



**NOAA Teacher in the Air
Jessica Schwarz
Onboard NOAA Aircraft Gulfstream IV (“Gonzo”)
February 25, 2007**

NOAA Teacher in the Air: Jessica Schwarz
NOAA 49: G-IV jet GONZO
Winter Storms Project
Sunday, February 25, 2007



Me (in the light-blue shirt) with the crew of Gonzo

My day started earlier than usual, as I woke up around 5:00 in the morning anxious and anticipating the day’s adventure flying with Gonzo’s crew. I was picked up at my hotel in downtown Waikiki by Paul Flaherty, Gonzo’s Operations Manager, and Marty Mayeaux, Flight Director to head to the airport terminal where Gonzo has been stationed for the last month and a half. To find Gonzo, we drove to a private portion of the airport where the plane had its own terminal.

Gonzo, the only Gulfstream-IV jet in NOAA’s fleet of airplanes, had just been fueled and was ready for the day’s mission by the time we arrived. Within minutes of arriving,

Marty was ready to give me a safety briefing for the day's flight. He had something in his hands that looked familiar to me: a big orange suit I honestly did not anticipate ever seeing again, let alone putting on again after my Teacher at Sea experience onboard



"Hmm, you really want me to try and get into that thing again?"



I'm back in the Gumby Suit...again!

NOAA ship RAINIER. The big orange suit, or "Gumby" suit, was to my surprise, also onboard the aircraft in case of an emergency evacuation over the ocean. Needless to say, I put the Gumby suit on all over again. I think it was actually harder to put the suit on this time, but nonetheless I got into it, all the while thinking, there is no way I'm going to be able to do this any quicker in an emergency.



Flight Director, Marty Mayeaux, is explaining to me during a pre-flight safety briefing the life vest is to be put on over the Gumby suit in the event of an emergency. Something goes over the Gumby suit?

After getting in and out of the Gumby suit, two graduate students from the University of Hawaii's graduate program in meteorology arrived. They had their Gumby suit initiation as well (they were much better at it than I was ☺), and then Marty took us all onboard Gonzo to familiarize us with safety equipment on the aircraft.

After the safety briefing I noticed that the pilots flying Gonzo for today's mission, Jeff Hagan, Gonzo's Aircraft Commander, and Lieutenant Commander John Longenecker, along with Greg Glover, were walking around the plane doing a pre-flight check to make sure everything looked good and ready to go.

I thought the plane looked brand new! It's actually only 11 years old, having been built in 1996. I couldn't wait to get up in the air.

Everyone boarded the plane and took their seats to prepare for takeoff. I didn't need to securely fasten my carry-on nor was I short on leg room as there was no seat in front of me. Pretty nice! The seatbelt was a bit more complicated than on a typical plane. There were five different belts to be fastened in one circular-shaped buckle. Marty gave me a head set so I could listen to the communication going on between the pilots and the flight tower. I didn't understand a word they were saying, but I knew when I heard "NOAA 49" they were talking to us.

While the pilots were preparing the plane for take-off, Marty explained to me how they receive their track, or mission for the day. Basically, there is a book (Winter Storms Operation Plan) of already planned flight tracks that the aircraft may fly in order to collect data on a winter storm or hurricane. Depending on the type of storm or information the aircraft is needed to obtain, a track will be assigned to the days mission. The National Center for Environmental Prediction (NCEP) will chose the track and then notify the Hurricane Center, which will then pass the information on to Paul Flaherty, the Operations Manager for the Gonzo.



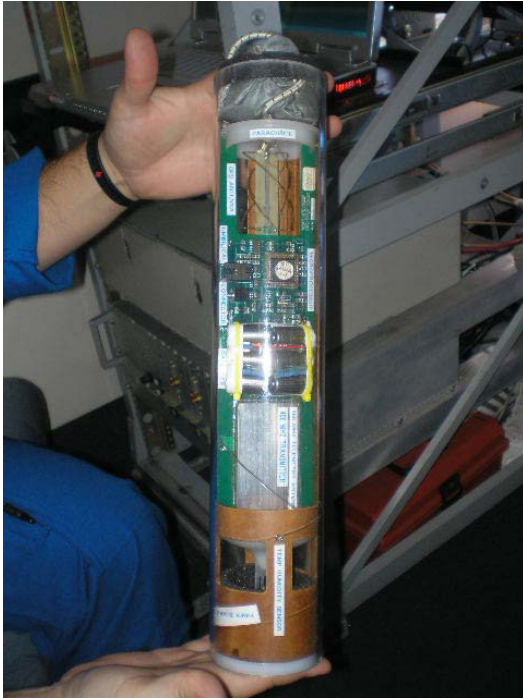
Well buckled and ready for take-off!

Our track for today was track 56. On track 56, there are 18 GPS points the aircraft will be flying through. At each of the 18 GPS points, a dropsonde will be released from the plane (I'll explain what that is later). Before we take off, Marty will input the GPS points (latitude and longitude) into the GPS unit to notify him of when the plane has reached the place to do a drop. It is Marty's job to communicate to the back of the plane, where Electronic Technicians Chuck Rasco and Mark Rogers sit, that they need to prepare and perform the drops.

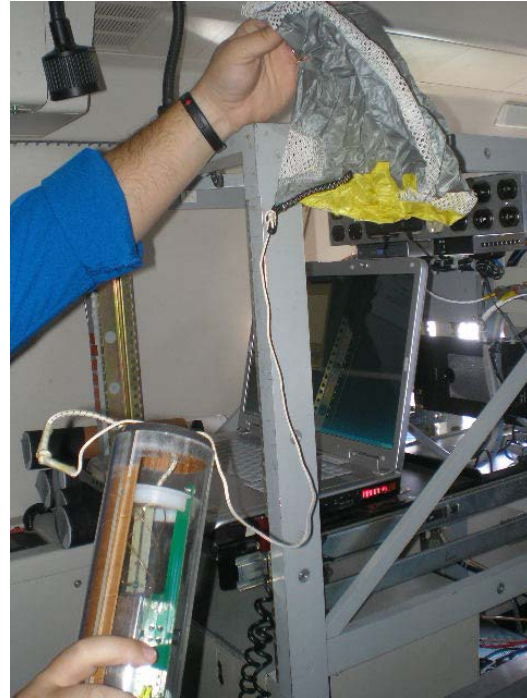
Chuck Rasco was excellent at explaining the mission for the day and let me help prepare a dropsonde and do a drop! Today's mission was to collect information on air temperature, relative humidity, wind speed, and wind direction in order to forecast when and how badly a winter storm moving in from the east will affect the western states (California, Oregon etc.). Gonzo flew in front of the storm and collected data by GPS satellites and receptors in the dropsonde, which sends the data to an AVAPS receiver from a 400 mhz transmitter. The AVAPS receiver is hooked up to a laptop computer where we were able to view the data as it was collected. View a picture of a dropsonde

below. By the way, a dropsonde, costs about \$800. We dropped 16 of them over our seven and a half hour flight.

Keep in mind, a “drop” is exactly that. We drop the dropsondes out of an opening in the plane. The dropsondes, which are attached to a parachute, slowly fall to the ocean collecting data every half a second. The data is then sent to Marty, the Flight Director, who, after performing “quality control” on the data points, sends it directly to NCEP



Electronic Technician Chuck Rasco shows me a model of a dropsonde.



Dropsonde with the attached parachute.

(National Center for Environmental Prediction) which is able to begin using the data for forecasting before we have even landed on the ground. It was incredible to watch the

data being collected while flying on Gonzo, and I'm impressed with how quickly the information is able to be shared and utilized for forecasting!



Electronic Technician, Chuck Rasco, explains to me how to prepare a dropsonde for the next drop.

I had an incredible experience onboard Gonzo, the entire crew was extremely helpful and informative in answering all my questions and welcomed me to participate and experience the research first hand. I'm looking forward to sharing my experiences with my seventh

grade students at West Hawaii Explorations Academy!

Thanks again to NOAA and the Gonzo crew for providing such an incredible experience for teachers!

This is cool, check it out!!!

To view details on the Gonzo aircraft, take a look at the link below!

http://www.aoc.noaa.gov/aircraft_g4.htm

To view information on weather forecasting click on the links below!

<http://www.nws.noaa.gov/>

<http://www.srh.noaa.gov/srh/jetstream/matrix.htm>