

Avionics Naviair ADS-B Briefing Document

Date: Tuesday, May 20 – 1 PM, XXX office (phone call)

Interviewer: reporter name

Interviewee: senior manager name

Reporter Background:

(Reporter name) is the Multimedia Editor (online) for *Avionics Magazine* and its website, AviationToday.com. He's been with the magazine for approximately a year and this is our first direct interaction with him. (Reporter name) is an active participant on Twitter (@reporter's Twitter), mostly posting recent news stories. Topics he has recently covered include the Malaysian MH370/flight tracking, avionics technologies for aircraft and general ATC-related news. (Reporter's name) does seem to be focusing more on their ATC-related coverage.

Reporter Input:

(Reporter's name) asked to speak with us about the Naviair ADS-B system release we issued on Monday.

Publication Background:

Avionics is a monthly print publication with a strong web presence that focuses on all aspects of aviation electronics. The publication covers technologies for civil, private and military aviation. Like many publications, they have written extensively about flight tracking technologies, ADS-B and space-based solutions in the wake of the MH370 incident.

Key Message:

- Saab is a leading supplier of WAM and ADS-B solutions, often taking on some of the most challenging surveillance needs of ANSPs
- We have completed our delivery of an ADS-B system to Naviair for surveillance of flights across Greenland and the Faroe Islands
- The system had to overcome significant environmental challenges in these remote locations
- Naviair is best suited to discuss how and when they plan to utilize the surveillance data

Potential Question/Answer:

How many sensors did you deploy?

There are two redundant sites (four sensors) in Faroe and five redundant sites (10 sensors) in Greenland.

What has been completed?

We have completed the installation of the sensors and Naviair has accepted the system.

Is it being used today?

No, Naviair plans to place the system into full operation late this year. The ANSP is best suited to discuss their interim plans and timing.

What were some of the challenges of this program?

Greenland is a very harsh operating environment, meaning the system had to be robust to withstand the elements. Also, the installation timeframe was limited due to the weather.

Recent Articles: Below are three recent articles by (reporter's name) that have run in *Avionics* or on *AviationToday.com*.

Thales to Provide Zambia ATM Modernization

May 7, 2014

The landlocked South African country of Zambia has selected the Thales TopSky-ATC system to modernize its Air Traffic Management (ATM) system nationwide. Zambia will receive a solution configured with two primary radars and two secondary surveillance radars equipped with full Mode S.

TopSky will manage Zambia's entire airspace, according to Thales. Zambia joins several other African countries, including Namibia and the Democratic Republic of Congo to upgrade their ATM with TopSky.

According to Thales, 70 percent of African Air Traffic Control (ATC) centers are currently equipped with TopSky.

Opinion: Technology to Prevent Flight Disappearance May Already Exist

April 24, 2014

Malaysia Airlines' flight MH370, a Boeing 777-200, has been missing now for 47 days, and while as an aviation journalist I am not in the business of proposing theories about what may or may not have happened, I do stay deeply in touch with aviation technology, and this incident will make a deep impact and impression on the industry. Until the aircraft is located, and the aircraft's flight data recorder is recovered and analyzed, there will be no way of knowing what happened. But, if anything, what this incident does teach the industry is that there needs to be a better method of tracking aircraft, rather than relying on radar coverage from Air Traffic Control (ATC) or an Aircraft Communications Addressing and Reporting Systems (ACARS).

This week I discussed the Malaysia Airlines incident with Skip Nelson, CEO of ADS-B Technologies and a pioneer of space-based ADS-B, as well as Viraf Kapadia, CEO of Star Navigation Systems and creator of a technology that provides real-time aircraft data streaming. I also discussed the issue with briefly with an engineer at Curtiss-Wright, which provides subsystems that power some of the most advanced military and commercial avionics systems in the world.

They all essentially said the same thing. They asked how, in 2014, it is possible for an airplane to disappear.

Nelson, reacting to the incident itself, said "One of the rules of the game, and one that we adhere to, is we keep our mouth shut when an accident happens.

"You haven't heard anything from us on this. Because that's the honorable thing to do. There are family members related to the passengers that were on that plane, and all they want to know is where their family is — not a bunch of theories about what may have happened or ACARS systems or stuff like that. We as an industry need to learn from this and focus on improving safety," said Nelson.

Nelson's Alaska-based ADS-B Technologies is among the companies that have been working on making flying safer for quite some time, even before tragedies put our industry need in the spotlight. Last week during the 2014 AMC | AEEC conference, NAV Canada announced its plans for the initial launch of a space-based Automatic Dependent Surveillance-Broadcast (ADS-B) network, which has the potential to greatly improve aircraft tracking, especially over large areas of oceanic airspace.

Nelson has been flying aircraft equipped with space-based ADS-B for four years. That's a technology that airlines could equip with right now, taking the existing ADS-B Out transmission from the cockpit and beaming it up to a satellite and relaying that information to ATC in less than 400 milliseconds.

While Nelson firmly stated that he did not believe space-based ADS-B could have prevented the Malaysia Airlines incident, he does believe that the technology can help to improve aircraft tracking in the future. This would be especially true for airplanes traveling in the Asia Pacific region, where many flights must pass through oceanic airspace where radar coverage is nonexistent or ineffective.

"Take a country like Peru or Chile, or even China, that does not currently have ADS-B, but may have geography problems with mountains like the Andes in South America, or the Himalayas, that effectively cut western China off from eastern China," he said.

"Now, instead of spending billions of dollars on ground infrastructure, countries like that can immediately go to space-based ADS-B. In China, we think as few as three satellite ground stations could cover the whole country. In Peru, we already have one station, and we're talking to them right now about possible demonstrations down there. In the Pacific, where land-based infrastructure is hard to come by, a satellite station in some place like Tonga and another one on Christmas Island would cover almost the entire link between New Zealand and Hawaii," Nelson added.

We will have more in-depth coverage of lessons learned from the Malaysia Airlines MH370 in our July issue, where we will examine how the industry will improve aircraft

tracking moving forward with concepts such as streaming flight data via satellite to the ground so that it is available if air traffic controllers lose sight of it.

Next month, the International Civil Aviation Organization (ICAO) is holding a special meeting involving a task force comprised of government officials and aviation experts from around the world to discuss this issue. Rockwell Collins CEO Kelly Ortberg is among those within the industry who has already expressed interest in joining that task force, and has also noted that the technology already exists to improve tracking.

Panama Opens Modernized ATC Center

April 21, 2014

The Civil Aviation Authority of Panama (AAC) announced the inauguration of a new approach and en-route radar Air Traffic Control (ATC) center that has the capability to manage the entire airspace of Canada.

Featuring the TopSky Air Traffic Management (ATM) system from Thales, the new facility will host 12 Controller Working Positions (CWP). Thales' TopSky-ATC and TopSky-Simulator will also be integrated at the new facility.

"In instigating a single program for the upgrade of their entire air traffic network, the AAC have set themselves a very ambitious challenge. Therefore, being chosen to help in such a venture is a true reaffirmation of our dominant position in Latin American ATM, and of the trust partners like the AAC place in Thales," said Raphael Cervantes, director of sales for Latin America of Thales's ATM business.