Building A Schedule Is No Simple Job

Many Elements To Consider

Last in a two-part series on Airline Scheduling.

Suppose you were given a group of airline routes and cities to be served and told to construct a flight schedule. How would you start? What requirements would you have to consider?

WHY SCHEDULES CHANGE

- New Airplanes
- Aircraft Modification Programs
- Changes in Maintenance Programs
- Government Route Changes
- Competitors' Actions
- Experience with a New Service
- Airport Construction

Preston Wilbourne, Director of Tariffs and Schedules, lists five basic steps you would have to take in starting a schedule from scratch:

(1) Determine the number of flights from point to point.
(2) Determine and set up the best arrival and departure times.
(3) Allow sufficient ground time and fuel stops.
(4) Figure return time so aircraft can originate other flights at destination cities and check on incoming flights from other airlines to guard against gate congestion.
(5) Build flights around each other in an interlocking pattern.

Full Equipment Use

"You should schedule airplanes to get the most passengers in the least time," adds Wilbourne, "and get maximum utilization of equipment compatible with maintenance, station, and crew overnighting requirements."

Maintenance, station, and crew requirements — these are three of the prime factors you would have to consider in setting up your schedule.

Look at maintenance. As you know, each plane in our fleet undergoes careful inspection and maintenance according to an exacting timetable. If a plane were to fly beyond a maintenance time limit, it could not continue in service until the work was performed. This means each plane must be routed around our system in such a way that it arrives at a maintenance base in accordance with its maintenance timetable.

To achieve this, the maintenance department, working closely with our schedule planners, prepares highly detailed aircraft routing charts. The result is a master plan that provides timely maintenance of our entire fleet as it traverses the system on its day-in day-out mission of public service.

Flight Crews

Limits on flight crews often dictate what schedule planners can and cannot do. For example, pilots can fly no more than eight hours a day; nor can they exceed 30 flight hours during any seven-consecutive-day period.

An airline must take a good, hard look at a proposed schedule that calls for excessive crew changes, or excessive layovers, or training additional crews when there are enough already for maximum fleet utilization. You can see, too, how even a 15-minute arrival or departure time change could cause any one of these things.

Gate capacity presents a challenge. If you have all your gates filled during the noontime at a certain city, obviously something will just have to "give" if you hope to run another flight through that city at that time of day.

Flight Peaking in the Public Interest

In recent months criticism has been mounting over the practice of "flight peaking." A critic might exaggerate peaking like this:

"I go out to the airport around 5 p.m. and I see airplanes all over the place. But when I want a flight around 3:30 p.m., there's not a plane in sight."

The truth is that peaking is a vital public service. It means that the airlines are flying when the most people want to go.

Because of the air age, the businessman, who accounts for a large share of our patronage, can now leave at the close of a day's work and arrive at his destination at a respectable hour. This is further borne out by the habits of private and business aircraft owners. The post office reports similar peaking patterns in hourly movements of the mails.

People Peak

So — in the interest of serving the most people — airlines schedule their services to a great extent at times when the majority of air travelers are on the move. This means a greater measure of flight activity around the early hours in the morning, afternoon, and evening.

For example, between 2:18 p.m. and 3:20 p.m. there are six flights out of Roanoke. Why? "Because," says Wilbourne, "the history of traffic flow on these flights indicates they carry exceptionally good loads." In other words, people peak during 2:18 and 3:20 at Roanoke.

"Lean" Hours

Though more flights are scheduled at peak hours, this is not to suggest airlines do not schedule "off period" services. They offer a great deal of service during the "lean" hours. It is significant that these flights are supported and made possible, to a great extent, by the higher loads and resultant revenues earned by the peak-period services.

Travelers want good connections, too. This is shown by the fact that one-third of the industry's business is made up of on-line and interline connecting passengers. In building up good connecting services an airline tries to make flights connect to or from as many other flights as possible. Obviously, in order to have a good connection pattern, flights must be scheduled to arrive and take off within a given time span.

Providing convenient connections is the lifeblood of the local service airlines. Conceived right after World War II, these carriers link the smaller and intermediate cities with trunkline flights to all U.S.A. and world destinations. Thus, excellent connections with the larger airlines at gateway cities is one of the primary services they offer people of their communities.

Public Service Paradox

Building up excellent connecting patterns and scheduling to serve the majority of the traveling public presents one of the great paradoxes of modern airline service. While it performs a vital public service, it creates peak periods in an airline's airport station activity. This imposes heavy demands upon an airline, for it must "gear up" for full capacity, even though much of the day may remain relatively quiet.

An airline must "gear up" inside the terminal as well, with ticket facilities and enough Agents equal to the task.

It's a paradox. In the interest of prudent utilization of equipment, facilities, and personnel, you must avoid peaking. Yet in the interest of public service, you must schedule flights when the majority want to travel, then provide them with maximum connecting opportunities.

J. A. Shulley is the newest member of the scheduling team. As Assistant Director—Tariffs and Schedules, he will work with all phases of timetable planning.

Why Schedules Change

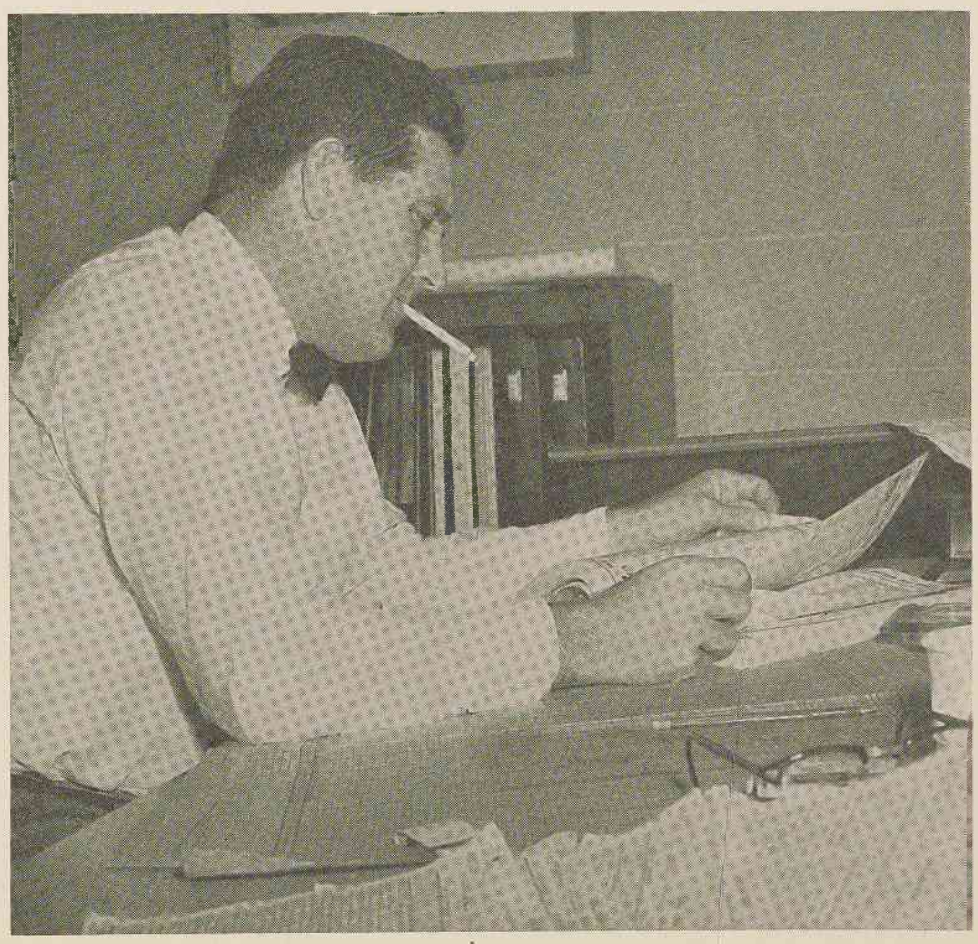
Little wonder an airline must publish new schedules at relatively frequent intervals. Obviously it would be a great advantage to our customers, to our company, and to employees if schedules could be planned with more lead time and more stability. But any one of these factors can easily require a major change of plans:

* New equipment delivery dates
* Aircraft modification programs
* Changes in maintenance programs
* Government route awards and route changes
* Schedule action of competitors
* Our own experience with a new service
* Uncertainty of airport runway, terminal, or hangar completion dates
* Switch twice yearly to and from daylight-saving time

The Public Decides

Another thing: In the final analysis, isn't it the traveling public that makes the big decisions in scheduling? It is the traveler whose preference decides whether or not a particular flight has sales appeal. It is he who won't wait for your flight if another airline's flight is leaving in 10 minutes. It is he and his fellows who cause the scheduling "no man's land" on the West Coast and the "bunching" of departures. It is the traveler who demands good connections and departures at the "magic hours"—requirements which cause peaking in station activity.

Thus the role of management is to translate public demand into schedules that can be operated safely and economically. Clearly, it is an art that requires precision planning, backed up by the knowledge and judgment gained over many years of experience.



Preston Wilbourne, Director—Tariffs and Schedules, coordinates all the elements which determine when and where Piedmont's equipment will operate. Details must be checked and re-checked, entailing piles of paper work.