Questions for Weather Forecaster for DCA15MA019 Accident

1. Please state your name:

Scott Wiley

2. What is your wx forecasting experience?

Weather observer for 5 years
Flight dispatch at Braniff International Airlines hired with intent to be director of meteorology, American Trans Air, Mid-Pacific Airlines, 7 years
Intern at NWS Longview, TX 1 ½ years
Intern at NWS Fort Worth, TX 5 years
Journeymen forecaster at NWS Lubbock, TX 1 year
CWSU Journeyman forecaster at ZLA 2 years
Pacific Coast Forecasting Company, 3 years
NASA Armstrong Flight Research Center Aerospace Meteorologist, last 8 years with flight test support with Jacobs Technology

   a. How many years total have you been forecasting? For your current company?

25 years, 8 years as an Aerospace Meteorologist with NASA Armstrong Flight Research Center, contactor for Jacobs Technologies

3. Where did you receive your weather training?

Purdue B.S. atmosphere science
Aviation Technology and Business minor
Licensed: Commercial pilot:Glider/ASEL, Instrument Rated, Advanced Ground Instructor, Flight Instructor Glider, Flight Dispatcher, FAA aviation Safety Councilor, FAA Safety Team (FAAST) Representative

4. What shift were you working?

On accident day at 0100 got ready
0230 left to meet folks after reviewing some weather information
0400 Mojave, CA met folks to begin preparation for day and forecasting for flight test
Offered to stay over until testing was done for that day

   a. What is your normal shift cycle (do you normally work nights)?

Normally 8am to 5pm job (Rarely, a few times a month on average)

5. What day of the shift cycle were you on?

Only day had to report early was the flight test day
Did some off hours work leading up to flight test day with:
Wx outlook Wednesday evening around 1800
Wx forecast Thursday around 0700 and 1900

6. How busy was your workload on the day in question? Was the timeframe for you to make forecast adequate?

The workload was normal for flight test forecasting and weather support. The original briefing was for an earlier take off, flight, and landing schedule with an outlook for forecast winds to pick up around 1000 am…well past the original flight schedule. As the schedule slipped to a potential landing near or after 10am offered to stick around and give the flight test managers weather support to give them an exact start of out of limit crosswinds.

Routinely updating metars, asos/awos every 15 min to on the hour, looking at asos at Palmdale, Fox Field, Sandberg, Edwards, Tehachapi… using dial in calling phone numbers for the ASOSs to see when winds would pickup as stations at different heights would predict when wind would get stronger at lower altitudes (morning inversion break down).

7. Please describe your normal routine for forecasting for missions.

Look at satellite pictures to start with, review of WV and IR imagery to locate lows and fronts
Looking at NAM/RAP/GFS to determine which was best (determine model of choice)
Looks at soundings, used FSL website to look at forecast soundings
Look for nocturnal boundary winds to drop down in height
Look at metars around the valley to determine where inversion is and when winds will pick up
NWS los angeles webpage for pressure gradient on web site
Winds alofts from AWC and FSL and put that into the briefing package and make sure and mention if any wind shears were present

8. To the best of your recollection can you please describe the weather or the expected weather conditions around Mojave, CA, during the accident time?

Area was on back side of tropical system (weak mountain waves on backside typically, very light rotor and wave activity)

Stable air in place
Winds undirectional
230 to 270 wind directions
Wind increase pretty easily upwards
Model soundings had been going very light with winds until day of the accident when they picked up a little bit
Winds at mountaintops and aloft conducive for weak wave in the Owens valley.
Forecast was for a few clouds (lenticulars-indicater of mountain wave's presence) which were visible far to the north near sunrise. The wind direction was unfavorable for Tehachapi's and White's mountain ranges to produce mountain waves (direction not perpendicular to orientation of the southern mountains).
Very gradual wind shift…conducive for weak wave (given direction wave would be north of area), wind blowing along the ridge and not perpendicular to ridges
Wind direction from 260 to 270 and significantly stronger winds to 40 knots (10,000 feet msl) needed for strong waves with 70-150 knots from 18,000-30,000 feet.

With more than 150 degrees of wind shear with height, mountain wave environment destroys the wave pretty quickly
When winds aloft reach 150-250 knots, the speed shear tends to break-up mountain waves…still turbulent but not as severe turbulence as with a breaking wave or rotor turbulence.
Winds would have to be substantially stronger and wind speeds would have to be more or less the same speed aloft for either strong wave conditions to be present or breaking waves, both which can produce severe turbulence and/or windshear conditions.
No PIREPs reported any turbulence in the flight test area.

9. Based on your experience was there anything unusual about the weather conditions?

Nothing unusually that day…other than surface winds picking around 1000 in the morning and approaching the cross wind limitations.

10. What weather forecasting tools did you use to monitor, make, or update the forecast?

Calling phone into awos/asos
WFO at LA has raws sites that updated fairly regularly with current data
Spaceship company setup nice computer so internet access was very fast
Went outside, as former wx observer, to look for any updates that would be need from the sky
Vertical extent of owens valley lenticulars minimal that day

11. Are there specific weather criteria for go/no-go decisions? If so do you know them or it is someone's else responsibility?

Was just there to provide weather information
Believe some of the criteria are 5 knot cross wind for runway 30
Company has a nice setup with instantaneous updates for runway wind (matlab program)

Someone else is in charge of the go/no-go decisions for weather, etc…but believe go/no-go decisions are in line with what is done at the Armstrong facility

12. Did you prepare the weather forecast for the day of the accident? Does the company use anything/anyone else for weather forecast or data too?

Yes. Provided an in-person weather briefing at the 5:00 crew brief utilizing the PowerPoint slides the NTSB has and he updated mission managers twice in the control room during the morning after the schedule had slipped. The schedule slips were placing the Spaceship2 landing very close to the time when winds were forecast to increase.

The Spaceship Company had formerly used another forecaster, but that forecaster was on annual leave. The forecaster the day of the accident was covering for the forecaster on annual leave. The forecaster on annual leave was an Embry-riddle university graduate, a licensed private pilot and an Armstrong Flight Research Center meteorologist with 7 years of forecasting experience.

13. Is there anything else you want to add?

Been in flight test for a while, and this support crew was the best that they get, very impressed with them and how they work through the briefings. Honored to be in the room. Very profession, family outfit, doing the best they could, tools they have were impressive. Family atmosphere…. All blaming themselves for what happened.

Additional notes:

Did lots of weather studies when in Texas at the NWS to keep up with what was going with the weather
Is a FAA safety team representative
Does weather briefings out in southern CA to local FSDOs

Been in the southern CA area for 15 years, very familiar with wave pattern
Reviewed the sierra wave project data
Does the Comet modules on mountain wave, through website stay current with anything new
Stays current in space weather as well and includes that in flight testing forecast