



Techwatch Bulletin

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SYSTEMS, EQUIPMENT AND FACILITIES

UPDATE- GAATS (Gander Automated Air Traffic System)

A new era has commenced in Gander with the delivery of the latest version of software. This software, delivered in late February, adds a graphical situation display (GSIT), an assortment of graphical tools and basic CPDLC functionality. Controller training has been completed and minor corrections made to the software so that the Gander oceanic controllers are now controlling oceanic traffic using the new situation display interface.

Planning to conduct trials for CPDLC use in the North Atlantic airspace is progressing well. Guidance Material has been approved and Canada and the UK are developing the required software to enable this functionality. Phase one of these trials is currently scheduled for late June/early July, 2002.

Contact: Harold Martin, Manager Flight Data Processing, (613) 248-7509

UPDATE - FANS 1/A – ADS WAY POINT POSITION REPORTING

The FANS 1/A ADS Waypoint Position reporting became operational on January 29, 2001. About 230 flights per day, belonging to some 18 operators, use the capability. That is about 30% of the total daily oceanic traffic. Plans are now proceeding to implement waypoint position reporting using other avionics packages (other than FANS 1/A) with pre-operational trials planned for September, 2002. These could potentially add an additional 100 (approximately) flights per day reporting positions automatically.

Contact: Harold Martin, Manager, Flight Data Processing, (613) 248-7509

UPDATE - OCEANIC CLEARANCE PROCESSOR (OCP II)

An upgrade to the current Oceanic Clearance Processor (OCP I) has been tested and certified. Implementation is planned for the middle of May, 2002. This upgrade will allow Gander to send initial oceanic clearances to all aircraft equipped with avionics conforming to ARINC Specification 623 while continuing to serve the current ARINC Specification 620 avionics aircraft.

Contact: Harold Martin, Manager, Flight Data Processing, (613) 248-7509

UPDATE AIRCRAFT COMMUNICATIONS ADDRESSING & REPORTING SYSTEM (ACARS) WAYPOINT POSITION REPORTING

Now that the FANS 1/A ADS Waypoint Position Reporting is operational, a trial of the ACARS Waypoint Position Reporting is being planned by the North Atlantic FANS Implementation Group

(FIG). After some required software changes, it is anticipated that this trial will commence in late summer or early fall 2002.

Contact: Harold Martin, Manager, Flight Data Processing, (613) 248-7509

UPDATE - NEW RADARS IN THE NORTH

The first of the new Northern Radars, Kuujuaq Radar, is now in operation. Additionally, Yellowknife Radar has also been commissioned and is operational. The new radar installation at Iqaluit has recently passed the operational flight check and is expected to be commissioned shortly. A similar radar at La Ronge is also planned for operation later in 2002. NAV CANADA's Board of Directors have also approved radars for Chisasibi, Stony Rapids and a replacement for Brisay which will follow during 2003.

Contact: Christine Guérin, Manager, Surveillance, (613) 248-6833

UPDATE- FLIGHT INFORMATION CENTRE PROJECT

The Flight Information Centre Project (FIC) involves the centralization of the provision of flight information services such as preflight weather briefings, flight planning and en-route radio communications into nine facilities: Halifax, Quebec City, London, Winnipeg, Edmonton, Kamloops, Whitehorse, Yellowknife and North Bay. The project focus has been on establishing FICs at three sites: Halifax, Quebec and Edmonton with staff and service transitions commencing in September 2001 for Halifax, November 2001 in Edmonton and in March 2002 for Quebec City. The other FICs will be established and ready for staff/service transitions in September 2002.

Related projects include:

- ***UPDATE- Pilot Information Kiosks***

The Pilot Information Kiosk is designed to give pilots quick and accurate weather and aeronautical information through a variety of media (Internet, Phone, and Fax) in support of the interpretive briefings provided by flight services specialists at FICs. Prototype versions of the kiosks are available in Charlottetown and Ottawa.

Production and fielding of national operational units is in progress. Two operational units have been delivered to TSC and NCTI respectively (December 2001) for Evaluation and Training Material development. In addition, 17 sites across the country now have kiosks and more sites will be added this summer and fall. The operational units will be rolled out to designated sites that meet the operational and technical criteria to receive a kiosk.

Contact: William Estrada, Project Manager, Pilot Information Kiosks, (613) 248-6872

UPDATE- AVIATION WEATHER WEB SITE (AWWS)

The new version of the Aviation Weather Web Site was released on the 30th of August after a 30 day beta test period that was undertaken with the help of the Canadian Owners and Pilots Association (COPA). The web site has improved redundancies to ensure reliable 24 hour-a-day accessibility, and improved functionality, such as the user capability to define and save their own routes for subsequent recall. Since the initiation of the new weather web site in August, the number of site hits have increased from 2000 per day to over 17,000 per day. Future plans include adding access to NOTAM information (late-2002) and filing a flight plan on-line (mid 2003), as well as gradually adding the following features:

- More US weather data (via link now)
- Looping of satellite and radar imagery

- Data that can be ingested by flight planning software & wireless devices
- Weather camera imagery
- Sunrise/sunset times
- Automated Terminal Information System (ATIS) broadcasts

The Internet accessible Automated Supplementary Enroute weather Prediction system (ASEP) is also expected to become operational in mid 2003. Through the Aviation Weather Web Site, this system will allow users to select weather predictions that are derived from Environment Canada's super computer model of the atmosphere. The predictions will be specific to the user's route, date/time of the flight (up to 40 hours into the future), and preferred cruising altitude. The ASEP predictions are presented to the user as colour profile (cross section) and plan view (bird's eye) graphics which are very easy to interpret. Pilot and flight dispatcher users will have access to the ASEP predictions, as will our Flight Information Centre (FIC) weather briefers.

Contact: John Footitt, Manager Aviation Weather Services (613) 563-5603

UPDATE FSS WEATHER GRAPHICS SYSTEMS

The FSS Weather Graphics System (FWGS) project is being delivered in co-ordination with the Aviation Weather Distribution System (AWDS) and the NAV CANADA Meteorological System (NCMETSYS) projects to deliver alpha-numeric and graphic weather products to support pilot briefings and ATS operations. There are currently 45 FSS and 4 ACC's that have FWGS and AWDS installed, and there are also 3 support facilities (non-operational units). Five more FSS will be completed this fiscal year. The remaining 26 FSS sites are planned for Phase 3 of the FWGS and AWDS projects, however the start date for this Phase has yet to be determined. ATS facilities that currently do not have these systems have GFAs and other graphic products faxed to them.

Contact: Harold Martin, Manager, Flight Data Processing, (613) 248-7509

UPDATE- PATWAS

The Pilot's Automatic Telephone Weather Answering Service (PATWAS) is being expanded and enhanced again. From its humble beginnings as a prototype system in Ontario, to its earlier introduction in the west, PATWAS will soon become a truly national system offering bilingual, improved weather product handling and more responsive menu navigation for users. The target site and revised date for the national launch of PATWAS is Quebec City, November, 2002.

Contact: Joe Clapp, Manager, Communications & Facilities, (613) 248-7240

UPDATE - D-ATIS/TVGS

Similarly, our D-ATIS/TVGS (Data Link – Automated Terminal Information Service and Text to Voice Generation System) is being deployed to cut down waiting times for routine information by first automatically converting text ATIS messages to voice and broadcasting them on the appropriate VHF frequency. A copy of the text message is also relayed to third party distributors for data link dissemination on demand. The TVGS is working well and we are expanding the available vocabulary to include PIREP, AIRMET and SIGMET. D-ATIS has now been commissioned at Sault Ste Marie, Saskatoon, Thunder Bay, Regina, St-Hubert, Vancouver, Calgary, Toronto (Pearson), Ottawa, Halifax, Winnipeg, Hamilton, Quebec City, Gander, St. John's, Dorval, Edmonton International, Moncton, Victoria, Mirabel, and Kelowna. The sites that are still being forecasted are Prince George, Sudbury, Waterloo, Buttonville, Toronto City Centre, London and Abbotsford.

Contact: Joe Clapp, Manager, Communications & Facilities, (613) 248-7240

UPDATE - CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC)

Planning to conduct trials for CPDLC use in the North Atlantic airspace is progressing well. Guidance Material has been approved and Canada and the UK are developing the required software to enable this functionality. Both are targeting late spring 2002 to commence trials.

Contact: Harold Martin, Manager, Flight Data Processing, (613) 248-7509

UPDATE PRE-DEPARTURE CLEARANCE (PDC)

A new Pre-Departure Clearance (PDC) system at Toronto and Vancouver is leading to faster taxi and take-off routines by reducing voice communication requirements and frequency congestion. PDC has also been installed and is now in operation at Calgary, Edmonton, Winnipeg, and Halifax Airports.

Contact: Christine Gu  rin, Manager, Surveillance, (613) 248-6833

UPDATE - ASDE

Airport Surface Detection Equipment (ASDE) systems are becoming increasingly sophisticated and increasingly important as a method of reducing runway incursions. In assessing the feasibility of an ASDE system for Halifax, the company has determined that, in addition to enhancing safety, ASDE could produce half a million dollars in annual savings for aircraft operators by providing smoother control over movements on the ground. The Board of Directors has authorized procurement of an ASDE system for Halifax. The contract for the new ASDE system has been awarded and the plan is to have an operational ASDE system in Halifax in the 1st quarter of 2003. In addition, a new ASDE system has now been approved for Vancouver. While Vancouver currently has an ASDE system in place, the new system being installed by the end of 2003 will provide enhanced monitoring and runway incursion warning capabilities.

Contact: Christine Gu  rin, Manager, Surveillance, (613) 248-6833

UPDATE- CONVERGING RUNWAY DISPLAY AID (CRDA)

CRDA was initially, as the name says, a converging runways utilisation optimisation tool. Since the first implementation in Calgary we have identified several alternative uses for this Decision Support Tool, including use as an In Trail Sequencing Aid. We also foresee several other Enroute and Terminal sequencing applications which will enhance efficiency while maintaining the highest safety levels provided by NAV CANADA.

Contact: Bob Armstrong, Manager, ATS System Effectiveness

PROCEDURES

UPDATE - FLIGHT MANAGEMENT SYSTEMS (FMS) & AREA NAVIGATION (RNAV) STANDARD ARRIVAL/DEPARTURE ROUTES (STARS & SIDS)

The Toronto public procedures published last November are working extremely well. Both controller and pilot groups are using them with ease. The RNAV STAR procedures serve 8 airports across Canada. The RNAV STAR trials ongoing in Vancouver since last fall with Air Canada as the lead carrier have been streamlined and should be available for the general public (CAP) by late summer. Other airports are slated for these procedures on an as required basis and coordination for development is through the responsible area control center (ACC) and the local aeronautical information services (AIS) field office. The published procedures are continuously being reviewed and modified to meet the needs of both the user and the air traffic controller.

RNAV SID procedure development is ongoing for Montreal, Calgary and Toronto airports. RNAV SID trials at Ottawa are being refined and new revisions should be implemented by mid summer. Standards will be developed from the data captured from the trial and these standards will be used in the further development of RNAV SID procedures at other Canadian airport locations.

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UPDATE REDUCED VERTICAL SEPARATION MINIMA (RVSM)

On April 18, 2002 RVSM was implemented in northern Canadian airspace, an area covering in excess of 8 million square kilometers, more than half of Canada's Domestic airspace. The addition of six flight levels between FL 290 and FL 410 inclusive, increases airspace capacity, provides more flexibility for air traffic control and enables our customers, in the airspace concerned, to operate at more optimum profiles. It is estimated that RVSM will generate \$ 14.3 million in efficiency gains in 2002, and increase with traffic growth.

The implementation of RVSM bridged several disciplines, both within and outside the Company. These included air traffic services, engineering, technical operations, airspace designation, aircraft certification, safety assessment and airspace monitoring. The program was implemented in concert with Transport Canada, in particular, in the areas of aircraft certification and airspace changes.

Now that RVSM in northern Canadian airspace is a reality, we will move to address the expansion of RVSM in southern Canadian Domestic airspace, in conjunction with the projected implementation of RVSM in US Domestic airspace. We'll have more information on this initiative in the coming months.

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UPDATE - SatNav – TRANSITION STRATEGY

NAV CANADA's business strategy is to use SatNav technology to provide better service at lower cost. This strategy is based on the following key principles: meet customers' needs for measurable efficiency and safety benefits; maintain seamless service in North America and globally; address all related technical and operational issues; apply international safety standards; buy proven hardware and software off the shelf; and, retain traditional aids until the technology is proven and accepted.

Our immediate strategy is to get maximum benefits from GPS. We have commissioned almost 250 GPS approaches, most of which provide increased airport usability. We have worked with Transport Canada to expand the use of GPS. We have started a data collection project with Air NorTerra aimed at finding ways to improve services based on GPS.

Longer term, we are exploring the possibility of linking stations in Canada to the U.S. FAA's Wide Area Augmentation System (WAAS). The FAA has made good progress in recent months, and plans to commission WAAS in late 2003. Their system will improve access to many airports by providing approaches with vertical guidance. We are using mathematical models to assess WAAS benefits in Canada, and if the benefits are there, we will develop a business case for the consideration of our customers and the NAV CANADA Board of Directors. Canadian WAAS stations would be identical to those proven in the USA.

We are also following the progress of the FAA's Local Area Augmentation System (LAAS) program, aimed at supporting Cat I (later Cat II/III) approaches. LAAS could offer Cat I service at some difficult sites in the nearer term. Once again, any decision would be based on a solid business case and customer demand, and we would only purchase proven equipment.

The NAV CANADA strategy is explained more fully in the latest version of the "SatNav Transition Strategy" document, available via e-mail request or on NAV CANADA's web site (www.navcanada.ca).

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