

Armchair Firefighting: Incident Meteorology and the Future of the Forecast Process

Matt Jeglum

**National Weather Service, Western Region Headquarters
Science and Technology Infusion Division**

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What is an Incident Meteorologist?

IMETs are specially trained meteorologists that deploy to all-hazards incidents and provide on-site meteorological support.

All hazards usually means wildfires, but also:

- Hurricane recovery operations
- Space Shuttle Columbia recovery
- Ship groundings
- *Deepwater Horizon* Spill

IMETs are typically:

- Deployed for 14 days,
- Working 14-16 hrs per day.
- Up at 0445, in bed at 2200.
- Sleep, eat, forecast, repeat.

The most unique aspect of the IMET is the level of contact and tailored information they are providing to the user. This model is the future!

Technology has come a long way for the Incident Meteorologist



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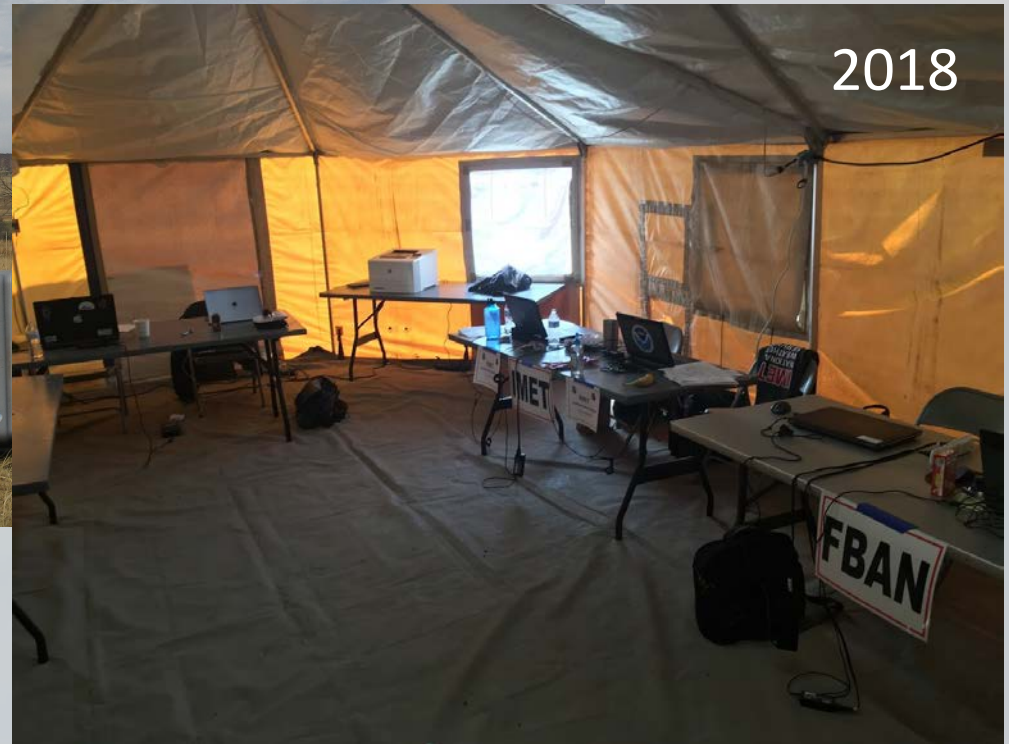


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Pros

- Instant feedback on the quality of your forecast.
- Providing a highly valuable public service.
- Second-to-none complex terrain forecast challenges.
- Beautiful places.
- Helicopter flights.
- Camaraderie.

Cons

- Instant feedback on the quality of your forecast.
- Sleeping in a tent in a cold pool in Wyoming in late September.
- Sleeping in a tent in southern Arizona in June.
- Food meant to sustain people burning 4000 cal/day.
- Porta potties.
- Camp crud. Which is now Camp COVID.
- Midnight wake-ups for thunderstorms threatening crews.

Forecasts are no longer right or wrong, but useful or useless.

Correct forecasts are determined by a skill score. Useful ones are determined by decision-maker action.

Better to be a statistician than a meteorologist beyond Day 1.

“..the National Research Council and the American Meteorological Society conclude that there are compelling reasons for the U.S. weather, water, and climate enterprise to consider uncertainty as an integral and essential component of all hydrometeorological forecasts.” Hirschberg et al. (2011, BAMS)

The 4 steps to get there:

- 1. Production of high quality post-processed ensemble data.**
 - This includes the ensemble and its reforecasts/reanalyses, the post-processing techniques, and gridded mesoscale analyses.
- 2. Tools to visualize and interpret ensemble output.**
 - Ideally these are cloud based and include GIS capabilities.
- 3. Forecasters fluent in interpreting and communicating ensemble output.**
 - University and OTJ training are in desperate need.
- 4. Public and partners with the ability to apply probabilistic information to decision making.**
 - Social science shows that the baseline understanding is there.