



Navigatus.aero

Queenstown Aviation Wx System Briefing

Overview of Company

- Multi–sector professional services company with a focus on the management of risk and change
 - (e.g. process, maritime, aviation, power, rail, infrastructure, business)
- Focus on ‘Client success’
- Certified to ISO9001:2015
- Values:
 - Integrity
 - Client service
 - Business and environmental sustainability



Advisory Services

- Business and Technical Analysis
- Risk Management
- Risk Assessment
- Aviation Audit
- Human Factors
- Safety
 - *Safety Management Systems*
 - *Safety Cases*
 - *Health and Safety*
 - *Human factors*
 - *Safety culture*



Queenstown Weather reporting system

- Original development of a system to support RPT jet services at Queenstown Airport. While originally implemented to support night operations at the aerodrome, its value to also support day operations was quickly recognised. That value is reflected in the current usage:
- Registered users: ~300 active
- Web access sessions per quarter: ~4200
- Log-ins per day: ~20 to ~ 55 (reflecting the forecast weather conditions)
- In-flight access: ~ 4 downloads / flight

Philosophy

Customer-centric (pilot / flight-planner) mind set underpinned all aspects of the design of the service and considerable pilot input was sought and flight-experience calibration time and feedback obtained during development of the system and service.

- Give a rich picture of the here and now
- Replace the trees/ grass / dust devils / water

Development - Certification

Jan 2016: Initial exploratory system (dismountable units)

Learn about:

- The wind regime in the Wakatipu Basin
- Turbulence on APP23
- Tech-crew needs

April 2016: In flight real-time system proven

May 2016: Initial 'advisory system' commissioned

Nov 2016: Night operations end of season forum

Air NZ (active use): 1 night time go-around

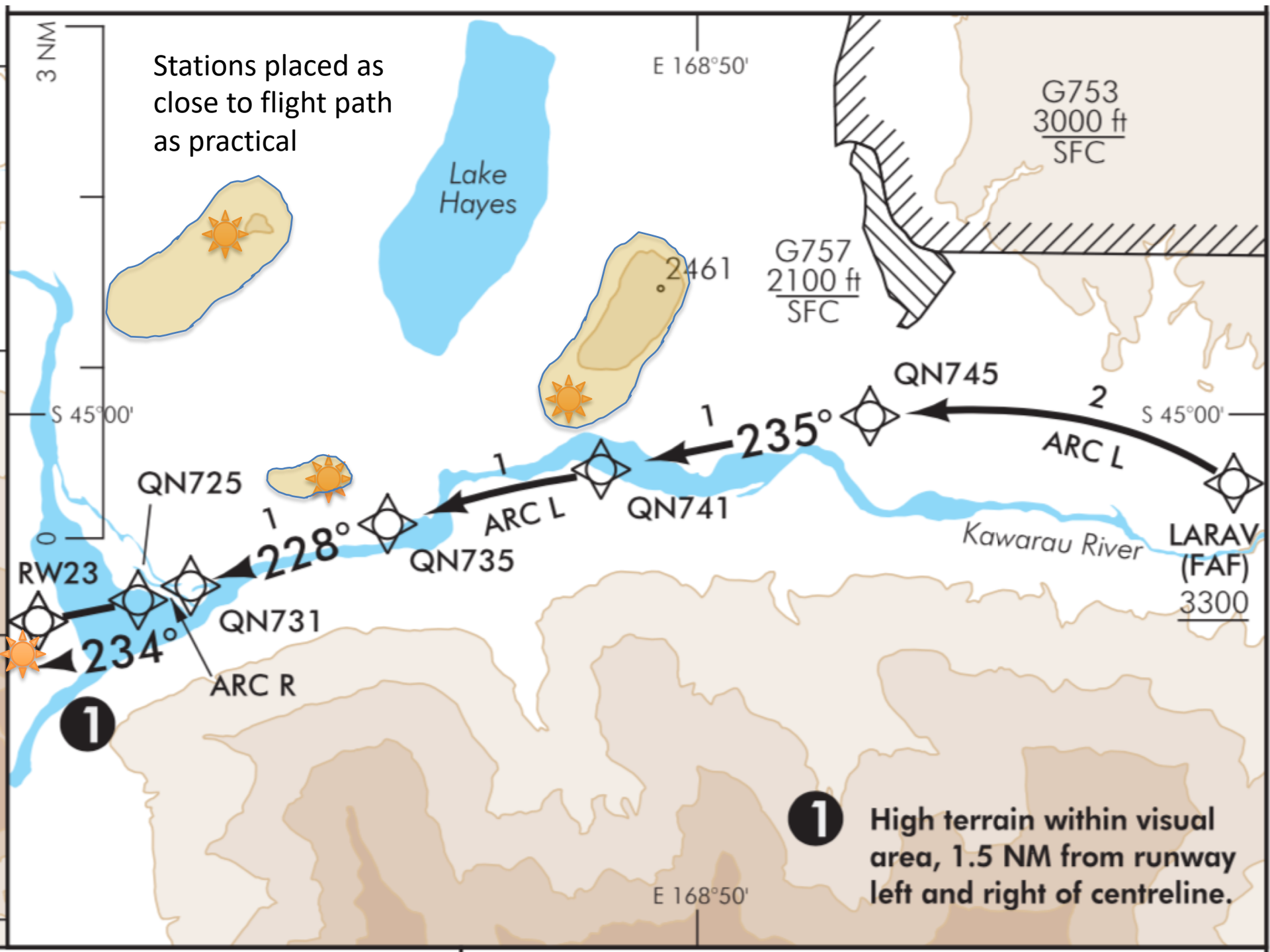
JQ: 10 (incidental use): night time go-arounds and 3 diversions

May 2018: Fully certifiable system commissioned

January 2019: Part 174, Part 100 issued

The challenge





Stations placed as close to flight path as practical

Lake Hayes

G753
3000 ft
SFC

G757
2100 ft
SFC

E 168°50'

2461

S 45°00'

QN725

QN731

QN735

QN741

QN745

LARAV
(FAF)
3300

S 45°00'

RW23

ARC R

ARC L

ARC L

Kawarau River

234°

228°

235°

1

1

High terrain within visual area, 1.5 NM from runway left and right of centreline.

E 168°50'



Stations placed as close to flight path as possible



Web-portal

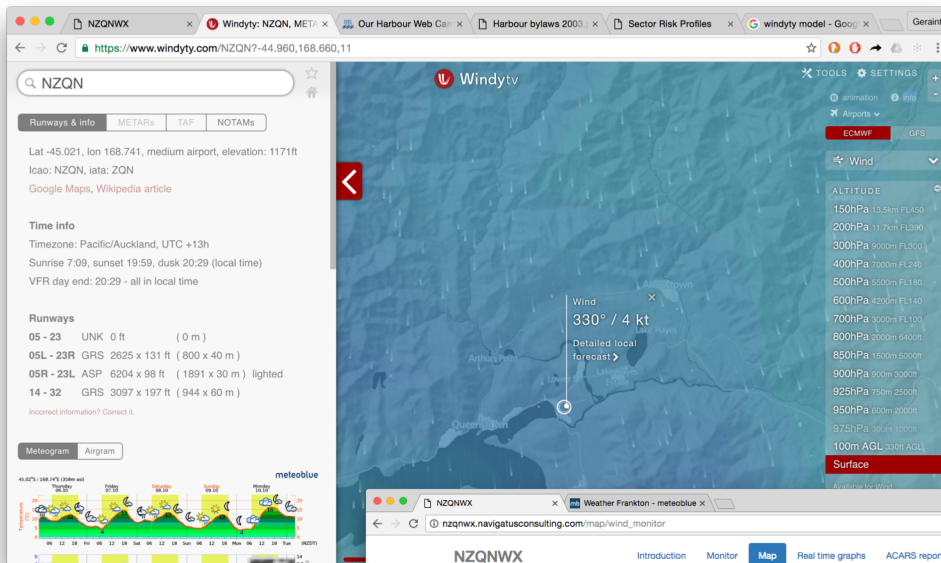
- Hands free (auto-reload) wind ‘monitor’ page (designed to support real-time reporting and decision making).
- ‘Map’ display with historical replay function (to support crew pre-flight briefing, wind regime analysis and pre-approach planning).
- ‘Day of Ops’ graphical display of speed, direction and gust (building over a 24-hour period).
- ‘Historical’ (month on month) analysis (average speed and gust vs time of day, wind roses, default runway).
- Supporting notes (to aid crew training).

Key current challenge

- Airlines wish Airways (ATC) to fully utilise the system.
- However ATC staff have been uncertain of use and have remarked need for formalised Airways procedures.
- In the mean time full value of the system is not being realised.

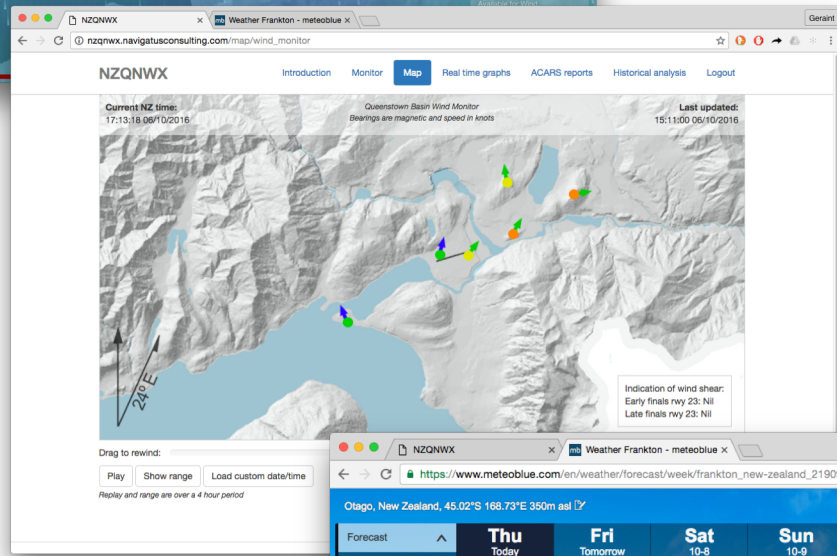
Observation

- GA increasingly using non-certified met sources:
 - on-line weather models such as Windy (Windyty), MetBlue, etc
 - ‘Dick Smith’ style home weather stations



Example of computer model vs actual
(15:15 06 Oct 2016):

Windyty:
330 (T)
4 knots



Actual:
185 (T)
12 knots
15 Gust



Meteoblue:
WSW (T)
17 knots
19 Gust

Management

- Noted that given fully automated system with in-built “self-test-and-protect” system functions, SMS activity can be disproportionate to time managing system.
- So currently:
 - Clarifying ‘production vs protection’ role split
 - Seeking most insightful reporting of system safety and management performance
 - Clarifying optimum safety KPIs

NAVIGATUS

AERO



Auckland: +64 9 377 4132
Wellington: +64 4 282 1359
Queenstown: +64 9 282 4496

Geraint Bermingham: +64 21 88 44 25
Stephen Hunt: +64 27 839 5345