

Who is the Dispatcher?

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Emergent Aircraft Systems and the Dispatcher

NASA Ames Research Center

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What is an Aircraft Dispatcher?



History of the Aircraft Dispatcher



What do Aircraft Dispatchers do?



The Value of Aircraft Dispatchers

What is an Aircraft Dispatcher?



- They are licensed airmen certificated by the Federal Aviation Administration.
- They have joint responsibility with the pilot in command for maintaining operational control and safety of flights under their guidance.
- They perform preflight planning.
- They are responsible for monitoring the progress of each flight under their control.



What is an Aircraft Dispatcher?



History of the Aircraft Dispatcher



What do Aircraft Dispatchers do?

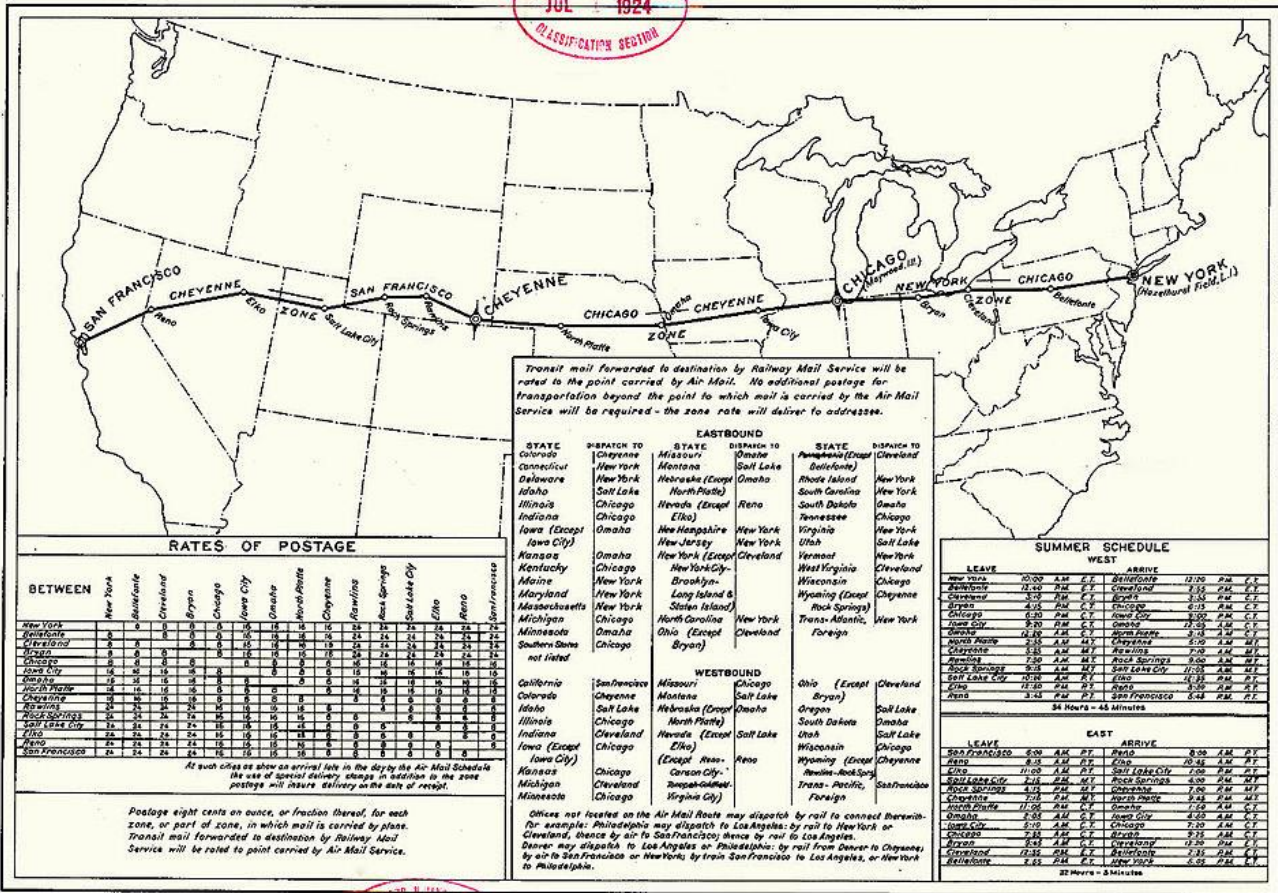


The Value of Aircraft Dispatchers

U.S. Air Mail Service



POST OFFICE, NEW YORK, N. Y.
JUL 1 1924
 CLASSIFICATION SECTION



Transit mail forwarded to destination by Railway Mail Service will be rated to the point carried by Air Mail. No additional postage for transportation beyond the point to which mail is carried by the Air Mail Service will be required - the zone rate will deliver to addressee.

RATES OF POSTAGE

BETWEEN

	New York	Baltimore	Cleveland	Chicago	Iowa City	Omaha	North Platte	Harlingen	Rock Springs	Salt Lake City	Elko	Reno	San Francisco
New York	0	0	0	0	0	0	0	0	0	0	0	0	0
Baltimore	0	0	0	0	0	0	0	0	0	0	0	0	0
Cleveland	0	0	0	0	0	0	0	0	0	0	0	0	0
Chicago	0	0	0	0	0	0	0	0	0	0	0	0	0
Iowa City	14	10	16	0	0	0	0	0	0	0	0	0	0
Omaha	14	10	16	0	0	0	0	0	0	0	0	0	0
North Platte	14	10	16	0	0	0	0	0	0	0	0	0	0
Harlingen	14	10	16	0	0	0	0	0	0	0	0	0	0
Rock Springs	14	10	16	0	0	0	0	0	0	0	0	0	0
Salt Lake City	14	10	16	0	0	0	0	0	0	0	0	0	0
Elko	14	10	16	0	0	0	0	0	0	0	0	0	0
Reno	14	10	16	0	0	0	0	0	0	0	0	0	0
San Francisco	24	24	24	14	10	16	0	0	0	0	0	0	0

At such cities show an arrival rate in the day by the Air Mail Schedule the use of special delivery stamps in addition to the zone postage will insure delivery on the date of receipt.

Postage eight cents an ounce, or fraction thereof, for each zone, or part of zone, in which mail is carried by plane. Transit mail forwarded to destination by Railway Mail Service will be rated to point carried by Air Mail Service.

STATE	DISPATCH TO	STATE	DISPATCH TO	STATE	DISPATCH TO
Colorado	Chicago	Missouri	Omaha	Pennsylvania (Except Baltimore)	Cleveland
Connecticut	New York	Montana	Salt Lake	Rhode Island	New York
Delaware	New York	Nebraska (Except Omaha)	North Platte	South Carolina	New York
Idaho	Salt Lake	Nevada (Except Elko)	Reno	South Dakota	Omaha
Illinois	Chicago	New Hampshire	New York	Tennessee	Chicago
Indiana	Chicago	New Jersey	New York	Virginia	New York
Iowa (Except Iowa City)	Omaha	New Mexico	Albuquerque	Utah	Salt Lake
Kansas	Omaha	New York (Except New York City)	Cleveland	Vermont	New York
Massachusetts	New York	Ohio (Except Cleveland)	Cleveland	West Virginia	New York
Maryland	New York	Oklahoma	Chicago	Wisconsin	Chicago
Maine	New York	Oregon	Salt Lake	Wyoming (Except Cheyenne)	Cheyenne
Massachusetts	New York	South Carolina	New York	Trans-Atlantic	New York
Michigan	Chicago	Ohio (Except Cleveland)	Cleveland	Foreign	
Minnesota	Chicago	Idaho	Salt Lake		
Missouri	Chicago	Illinois	Chicago		
Montana	Salt Lake	Indiana	Chicago		
Nebraska (Except Omaha)	North Platte	Iowa (Except Iowa City)	Omaha		
Nevada (Except Elko)	Reno	Kansas	Omaha		
New Hampshire	New York	Michigan	Chicago		
New Jersey	New York	Minnesota	Chicago		
New Mexico	Albuquerque	Missouri	Chicago		
New York (Except New York City)	Cleveland	Montana	Salt Lake		
Ohio (Except Cleveland)	Cleveland	Nebraska (Except Omaha)	North Platte		
Oklahoma	Chicago	Nevada (Except Elko)	Reno		
Oregon	Salt Lake	New Hampshire	New York		
South Carolina	New York	New Jersey	New York		
South Dakota	Omaha	New Mexico	Albuquerque		
Tennessee	Chicago	New York (Except New York City)	Cleveland		
Virginia	New York	Ohio (Except Cleveland)	Cleveland		
Utah	Salt Lake	Oklahoma	Chicago		
Vermont	New York	Oregon	Salt Lake		
West Virginia	New York	Idaho	Salt Lake		
Wisconsin	Chicago	Illinois	Chicago		
Wyoming (Except Cheyenne)	Cheyenne	Indiana	Chicago		
Trans-Atlantic	New York	Iowa (Except Iowa City)	Omaha		
Foreign		Kansas	Omaha		

WESTBOUND

STATE	DISPATCH TO	STATE	DISPATCH TO
California	San Francisco	Missouri	Chicago
Colorado	Chicago	Montana	Salt Lake
Idaho	Salt Lake	Nebraska (Except Omaha)	North Platte
Illinois	Chicago	Nevada (Except Elko)	Reno
Indiana	Chicago	New Hampshire	New York
Iowa (Except Iowa City)	Omaha	New Jersey	New York
Kansas	Omaha	New Mexico	Albuquerque
Michigan	Chicago	New York (Except New York City)	Cleveland
Minnesota	Chicago	Ohio (Except Cleveland)	Cleveland
Missouri	Chicago	Oklahoma	Chicago
		Oregon	Salt Lake
		Idaho	Salt Lake
		Utah	Salt Lake
		Wisconsin	Chicago
		Wyoming (Except Cheyenne)	Cheyenne
		Rhode Island	New York
		Trans-Atlantic	New York
		Foreign	

SUMMER SCHEDULE

WEST

LEAVE	ARRIVE	LEAVE	ARRIVE
New York	10:00 AM	Elko	12:00 PM
Baltimore	12:00 PM	Cleveland	2:35 PM
Cleveland	3:05 PM	Chicago	3:55 PM
Chicago	4:15 PM	Omaha	6:15 AM
Iowa City	6:30 PM	North Platte	7:35 AM
Omaha	8:30 PM	Harlingen	8:55 AM
North Platte	9:35 AM	Rock Springs	9:55 AM
Cheyenne	1:00 AM	Salt Lake City	11:05 AM
Chicago	1:30 AM	Elko	12:05 PM
New York	3:45 AM	San Francisco	5:45 PM

54 Hours - 45 Minutes

EAST

LEAVE	ARRIVE	LEAVE	ARRIVE
San Francisco	6:00 AM	Reno	8:50 AM
Elko	8:55 AM	Chicago	10:45 AM
Chicago	11:00 AM	Salt Lake City	1:00 PM
Salt Lake City	2:15 PM	Rock Springs	4:00 PM
Rock Springs	4:15 PM	Cheyenne	7:00 PM
Cheyenne	7:15 PM	North Platte	8:45 PM
North Platte	11:00 PM	Omaha	1:00 AM
Omaha	2:35 AM	Iowa City	4:00 AM
Iowa City	5:15 AM	Chicago	7:00 AM
Chicago	7:15 AM	Omaha	9:15 AM
Omaha	9:35 AM	Cheyenne	11:30 AM
Cheyenne	12:05 PM	Baltimore	1:15 PM
Baltimore	2:35 PM	New York	5:05 PM

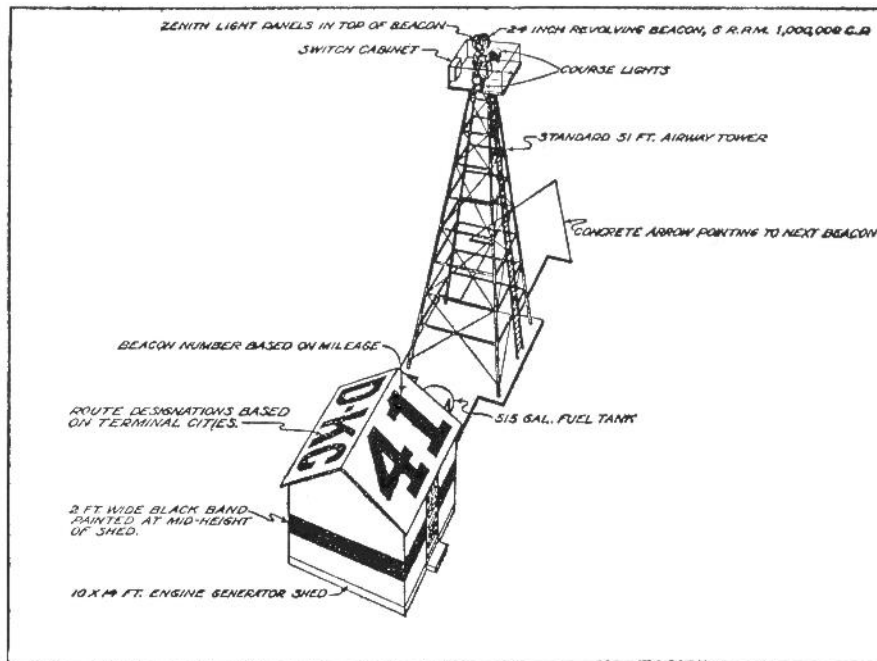
22 Hours - 5 Minutes

POST OFFICE, NEW YORK, N. Y.
JUL 1 1924
 CLASSIFICATION SECTION

22 Hours - 5 Minutes

Dr. of Copyright

Concrete Arrows



Frequency of Aviation Accidents – 1920s



ALPA Key Men - 1931



Civil Aeronautics Act - 1938



Operational Control Concept



ALPA Key Men - 1938



Historical Perspective



Historical Perspective





Alaska
AIRLINES



jetBlue

FRONTIER
AIRLINES

American
Airlines

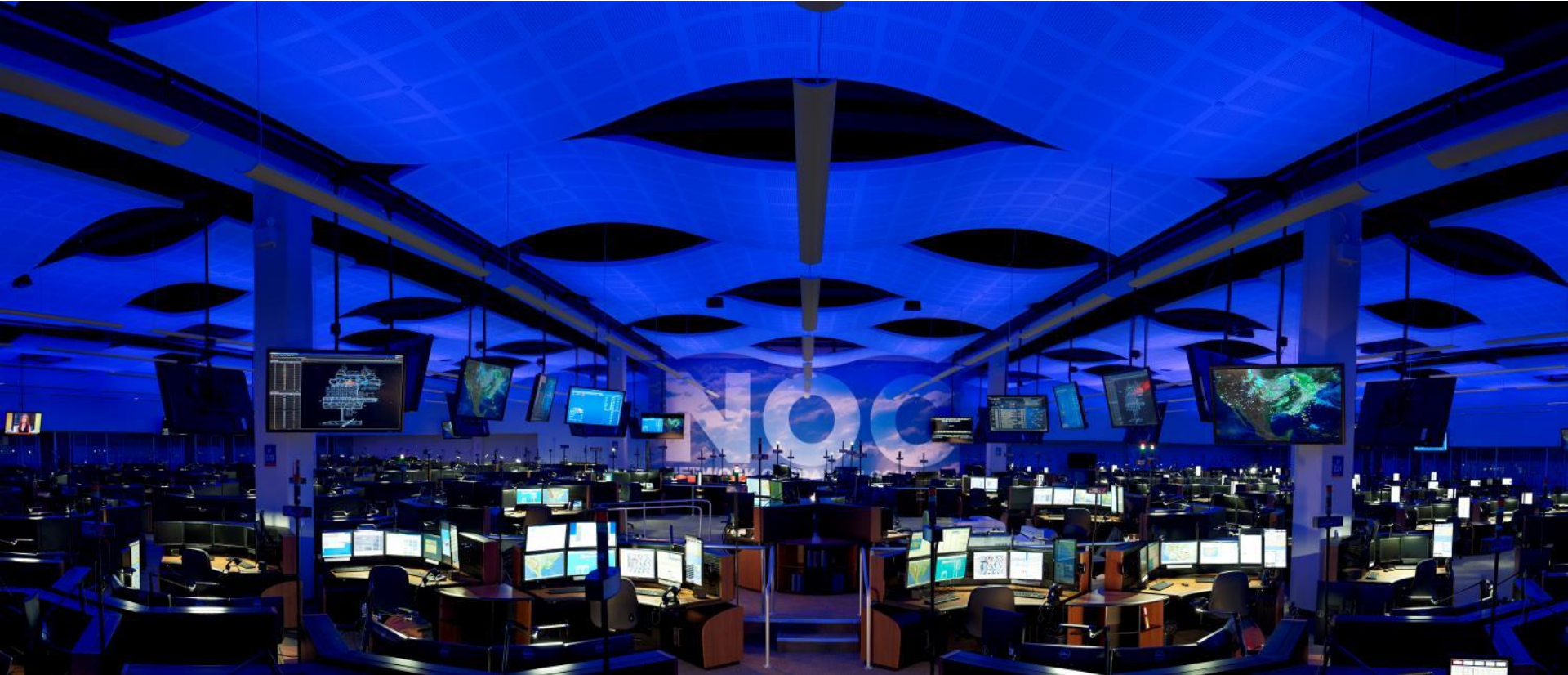
Southwest


DELTA
AIR LINES

spirit



Historical Perspective





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History of the Aircraft Dispatcher



What do Aircraft Dispatchers do?



The Value of Aircraft Dispatchers

Two Essential Functions

Operational Control

- **Safety of flight decisions**
- **Regulatory compliance**



Operations Control

- **Commercial decisions**
- **Network disruption management**



What do Aircraft Dispatchers do?



Aircraft Assignment

- Assign aircraft to schedule and maintenance lines
- Ensure aircraft are equipped and valid to fly the mission



Schedule Management

- Communicate operational schedule to company systems and publish flight time/status to Customers



Flight Planning

- Create a flight plan and revise if necessary
- File flight plans and calculate aircraft performance



Flight Following

- Track flight and monitor conditions
- Maintain rapid and reliable communication



IROPS Management

- Detect problems and develop recovery solutions
- Communicate changes and monitor recovery solutions



Post Ops Analysis

- Record retention and reporting for DOT and FAA
- Post operational analysis to find ways for improvement

Network Operations Control (NOC)



**TOC
(Technology)**



**Crew
Scheduling**



Bridge



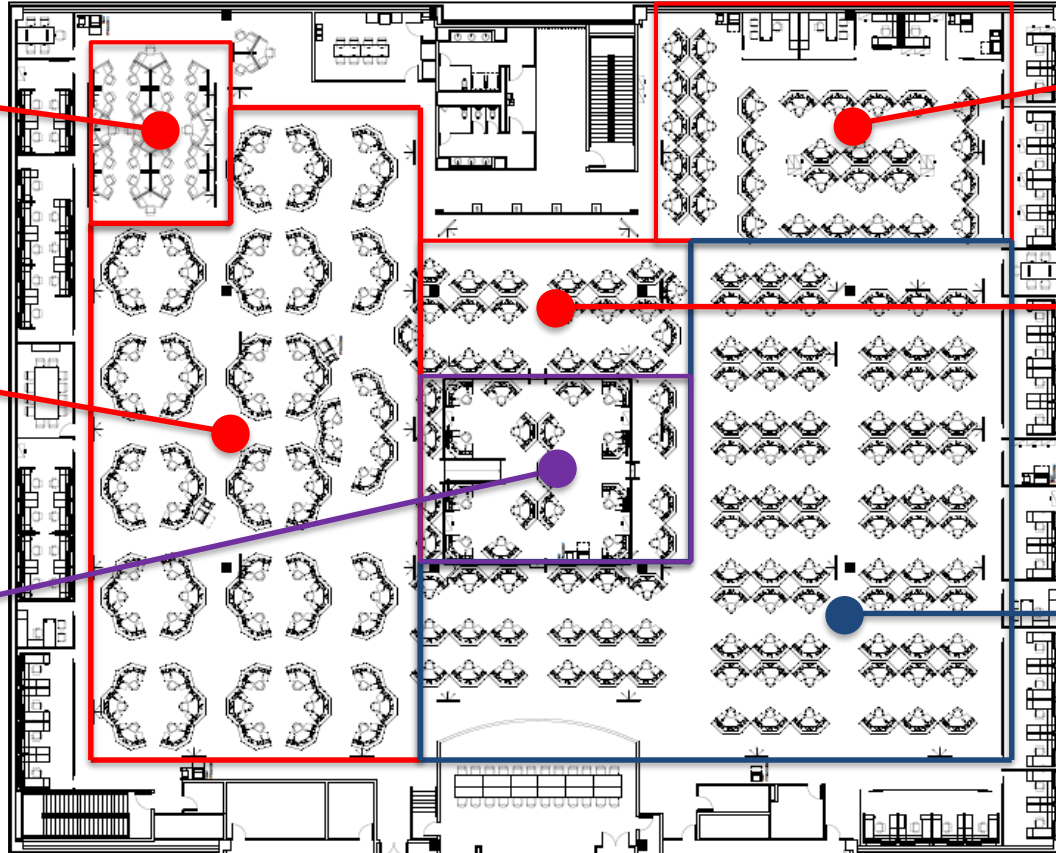
**Tech Ops
(Maintenance)**



**SOD
Planning Units
(Fleet Management)**



Flight Dispatch





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History of the Aircraft Dispatcher

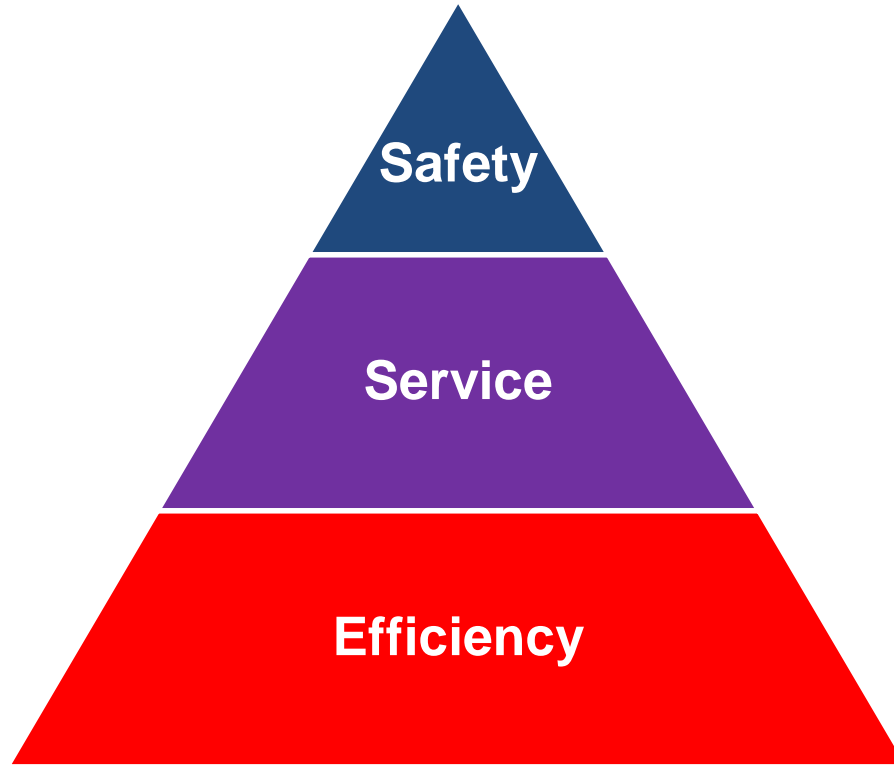


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The Value of Aircraft Dispatchers

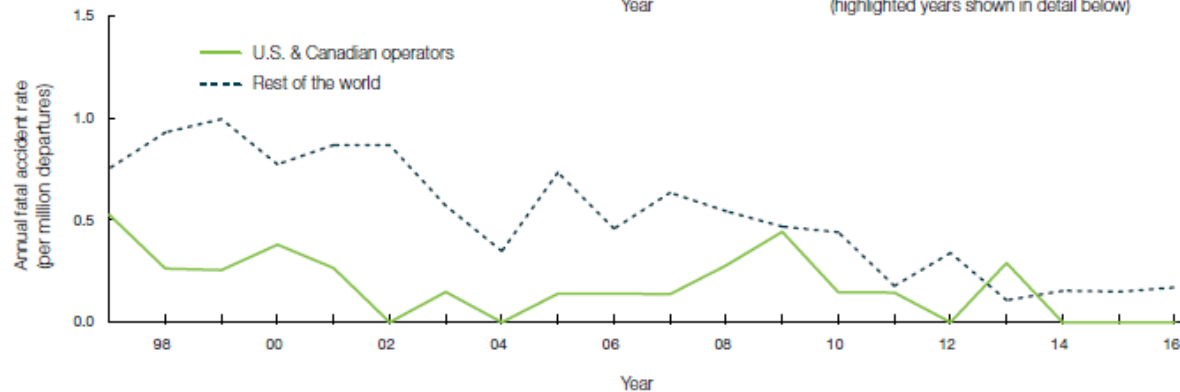
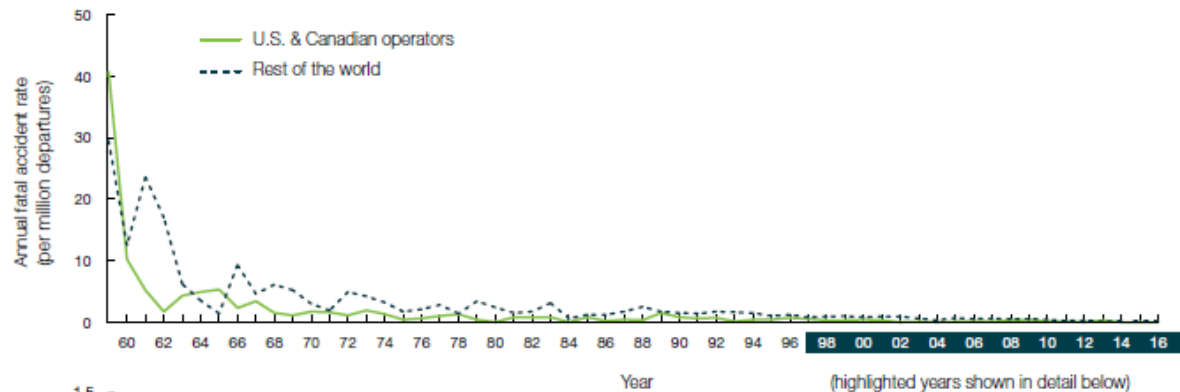
The Rule of Three



- Planning for known hazards and maintaining regulatory compliance
- Monitoring the progress of each flight
- Issuing necessary information for the safety of the flight
- Cancelling or redispatching the flight if it cannot operate or continue in a safe manner

U.S. and Canadian Operators Accident Rates by Year

Fatal Accidents | Worldwide Commercial Jet Fleet | 1959 through 2016



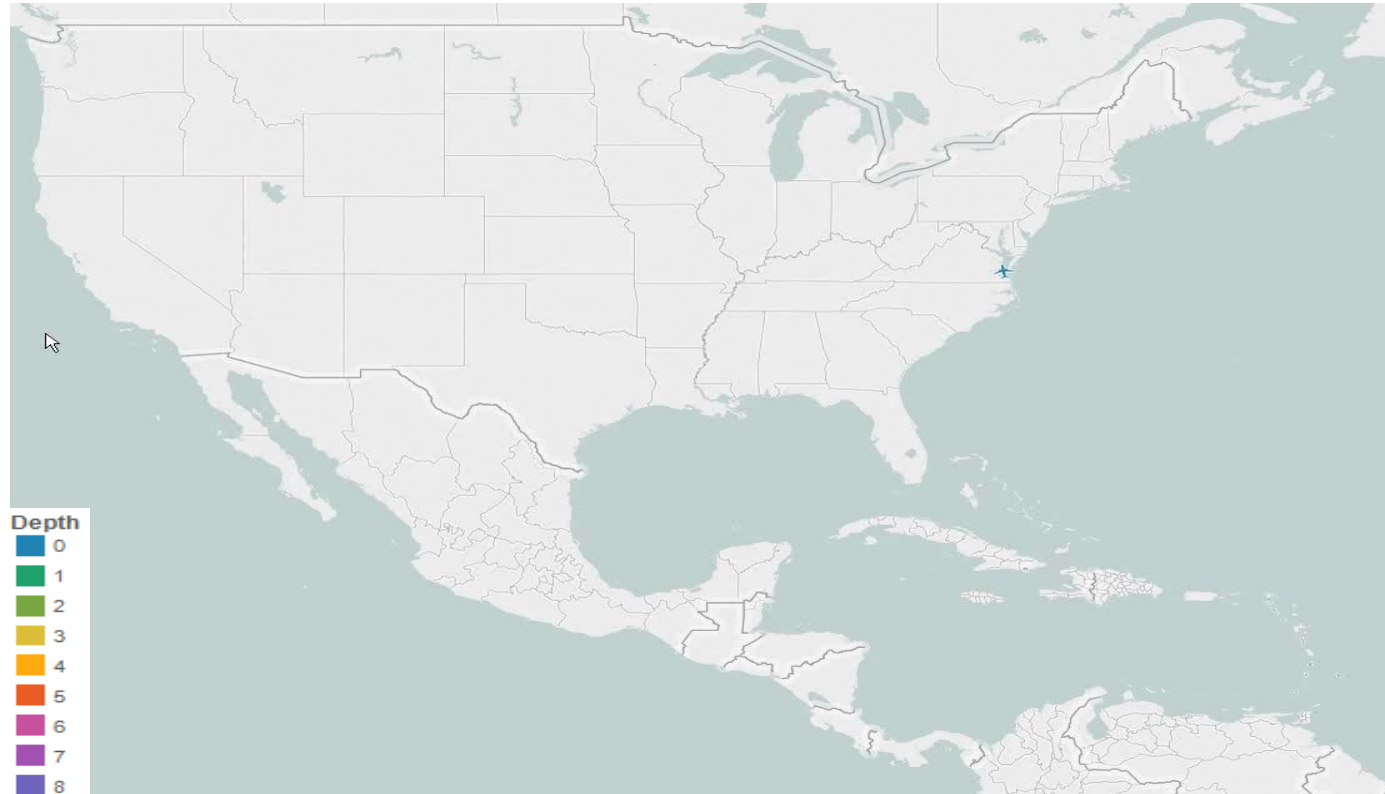
Service

- Meeting customers expectations
- Operational flexibility
- Network disruption management



Downline Connection Complexity: ORF - BWI

One flight can affect over 820 flights thru pax connections across the system

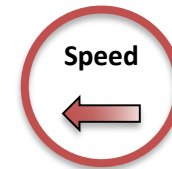
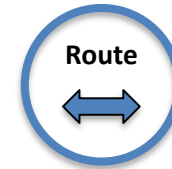
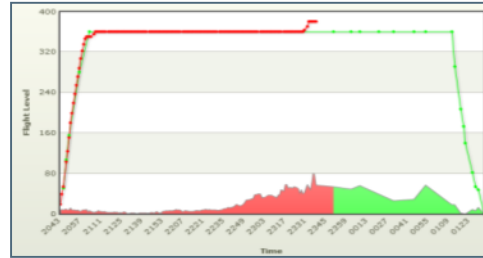


Key Notes

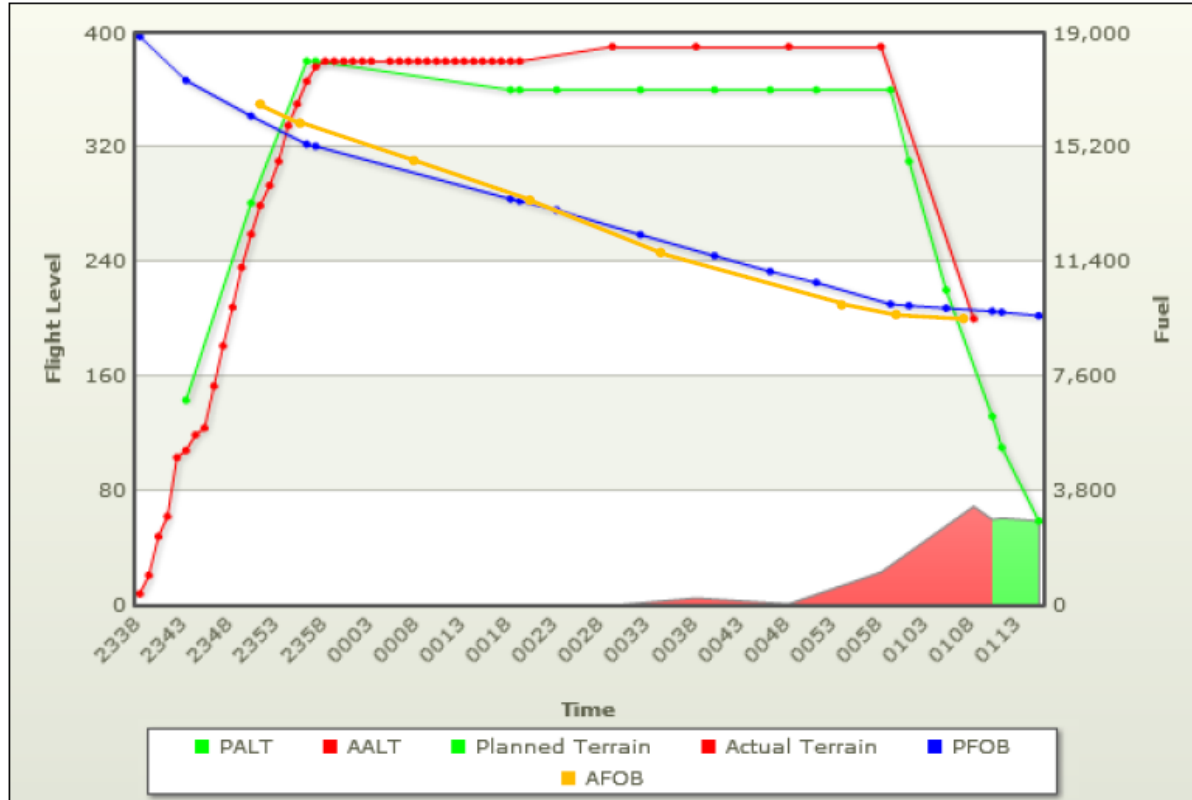
- Downline Connection Complexity is defined as 1 flight connected to 1 or more other flights through possible pax connections beyond scheduled itineraries
- ORF-BWI flight occurred 10/6 and flies into a BWI ICO bank
- From that flight, there are 30 connections, which also have further connections downstream and so on
- Each color represents a level of depth from the original flight, ORF-BWI. In other words, how many flights removed is one flight from the original flight in question
- Blue is the 1st level, or the ORF-BWI flight itself, while teal is the 2nd level, yellow represents the 3rd level etc

Efficiency

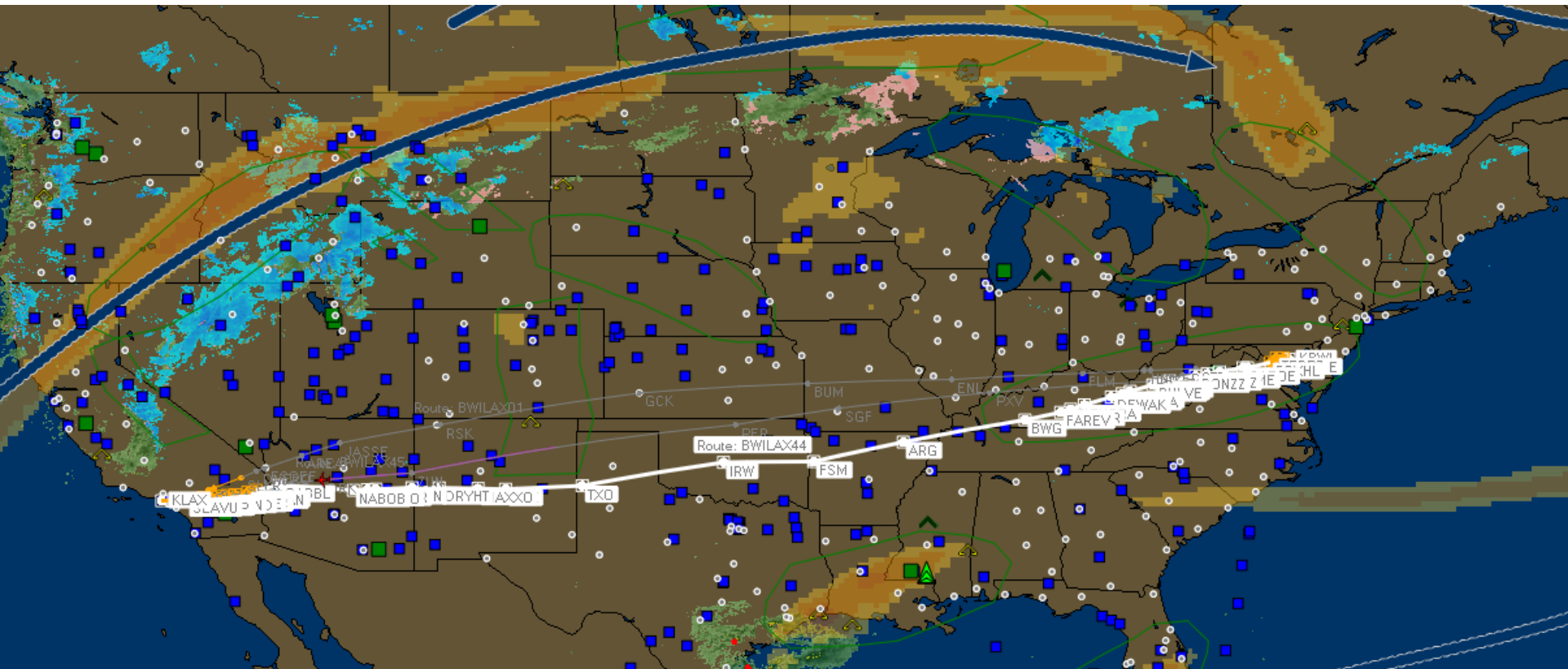
- Flight optimization
- Fleet optimization
- On time performance



Altitude

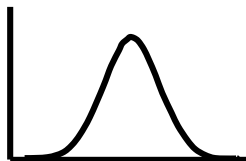


Route

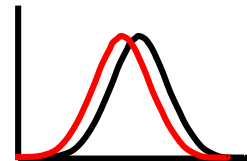


Speed

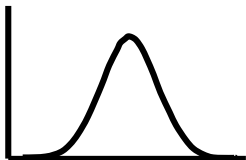
**Slower
Speed**



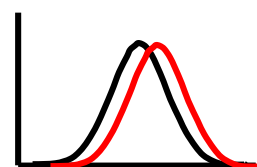
Actual Block



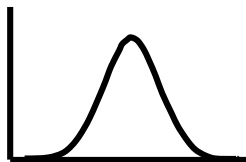
**Faster
Speed**



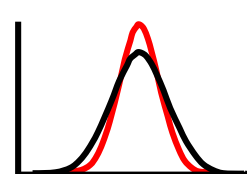
Actual Block



**Variable
Speed**



Actual Block



***“Dispatch is the heart
of the airline.”
- Herb Kelleher***

