

FEATURE Crew scheduling & rostering

One of the persistent effects of the post-11 September 2001 turmoil has been the shift of routes from mainline airlines to their regional affiliates to match passenger volumes more closely. That has made the job of regional airline schedulers more complex than it was a year ago; in addition to the necessary growth in aircraft fleet size, airlines have had to add more pilots and flight attendants to operate those aircraft, ensure that they are trained and familiar with the new routes, properly blend the new-hires with the veterans and ensure that the schedules and crew assignments comply with regulatory, contractual and company rules.

There has also been a shift in the make-up of the supply community from which airlines acquire their crew scheduling programs as two of the oldest companies have been bought by larger entities and at least one new supplier has emerged. One of the original scheduling providers, SBS International, was acquired by Boeing in June 2001 and long-time independent David R Borne-



All screenshots courtesy of Sabre.

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"Internet access to PrefBID and CrewTrac minimises the labour intensity of keeping crew members informed of their current assignments," says Hayden. "CrewVoice can also be used for automated crew check-in, thereby reducing the volume of distracting phone calls to the airline's busy crew controllers."

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Regulations, contracts and in-house rules all affect the ways in which an airline can put together crew schedules. Al Ditter reports on some of the software available to lighten the airlines' burdens.

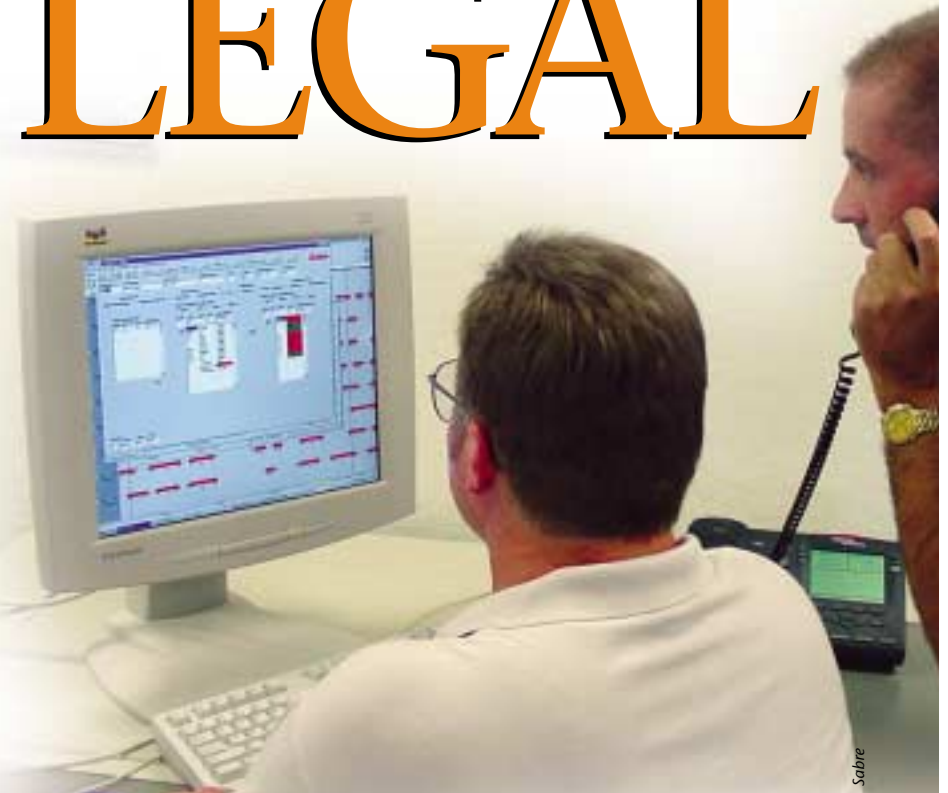
MIXED *matched and* LEGAL

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Despite those changes, the community still retains a substantial number of vendors, including Sabre, SBS, AD OPT and Mercury Scheduling among others, offering the airlines an extensive range of choices.

CREW-RELATED SOFTWARE

Sabre, best known for its passenger reservation system, has established its scheduling systems division in Phoenix, Arizona. Sabre's Kathryn Hayden explains that the company's suite of crew-related software for regional airlines consists of five trademarked Windows-based products. They include: CrewPlan, an optimised pairings and bid lines system; PrefBID, which generates assignments based on crew member preferences; CrewQual, a records system which maintains pilot and cabin crew qualifications and training records; CrewTrac, which monitors crew legality and flight coverage in real time; and CrewVoice, which provides crew member access to scheduling information via touch-tone phone.





“Our products can be implemented separately or as an integrated suite.”

*Kathryn Hayden,
Sabre*

an integrated suite, she notes, adding that a training scheduling system, to be known as CrewClass, is currently under development.

Hayden says the scope of Sabre’s PC-based automation supports all aspects of an airline’s system operations control centre and includes more than its crew-related products. “Sabre also offers Windows-based products in the areas of flight scheduling, flight dispatch, flight planning, weight and balance, operations control and maintenance control.

“The integrated nature of the software allows for coordinated decision-making, taking into account all relevant operational factors during irregular operations. Graphical displays generated by the software are designed to support rapid evaluation of alternative aircraft deployments and crew assignments when normally scheduled operations are disrupted.”

Sabre’s products, principally CrewTrac, CrewPlan and CrewQual, are in use with over 60 clients, including regional airlines Sky West, Mesaba, ACA, ASA, Mesa, US Airways Express, Air Canada Jazz, Air Wisconsin, Midwest Express, Chautauqua, Frontier, Skyway and Trans States.

SBS International, based in New York City, was founded in 1972 as Selective Bidding Systems to develop and provide flight crew scheduling systems for the international airline community. Today, most of the

US major and many of the regional carriers use one or more of the company’s crew pairing, rostering, bid line, preferential line building, crew management and operations control systems. It also offers a suite of integrated systems under the tradename ‘Maestro’, including the MaestroLines line-building generator, MaestroCrew to provide day-to-day crew tracking, and eMaestro, through which “crew members can now access and manage their scheduling needs from virtually anywhere having access to the internet”. A new pairing generator, MaestroPair, is currently under development, says SBS sales and marketing manager Leo Katigbak.

SBS’s proprietary RuleTalk programming language “handles staff management regulations externally to the application code and, as a result, allows speedy implementation of changes to those rules,” according to the company. “Parameter tables allow users to control the legalities applicable to the rostering processes and to define rostering optimisation criteria. With these tools, the development of ‘what-if’ scenarios is fast and accurate.”

The SBS client list, principally among mainline carriers, is extensive. Its regional airline client list includes Comair, Pinnacle Airlines and Horizon Air.

Dan Scott, Horizon’s VP flight operations, says, “We use SBS Track and Pair line-building programs, but not Maestro. Alaska [Horizon’s mainline partner] is currently using Maestro and is migrating to the Millennium version. We will follow Alaska’s lead and migrate to Millennium as soon as they complete their transition.”

Horizon has probably undergone the most extensive revamping of its fleet and route system post-11 September (see RAW, September 2002) of all the US regional airlines. Assignment of its crews is done with the various software tools and the input of the pilots and flight attendants. Horizon’s pilots are represented by the International Brotherhood of Teamsters and the flight attendants by the Association of Flight Attendants. “They have a lot of input,” says Scott. “We have both an AFA and IBT scheduling committee which

ACCOMMODATING CREWS

Airline crew schedulers have many tools to help them ensure that the right people with the right qualifications are on the right aircraft to fly the right route at the right time. However, regional airline pilots and flight attendants – especially those on the increasingly longer flights now possible with the extended range of the regional jet – are sometimes required to remain overnight at outstations, either because the schedule requires an early morning departure or because of time and duty requirements for rest. For those situations, a new set of service providers has emerged to handle the

logistics of airline crew accommodations.

Eden Prairie, Minnesota-based LJK Companies, for example, promotes itself as “a full-service lodging administrator [which can] significantly reduce total lodging expenses by negotiating lower rates, processing and auditing lodging charges, distributing payment to hotels and providing the customer with detailed analysis and exception reporting,” says sales and marketing director Alan Bergseth.

The company says it maintains relationships with national franchises and management companies covering thousands of hotels and can

use those relationships to negotiate prices and pinpoint savings opportunities. It selects hotels based on client guidelines and specifications to obtain, for example, hotels at favourable rates near the airport where crews will be required to remain overnight. The company also negotiates contracts, makes reservations, processes all lodging transactions, validates charges and handles all vendor communications.

In addition, LJK maintains a 24-hour reservation and customer service centre to handle routine and emergency needs for such things as mechanical or weather delays.



work very closely with our crew planning department. Both committees have slightly different focuses and through our regular meetings we have been successful with developing schedules that take into consideration the differing needs and desires of the two groups.”

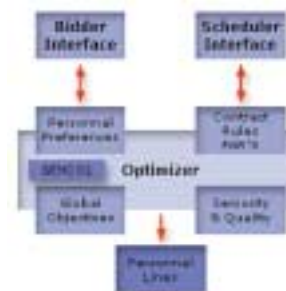
TAILORED OFFERINGS

Mercury Scheduling Systems, based in Vancouver BC, is one of two Canadian vendors of aircrew scheduling programs. It has a full slate of trademarked systems ranging from the all-encompassing Magellan crew control system to the aptly-named Nova Lite program for smaller operators.

Mercury classifies Magellan as “the first second-generation crew tracking system available to the airline industry”. It is claimed to “fundamentally track each crew member through time, from long range planning through day of operations, to historical records [using] one core database that holds all crew and related records which automatically updates as time passes”. Magellan is said to be “a dynamic database where time is an active component, com-

pared to the more traditional systems where the data is relatively static and only updated through specific user interactions”. The system monitors the schedule in real time and any change which produces a conflict alerts the user but also offers a solution. “The scheduler can work directly within a crew member’s roster to modify a trip or assignment, overriding rules or logical aspects of continuity, in a search for a solution.”

Mercury’s other products include the Cygnus crew pairing optimiser and the Nova crew planning system, all or some of which are in service with a wide range of cargo, charter and smaller scheduled carriers. Its customer list also includes JetBlue and Canada’s WestJet, two of the most successful start-up carriers.



Above Schematic of AD OPT Technologies' Altitude system.

FEATURE *Crew scheduling & rostering*

Nova Lite is Mercury's offering for the regional and smaller airline market. The system excludes automated roster construction and data exchange but does include flight schedule maintenance, pairing/trip construction, crew bidding, roster construction, planning periods, report generation and record maintenance.

It also offers Nova OnLine, "an internet-based bid entry and crew communication system used to support the preferential bidding phase of the Nova crew planning system [permitting] planners to distribute bid pack information and publish rosters over the internet." With Nova OnLine, crews "can submit their preferential bids online from any remote location and can gain access to the bid package information as soon as it is available; they no longer have to travel to their crew rooms to enter their bids in person."

EXTENDING THE LINE

Montreal's AD OPT Technologies is a relatively new company which recently added airlines to its line of workforce scheduling systems in the medical, railroad and air traffic control fields.

Using the trademark 'Altitude', the company offers a product family of resource planning, scheduling and

management solutions for both passenger and cargo carriers. This is powered by Gencol, regarded as "an industry-leading column generation technology that can process a virtually endless number of possibilities". Included in the product line are Altitude Pairing, Altitude Preferential Bidding System and the new Altitude Manpower Planning tools.

AD OPT's customers include major carriers Air Canada, America West, Northwest and South African airlines, charter operator Air Transat, cargo operators Federal Express and UPS, and regional carriers Mesaba and Air Canada Jazz. The company recently added Bombardier's fractional business aircraft operation, Flex-Jet, having previously announced that swiss had joined its list of customers for the Altitude preferential bidding and pairing systems.

The expanded usage of regional aircraft into roles previously filled by mainline carriers has indeed placed greater stresses on the central operations control centres and scheduling departments of the regionals. But the providers of crew scheduling tools have improved their products as well, and the increased processing capabilities of computers, combined with the availability of the internet to crews and schedulers, has done much to ameliorate those stresses. †



SBS International

