

# The COMET Program

*Lee-ann Simpson & Frank  
Brody  
The COMET Program*

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# Brief Overview

1. COMET's aviation program
2. Meted courses and lessons
3. Updated DLAC course
4. Looking ahead

# Aviation at COMET

1. “West Coast Fog” was published in September 2000
2. 73 aviation-focussed lessons published (excluding translated material)
3. Respond to requests for training material
  - a. Program manager
  - b. Project leads
  - c. Instructional designers
  - d. Media development group
  - e. Subject matter experts

[www.meted.ucar.edu](http://www.meted.ucar.edu)

The screenshot shows a web interface with a sidebar on the left containing a navigation menu with categories like 'All Topics Areas', 'Aviation Weather', 'Climate', 'Convective Weather', 'Emergency Management', 'Environment and Society', 'Fire Weather', 'Flight and Low Visibility', 'General', 'Hydrology/Frosting', 'Mesoscale Meteorology', 'Mesonum Meteorology', 'Numerical Modeling (NWP)', 'Observations/Remote Sensing', and 'Other'. The main content area displays a grid of six lesson cards. The top row includes 'Prévision Immédiate des MCS', 'Effectively Communicating Aviation Forecasts', and 'Aviation Hazards: Low-level Wind Shear & Low-level Turbulence'. The bottom row includes 'TAF Essentials: Customers and Decisions', 'Aviation Hazards: Low-Ceilings and Reduced', and 'TAF Essentials: Encoding and Standards'. Each card features a thumbnail image, a title, and a star rating.

The screenshot shows a web interface similar to the previous one, but with a different selection of lesson cards. The top row includes 'Cursos virtuales: curso sobre ciencia, impacto y pronóstico', 'Distance Learning Aviation Course 1 (DLAC) 1, 2nd Edition: A Guide to Aviation Forecasting in Support of the National Airspace System', and 'Distance Learning Aviation Course 2 (DLAC) 2, 2nd Edition: Producing Customer-focused TAFs'. The bottom row includes 'Resumo de meteorologia aeronáutica', 'Reserve Aerographer's Mate School - Mod 8', and 'Reserve Aerographer's Mate School - Mod 9'. The sidebar navigation menu is identical to the previous screenshot.



# What is Available on Meted?

- 10 Aviation lesson published online since 2023 (excluding translated lessons)
- 2 Distance Learning Aviation **Course** (DLAC) Updates
  - DLAC 1: A Guide To Aviation Forecasting in Support of the National Airspace System
    - Updates started in 2020
    - 2 new TAF lessons
  - DLAC 2: Producing Customer-Focused TAFs
    - Older course

Distance Learning  
Aviation Course

**DLAC 1**

2nd Edition

Distance Learning  
Aviation Course

**DLAC 2**

2nd Edition

# DLAC 1: A Guide To Aviation Forecasting in Support of the National Airspace System

## 5 Foundation Lessons

## 6 Weather Hazard Lessons

**The Structure of the NWS Aviation Program**



Moritz Mentges

**TAF Essentials: Customers and Decisions**



Bill Abbott

**Meteorological Observations for Aviation Forecasting**



Photo by Vadim Sádovski on Unsplash

**Meteorological Analysis and Forecast Tools for Aviation**



rauschenberger

**TAF Essentials: Encoding and Standards**



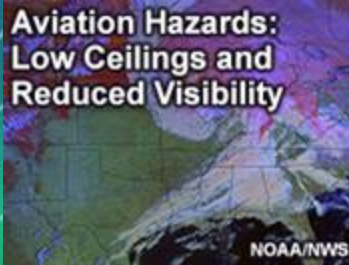
hpgruesen on Pixnio

**Aviation Hazards: Thunderstorms**



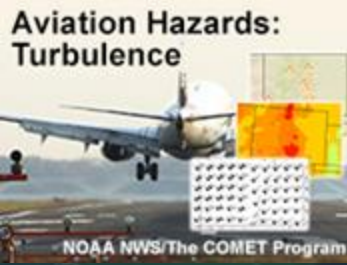
JByers Pixabay

**Aviation Hazards: Low Ceilings and Reduced Visibility**



NOAA/NWS

**Aviation Hazards: Turbulence**



NOAA NWS/The COMET Program

**Aviation Hazards: Icing**



Famartin

**Aviation Hazards: Volcanic Ash**



Creative Commons Adisidis

**Aviation Hazards: Low-level Wind Shear & Low-level Turbulence**



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## What is your current experience with the DLAC 1 Updated lessons

This is the first time I have heard about the DLAC courses

0%

I have heard about the DLAC course but I have never taken any of the lessons

0%

I have enrolled in the course and taken a few of the lessons

0%



# DLAC 1: A Guide To Aviation Forecasting in Support of the National Airspace System

1. Primary Audience = Aviation forecasters
  - a. NWS Aviation Meteorologist Training and Competencies Instruction Directive (NWSI 10-185) mandatory training
2. Secondary Audience = Aviation operations, weather-aware persons, undergraduate and graduate students in meteorology or atmospheric science
3. 12 -15 hours to complete all 11 lessons
4. “Foundation” lessons are prerequisite knowledge for the “Hazard” lessons



- Broad understanding of the NWS aviation program structure and functions
- Focus on roles and responsibilities of operational units providing aviation forecasts and decision support.

The methodology used is that of a Jeopardy-style game

[https://www.meted.ucar.edu/education\\_training/lessons/10067](https://www.meted.ucar.edu/education_training/lessons/10067)



- Provides foundational knowledge about a select list of tools and observations
- Information about how tools can best be used within the aviation space.
- Topics covered include: METARs, PIREPs, satellite imagery, Multi-Radar Multi-Sensor (MRMS) system, and the Offshore Precipitation Capability.

[https://www.meted.ucar.edu/education\\_training/lessons/10043](https://www.meted.ucar.edu/education_training/lessons/10043)



## TAF Essentials: Customers and Decisions



Bill Abbott

## Meteorological Analysis and Forecast Tools for Aviation



rauschenberger

## TAF Essentials: Encoding and Standards



hpgruesen on Pixnio

- TAFs are a critical product in decision making and flight planning for all aircraft movement and safety.
- All TAFs must be prepared, issued and distributed according to the requirements of the FAA and ICAO

[https://www.meted.ucar.edu/education\\_training/lessons/10114](https://www.meted.ucar.edu/education_training/lessons/10114)

- Provides foundational knowledge about a select list of analysis and forecast tools
- Information about how tools can best be used within the aviation space.

[https://www.meted.ucar.edu/education\\_training/lessons/10164](https://www.meted.ucar.edu/education_training/lessons/10164)

- Introduces aviation forecasters to how to interpret, encode and issue Terminal Aerodrome Forecasts (TAFs)

[https://www.meted.ucar.edu/education\\_training/lessons/10238](https://www.meted.ucar.edu/education_training/lessons/10238)

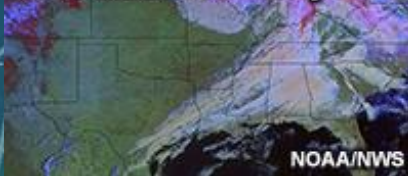
# DLAC 1: Weather Hazards

## Aviation Hazards: Thunderstorms



[https://www.meted.ucar.edu/education\\_training/lessons/10180](https://www.meted.ucar.edu/education_training/lessons/10180)

## Aviation Hazards: Low Ceilings and Reduced Visibility



[https://www.meted.ucar.edu/education\\_training/lessons/10183](https://www.meted.ucar.edu/education_training/lessons/10183)

## Aviation Hazards: Turbulence



[https://www.meted.ucar.edu/education\\_training/lessons/10181](https://www.meted.ucar.edu/education_training/lessons/10181)

## Aviation Hazards: Icing



[https://www.meted.ucar.edu/education\\_training/lessons/10185](https://www.meted.ucar.edu/education_training/lessons/10185)

## Aviation Hazards: Volcanic Ash



[https://www.meted.ucar.edu/education\\_training/lessons/10182](https://www.meted.ucar.edu/education_training/lessons/10182)

- Assess a real forecast situation
- Apply knowledge of observations and forecast tools to follow the forecast products through the communication chain.



# DLAC 1: Weather Hazards Continued

## Aviation Hazards: Low-level Wind Shear & Low-level Turbulence



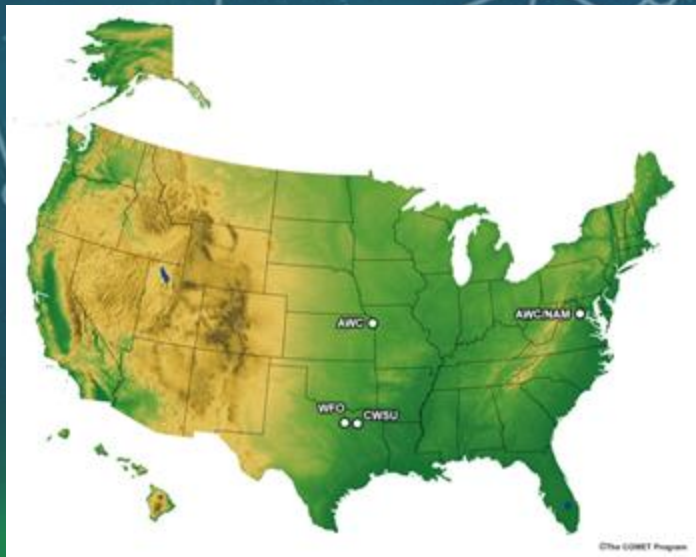
CC Martin Hartland

[https://www.meted.ucar.edu/education\\_training/lessons/10184](https://www.meted.ucar.edu/education_training/lessons/10184)

- Explore the definitions of LLWS and LLT, the differences between their impacts, and analyze, interpret, and forecast both.



# Lesson Demonstration: Hazards



Overview & Challenge

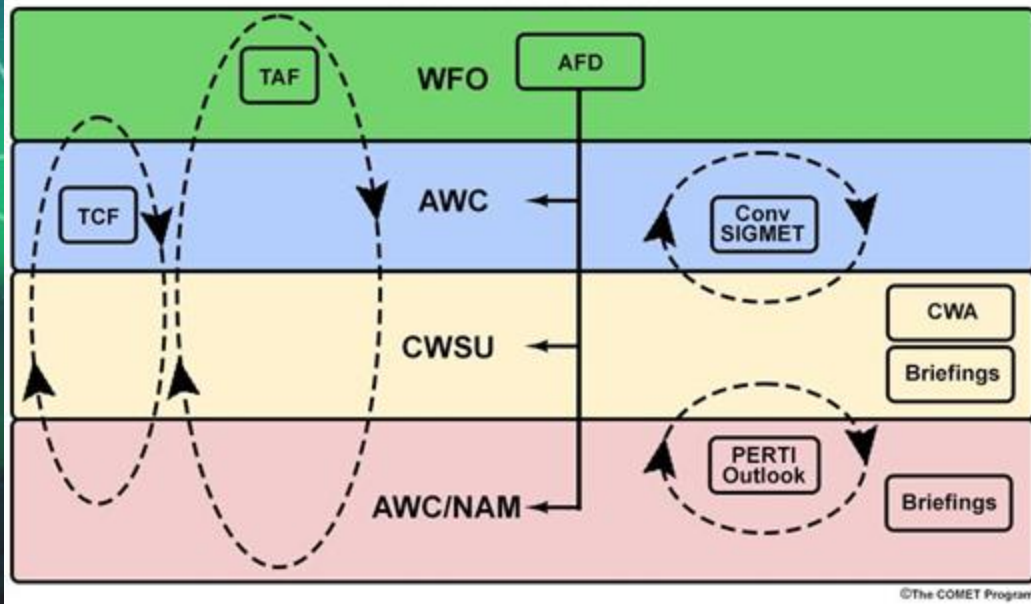
Tools and Processes

Wrap-up

Impacts Exercise

## Impacts Exercise

A Conceptual Diagram of the Collaboration Between NWS Aviation Weather Support Offices for Certain Products and Services



# JEOPARDY GAME

START

[Jeopardy](#)

## Key Takeaways

1. The “TAF Essentials” lessons include how to encode and create a TAF and understanding user needs.
2. Understanding the NAS and FAA operations is essential for aviation forecasters
3. Each of the “Hazards” lessons puts the learner in the role of a forecaster, to simulate operational duties and processes.
4. Key outcomes of all lessons include the importance of **collaboration** and **coordination**.
5. Critical to understand user needs and decision making methods and timelines.
6. Each lesson includes recent case studies, relevant datasets and applicable software visualization to add to the reality of the workplace.



# DLAC 2: Producing Customer-Focused TAFs

## 5 Core Topics



DLAC 2 helps aviation forecasters practice writing clear, concise TAFs that convey relevant hazards to aviation forecast customers.

DLAC 2 lessons focus on issues such as:

- How TAFs impact aviation forecast customers
- The importance of effective communication between the forecaster and customers
- The need for collaboration and coordination with other offices issuing aviation forecasts, and,
- How to create TAFs that maximize the usefulness of NWS forecasts to the customer

## DLAC 2: Producing Customer-Focused TAFs

1. Primary Audience = Aviation forecasters
2. 10 -13 hours to complete all 5 lessons
3. Slightly older lessons but still applicable

DLAC 2 helps aviation forecasters practice writing clear, concise TAFs that convey relevant hazards to aviation forecast customers.

DLAC 2 lessons focus on issues such as:

- How TAFs impact aviation forecast customers
- The importance of effective communication between the forecaster and customers
- The need for collaboration and coordination with other offices issuing aviation forecasts, and,
- How to create TAFs that maximize the usefulness of NWS forecasts to the customer

## Which aviation topics would you like to see addressed in future COMET offerings?

Nobody has responded yet.

Hang tight! Responses are coming in.



# Looking Ahead

1. Continue to provide the aviation weather community with effective, interactive and engaging training solutions
  - a. Online
  - b. Hybrid
  - c. In person
2. Include non-meteorologist aviation users and partners in training solutions

[3-Question Survey](#)



# Contact Us

1. [www.meted.ucar.edu](http://www.meted.ucar.edu) for the online catalogue of lessons
2. Email [lsimpson@ucar.edu](mailto:lsimpson@ucar.edu) or [fcbrody@ucar.edu](mailto:fcbrody@ucar.edu) for ideas and questions