A Contest Meteorologist's Day at the 2012 World Gliding Championship

By Dan Gudgel

For those occupations and avocations that depend on weather conditions, a meteorologist provides very pertinent information. Quality weather forecasts for aviation are essential – and particularly for soaring contests. However, meteorological science still needs to be evaluated and applied with some "art" as a decision-support tool for contests. A soaring contest meteorologist is a key element of the Competition Director's Team in assisting in daily task selection and other auxiliary roles that are crucial in comprehensive support of the contest.

So what does a Contest Meteorologist's day look like? Preparing for a major contest such as WGC-32 in the modern communications era requires forethought to insure proper equipment, computer software, and Internet information sites are current and relevant.

Then preparation must be taken that will enable the meteorology team to communicate effectively with the Contest Manager, Competition Director(s), and the pilots (often through their Team Captains) in regard to weather conditions throughout a typical contest day. Some of this pre-planning work involves direct coordination with the Competition Director, as the needs of the Meteorology Team overlap those of other contest functions, especially in the areas of Internet access and presentation capabilities. An Integrated Technology position such as that occupied by Andrew Dignan at the WGC-32 was invaluable in this regard.

Author Dan Gudgel (right) and Walt Rogers on the job, calling the weather during the 2012 World Gliding Championship in Uvalde, Texas. The duo also provided their services during the 1991 World Gliding Championship.

WGC-32 provides a fine example of tasks that the Meteorology Team had to accomplish in preparing for its support role:

- Determine a deadline for briefing the Task Selection Committee;
- Determine a deadline for documentation on the Written Task Sheet;
- Establish Standard Briefing Formats for both written and verbal presentations;
- Choose a base-line numerical weather model that will be applied as a "first guess" among various models reviewed daily;
- Prepare and install the Radiometrics Profiler (*Refer to the "Radiometrics Profiler" sidebar*) at the contest site;
- Establish, confirm, and "tab," Internet weather links for consistent, fast access;
- Determine archiving procedures for daily post-evaluation;
- Review meteorology products with applications toward improving forecasts for meteorological risks for the contest task area: i.e., Texas Gulf Coast Sea Breeze, nearby Hill Country convection, etc.;
- Work with the National Weather Service (NWS) Southern Region Headquarters to take advantage of any "experimental" products that could provide forecasting assistance; and,
- Coordinate with the NWS Austin/San Antonio Weather Service Office for "local knowledge" coordination calls.

If the meteorologist is diligent, the preparation work might be completed prior to the contest, but some of the aforementioned items invariably are, or must be, postponed till the arrival on-site for a variety of reasons. Like other volunteers serving in the many capacities at a soaring contest, an enthusiastic service mentality is a necessity because long hours are required. While there are probably more efficient Contest Meteorologists who do not have to arise early, I personally feel driven to start my WGC-32 duties early in the day, and that day routinely ends late (*See* "*WGC-32 Meteorologist Itinerary*").

The obvious and primary role of the contest meteorologist is support of the Task Selection Committee, but a secondary – and no less important role – is that of contest site safety. Being in the role as a meteorologist, any weather-related comments, concerns, and questions are typically directed to me. While it does take time from scheduled, routine support duties, concerns from folks in and around the contest underscore the importance and trust placed in the position.

Furthermore, the "weather advisory" aspects of the contest meteorology team in regard to airfield weather safety are often utilized. In the WGC in 1991, a rather robust gust front triggered by convection along the Texas Gulf Coast, the Sea Breeze reached speeds of 60 knots and was noted by Walt and I. A quickly composed "Local Airport Weather Advisory" for the contest site, with notice to secure any gliders, trailers, tents, and equipment on the airfield, was distributed by runners to Team Captains.

Time prior to, and using the initial part of the official WGC-32 Practice Period, allowed the meteorology team to establish a local procedure for notifying Team Captains utilizing phone text-messaging capabilities. As if on cue, the very first official WGC-32 contest day saw the need to utilize the messaging capability, first for a pilot and ground weather-related advisory in regard to a more robust Sea Breeze Front than expected, and another for the threat of gusty winds for the contest airfield itself.

Again, safety messages are a function not necessarily given a lot of attention, but it is a role that must be considered by a meteorologist to do a comprehensive support job.

My selection as Chief Meteorologist for WGC-32 had my team, Technical Support Meteorologist Walt Rogers and myself (See "***WGC-32 Meteorology Team***" photo), in a "return role" following the WGC at Uvalde in 1991. A Contest Meteorologist occupies a position of trust and may be pressed into service in other contest functions, depending on an individual's unique experience and background. With a diverse aviation background, I additionally have served as Chief Tow Pilot, instructor, ride pilot, "Contest Air" for radio communications, and have been asked my "opinion" on proposed Competition Director rulings. It was an honor and a privilege to serve the Contest Manager Linda Murray, Competition Directors Ken Sorenson and John Good, and the Soaring Society of America in such a critical position in the greatest stage in soaring, the "Olympic-like" WGC-32.

WGC-32 Meteorologist's Daily Itinerary

0445CDT – Make first coordination phone call to Flight Service for any Temporary Flight Restrictions on behalf of the contest;

0455CDT – Make coordination call to NWS Austin/San Antonio Office;

0500CDT – Begin retrieving, storing, and reviewing conditions from the day before, including archiving data for the morning briefings;

0600CDT – Begin analyzing current data along with numerical model projections for the current-day forecast;

0700CDT – Begin comparison of model output and observed data;

0730CDT – Upper data received and processed for evaluation. Meteorological discussion with Walt Rogers in regard to the day's soaring weather;

0800CDT – Begin loading presentation for Task Selection Committee and Pilot Briefing;

0815CDT – Task Selection Committee Weather Briefing and subsequent availability for confidence input as the Task Committee works;

0900CDT – Finish presentation for the daily Pilot Meeting;

0945CDT – Last check of the current weather situation and prepare for the Pilot meeting;

1015CDT – Pilot Meeting (Meteorology presentation scheduled for 8 minutes maximum of a target 20-minute meeting);

1110CDT – Entry of the Pilot Meeting Presentation into the WGC Web site;

1145CDT – Continue to monitor the weather for fine-tuning "trigger time" estimates for the "sniffer;"

1200CDT – Provide real-time advice to the Competition Directors prior to and during the launch with an active "Weather Watch" for subsequent progression toward the contest gate openings or even task changes (in the WGC tasks can even be cancelled due to changes in weather situations);

1400CDT – The afternoon and early evening hours are then spent in monitoring the task area weather for Team Captain updates and for the contest site "Weather Watch"; and,

1900CDT – I begin documentation for post-analysis, review, and a preliminary outlook for the next day that extends to 2000CDT.

Radiometrics Profiler

Temperature and humidity profiles of the atmosphere have typically been taken by balloon soundings twice a day, and separated physically by 200-300km. To get a higher time, and better spatial-resolution, a radiometer profiler was deployed at the WGC-32 Uvalde site. Courtesy of Mike Exner at Radiometrics Corporation, radiometric profiling enabled the contest meteorology team to get 3-minute updates on overhead temperature and humidity throughout the day. This nearly continuous sounding information then was used to improve forecast soaring parameters such as cloud base, thermal height, and subtle stability changes. In regard to the MP-3000A Radiometrics Profiler used at WGC-32 graciously donated by Mike, find more information at the Radiometrics Corporation URL at www.radiometrics.com.