

# **UNITED AIRLINES**

**LEONARD J. SALINAS  
FLIGHT DISPATCH  
21APR2010**

**Congressional Hazards Caucus Alliance**

# B747-400



# B777



# B767/B757/A320/A319



# CODE OF FEDERAL REGULATIONS

## Sec. 121.535

### Responsibility for operational control: Flag operations.

(a) Each certificate holder conducting flag operations is responsible for operational control.

(b) The pilot in command and the aircraft dispatcher are jointly responsible for the preflight planning, delay, and dispatch release of a flight in compliance with this chapter and operations specifications.

**(c) The aircraft dispatcher is responsible for--**

**(1) Monitoring the progress of each flight;**

**(2) Issuing necessary instructions and information for the safety of the flight; and**

**(3) Cancelling or redispatching a flight if, in his opinion or the opinion of the pilot in command, the flight cannot operate or continue to operate safely as planned or released.**

(d) Each pilot in command of an aircraft is, during flight time, in command of the aircraft and crew and is responsible for the safety of the passengers, crewmembers, cargo, and airplane.

(e) Each pilot in command has full control and authority in the operation of the aircraft, without limitation, over other crewmembers and their duties during flight time, whether or not he holds valid certificates authorizing him to perform the duties of those crewmembers.

# CODE OF FEDERAL REGULATIONS

## Sec. 121.627

### **Continuing flight in unsafe conditions.**

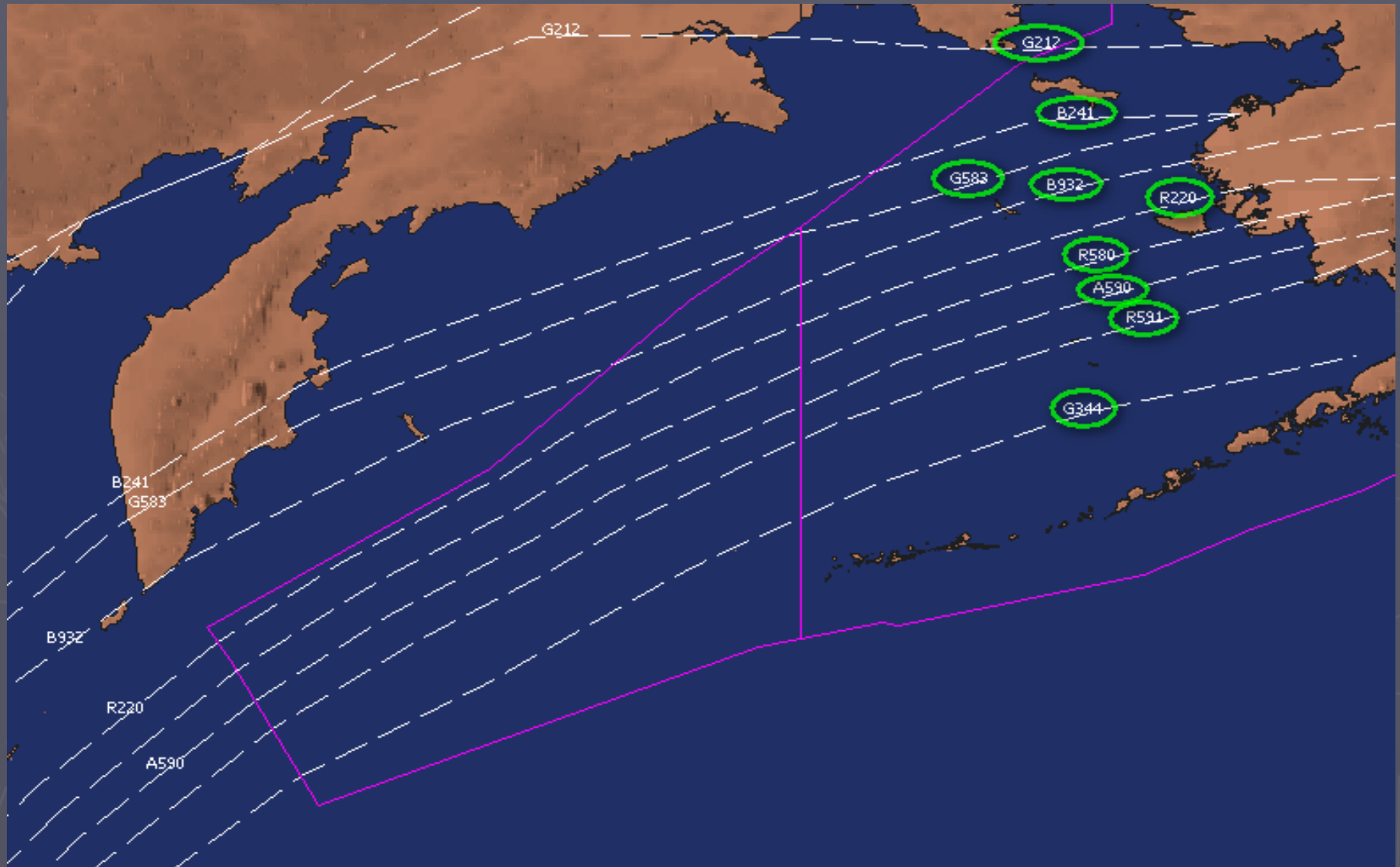
(a) No pilot in command may allow a flight to continue toward any airport to which it has been dispatched or released if, in the opinion of the pilot in command or dispatcher (domestic and flag operations only), the flight cannot be completed safely; unless, in the opinion of the pilot in command, there is no safer procedure. In that event, continuation toward that airport is an emergency situation as set forth in Sec. 121.557.

# CODE OF FEDERAL REGULATIONS

## 121.101 Weather reporting facilities.

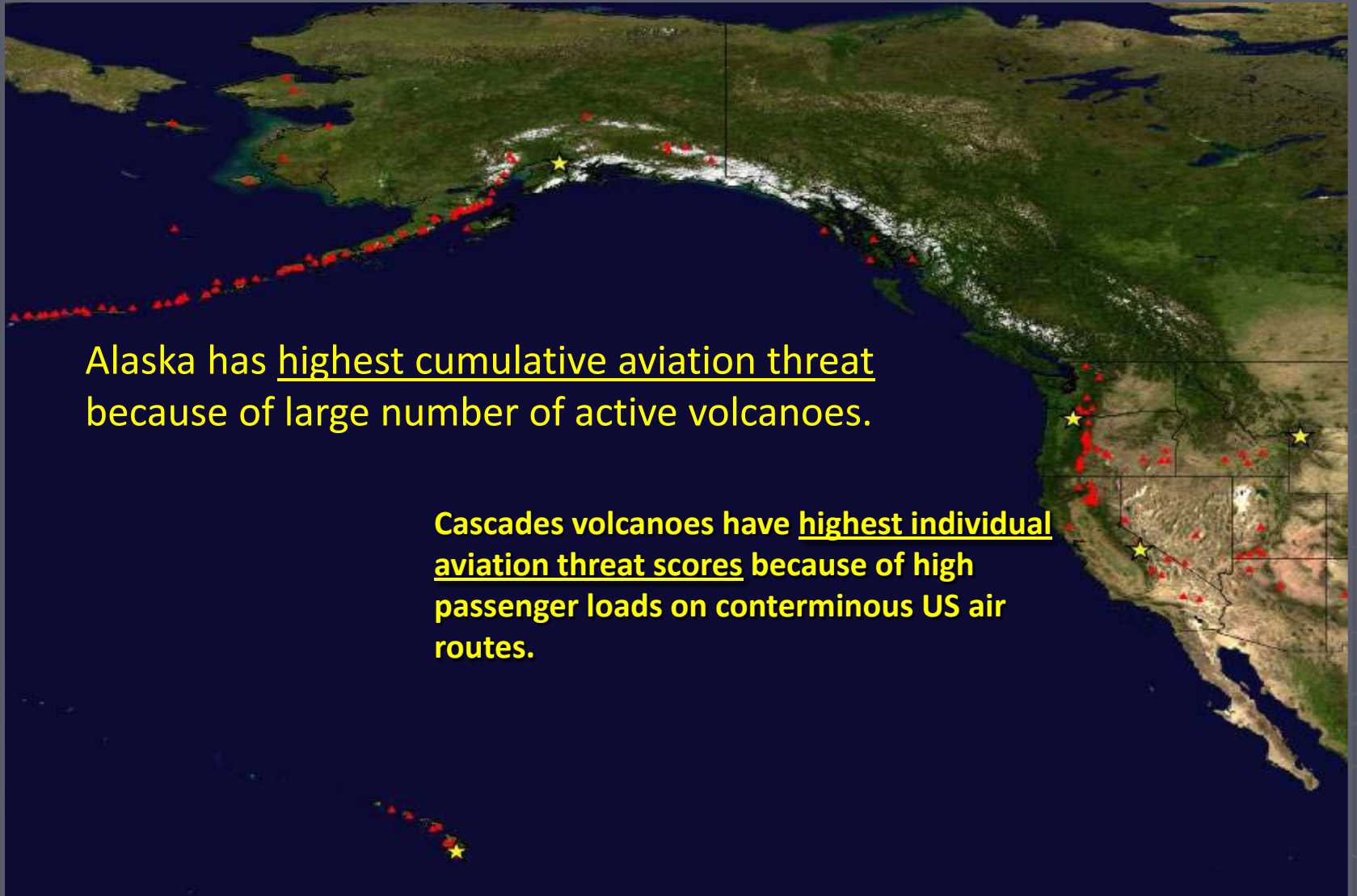
- (d) Each certificate holder conducting domestic or flag operations shall adopt and put into use an approved system for obtaining **forecasts and reports of adverse weather phenomena**, such as clear air turbulence, thunderstorms, and low altitude wind shear, that may affect safety of flight on each route to be flown and at each airport to be used.

# WESTBOUND OPERATION OVER ALASKA





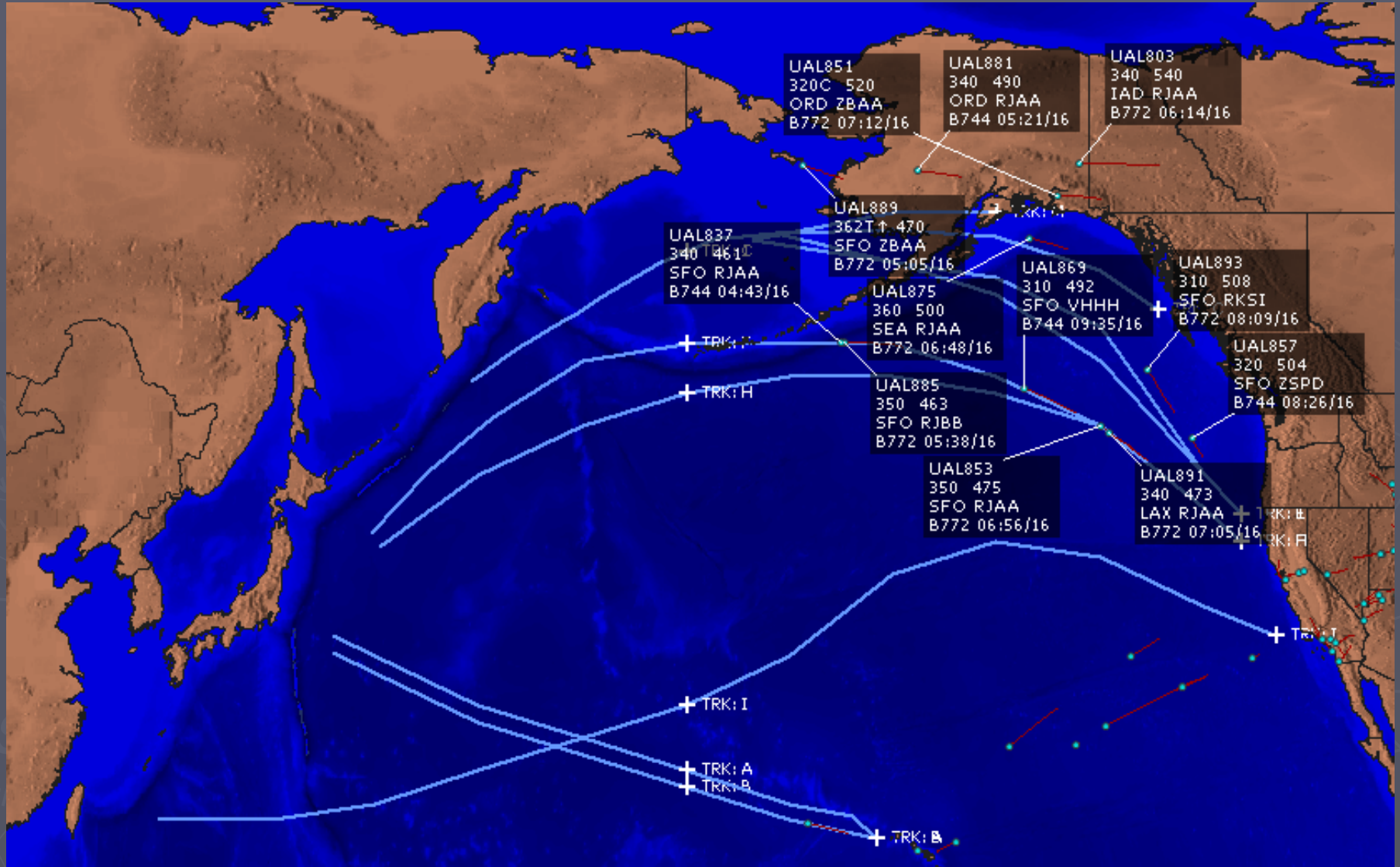
# Alaska Volcanoes and Western U.S.



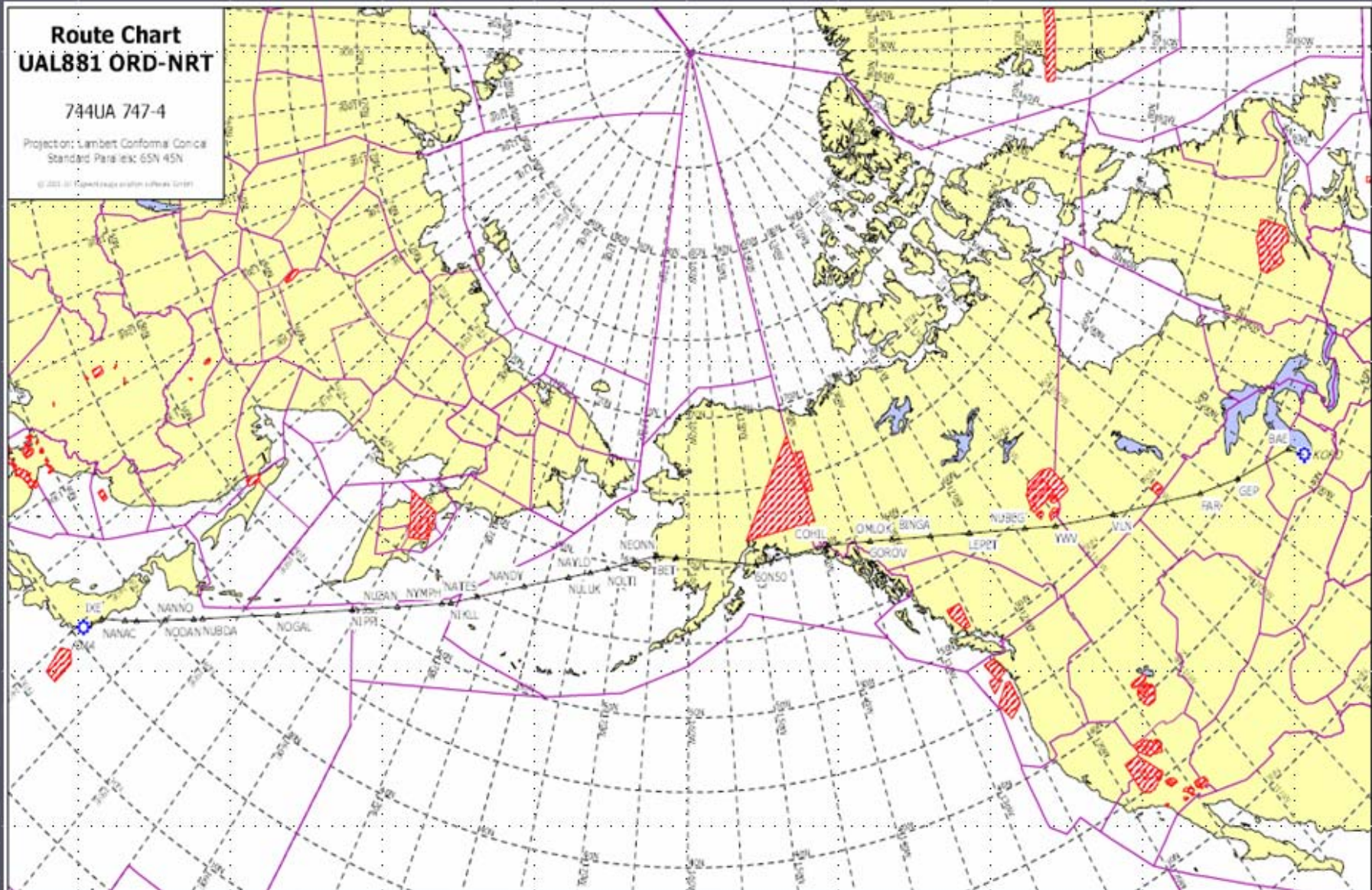
Alaska has highest cumulative aviation threat because of large number of active volcanoes.

Cascades volcanoes have highest individual aviation threat scores because of high passenger loads on conterminous US air routes.

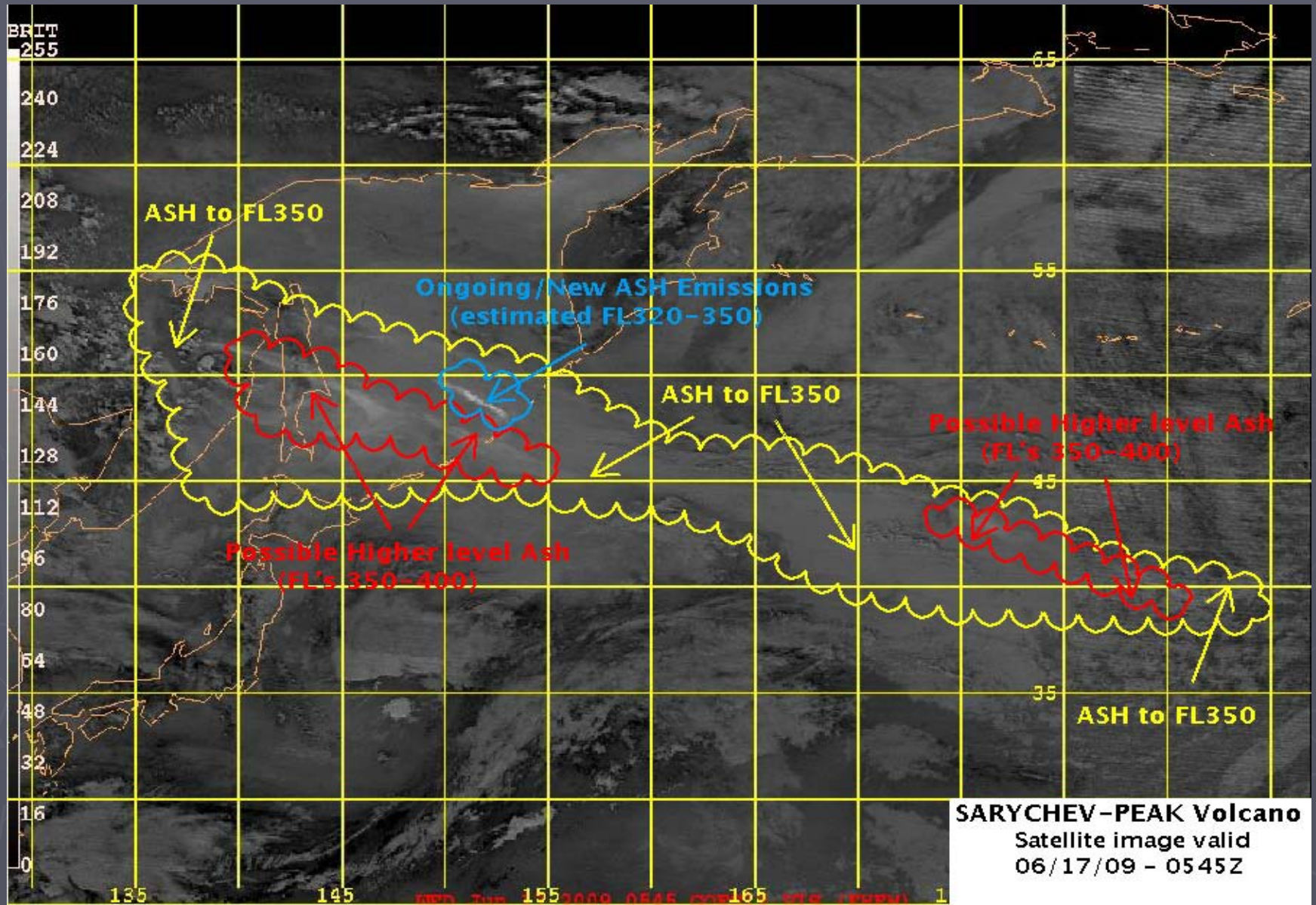
# WESTBOUND OPERATION



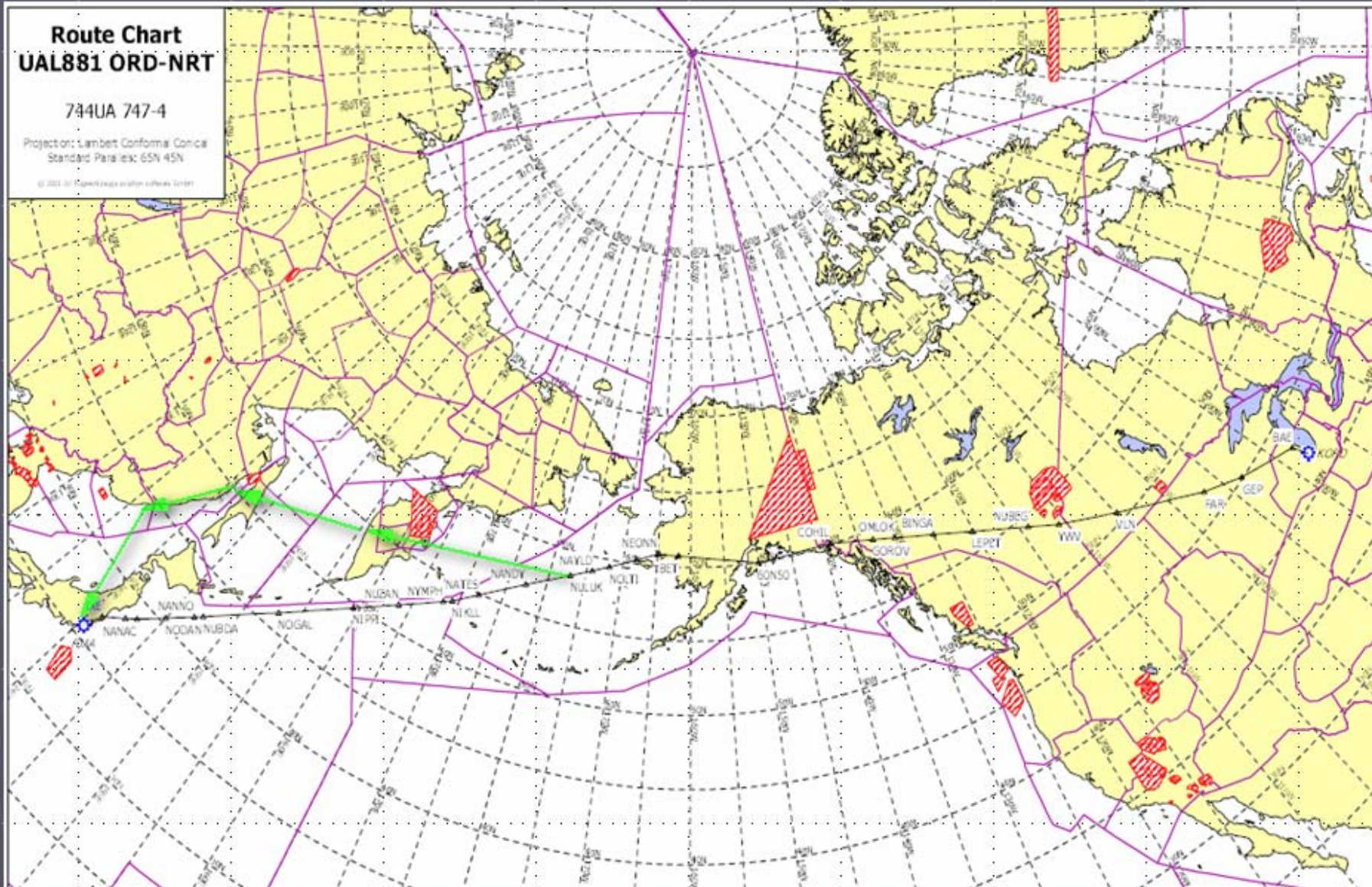
# FLIGHT TRACK



# ASH LOCATION



# FLIGHT TRACK



# **SARYCHEV - AIRLINE IMPACT & COSTS**

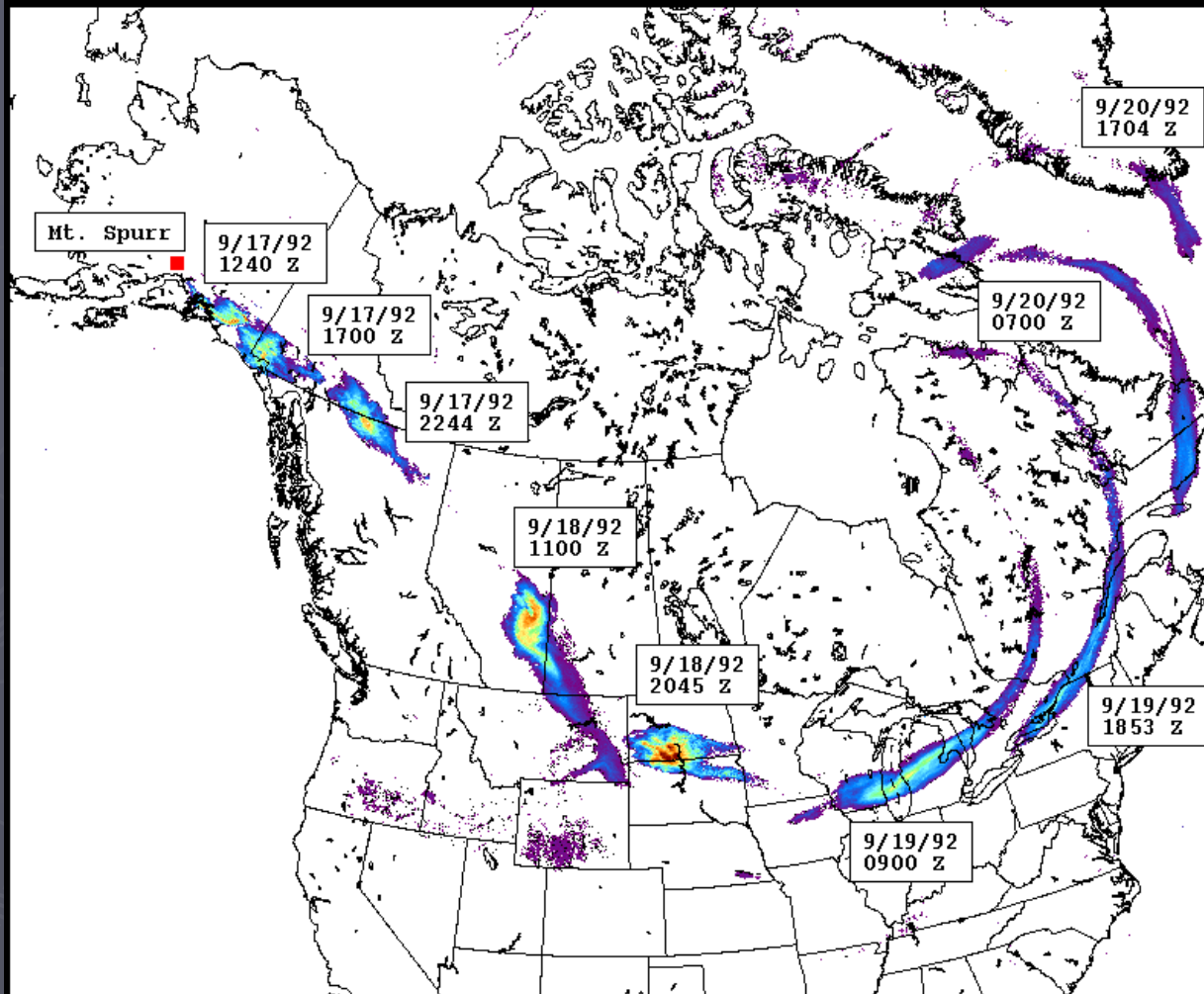
- ▶ **Between 12JUN09 and 17JUN09 the eruption and the ash cloud resulted in 65 re-routes, 6 diversions, 2 turn backs to originating departure cities, and 12 fuel stops.**
- ▶ **The additional costs to the air carriers from the Sarychev eruption and resulting ash cloud were estimated at \$1.8M.**
- ▶ **Russian ATC handled 179 total requests vs. normal workload of 20 flights per day.**

# REDOUBT - AIRLINE IMPACT & COSTS

- ▶ **Between 15MAR09 and 04APR09 the eruption and the ash cloud resulted in 60 re-routes, 20 diversions, 10 turn backs to originating departure cities, and multiple cancellations due to no ops at night.**
- ▶ **The additional costs to the air carriers from the Redoubt eruption and resulting ash cloud were estimated at approximately one half-million dollars.**

# Volcanic Cloud Movement

## Mt. Spurr, Alaska



-12 C

AVHRR Band 4-5

-0.5 C



# DIVERSION SUPPORT

**UNITED**

5 MAY 06

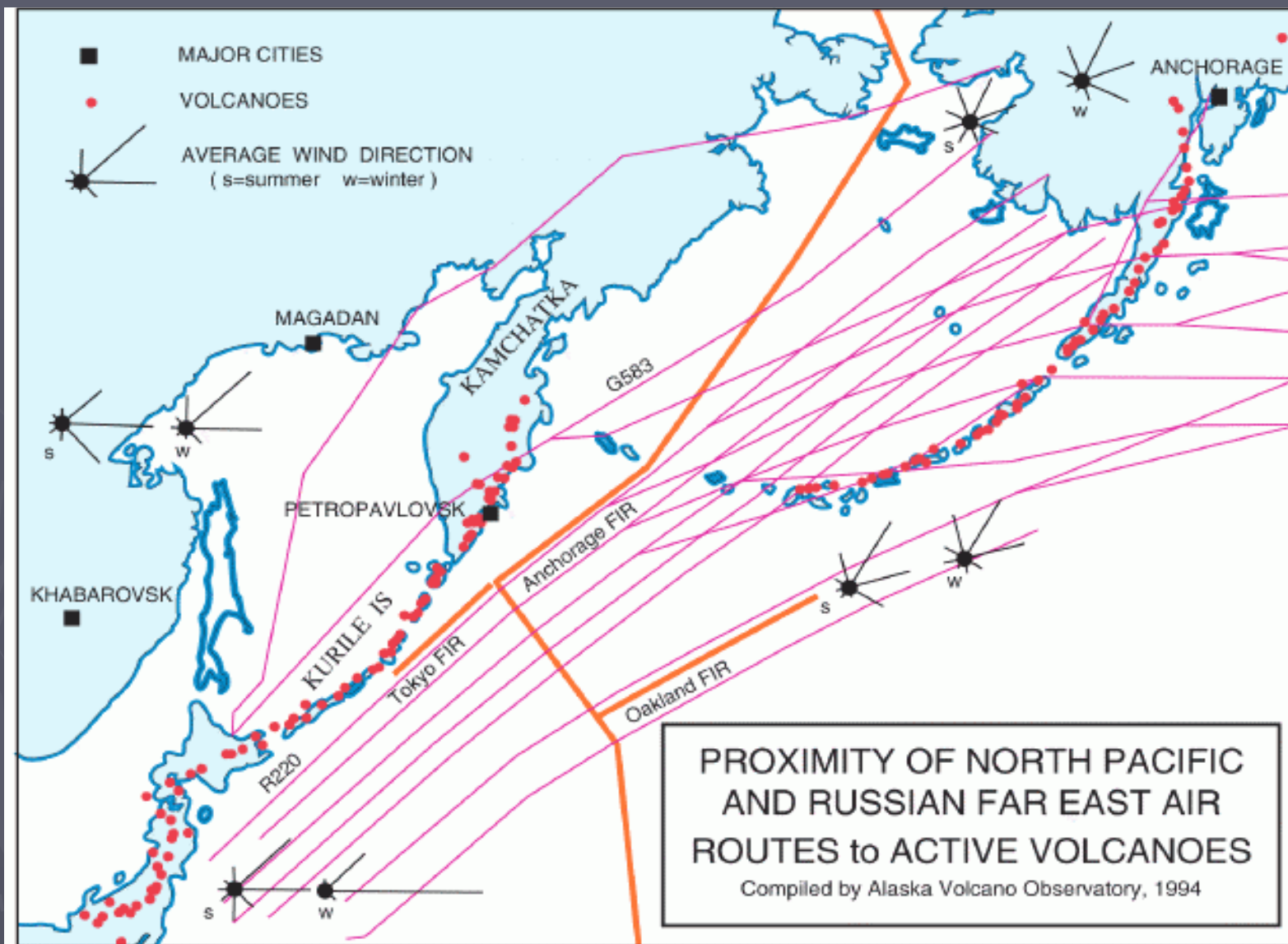
21.EA/AP.i  
Regions  
Eurasia/Polar



CHANGES: New format.

FLIGHT OPERATIONS MANUAL

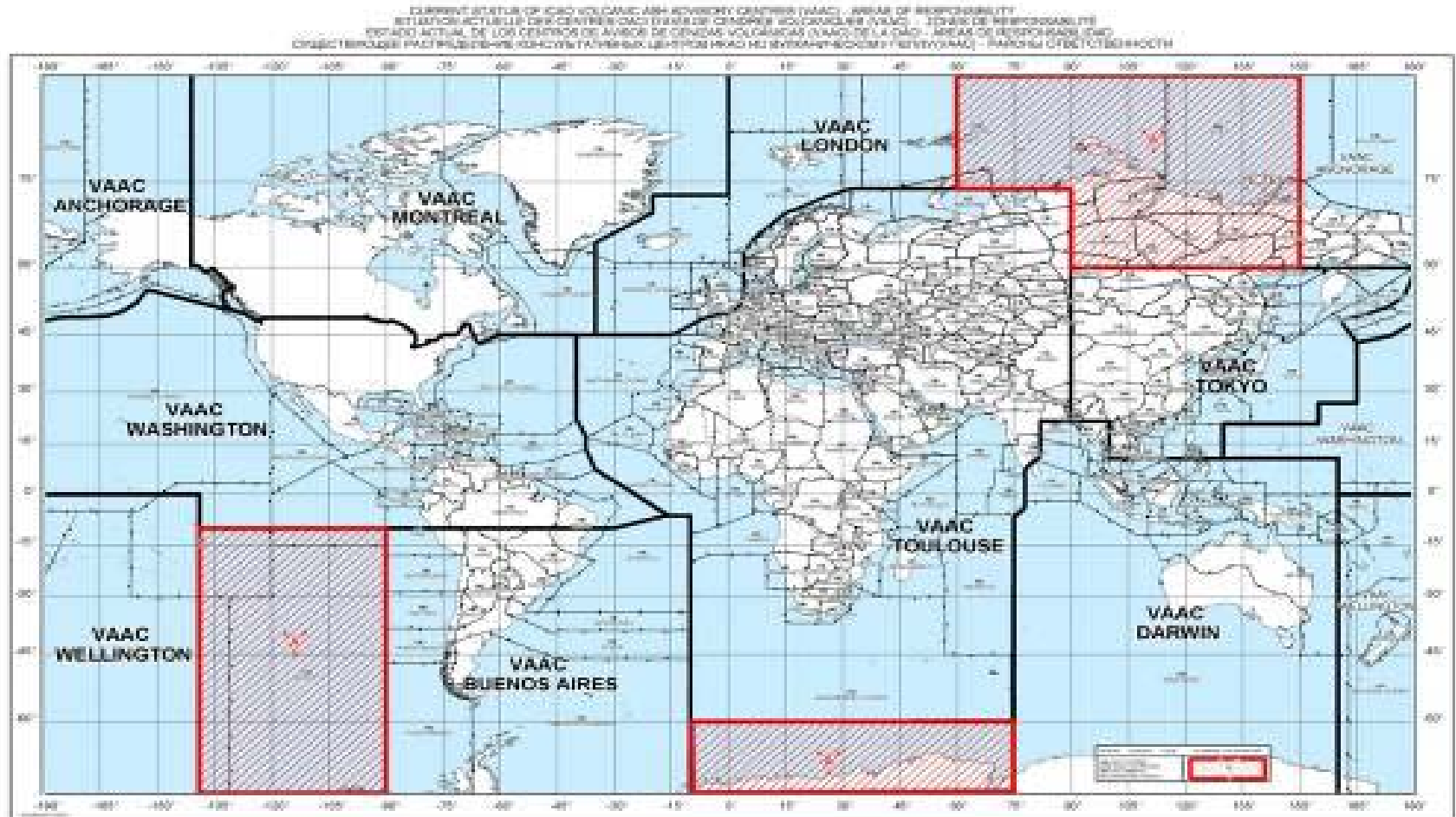
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# DIVERSION SUPPORT



# VOLCANIC ASH ADVISORY CENTERS



# **IMPACT ICELANDIC ASH CLOUD**

## **4/14 – 4/18**

- ▶ 222 US – Europe Cancellations**
- ▶ Customers - US- Europe 18,869**
- ▶ Customers - Europe to US 25,977**
- ▶ Rome, Italy operations were re-routed over Northern Africa which required special over-fly permits**

# PROBLAMATIC SHORTFALLS

- ▶ **Dispersion model differences**
- ▶ **Satellite sensor inadequacy, as it relates to the detection of specific physical phenomena**
- ▶ **Clarity of labeling time-series data, such as sequential remote-sensing imagery**
- ▶ **Direct access to subject matter experts during events**

# AIRLINE OPERATIONS NEEDS

- ▶ **Global synoptic views of activity that may impact flight routes**
- ▶ **Specific forecasts (predictions) of impending volcanic activity**
- ▶ **Clear descriptions of ash-dispersion model capabilities and remote- sensing detection techniques**
- ▶ **Capitalize on continuous advances in remote satellite sensing, aircraft capability, meteorological equipment, flight planning, communications and Air Traffic Management**

# CARIBBEAN ERUPTION



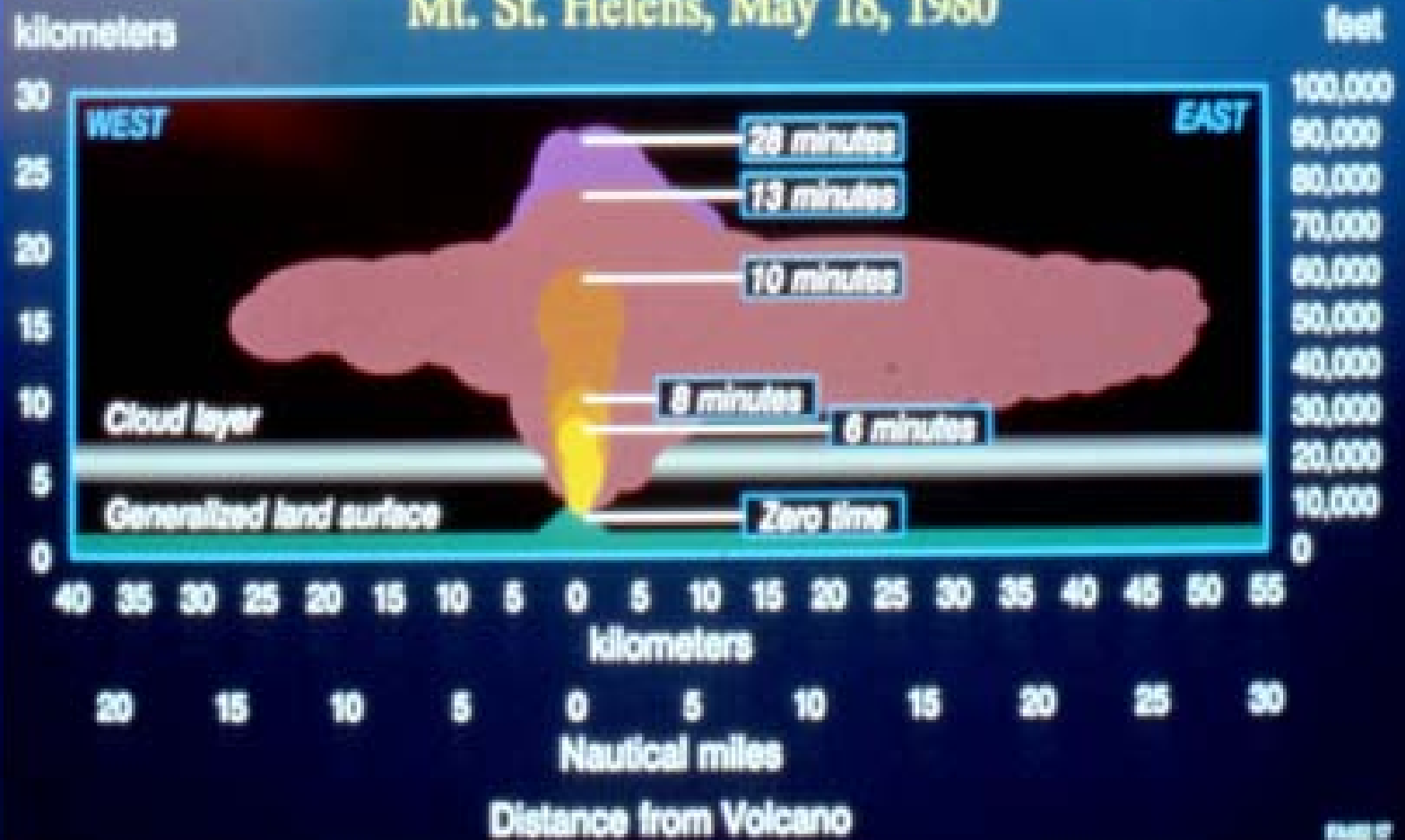
- ▶ Information requirement is immediate
- ▶ Rapidly changing conditions



# AIRLINE OPERATIONS NEEDS

- ▶ **“5 MIN” Notification**
- ▶ **Initial information has to be issued very quickly, and continued communication flow needs to be consistent and issued at specific intervals and in specific formats to facilitate procedural development in the aviation community.**
- ▶ **These issues provide a strong argument in the United States for continued collaboration among Air Carriers, Volcano Observatories, and Volcanic Ash Advisory Centers.**

# Vertical Growth and Lateral Expansion of Ash Plume Mt. St. Helens, May 18, 1980



# AIRLINE OPERATIONS NEEDS

- ▶ **LONG TERM STRATEGIC THREAT PLANNING**
- ▶ **PRE-TACTICAL ERUPTION PLANNING – Identify Significant Threats**
- ▶ **ERUPTION – Rapid Notification**
- ▶ **TACTICAL MANAGEMENT – VAAC, MWO, ATC, Aircraft, AOC's**
- ▶ **POST ERUPTION – Ash Dispersion / So2 Dispersion**
- ▶ **EVENT CLOSURE –Identify when volcano and/or ash no longer threat**



# FLIGHT



# COMPLETION



# QUESTIONS?

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**THANK YOU!**

**UNITED**

