

Southwest Airlines Meteorology Use of NWS Products and Services

**Southwest Aviation Weather Safety Workshop 10
Rancho Cucamonga, CA – April 21st, 2023**



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SWA Facts

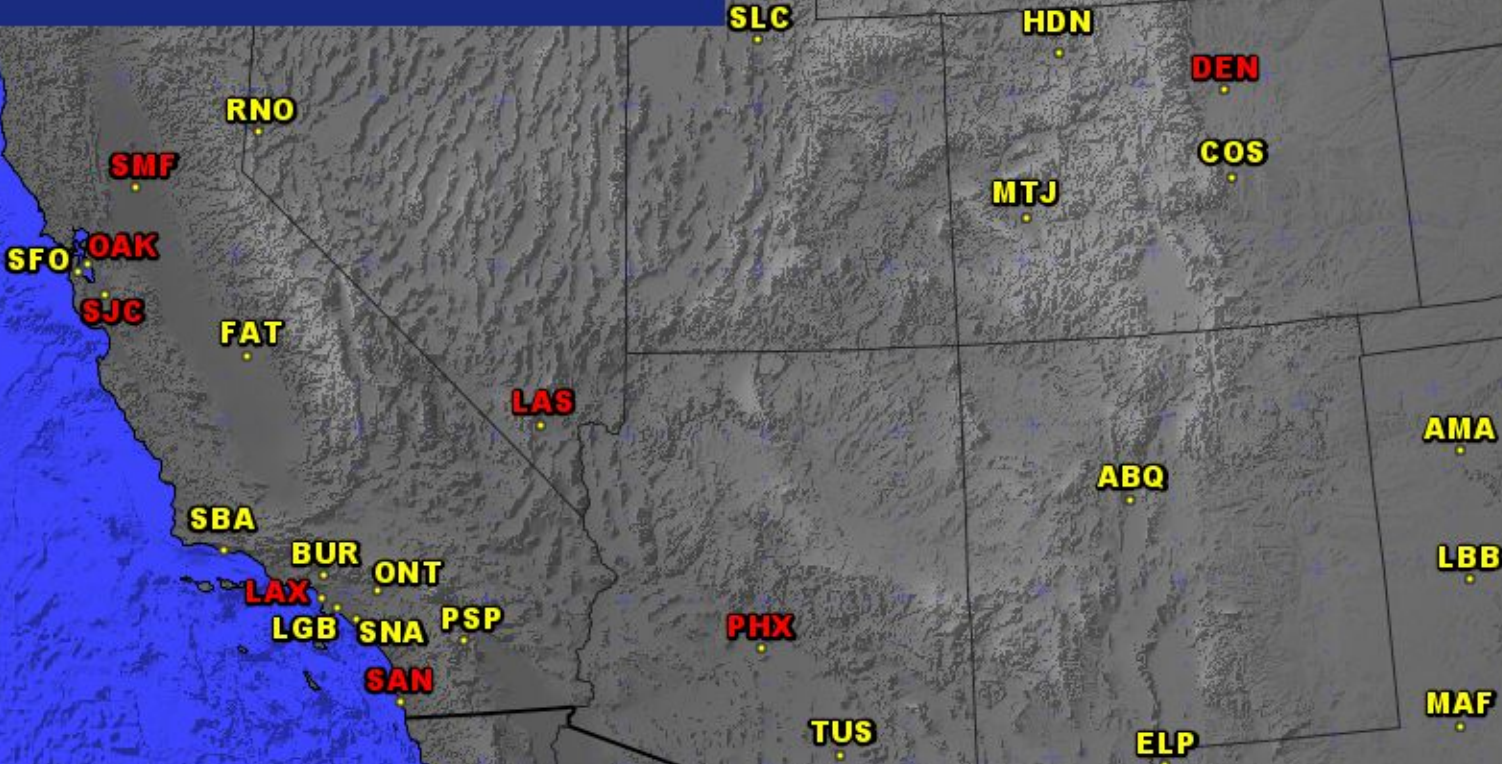
•Pre-COVID:

- Largest domestic carrier with up to 4,000 daily flights
- >4000 flights with over ½ million passengers/day at peak travel times
- Carried >134 million revenue passengers in 2019
- 730 Boeing 737 aircraft (-700, -800, MAX 8)

•Current state:

- Added 18 new destinations since early 2020
- 120+ destinations across the US (including Hawaii), Caribbean, Mexico and Central America
- Average flight length is approx. 755 mi
- Shortest: 63 nm (DEN-COS)
- Longest: 2,589 nm (PHX-LIH)
- 47 consecutive years of annual profitability until 2020

Southwest Airlines Presence



Updated - 03:30 AM CT Apr 10 2023





General Information

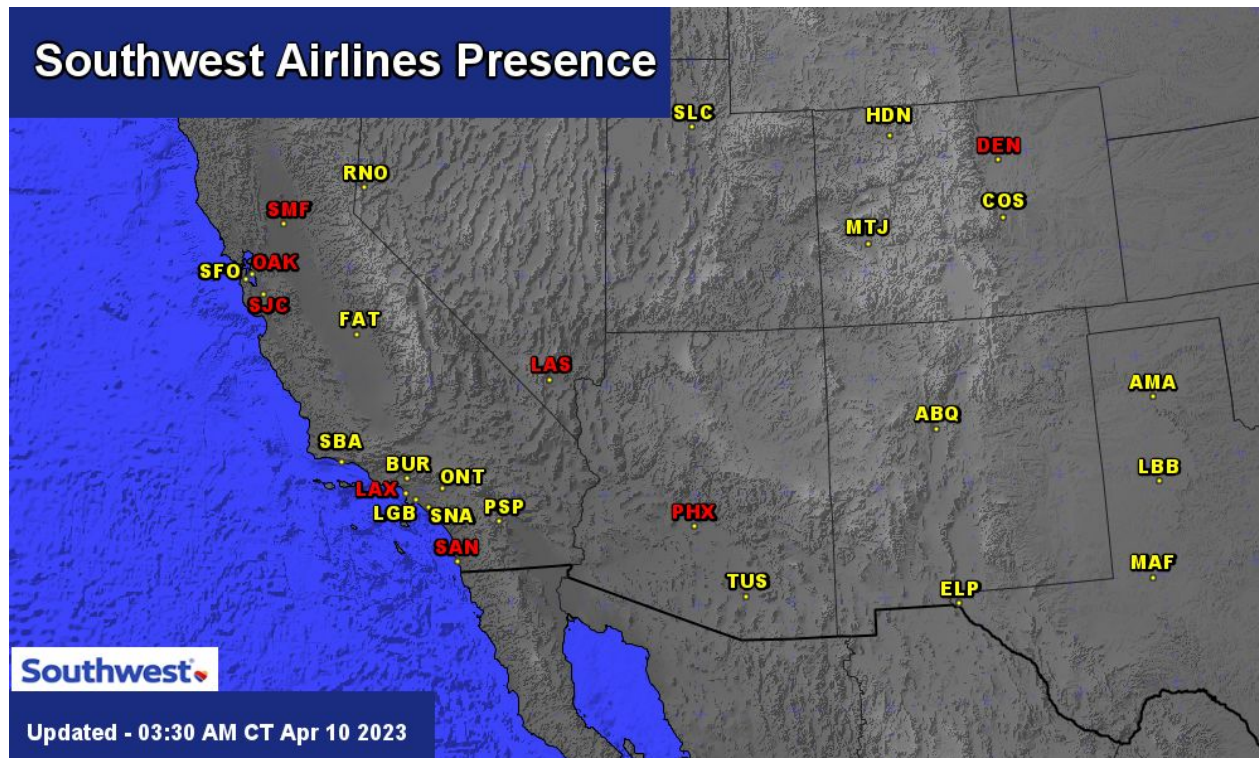
- ~730 Boeing 737 aircraft (-700, -800, MAX 8)
- Nearly all Southwest 737 aircraft are Category IIIA capable
 - Heads up guidance system equipped (no autoland at SWA)
 - All pilots are trained for landing to Category IIIA minimums
 - These minimums assume the runway equipage is able to support CAT IIIA



Busiest Airports (March 2023)

| City | Max Daily Departures | # of Gates | Nonstop Cities Served |
|-----------------------|----------------------|------------|-----------------------|
| Denver | 310 | 33 | 94 |
| Las Vegas | 284 | 21 | 68 |
| Chicago (MDW) | 260 | 37 | 78 |
| Baltimore | 234 | 29 | 70 |
| Dallas (DAL) | 208 | 18 | 69 |
| Phoenix | 200 | 32 | 59 |
| Houston (HOU) | 173 | 20 | 69 |
| Orlando | 169 | 20 | 56 |
| Nashville | 167 | 16 | 57 |
| St. Louis | 129 | 17 | 57 |
| Oakland | 126 | 11 | 35 |
| San Diego | 122 | 6 | 29 |
| Atlanta | 120 | 18 | 42 |
| San Jose (SJC) | 113 | 18 | 27 |
| Sacramento | 103 | 11 | 25 |
| Los Angeles | 102 | 12 | 28 |

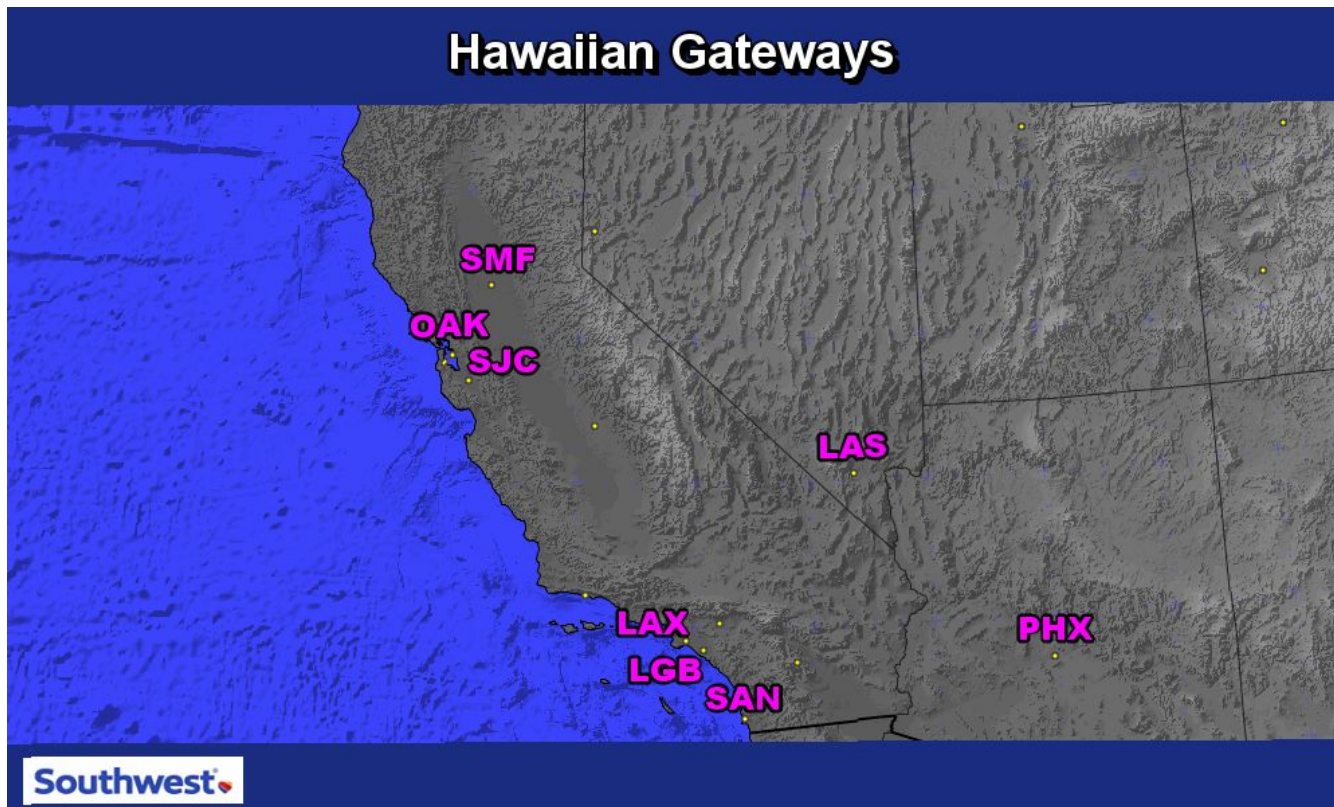
| City | Average Daily Departures |
|------|--------------------------|
| ABQ | 25 |
| AMA | 7 |
| BUR | 59 |
| COS | 13 |
| DEN | 254 |
| ELP | 22 |
| FAT | 4 |
| HDN | 3 |
| LAS | 232 |
| LAX | 71 |
| LBB | 8 |
| LGB | 38 |
| MAF | 11 |
| MTJ | 3 |
| OAK | 103 |
| ONT | 31 |
| PHX | 177 |
| PSP | 11 |
| RNO | 22 |
| SAN | 96 |
| SBA | 6 |
| SFO | 23 |
| SJC | 89 |
| SLC | 33 |
| SMF | 87 |
| SNA | 46 |
| TUS | 10 |



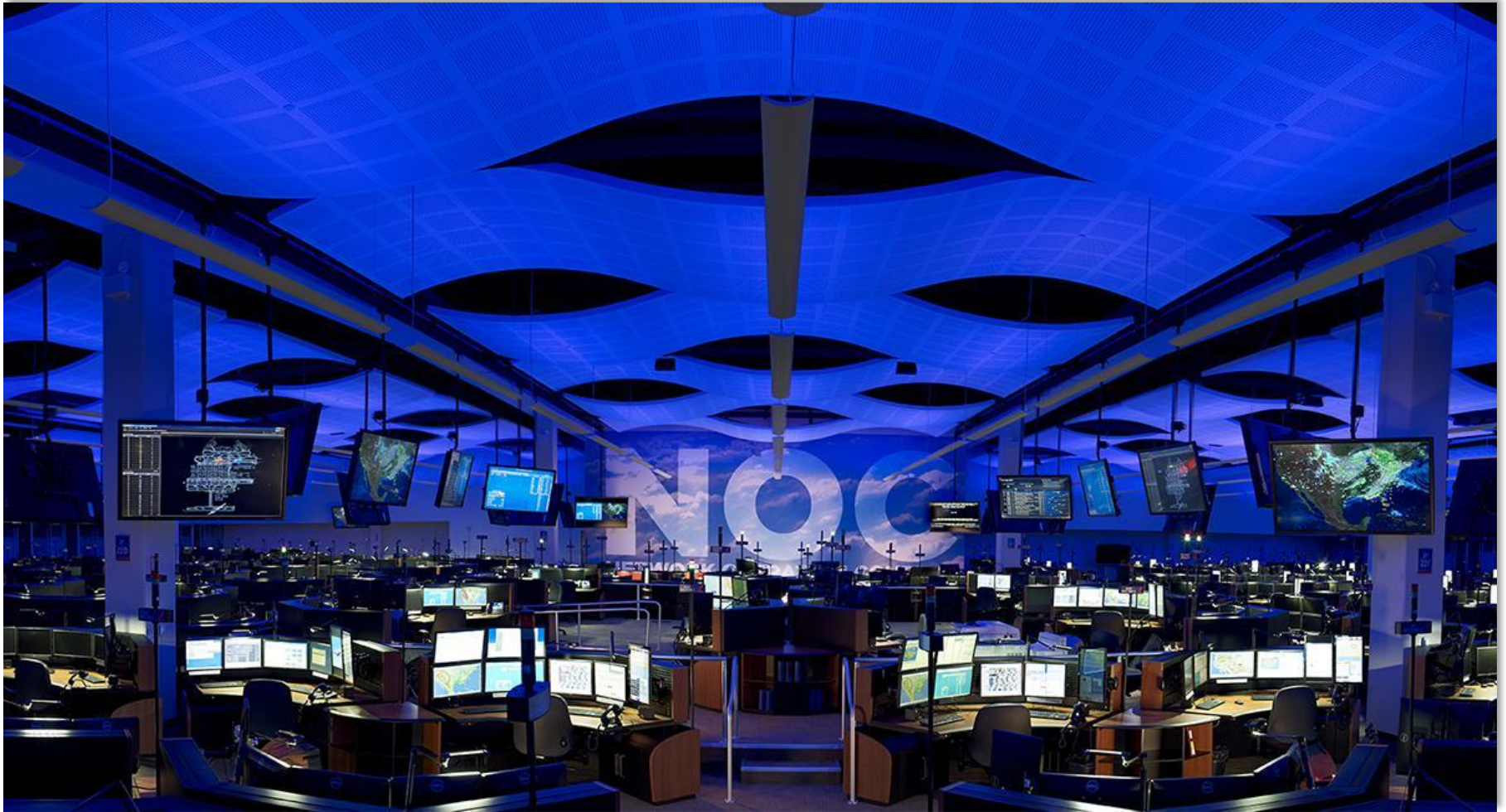
Total = 1,484

Operational Sensitivity in the Southwest

- Serving Hawaiian Islands since 2019
 - Over 100 flights per day
- Gateways susceptible to Heatwaves



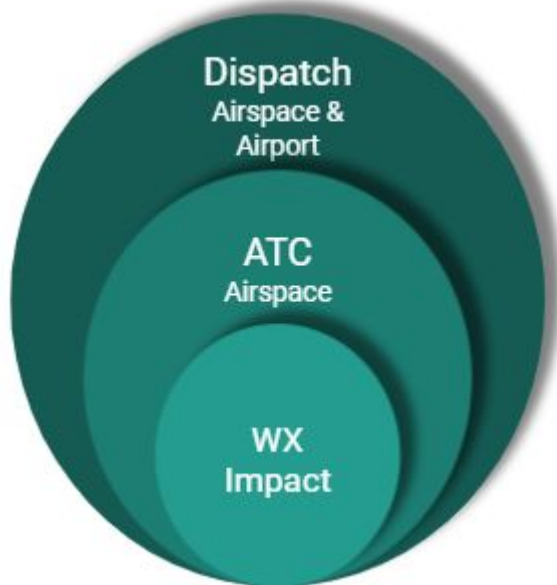
Network Operations Control



NOC Overview

- This is considered the decision maker for the airline
- 24/7/365 coverage
- Comprised of Employees from various groups

Primary



Secondary



SWA Meteorology – What we do

- Focus on big picture
 - Involved in strategic and tactical decision-making processes
 - Decision support, NOT Decision-makers
- 3x daily briefings to operational decision-makers
 - Additional meetings for major events like hurricanes, winter storms
- Ground Operations Support
 - Station Forecast
 - Weather Watch
- Tactical focus as well
 - Issue TAFs (when there is no NWS TAF issued)
 - ETOPS/Hawaii Forecasts
- Past weather events (turbulence, hail reports, wet bag complaints, etc) and special projects
- Participation in industry workgroups

SWA Partnership with the NWS

- Concentrated effort to build relationship with NWS
 - WFO/CWSU/National Centers



- Collaboration delivered through:
 - Workshops
 - Ad Hoc Meetings
 - Research Projects

SWA Partnership with the NWS

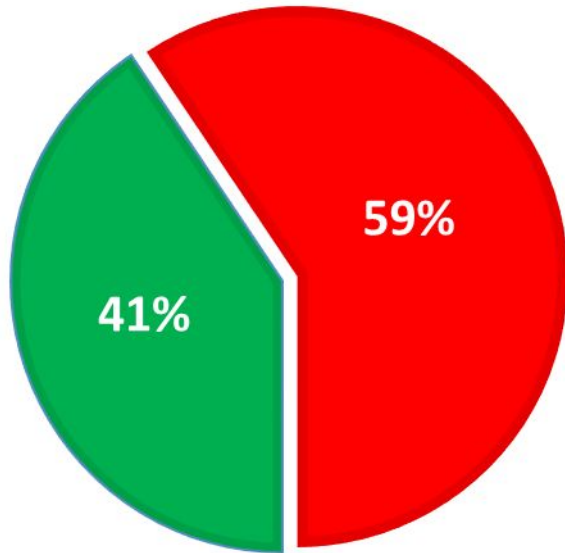
- Communicate via phone and NWSChat
- Use a vast array of WFO/CWSU products:
 - Forecast discussions
 - Point forecasts
 - Graphiccasts
 - PNS
 - Dedicated Aviation Websites
 - McCarran Airport Weather
 - San Francisco Marine Stratus Forecast System
- TAFs
 - Used for long and short term operational decision making
 - Most used NWS product
- National Centers are also crucial
 - AWC's TCF
 - SPC's Convective Outlook
 - NHC's Forecast Tracks

Miscellaneous Topics

- Please invite us to any storm calls you have with Emergency Management or the Media
- Familiarity with your airports operating criteria and local minimums
- Help us where you can with ASOS/AWOS outages

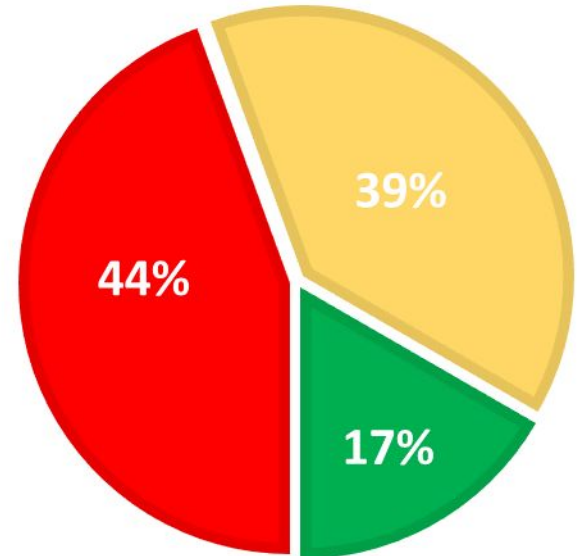
Turbulence 2019 - Present

TURBULENCE INJURIES



■ No Injury ■ Injury

TURBULENCE SEVERITY



■ Severe ■ Moderate ■ Light

Turbulence 2019 - Present



Thank you!



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Donal Morrissey