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Bouncing Back

While airlines can't control most delays caused by irregular operations, they can certainly recover with minimized impact using the right people, processes and technology.

■ By Rich Coskey | *Ascend* Contributor

Airlines in the United States are financially squeezed on both sides of the profit and loss statement. Unit revenue is difficult to increase given competition and the addition of capacity, and controllable costs — such as wages, rents and what remains of passenger amenities — have been attacked and reduced. And yet, with just a few quarters of sporadic industry profitability, pressure to increase wages after several rounds of cuts is mounting.

As a result, the cost of airline irregular operations, or IROPs, has come under greater scrutiny recently because of continued pressure on carrier profitability (on both the revenue and cost sides), and it is one of the last operational areas airlines can directly or indirectly influence.

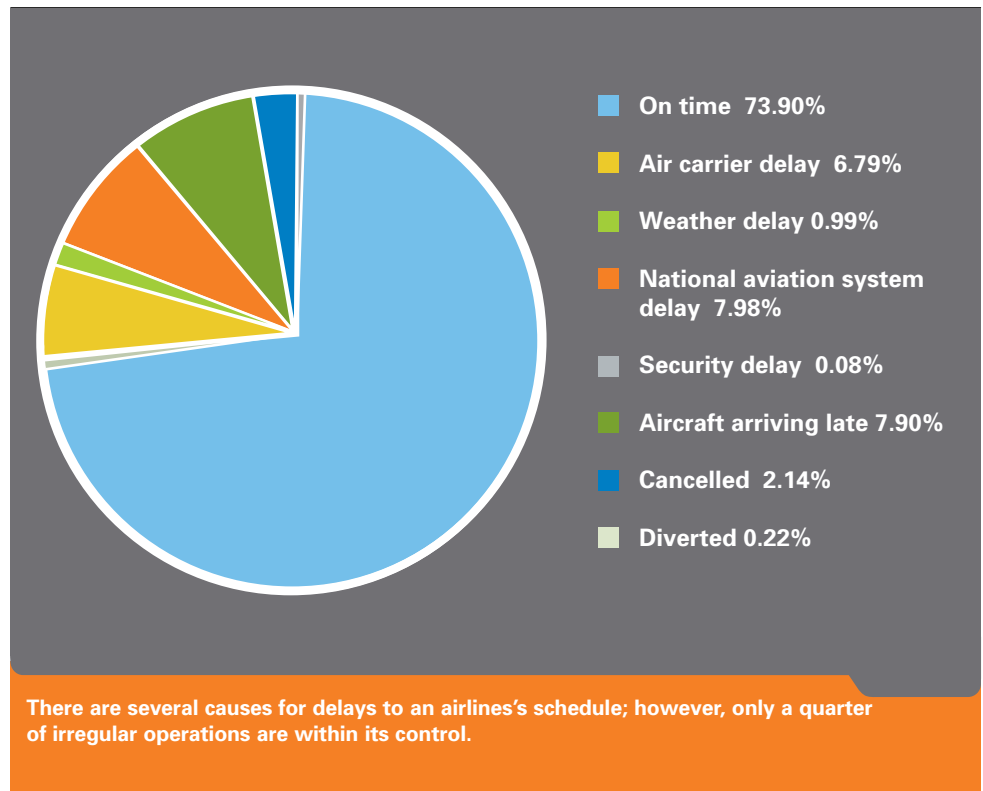
A Look at Irregular Operations

One of the remaining areas where airlines can achieve further cost savings is in the management and mitigation of IROPs, which comprise any flight that doesn't operate according to the schedule, resulting in delays, cancellations and/or diversions. The U.S. Bureau of Transportation Statistics compiles monthly figures, which are reported by U.S. major carriers, about the on-time performance of their domestic operations.

BTS defines a delay as a flight arriving more than 15 minutes late. Cancellations and diversions are considered a type of delay. The BTS assigns delayed flights into seven categories that airlines can use to classify their delays:

- Air carrier — Delays and cancellations due to circumstances within the airline's control (e.g. maintenance or crew problems, aircraft cleaning, baggage loading, fueling, etc.);
- Weather — Extreme weather conditions, such as blizzards and tornadoes, for which corrective action cannot be taken;

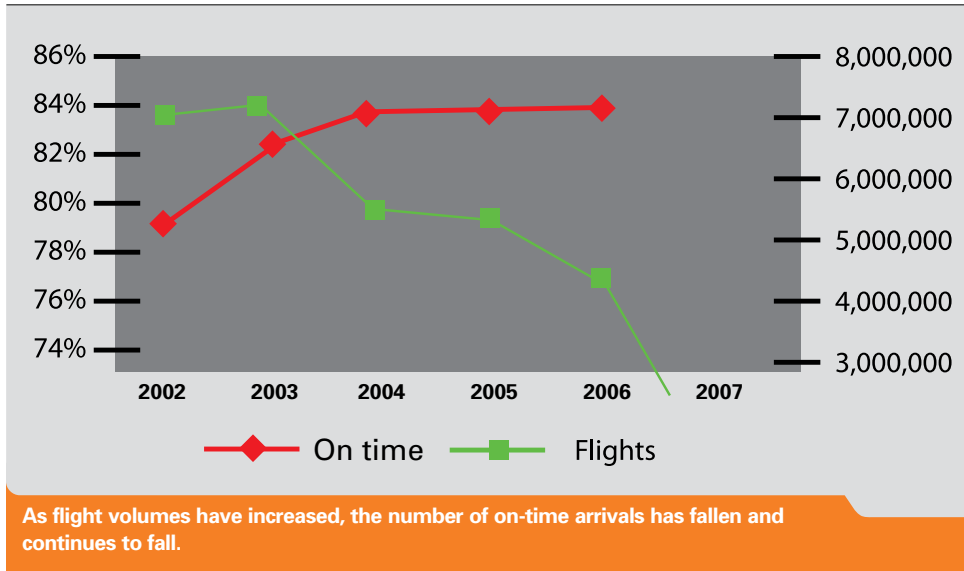
Types of Flight Delays



- National aviation system — Non-extreme weather, airport operations, heavy traffic volume, air traffic control;
- Security — Terminal evacuations, aircraft deplaning/reboarding, and instances where security lines exceed 29 minutes;
- Aircraft arriving late — The follow-on effect of a late-arriving aircraft;
- Cancellations — Flights cancelled for other reasons;
- Diversions — Flights diverted for other reasons.

A fraction less than 6.8 percent of all domestic flights were delayed for circumstances under the carriers' control, equating to about a quarter of all delayed flights. Airlines also have some influence over delays caused by the national aviation system (e.g., traffic volumes and flight timing). Of the 8 percent in this category, approximately two-thirds were due to weather, so non-weather-delayed flights constituted 2.9 percent of all flights. As a result, during the past year, U.S. carriers have had direct or indirect influ-

Flight Volumes Versus On-Time Arrivals



ence on a little more than a third of delayed flights.

Further, the trend is not encouraging. Since 2002, as flight volumes have increased, on-time performance has declined by 11 percentage points.

The Cost of Delays

Delays are obviously not just operational issues. There are impacts to passengers and employees. The overall impact of IROPs, however, is to the bottom line. In 2004, *Sabre Airline Solutions*® estimated that the weighted average direct operating cost of 1 minute of delay was US\$40. Factoring in the doubling of the cost of jet fuel since 2004 and adding indirect costs, the total cost of a minute delay can be estimated at approximately US\$100.

In addition to tracking the number and causes of delayed flights, the BTS tracks total delay minutes. The minutes of “air carrier” plus the proportion of non-weather-related, or national aviation system, delays totaled 36.5 million from May 2006 to April 2007. Using the round figure of US\$100 per minute of delay, domestic IROPs under the direct or indirect influence of U.S. carriers totaled approximately US\$3.65 billion of cost/lost revenue for the industry during the last year. Many delays cause extra down-line delays. According to the BTS, flights delayed by up-line causes comprise 7.9 percent of all delays, accounting for another 35.7 million minutes. So each delay prevented up line may eliminate further delays and costs, with industry total potential savings in the hundreds of millions or billions of dollars.

Dealing with Irregular Operations

Obviously, not every minute of directly or indirectly controllable delay can be eliminated from an

airline’s operations. But given the estimated financial magnitude of the problem, it is clear that nearly every airline can find thousands, or millions, of dollars in annual savings with investment in people, processes and technology to mitigate IROPs. Every airline can accommodate a certain level of schedule deviation. Airline managers, staff and crew deal with myriad unplanned or unexpected events on any given day of operation. The smooth operation of a carrier anticipates certain levels of weather/ATC, maintenance, crew or technology events that can be managed without major disruption to the overall schedule.

IROPs vary in breadth, severity and duration — from a thunderstorm cell passing over a hub or focus city to an extreme weather event such as an airport-closing blizzard or even suddenly implemented and ever more rigorous and comprehensive security procedures. Airlines are generally well equipped to manage IROPs up to a certain threshold. But because not every event can be anticipated, let alone adequately planned for, there is a point at which standard operating procedures begin to break down. However, given the operational and financial impact of IROPs, airlines have strong incentives to push that threshold out as far as possible.

Some areas where *Sabre Airline Solutions* has assisted clients in mitigating the operational and financial impact of IROPs include:

- **Planning** — Tighter turn times lead to more aircraft flying time but reduce the buffer for IROPs. Schedules are planned to maximize revenue but need to be robust enough to allow for IROPs recovery. Planning encompasses other dimensions, such as adopting a fleet with common-rating flight decks and electronic flight bags to maximize flexibility.
- **Procedures** — The design and proper functioning of an airline’s system operations control center is critical to IROPs management and recovery. Multiple contingency plans must be created for anticipated events, and processes must be

detailed to address the unforeseeable. Lines of authority and decision making must be clearly defined and followed. IROPs planning and recovery is the ultimate time-sensitive undertaking — the right people must understand and implement the process. One broad finding that *Sabre Airline Solutions* has made with its clients is that delegating IROPs handling to SOC managers results in faster and smoother recovery.

- **Policy** — During IROPs, airlines can reconstitute their schedules for different parameters, for example, to minimize revenue loss, minimize passenger misconnects or maximize completion factor. Each airline’s IROPs recovery objective must be clearly defined and planned around. Not every airline has the same objective.
- **People** — Two major constituencies are affected during IROPs: passengers and employees. Getting passengers to the hub is ineffectual if a blizzard keeps employees from getting to the airport. Further, knowing where each employee is, especially eligible flight crew, is critical to recover the operation. Rapid and accurate communications — to passengers to ease their disruption and to employees to position them for returning to full operations — are essential.
- **Technology** — It’s merely a tool to run an airline’s operations, but in the hands of dedicated and well-trained staff, it is the tool that helps run operations smoothly on a blue-sky day and becomes fundamental to recovery during IROPs. IROPs recovery comprises three dimensions: aircraft, crew and passenger reaccommodation. Even for a small carrier, the mathematical complexity of solving these three dimensions simultaneously and quasi-optimally often calls for a technological solution. Factor in crew and passenger notification, maintenance scheduling, effective use of ACARS to send and receive data, and an integrated suite of applications makes sense for many carriers.

IROPs recovery is the extreme and most challenging form of airline operational management. The same people, plans, procedures, policies and technologies that facilitate a “typical” day of flying become critical during IROPs. In addition, given the potential for saving millions of dollars annually, every airline should examine, and continually re-examine, its methods for anticipating, enduring and recovering from IROPs. The savings from redeveloping the United States’ aviation infrastructure may be a decade or more away and can be only partially motivated by airlines, but there are many actions carriers can take beginning immediately to ensure the impact and cost of their next IROPs is minimized. ■

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