



APM Express

The Newsletter from APM Consulting, LLC

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VOLUME 1, ISSUE 2

NEWSLETTER DATE: DECEMBER 2003

Editor's Notes

Welcome to the December 2003 edition of the **APM Express**, the newsletter from APM Consulting. Thank you to everyone who provided feedback on the inaugural edition. Your thoughts and comments are always welcome and appreciated. I would also like to thank all of you who provided information about your site's activities and projects. Without your input, there would be no **APM Express**. I am happy to report that in this issue we have added reports from five new airports.

I would like to take this opportunity to wish each of you and your families the very best of the holiday season and a healthy, happy, and prosperous New Year!

Best regards,

John Champ
President
APM Consulting, LLC

Beijing Capital International Airport

Logplan is currently working with a team from Beijing Capital Airport on a conceptual design for a new Terminal 3 that will include a satellite building. Concepts for an APM system that will connect the buildings are being developed at this time.

The new Terminal, Satellite building, and APM system will be ready for the 2008 Olympics that are being hosted by Beijing.

Information contributed by Jorg Nahke

Denver International Airport

The AGTS at Denver International Airport continues to operate quite well maintaining an average system availability in excess of 99.8%. The system performed flawlessly during the recent Thanksgiving rush when approximately 706,000 passengers made their way through DIA. Several projects and areas of concern have been addressed since the last issue of the **APM Express**.

The issue of failures with the main vehicle running tires has been alleviated by limiting the tire mileage to no more than 110,000 miles. Since putting this measure into place, there have been no further failures.

Some minor problems with the operational radio system (ORS) have been corrected by replacing the 20 DB couplers with 10 DB. Prior to this change, Central was receiving "No Response to Poll" alarms for vehicles in our storage areas. The fix appears to be working well, and we will continue to monitor the situation.

Sticking station door autolocks continue to be a source of problems at the site. Currently Horton Automatics is building 8 new autolock assemblies to be tested at the site. The new assemblies will utilize an 18 volt coil rather than the 24 volt coil that is presently used. We will report on the progress of this test in the next issue of **APM Express**.

All of the vital relays in the switch logic control cabinets have been replaced and the project involving the routing of the traction motor cables is ongoing.

Information contributed by John Champ

Detroit Metropolitan Airport

The Express Tram went into service on the opening day of the Edward H. McNamara Terminal/Northwest World Gateway in Detroit on February 24, 2002. After a few rough months, the Express Tram has performed very well. In fact, since the beginning of 2003, the Express Tram has achieved an average system availability rate of 99.1%.

A very unique feature of the Express Tram is that it operates on an elevated guideway approximately 21 ft. above Gate Level inside Concourse A, which has 64 jet gates and is approximately 4,900 ft. in length. It is completely visible to passengers at Gate Level as it travels from station-to-station.

The Express Tram is designed in a single-lane-with-center-bypass configuration serving three stations (North Station, Center Station and South Station). It is capable of carrying over 4,000 passengers per hour, per direction. The total guideway length, including the bypass area, is approximately 3,900 ft.

The Express Tram consists of two 112 ft. long trains, with each train consisting of two 54.5 ft. long vehicles with a 3 ft. gap between the vehicles which is concealed by the use of bellows. Each vehicle has a stylized end-cap design at one end to give the train a modern "bullet train" appearance. Each vehicle is capable of carrying 106 passengers which yields a train capacity of 212 passengers, and achieving a maximum speed of approximately 30 MPH. Each vehicle also has four 5-ft. wide automatic bi-parting doors on each side to facilitate boarding and exiting.

On-board vehicle amenities include push-to-talk communication with the Express Tram control room, a designated wheelchair priority area for handicapped passengers, dynamic display signs above each vehicle door which are coordinated with audio messages, and a 20 in. diagonal matrix display screen at each end of the vehicles capable of playing DVD-recorded information about the airport and/or advertising.

Information contributed by Dennis Farmer

DFW International Airport

Work on DFW International Airport's new SkyLink system continues to progress nicely. The guideway is nearly complete and work continues on the power rail and power distribution equipment. The fabrication of all guidebeam has been completed and the installation is ongoing at this time. The procurement and installation of various station components is also well underway.

A 100,000 sq. ft. maintenance and storage facility is approximately 99% complete. The storage yard adjacent to the facility is capable of storing 23, 4-car trains. The maintenance facility will also house the systems Central Control center.

Fourteen of the 64 car shells have been received at Bombardier's manufacturing facility in Pittsburgh, PA, and vehicles 1-4 have completed final assembly and are undergoing testing.

On September 24, 2003, a 4-car train demonstration was held for the SkyLink Team on Bombardier's test track in Pittsburgh.

For more information about SkyLink visit the DFW web site at www.dfwairport.com.

Information contributed by Tomas Rivera

Hartsfield – Jackson Atlanta International Airport

In honor of the late Mayor of Atlanta, Maynard Jackson, the airport has been renamed Hartsfield-Jackson Atlanta International Airport.

Atlanta is in the process of negotiating a new operations and maintenance contract. Although they have always had a time and materials arrangement with their supplier, they may consider using a fixed fee contract if it proves to be more cost effective.

Lea & Elliott is helping Atlanta look into the possibility of replacing their Automatic Train Control (ATC) system. A proposal will be forthcoming in 2004.

Atlanta is currently working on a \$500,000 project that will provide 24-hour service by operating two trains in a modified loop utilizing either guideway and the turn back areas. The program includes activating bypass areas, programming operating software, and installing signs and lighting. The estimated completion date is July 1, 2004.

A new vehicle storage facility is also underway. The storage facility will have five spurs and cover 100,000 sq. ft. The facility will also provide space for Atlanta's training program.

Specifications are currently being prepared for a new \$200 million dollar APM system that will serve a consolidated rental car facility. The new APM has an estimated completion date of 2007.

Information contributed by Steve Yates

Incheon International Airport

Incheon International Airport is currently planning a new Satellite Concourse A that will be connected to the existing Terminal 1 via an APM system. In the preliminary stage of development the APM will consist of 2 stations and approximately 900 meters of dual lane guideway.

The trains will be operated in a synchronized double shuttle mode of operation with a capacity of more than 5000 passengers per hour per direction of travel. Proposals from interested APM suppliers have been received and evaluated.

Logplan is providing Incheon with technical support and consulting services for the new APM system. The new Satellite A and APM system are projected to enter revenue service sometime in 2008.

Information contributed by Jorg Nahke

Madrid Barajas International Airport

Installation and testing continues on the new APM system at Madrid's Barajas International Airport. The APM is being supplied by Bombardier Transportation and Logplan is providing Madrid with technical oversight.

The APM is a pinched loop and will consist of 19 vehicles, 4 stations, and approximately 2.5 Km of dual lane guideway. The first two vehicles were received on site and current plans call for automated operations to be performed during the spring of 2004. The opening of the system is scheduled for 2004.

Information contributed by Jorg Nahke

Orlando International Airport

Since the last edition of the ***APM Express***, repairs to the 4500-Train (the Airside 4 train that was impacted by the construction crane) have been completed. Two windshields and a section of the lead car roof were replaced. Total downtime was limited to three days.

Work continues on the new Intermodal Transit System (ITS). The guideway from mid-span, north, to the (existing) Terminal is 90% complete. The guideway section from mid-span to the south will not be built until passenger demand dictates the need for the South Terminal to be built. It is estimated that this will occur approximately in the year 2012. No system supplier has been selected for this APM and everything is currently being built generically to accommodate all/any potential suppliers.

O&M contract negotiations with Bombardier are expected to begin in late January. We are in the final option year of a 5-year base with two 1-year options. Contract value is estimated at \$28-30M with a 5-year base.

Information contributed by Mike Shumack

Sea-Tac International Airport

The modernization project at Sea-Tac International Airport is ongoing. The South Loop went into passenger service with new vehicles and Flexiblok controls on November 11, 2003. At the present time service consists of operating a 3-car train in shuttle mode between the Main Terminal South and South Satellite stations. The limited service is in effect to accommodate work being performed by the ventilation contractor. The system is designed to be a must ride loop.

The remaining six new vehicles are scheduled for delivery on December 9th and 10th. The old vehicles are to be removed at the same time. One of the old vehicles will be kept for several months and is to be used as a work platform by contractors.

Next quarter's activities will include the relocation of the Airport Communication Center (Central Control) from the parking garage to the lower level of the new office tower. Overall system demonstration tests are scheduled to begin in March 2004.

Information contributed by Jeff DeMarre

San Francisco International Airport

AirTrain is steadily climbing the learning curve after successfully opening this past March. The airport, together with Bombardier, is making refinements to improve the system's reliability and ease-of-use. Recent improvements include:

- Newly recorded vehicle and station platform PA announcements with a scheduling feature.
- Upgraded ORS software.
- Installation of a digital recorder that has the ability to record the Central Control screens while simultaneously recording the maintenance radio system (MRS). This allows for review of incidents and for use as a training tool.

AirTrain also completed a very busy Thanksgiving holiday weekend with an availability of 99.52%. This feat was quite an accomplishment given the heavy rain experienced in the Bay Area and the greatly increased passenger loads! The month of October was Bombardier's best to date with an availability of 99.81%.

Information contributed by Michael Robert and Derek Phipps

Tampa International Airport

Sam Ensell has been temporarily re-assigned to the outbound baggage system project. With the exception of the portion allocated to the new Airside C under construction, the entire system will be completed in about six months and 100% of our carriers will then be utilizing in-line screening and automated sort/distribution.

Maintenance Contracts Manager, Pat Campbell, is overseeing the shuttle and monorail maintenance contracts, both of which are being performed by Bombardier.

Bombardier is also performing the shuttle portion of the new Airside C construction. They removed a major portion of the original guideway and superstructure to achieve the desired elevation and interface with the new airside. Additionally, they have removed the entire remaining running surfaces and are in the process of forming and pouring new ones. Their portion of the construction appears to be moving along nicely. As stated previously, we'll be utilizing existing shuttle cars for the new airside, ultimately converting four 1-car consists to two 2-car consists.

We are nearing completion of a prototype for a shuttle entrance warning system which we hope will alleviate most of the passenger generated door closing interruptions. It will bear a distinct resemblance to the system in place at Hartsfield-Jackson, but in the interest of saving time and money, it will not be tied in to the ATO. It's more or less an in-house project with some valued assistance from our local Bombardier maintenance staff.

One other item of interest: several of our CX-100 cars (vintage 1995) are experiencing problems with the ply-metal flooring. Bombardier has replaced five floor panels in one car and will be repairing floors in at least two additional cars during 2004.

Information contributed by Gary Houts

Washington Dulles International Airport

After a series of unavoidable delays work on the new APM system for Dulles Airport has finally begun. Sumitomo Corporation was selected to design and install the new APM. They will also provide the initial operations and maintenance service.

The base system will be a pinched loop consisting of 2.2 miles of dual lane guideway. The system will utilize 29 vehicles that will be operated in 3-car trains. The projections are to use seven, 3-car trains with 1 hot spare train and 5 vehicles available for maintenance. There will be five stations serviced by the APM.

There will be an offline maintenance and storage facility that will be capable of accommodating the entire fleet. The facility will have an adjacent yard that will be covered with awnings to prevent snow and rain from getting on the guideway.

When completely built out, in approximately the year 2030, the system will consist of 2 concentric tracks about 10 miles in length. The tracks will be completely underground and take on the form of an oval, much like a race track.

Information contributed by Ashok Abhyankar

Zurich International Airport

The new cable propelled APM system called Skymetro went into revenue service on September 1, 2003. Skymetro connects two terminal buildings, Airside Center and Dock E, at Zurich International. The system operates on a 20 hour per day schedule, 7 days a week.

Skymetro services 2 stations that are connected by approximately 1.2 Km of guideway in independent tunnels. The system currently operates with two, 2-car trains, in a synchronized double shuttle. At the present time headways average two minutes.

In the spring of 2004, Skymetro will begin operating in a pinched loop configuration utilizing three, 2-car trains. During the first two months of operation Skymetro carried approximately two million passengers.

Logplan provided Zurich with consulting services during the design and installation of Skymetro and will continue to support the system.

Information contributed by Jorg Nahke