Flight Planning Process
Delta Air Lines

Bob Oberstar
International Supervisor – Flight Control
Delta Air Lines

This will be a short presentation on the process Delta Air Lines' Dispatchers go through when planning a flight from origin to destination. All Delta Dispatchers are licensed by the FAA and have joint responsibility along with the Pilot(s) in Command of the aircraft.

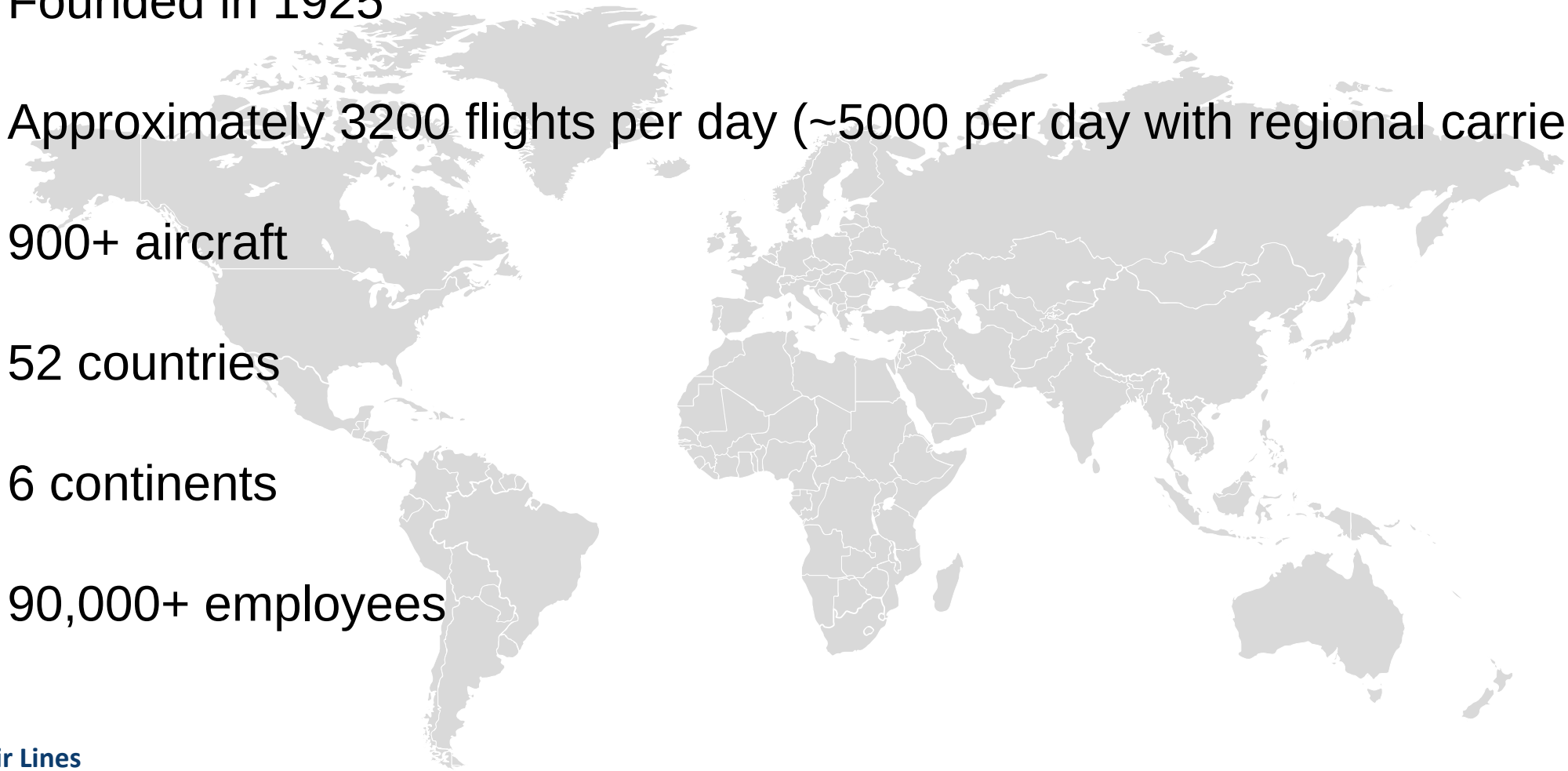
There are several tasks involved when preparing a flight plan, resulting in a safe and efficient flight for our Customers and Crew.

Safety is always our priority. We must comply with all requirements of our Ops Specs, which are overseen by our Regulator (the U.S. FAA).

My example will be planning a flight from LOS-ATL with an A330-200 aircraft.

Delta Air Lines:

- Founded in 1925
- Approximately 3200 flights per day (~5000 per day with regional carriers)
- 900+ aircraft
- 52 countries
- 6 continents
- 90,000+ employees



Major airlines have very similar processes, but may have different flight planning systems, different procedures, and possibly different Ops Specs requirements.

The end product should be very similar for any airline, with **safety** the number one goal in planning that flight from the origin to the destination as efficiently as possible.

The following are some of the highlights of what dispatchers are looking at:

NOTAMS - Origin airport, (possible Takeoff Alternate airport), Destination airport, Destination Alternate, Enroute Alternates (Adequate airports, ETOPS alternates), all enroute FIRs.

Weather - Same airports and enroute airspace as above. This would include enroute constraints such as Volcanoes, Hurricanes, and enroute winds.

MELs (Miscellaneous Equipment List) - Deferrals/Discrepancies on the aircraft planned to be used.

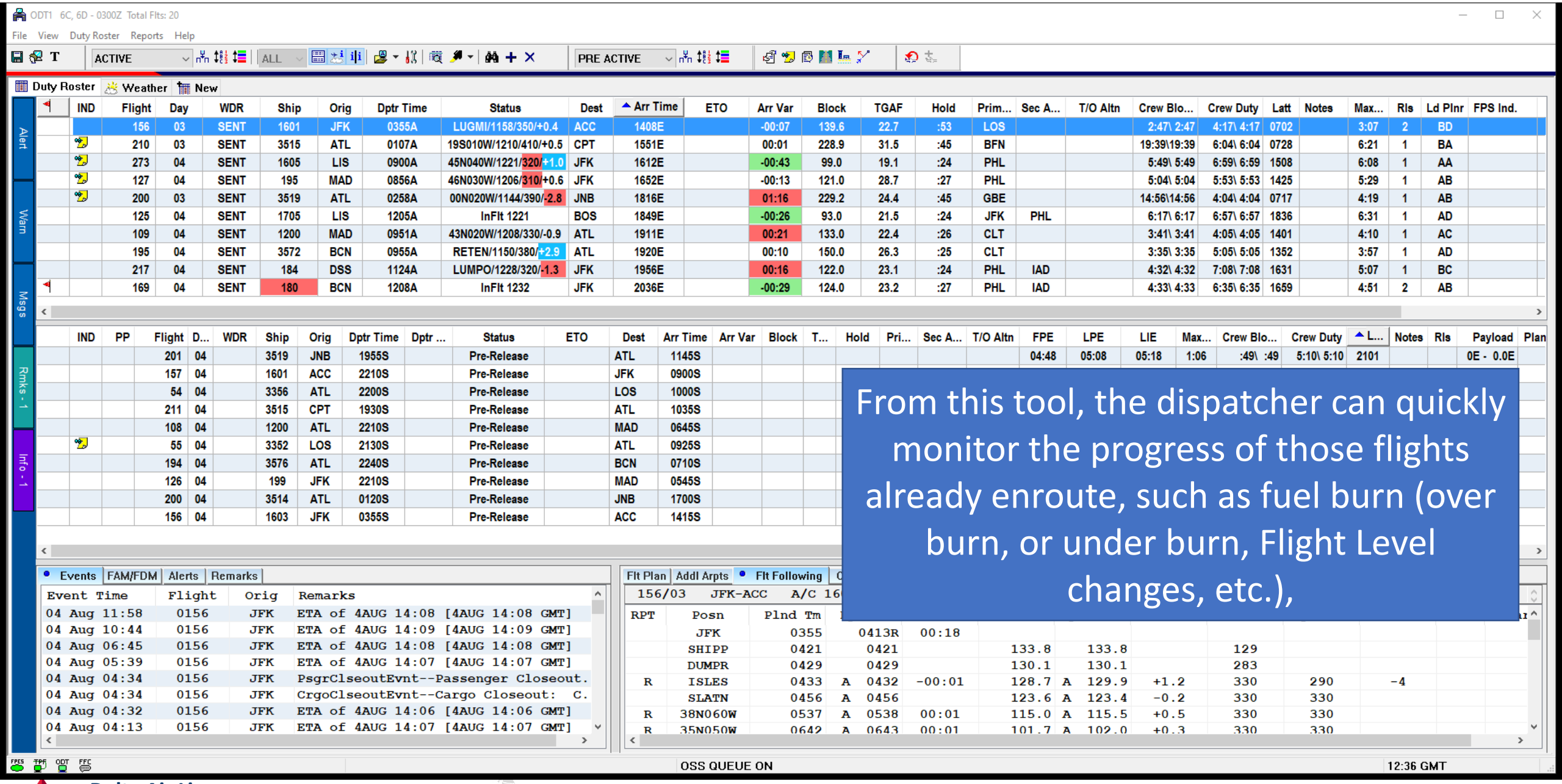
Crew Duty concerns

Payload and Fuel needs

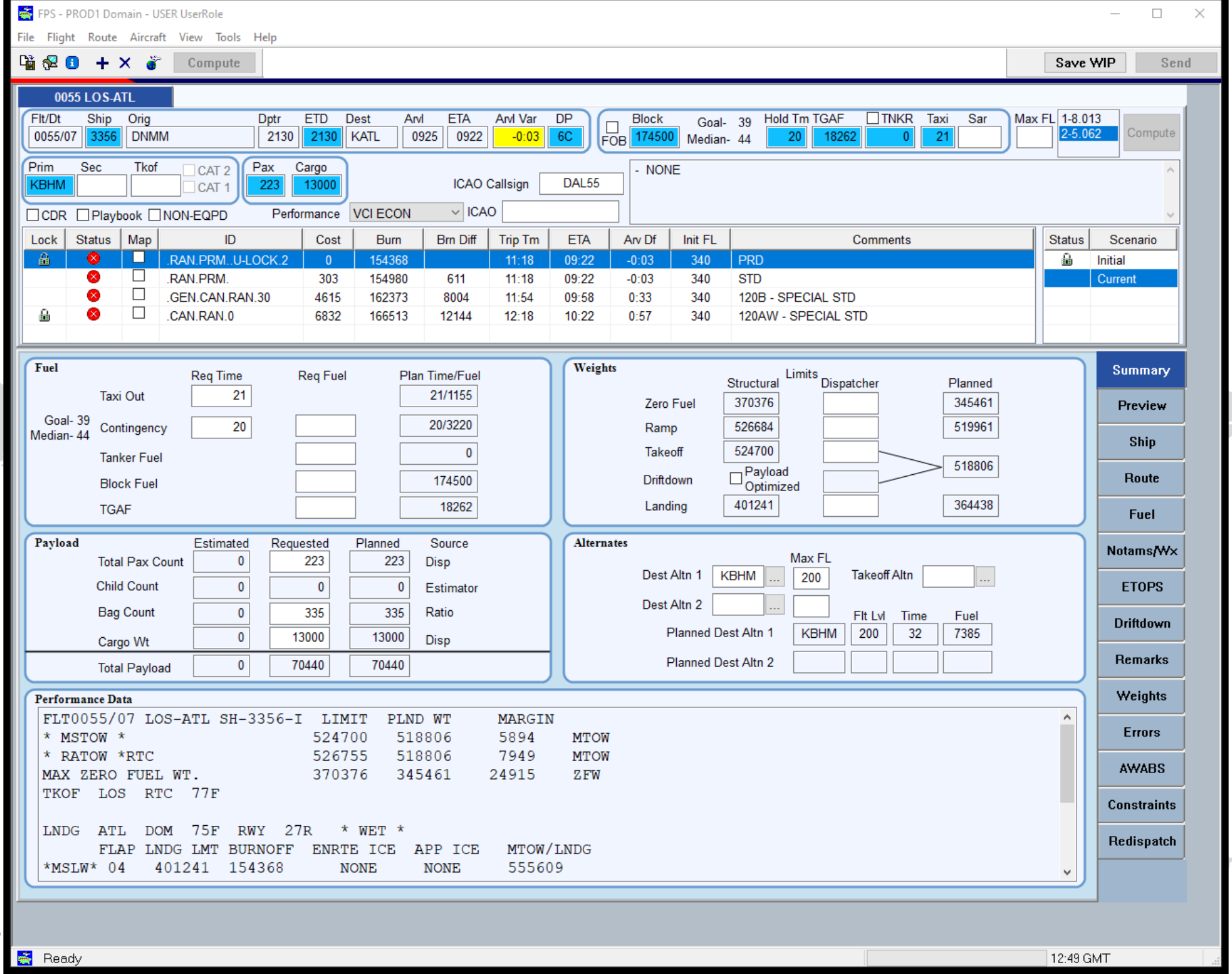
A Delta Air Lines Dispatcher shift can be scheduled no more than 10 hours. When arriving for his/her shift, they will have a pre-set workload of flights. Delta International Dispatchers are trained and qualified to work all aircraft.

At the start of their shift, they pull up our ODT (**O**perations **D**esk **T**op), an internal Delta tool for workload needs. This will display flights enroute, as well as those which need to be planned and released after evaluating NOTAMS, Weather, MELs, Crew Duty, Payload and Fuel needs.

We use this tool for monitoring progress of flight, such as actual fuel burn vs. planned, route changes, flight level changes, etc.


ODT1 6C, 6D - 0300Z Total Flts: 20
File View Duty Roster Reports Help
ACTIVE
ALL
PRE ACTIVE
Duty Roster
Weather
New
Alert
Warn
Msgs
Rmks - 1
Info - 1
IND Flight Day WDR Ship Orig Dptr Time Status Dest Arr Time ETO Arr Var Block TGAF Hold Prim... Sec A... T/O Altn Crew Blo... Crew Duty Latt Notes Max... Rls Ld Plnr FPS Ind.
156 03 SENT 1601 JFK 0355A LUGMI/1158/350/+0.4 ACC 1408E -00:07 139.6 22.7 :53 LOS 2:47\ 2:47 4:17\ 4:17 0702 3:07 2 BD
210 03 SENT 3515 ATL 0107A 19S010W/1210/410/+0.5 CPT 1551E 00:01 228.9 31.5 :45 BFN 19:39\19:39 6:04\ 6:04 0728 6:21 1 BA
273 04 SENT 1605 LIS 0900A 45N040W/1221/320/+1.0 JFK 1612E -00:43 99.0 19.1 :24 PHL 5:49\ 5:49 6:59\ 6:59 1508 6:08 1 AA
127 04 SENT 195 MAD 0856A 46N030W/1206/310/+0.6 JFK 1652E -00:13 121.0 28.7 :27 PHL 5:04\ 5:04 5:53\ 5:53 1425 5:29 1 AB
200 03 SENT 3519 ATL 0258A 00N020W/1144/390/-2.8 JNB 1816E 01:16 229.2 24.4 :45 GBE 14:56\14:56 4:04\ 4:04 0717 4:19 1 AB
125 04 SENT 1705 LIS 1205A InFlt 1221 BOS 1849E -00:26 93.0 21.5 :24 JFK PHL 6:17\ 6:17 6:57\ 6:57 1836 6:31 1 AD
109 04 SENT 1200 MAD 0951A 43N020W/1208/330/-0.9 ATL 1911E 00:21 133.0 22.4 :26 CLT 3:41\ 3:41 4:05\ 4:05 1401 4:10 1 AC
195 04 SENT 3572 BCN 0955A RETEN/1150/380/+2.9 ATL 1920E 00:10 150.0 26.3 :25 CLT 3:35\ 3:35 5:05\ 5:05 1352 3:57 1 AD
217 04 SENT 184 DSS 1124A LUMPO/1228/320/-1.3 JFK 1956E 00:16 122.0 23.1 :24 PHL IAD 4:32\ 4:32 7:08\ 7:08 1631 5:07 1 BC
169 04 SENT 180 BCN 1208A InFlt 1232 JFK 2036E -00:29 124.0 23.2 :27 PHL IAD 4:33\ 4:33 6:35\ 6:35 1659 4:51 2 AB
IND PP Flight D... WDR Ship Orig Dptr Time Dptr ... Status ETO Dest Arr Time Arr Var Block T... Hold Pri... Sec A... T/O Altn FPE LPE LIE Max... Crew Blo... Crew Duty L... Notes Rls Payload Plan
201 04 3519 JNB 1955S Pre-Release ATL 1145S 04:48 05:08 05:18 1:06 :49\ :49 5:10\ 5:10 2101 0E - 0.0E
157 04 1601 ACC 2210S Pre-Release JFK 0900S
54 04 3356 ATL 2200S Pre-Release LOS 1000S
211 04 3515 CPT 1930S Pre-Release ATL 1035S
108 04 1200 ATL 2210S Pre-Release MAD 0645S
55 04 3352 LOS 2130S Pre-Release ATL 0925S
194 04 3576 ATL 2240S Pre-Release BCN 0710S
126 04 199 JFK 2210S Pre-Release MAD 0545S
200 04 3514 ATL 0120S Pre-Release JNB 1700S
156 04 1603 JFK 0355S Pre-Release ACC 1415S
From this tool, the dispatcher can quickly monitor the progress of those flights already enroute, such as fuel burn (over burn, or under burn, Flight Level changes, etc.),
Events FAM/FDM Alerts Remarks
Event Time Flight Orig Remarks
04 Aug 11:58 0156 JFK ETA of 4AUG 14:08 [4AUG 14:08 GMT]
04 Aug 10:44 0156 JFK ETA of 4AUG 14:09 [4AUG 14:09 GMT]
04 Aug 06:45 0156 JFK ETA of 4AUG 14:08 [4AUG 14:08 GMT]
04 Aug 05:39 0156 JFK ETA of 4AUG 14:07 [4AUG 14:07 GMT]
04 Aug 04:34 0156 JFK PsgrClseoutEvnt--Passenger Closeout.
04 Aug 04:34 0156 JFK CrgoClseoutEvnt--Cargo Closeout: C.
04 Aug 04:32 0156 JFK ETA of 4AUG 14:06 [4AUG 14:06 GMT]
04 Aug 04:13 0156 JFK ETA of 4AUG 14:07 [4AUG 14:07 GMT]
Flt Plan Addl Arpts Flt Following
156/03 JFK-ACC A/C 16
RPT Posn Plnd Tm
JFK 0355 0413R 00:18
SHIPP 0421 0421 133.8 133.8 129
DUMPR 0429 0429 130.1 130.1 283
R ISLES 0433 A 0432 -00:01 128.7 A 129.9 +1.2 330 290 -4
SLATN 0456 A 0456 123.6 A 123.4 -0.2 330 330
R 38N060W 0537 A 0538 00:01 115.0 A 115.5 +0.5 330 330
R 35N050W 0642 A 0643 00:01 101.7 A 102.0 +0.3 330 330
OSS QUEUE ON
12:36 GMT

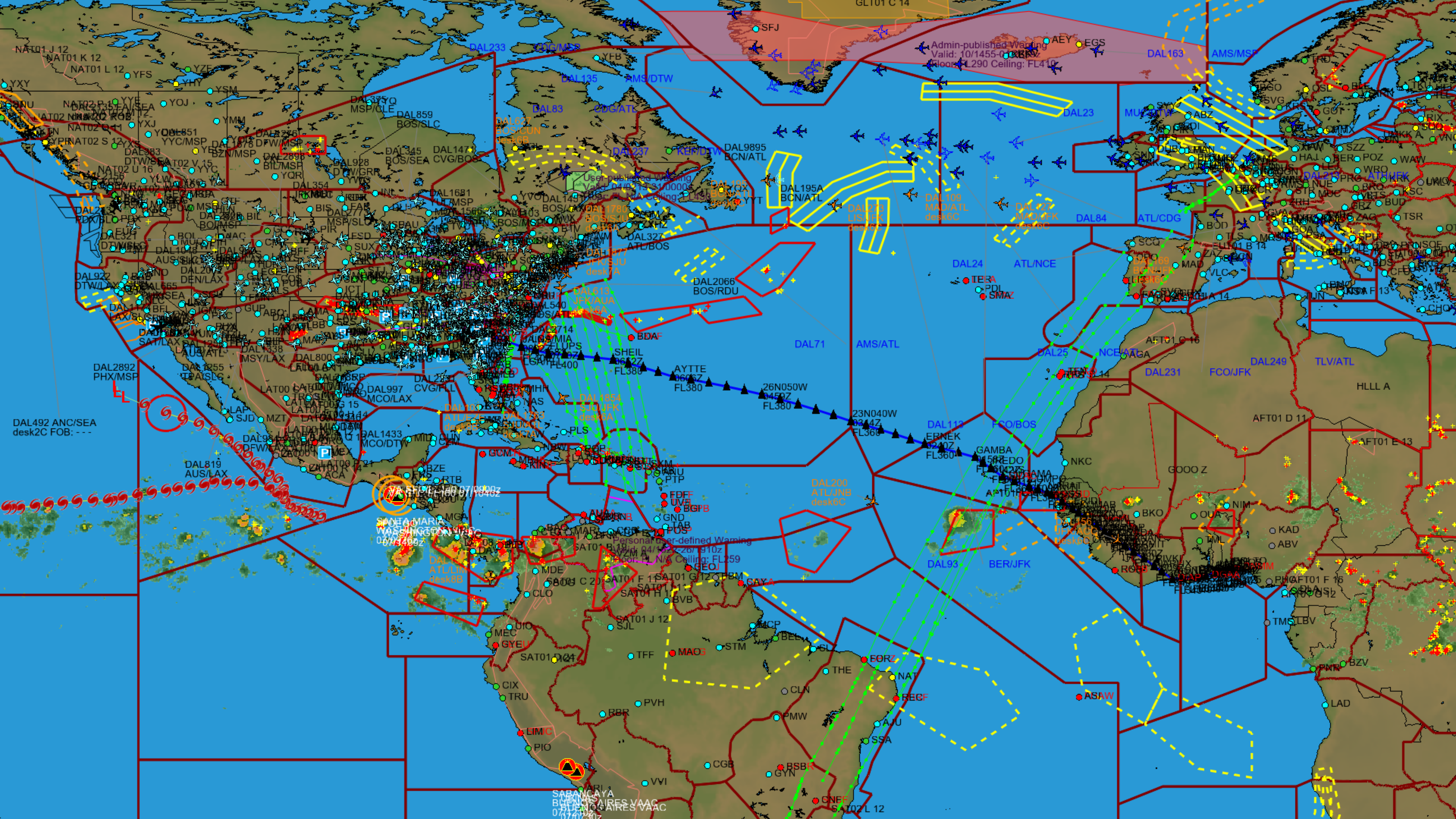
The Delta Air Lines Flight Planning System is an in-house product which is supported by a team of NavData Analysts who maintain, and update as needed. We also have Jeppesen feed to support our system with AIRAC Cycle changes every 28 days.


FPS - PROD1 Domain - USER UserRole
File Flight Route Aircraft View Tools Help
Compute
Save WIP
Send
0055 LOS-ATL
Flt/Dt 0055/07
Ship 3356
Orig DNMM
Dptr 2130
ETD 2130
Dest KATL
Arvl 0925
ETA 0922
Arvl Var -0:03
DP 6C
FOB
Block 174500
Goal- 39
Median- 44
Hold Tm TGAF 20 18262
TNKR 0
Taxi 21
Sar
Max FL 1-8.013 2-5.062
Compute
Prim KBHM
Sec
Tkof
CAT 2
CAT 1
Pax 223
Cargo 13000
ICAO Callsign DAL55
CDR Playbook NON-EQPD
Performance VCI ECON
ICAO
- NONE
Lock Status Map ID Cost Burn Brn Diff Trip Tm ETA Arv Df Init FL Comments
.RAN.PRM..U-LOCK.2 0 154368 11:18 09:22 -0:03 340 PRD
.RAN.PRM. 303 154980 611 11:18 09:22 -0:03 340 STD
.GEN.CAN.RAN.30 4615 162373 8004 11:54 09:58 0:33 340 120B - SPECIAL STD
.CAN.RAN.0 6832 166513 12144 12:18 10:22 0:57 340 120AW - SPECIAL STD
Status Scenario
Initial
Current
Fuel
Req Time Req Fuel Plan Time/Fuel
Taxi Out 21 21/1155
Goal- 39 Median- 44
Contingency 20 20/3220
Tanker Fuel 0
Block Fuel 174500
TGAF 18262
Weights
Limits
Structural Dispatcher Planned
Zero Fuel 370376 345461
Ramp 526684 519961
Takeoff 524700
Driftdown
Payload Optimized
518806
Landing 401241 364438
Payload
Estimated Requested Planned Source
Total Pax Count 0 223 223 Disp
Child Count 0 0 0 Estimator
Bag Count 0 335 335 Ratio
Cargo Wt 0 13000 13000 Disp
Total Payload 0 70440 70440
Alternates
Max FL
Dest Altn 1 KBHM 200
Takeoff Altn
Dest Altn 2
Flt Lvl Time Fuel
Planned Dest Altn 1 KBHM 200 32 7385
Planned Dest Altn 2
Performance Data
FLT0055/07 LOS-ATL SH-3356-I LIMIT PLND WT MARGIN
* MSTOW * 524700 518806 5894 MTOW
* RATOW *RTC 526755 518806 7949 MTOW
MAX ZERO FUEL WT. 370376 345461 24915 ZFW
TKOF LOS RTC 77F
LNDG ATL DOM 75F RWY 27R * WET *
FLAP LNDG LMT BURNOFF ENRTE ICE APP ICE MTOW/LNDG
MSLW 04 401241 154368 NONE NONE 555609
Summary
Preview
Ship
Route
Fuel
Notams/Wx
ETOPS
Driftdown
Remarks
Weights
Errors
AWABS
Constraints
Redispatch
Ready
12:49 GMT

Another tool used for planning, weather needs, and flight following is **WSI FUSION.** This tool will have radar/satellite overlay, flights, country and airport information, FIR boundaries, VAAC advisories for volcanoes around the world, airways, waypoints/navaids, and much more.

We are able to retrieve NOTAMS from this site (we also use a number of internet-based NOTAM sites).

The Map is tailored to the dispatchers needs, such as the region they are working. When a dispatcher plans a route from our Flight Planning System, that route will overlay on the WSI FUSION map to analyze for possible constraints along that route.



Admin-published Warning
Floor: FL290 Ceiling: FL410
DAL233
DAL135
AMS/DTW
DAL83
CDG/ATL
DAL859
BOS/SLC
DAL9895
BCN/ATL
DAL195A
BCN/ATL
DAL23
DAL163
AMS/MSP
DAL84
ATL/CDG
DAL24
ATL/NCE
DAL2066
BOS/RDU
DAL327
ATL/BOS
DAL71
AMS/ATL
DAL25
NCE/ATL
DAL231
FCO/JFK
DAL249
TLV/ATL
HLLL A
AFT01 D 11
AFT01 E 13
DAL113
FCO/BOS
DAL93
BER/JFK
DAL200
ATL/JNB
desk6C
SHEIL
AYTTE
FL380
26N050W
FL380
23N040W
FL360
ERNEK
FL360
GAMBA
DAL2892
PHX/MSP
DAL492 ANC/SEA
desk2C FOB: - - -
DAL819
AUS/LAX
DAL997
MCO/LAX
DAL1433
MCO/DTW
Personal user-defined Warning
Ceiling: FL259
SANTA MARIA
SABANCAYA
BUENOS AIRES VAAC
GOOO Z
NKC
BKO
KAD
ABV
TMS
LBV
LAD
PNR
BZV
NIM
FOR
NAT
REC
AJU
SSA
CGB
BSB
PMW
PVH
MAO
STM
BEL
SLZ
THE
CLN
TFF
SJL
MCP
BVB
UIO
GYE
CIX
TRU
LIM
PIO
ARI
VVI
GYN
CNF
BDA
TER
PDL
SMA
SCQ
MAD
VLC
ASI
SFJ
AEY
EGS
YFB
YYR
YYT
YMM
YFS
YXY
YYC
YZF
YSM
YOJ
YQR
MEC
CLO
MDE
BZE
RTB
MGA
PLS
NAS
FDF
UVF
BGI
GND
TAB
POS
PTP
SJD
MZT
ACA

The above examples are just a few tools used for planning a safe and efficient flight. There are a number of different departments involved to make each and every flight work, such as our Maintenance Control Team, Customer Service, Corporate Security, Load Control for Weight and Balance needs, Cargo, Pilot and Flight Attendant crew scheduling, and many more.

The process to plan a LOS to ATL operation starts early with a review of the aircraft (MELs), the routes - enroute constraints – NOTAMS. About 2 ½ hours prior to departure we get a expected payload estimate (Customers, bags checked, cargo) at which time we will release and file the ICAO FPL.

The dispatcher's job is not done. We will continue to monitor progress of the flight for any new constraints or changes that may affect the flight as it was planned. This process lasts until the flight has safely arrived at the destination.


Thank You