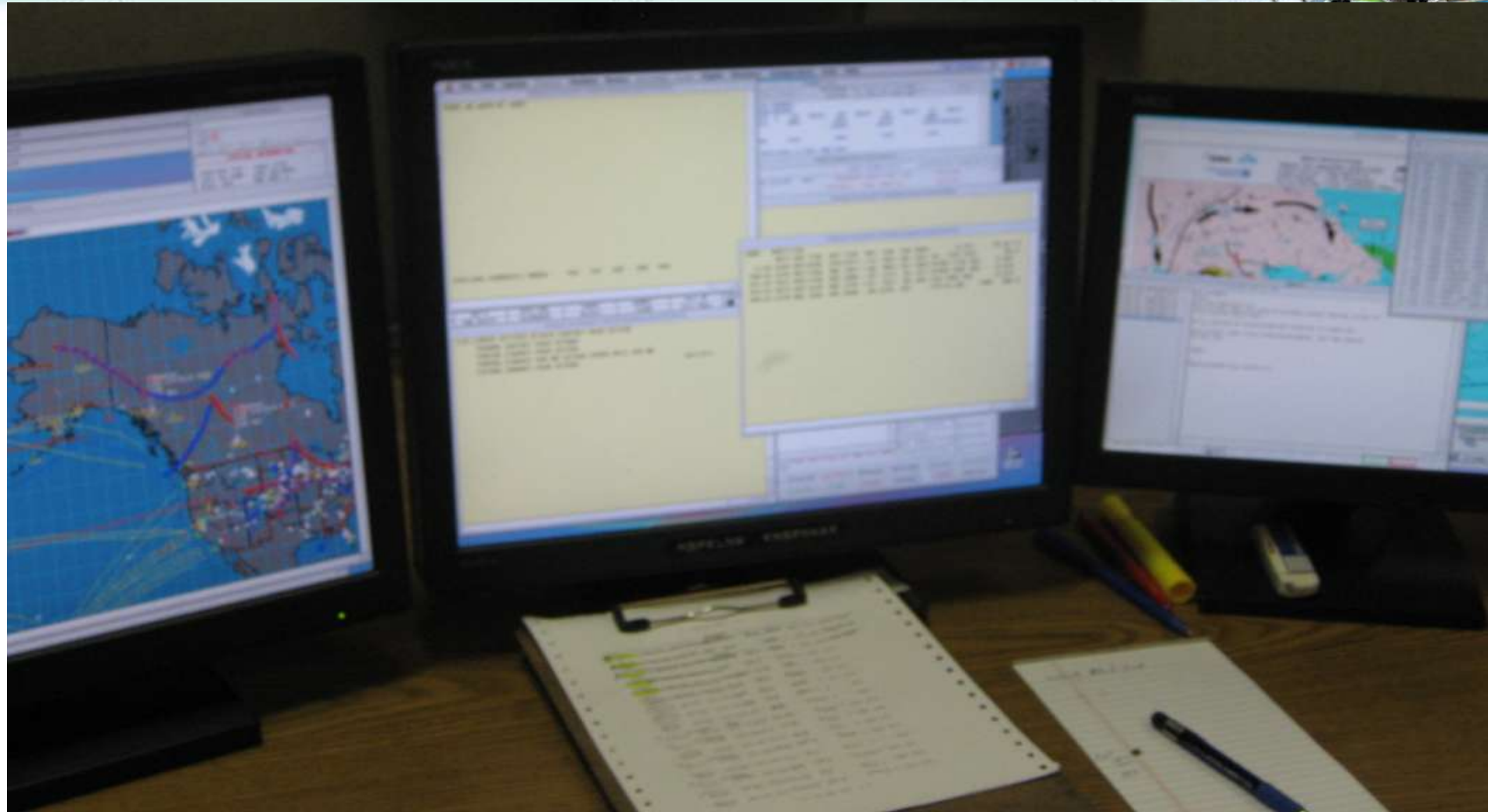


Dispatcher work station



Dispatcher work station . . .



NWA Operations Control - RIP



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NWA Systems Ops Control (SOC)



Who a dispatcher works with . . .

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Internal (Company) departments:

- Air Cargo Specialist
- Aircraft Coordinator
- Airline Air Traffic Control Coordinator
- Airport Customer Service Coordinator
- Automation Support
- Corporate Security
- Flight Operations Representative
- In-Flight Service Representative
- Maintenance Coordinator
- Meteorologist (Surface, Upper Air)
- Navigation Database Analyst
- Reservations Coordinator
- System Reroute Crews Coordinator
- Technical Analyst - Maintenance

External agencies

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Air Traffic Control
ATCSCC
ARTCC
Tracon
ATCT

Airport Management and Port Authorities

Aircraft and Engine Manufacturers

Vendors and Suppliers

Medical support facilities

Homeland Security – TSA

Law Enforcement Agencies, including Federal Air Marshals (FAM)

Immigration and Customs Enforcement – ICE

Different dispatcher roles



Assistant Dispatcher

Dispatcher

- Domestic
- International

Chief dispatcher

Check dispatcher / Instructor

ATC coordinator

Shift supervisor

- Also called Coordinator, Shift Manager, Sector Manager

Boring list of FARs

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http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title14/14cfr121_main_02.tpl

- 121.107 dispatch centers
- 121.395 aircraft dispatcher
- 121.415 training requirements
- 121.422 initial and transition ground training
- 121.463 aircraft dispatcher qualifications
- 121.465 duty time limitations
- 121.533 responsibility for operational control, domestic air carrier
- 121.557 emergencies
- 121.593 dispatching authority
- 121.599 familiarity with weather conditions (*on the route to be flown*)
- 121.601 dispatcher information to the pilot in command (*all, additional, hazardous / before and during*)
- 121.619 alternate for destination
- 121.627 continuing flight in unsafe conditions (reference back to 121.557)
- 121.639 fuel supply
- 121.647 factors for computing fuel required
- 121.663 responsibility for dispatch release
- 121.687 dispatch release** (contents)
- 121.693 load manifest

Back to that “dispatch release” thing . . .

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§ 121.687 Dispatch release: Flag and domestic operations.

- (a) The dispatch release may be in any form but must contain at least the following information concerning each flight:
 - (1) Identification number of the aircraft.
 - (2) Trip number.
 - (3) Departure airport, intermediate stops, destination airports, and alternate airports.
 - (4) A statement of the type of operation (e.g., IFR, VFR).
 - (5) Minimum fuel supply.
 - (6) For each flight dispatched as an ETOPS flight, the ETOPS diversion time for which the flight is dispatched.

- (b) The dispatch release must contain, or have attached to it, **weather reports, available weather forecasts**, or a combination thereof, for the destination airport, intermediate stops, and alternate airports, that are the latest available at the time the release is signed by the pilot in command and dispatcher. It may include any additional available weather reports or forecasts that the pilot in command or the aircraft dispatcher considers necessary or desirable.

Dispatchers and Weather



Dispatcher

- Release and monitor
- Compute fuel required
- Provide information to the PIC, including hazardous weather

Single biggest disruption to air carrier operations is 'weather'

Dispatchers are the largest consumers of weather information in aviation

Dispatchers rely heavily on professional meteorologists to interpret and predict risk due to weather

PIC responsible for the safety of the aircraft in flight

Dispatcher Weather Training



Basic Weather Studies

The earth's motion and its effects on weather

Analysis of regional weather types, characteristics and structures:

- Maritime
- Continental
- Polar
- Tropical



Analysis of the following local weather types, characteristics, and structures or combinations thereof:

- Coastal
- Mountainous
- Island
- Plains

The following characteristics of the atmosphere:

- Layers
- Composition
- Global Wind Patterns
- Ozone

And...

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Pressure:

- Temperature Effects on Pressure
- Altimeters
- Pressure Gradient Force
- Pressure Pattern Flying Weather

Wind:

- Major Wind Systems and Coriolis Force
- Jetstreams and their Characteristics
- Local Wind

Clouds:

- Composition
- Formation
- Dissipation
- Types and Associated Precipitation
- Use of Cloud Knowledge in Forecasting

And...



Fog:

- Causes, Formation, and Dissipation
- Types

Ice:

- Causes, Formation, and Dissipation
- Types

Stability/Instability:

- Temperature Lapse Rate, Convection.
- Adiabatic Processes
- Lifting Processes
- Divergence
- Convergence



Turbulence:

- Jetstream Associated
- Pressure Pattern Recognition
- Low Level Windshear
- Mountain Waves
- Thunderstorms
- Clear Air Turbulence

Airmasses:

- Classification and Characteristics
- Source Regions
- Use of Airmass Knowledge in Forecasting

Fronts:

- Structure and Characteristics, Both Vertical and Horizontal
- Frontal Types
- Frontal Weather Flying

Theory of Storm Systems:

- Thunderstorms
- Tornadoes
- Hurricanes and Typhoons
- Microbursts
- Causes, Formation, and Dissipation

And...

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Weather, Analysis, and Forecasts

Surface observations, by certified observer or automated observations

Terminal Forecasts

Significant En route Reports and Forecasts

- Pilot Reports
- Area Forecasts
- Sigmet
- Airmets
- Center Weather Advisories
- Weather Imagery
- Surface Analysis
- Weather Depiction
- Significant Weather Prognosis

And...

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- Winds and Temperature Aloft
- Tropopause Chart
- Composite Moisture Stability Chart
- Surface Weather Prognostic Chart
- Radar Meteorology
- Satellite Meteorology
- Other charts as applicable

Meteorological Information Data Collection Systems
Data Collection, Analysis, and Forecast Facilities

Service Outlets Providing Aviation Weather Products

Weather Related Aircraft Hazards:

- Crosswinds and Gusts
- Contaminated Runways
- Restrictions to Surface Visibility
- Turbulence and Windshear
- Icing
- Thunderstorms and Microburst
- Volcanic Ash

Why so much emphasis on weather . . .



Must be over-water equipped . . .



Note to self about plowing water . . .



Weather increases risk . . .



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Type:	Tupolev 154M	Photographer:	Elcommendante
Registration:	101	Date:	APR 2010
Operator:	Polish Air Force	Taken at:	Smolensk Air Base (/XUBS) [RA]

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THE SCIENCE OF HARMONIZING AIR TRAFFIC

Nice day, gusty crosswind . . .



Photo of Boeing 737-524 N18611



© NTSB

aviation-safety.net

Type:	Boeing 737-524	Photographer:	NTSB
Registration:	N18611	Date:	21 DEC 2008
Operator:	Continental Air Lines	Taken at:	Denver International Airport, CO (DEN/KDEN)

Shared Weather Information

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PIC and Dispatcher have access to the same weather information, more or less, until the cockpit door is closed

From that point on, the PIC has eyeballs, radar and radio/ACARS for further updates

Dispatcher role is to monitor weather and provide useful updates in a safe and timely manner so that the flight can ... continue to operate as planned

PIC provides updates through Pilot Reports (PIREPS) which are entered into the system

PIC will often provide report directly to dispatch, which may not be entered into the system, but will be shared with other company flights

Limitations



The Dispatcher has the ability to send significant weather changes / updates to the cockpit in text form

Graphical weather displays and their two-way transmission on high on the list of desired technological advances

Yes, the passenger in the back can have better access to weather data than the PIC while the aircraft is en route

Weather information in cockpit

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The PIC does not need to know ALL the weather

Weather information required in the cockpit changes depending on the actual weather phenomena and the stage of flight:

- Departure
- En route
- Arrival

Pilots want information on anything that impacts the decision to operate

It is all about risk assessment and risk management

High risk weather types include:

- Convective Activity
- Icing
- Turbulence
- Volcanic Ash
- Wind Shear

Air Carrier reaction to high risk weather

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Air carrier goal is to operate the system

System is comprised of individual flights

Each flight requires a specific decision to operate

Some risk is acceptable – it can be VERY subjective

If the origin weather is unacceptable: delay

If the origin and destination are suitable, but en route weather is or is potentially unacceptable: reroute

If the flight is en route and the destination weather renders it unacceptable: hold for improvement, or divert

It is really quite simple . . .



**There are only two things you can do
with an aircraft in the air:**

Keep going where you were going, or

Go somewhere else.



... Time for a break?



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