The organisation that represents all those involved in Broadcast Meteorology

Edition 22
November 2005

Prs on the mailing list....

The magazine of the Association not only expresses the views of our industry to our own members, but also to others outside the industry. The committee is very keen to spread our message, and so since the last edition, we now send a copy to every Permanent Representative of each country represented at the WMO.

We hope in this way, the PRs will gain a better understanding of what we do and why. This is particularly important in developing nations, and members may find it useful to talk to their PRs about some of the issues raised in UP FRONT.

We also hope that PRs will feel free to contribute articles that may be of use to our membership - it is vital, in particular when there are major weather related disasters that we all understand our roles and responsibilities. This is best done by a continuing relationship of dialogue.

A YEAR OF DISASTERS?

This edition of UP FRONT is dominated by articles on the effects of natural weather disasters this year with the record Atlantic Hurricane Season.

The main focus in the media has been on the USA, and in particular where we witnessed the national horror of what transpired in New Orleans. The USA, which in some ways has championed natural disaster awareness and preparedness - failed to provide a text book response.

Always after a big disaster there is a period of looking at whom to blame. Paul Gross’s article is a factual account of what the ‘season’ brought. But I have also included a couple of articles on a growing criticism of the US National Met Service over a lack of direction and funding. I think there is are lessons for all of us to learn from this.

There will always be a temptation after any disaster to ‘shoot the messenger’ but in this case there does appear to be some flaws that need closer examination.

I hope that members of the IABM will be moved to write some more articles on this subject, in particular, our colleagues in South America where the season was equally devastating, but the media is poor at reporting on events in this area.

John Teather, Editor UP FRONT
A combination of warmer ocean temperatures, favourable upper air currents, and an active hurricane period has generated a second consecutive devastating hurricane season in the U.S. You may recall last autumn, when four hurricanes struck Florida. This year’s season is proving to be just as destructive. As you read this article, keep in mind that our long term average is 10 named storms, 6 hurricanes, and 2 major hurricanes in a season. Thus far, we have had 23 named storms, 13 hurricanes, and 7 major hurricanes, which officially makes 2005 the most active hurricane season ever in the Atlantic.

The first three named storms of the season, Arlene, Bret and Cindy remained tropical storms at landfall. The first hurricane of the season, Dennis, quickly became a major hurricane and then crossed Cuba before crossing the Gulf of Mexico and moving into an environment of very light wind aloft. Katrina exploded into a very powerful and dangerous hurricane that eventually struck the central Gulf Coast just east of the city of New Orleans. The radar image below shows Katrina just before making landfall.

Katrina’s devastation can be divided into two parts: incredible flooding in New Orleans, and incredible wind and storm surge (giant ocean wave) damage just east of the storm in Mississippi. New Orleans is a city that is below sea level. It is bounded by the Mississippi River to the south, and by a very large lake (Lake Pontchartrain) to the north. If you can imagine a soup bowl, New Orleans is at the bottom of the bowl. Strong north winds on Katrina’s west side pushed the lake’s waters southward into levees which were designed to keep the water out of the city. But those levees were designed to protect from up to a Category 3 hurricane – not a stronger Category 4 storm like Katrina (here in the U.S. we rate hurricanes on a scale from 1 to 5, with 5 being the strongest – if you want more information about this scale, see http://www.tpc.ncep.noaa.gov/aboutsshs.shtml). The levees failed, and water from Lake Pontchartrain poured into New Orleans. Pumping stations designed to remove flood waters quickly failed, and entire neighbourhoods quickly had water up to their roof tops. Many people were rescued by helicopter from the tops of their homes. East of Katrina, the strongest wind completely destroyed areas up to 60 miles (90 kilometres) away. Katrina’s storm surge is estimated to be 25-30 feet (7-9 meters). When you imagine a wave of water this large pushing ashore, it is easy to picture how entire streets of buildings were completely swept away. Katrina will easily become the costliest natural disaster ever to strike the United States, and it should be noted that Four of the next five storms (Lee, Maria, Nate and Philippe) all remained harmless out in the Atlantic. Only Hurricane Ophelia affected the U.S. – moving slowly and battering the eastern North Carolina (Continued on page 3)
A record breaking Hurricane season continues to wreak havoc in the Americas

No matter what happens from here on in, the Atlantic hurricane season 2005 will go down as a record breaking year.

At the time of writing this season has seen 23 named storms, more than at any point since record-keeping began in 1851, of which 13 have grown to full fledged hurricanes and have battered coastal sections of the Caribbean, Central America and the southern United States.

Hurricane Wilma, the 12th of the season, was the most intense Category 5 Atlantic hurricane ever recorded as it churned toward western Cuba and Mexico’s Yucatan Peninsula on Oct 19th. Three days later after stalling out close to the popular holiday destination of Cancun, and dropping over 5 feet of rain, she eventually weakened and headed back out across the Gulf towards Florida.

Wilma then raced across the unusually warm water and made landfall as a Category 3 near Naples, Florida early morning Oct 24th. Packed with winds of 200 km/h she roared across the state in just over 7 hours. I had the opportunity of covering this storm for the Canadian Broadcasting Corporation and thought I’d pass along a few photos for our readers.
The death toll from these events this year has been horrendous. Category 4 Hurricane Katrina killed more than 1,200 in the US on August 29th, and Hurricane Stan resulted in the deaths of more than 2,000 in Guatemala.

A climate study released just last month said that with the gradual warming of the waters in the Gulf, means that the southern States, Central America and the Caribbean countries will experience a greater frequency of hurricanes. The study, published by the journal Proceedings of the National Academy of Sciences, warned that global warming has substantially affected the frequency, the tracks and the intensity of Atlantic hurricanes.

Claire Martin
Meteorologist
CBC News: Weather Centre.

Fact and Comment by Steve Forbes

Hurricane "Grasping Government"

The prominence that hurricanes Katrina and Rita have given the National Weather Service will prompt this agency to continue its insidious assault on the country's commercial weather industry. The prime mission of the NWS is to give warning of tornadoes, hurricanes and other weather hazards. The service is also supposed to provide basic forecasts to the public, as well as essential marine and aviation forecasts. The private sector has created a variety of commercial weather products that range from specialized forecasts for weather-sensitive businesses, such as resorts and commodities traders, to those consumer-friendly weather maps seen in newspapers and on television.

But a few years ago the NWS decided to compete head-on with such private outfits as AccuWeather, the Weather Channel and WeatherData. At the end of last year the Commerce Department's National Oceanic & Atmospheric Administration (NOAA), parent of the NWS, formalized this taxpayer-subsidized attack by repealing its policy of noncompetition and nonduplication with the private sector. This is a classic bureaucratic power grab that should be halted. It's the equivalent of the government's Bureau of Labor Statistics deciding to formally compete with Wall Street firms and other private entities that do economic analyses and research, or of the U.S. Postal Service using government money to drive UPS and FedEx out of business.

Senator Rick Santorum (R-Pa.) has proposed legislation that would force the NWS to get back to its basic purpose--producing warnings of tornadoes, tsunamis and the like.

Contrary to NWS propaganda, private-sector weather companies don't simply take the government's data and repackage it. As the head of WeatherData, Mike Smith, puts it, "We create original content because our clients demand it. For instance, we assist Toyota's logistics department in managing their world-famous, just-in-time inventory system around snow and ice storms. We help BNSF Railway prevent accidents by precisely informing them in sufficient time to take precautionary measures where a tornado or flash flood will occur along their right-of-way."

The public gets most of its weather forecasts from commercial providers, including the Weather Channel. Joel Myers, founder of what has become the world's best-
known commercial weather service, AccuWeather, pioneered ready-for-air color weather graphics for TV stations and print-ready weather pages for newspapers.

Several years ago Canada’s government weather service took a similar course and went into direct competition with the private sector. Once the government achieved a monopoly, the price of its raw data went up - just what you’d expect from a monopolist. To its credit, however, the Canadian government recently has reversed itself. The government service has returned to its core mission of providing raw data, such as warning of hurricanes and tornadoes, and leaves the more specialized work for specific industries and companies to the private sector.

It’s not as if the National Weather Service has been a model of efficiency. At least two of its six tsunami-sensing buoys stationed in the Pacific Ocean were out of service on the day the notorious Indian Ocean tsunami erupted last December. The NWS’ Pacific Tsunami Warning Center, in fact, was unmanned at the time. Granted, there was little the NWS could have done to prevent the loss of life caused by that wave, but had a similar tsunami erupted farther west, we would not have been fully prepared either.

Another example of the NWS’ ineffectiveness took place during the 2004 hurricane season. As Senator Santorum ruefully observed, “As Hurricane Charley hit southern Florida, the United States’ most sophisticated research aircraft for collecting data on hurricanes, two P-3 Orions, were nowhere near the eye of the storm. Instead they were studying monsoon effects in Mexico and air pollution in New Hampshire. Had the hurricane-hunter planes studied the path of the storm, NWS could have helped to prevent the upheaval of many Floridians impacted by the uncertainty of the path of a dangerous and deadly hurricane.”

The Santorum bill deserves prompt passage.

Steve Forbes is President and Chief Executive Officer of Forbes and Editor-in-Chief of Forbes magazine.

Since Mr. Forbes assumed his position in 1990, the company has launched a variety of new publications and businesses. They include: Forbes FYI, the irreverent lifestyle supplement; Forbes Global, the magazine’s international publication; and Chinese, Korean, Japanese, Brazilian, Russian, Arabic and Hebrew editions of the magazine. Forbes also publishes the Gilder Technology Report, as well as a number of investment newsletters.

In 1997 Forbes entered the new media arena with the launch of Forbes.com. The site now attracts over seven million unique visitors a month and has become the leading destination site for business decision-makers and investors.
The Saffir-Simpson Hurricane Scale

The Saffir-Simpson Hurricane Scale is a 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly dependent on the slope of the continental shelf and the shape of the coastline, in the landfall region. Note that all winds are using the U.S. 1-minute average.

**Category One Hurricane:**
Winds 74-95 mph (64-82 kt or 119-153 km/hr). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage. Hurricane Lili of 2002 made landfall on the Louisiana coast as a Category One hurricane. Hurricane Gaston of 2004 was a Category One hurricane that made landfall along the central South Carolina coast.

**Category Two Hurricane:**
Winds 96-110 mph (83-95 kt or 154-177 km/hr). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings. Hurricane Frances of 2004 made landfall over the southern end of Hutchinson Island, Florida as a Category Two hurricane. Hurricane Isabel of 2003 made landfall near Drum Inlet on the Outer Banks of North Carolina as a Category 2 hurricane.

**Category Three Hurricane:**
Winds 111-130 mph (96-113 kt or 178-209 km/hr). Storm surge generally 9-12 ft above normal. Some structural damage. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings. Hurricane Frances of 2004 was also a Category Three hurricane that made landfall near the South Carolina coast.

(Continued on page 19)

Blind Eye
Faulty equipment and gaps in research have sent hurricane forecasts off course

by DEBBI CENZIPER of the Miami Herald  dcenziper@herald.com

While hurricanes relentlessly pound America's coastlines, breakdowns in crucial weather-observing equipment are thwarting forecasters at the National Hurricane Center -- the nation's first line of defense against tropical weather -- as they struggle to get a fix on the deadly storms, a Miami Herald investigation found.

Buoys, weather balloons, radars, ground sensors and hurricane hunter planes, all part of a multibillion-dollar weather-tracking system run by the federal government, have failed forecasters during nearly half of the 45 hurricanes that struck land since 1992.

"It's almost like we're forecasting blind," said Pablo Santos, who has pressed for years for more buoys as science officer at the National Weather Service's Miami office, which supports the Hurricane Center during storms. "We've never really had the equipment to do it."

The Hurricane Center's own records reveal forecasters have predicted tracks hundreds of miles off course, anticipated weak storms that grew so powerful, entire communities were leveled, and powerful storms that grew so weak, emergency managers evacuated thousands of people from places barely brushed by strong winds.

Some of the problem forecasts occurred in the hours before landfall, stunning communities from the Caribbean to the Gulf Coast to Florida.

Publicly, forecasters at the Hurricane Center in West Miami-Dade have long blamed the errors on the limitations of science and the unpredictability of weather. Some storms, to be sure, are particularly erratic and difficult to forecast.

But government records obtained by The Herald reveal some of the most crippling problems are man-made, created by the National Weather Service and its parent agency, the National Oceanic and Atmospheric Administration (NOAA). The problems for years have landed at the doorstep of the Hurricane Center, but officials said they kept quiet because they feared for their jobs.

Said former Hurricane Center Director Robert Simpson: "You could cut your own throat."

While the nation focuses on the government's slow response to Hurricane Katrina, The Herald's investigation explored critical lapses long before Katrina and other storms made landfall, with forecasters struggling to predict the path, strength, size and timing of dangerous hurricanes.

In August, as Katrina steamed toward Florida, budget constraints forced the Hurricane Center to limit missions on the government's $43 million Gulfstream jet, even though it's uniquely equipped to track the steering currents that can alter the course of a storm.

The jet was flown only once before the Florida strike, and during that lone mission, critical data collected about the atmosphere never made it to forecasters because of a computer crash. Ultimately, forecasters missed the steering currents that unexpectedly pushed Katrina south into Miami-Dade County, flooding neighborhoods and wrecking hundreds of homes.

"They could have warned South Dade," said hurricane research meteorologist Mike Black, who helped oversee the data on the flights.

HURRICANE CHARLEY SKEWED FORECAST, A SUDDEN SWING

Problems also frustrated forecasters in 2004 before Hurricane Charley, the fiercest storm to strike Florida since Hurricane Andrew 13 years ago.

As Charley sped through the Caribbean

(Continued on page 7)
and aimed for Florida’s West Coast, weather balloon readings were missing from countries all along its path, leaving hundreds of miles of the atmosphere unmonitored. Three coastal weather-observing stations between the Florida Keys and northwest Florida were malfunctioning, denying forecasters clues about ocean temperature and wind speed.

As with Katrina, the jet was grounded in the make-or-break hours before landfall. Worse: The government’s two renowned turboprop planes, rigged with unique equipment to measure wind speeds near the storm’s surface, weren’t flown at all.

In the end, forecasters were off the mark. They originally predicted Charley striking the Tampa area as a Category 2 storm, but a few hours before landfall, forecasters issued a special advisory shifting the track east and upgrading Charley’s strength to a Category 4. The storm battered communities from Punta Gorda to Orlando, killing at least 35 people.

“People weren’t expecting that drastic deviation,” said Black, who acknowledged the forecast could have been improved with more data about steering currents.

Despite the lapses, Hurricane Center forecasters, considered among the nation’s best, have improved track forecasts and predicted some storms with pinpoint accuracy, their warnings likely saving thousands of lives. No one expects equipment gaps have compromised forecasts, including those for Hurricane Andrew in 1992, Erin in 1995 and Mitch in 1998. Said Mayfield: “We need help. . . . We need more observation [equipment]. There’s no question.”

Weather Service officials counter there’s an overlap in coverage, meaning if a radar or buoy fails, another one a few hundred miles away can help. They added that after the 2004 hurricanes, Congress approved a one-time, $20.7 million allotment to fix damaged equipment, add more buoys, upgrade hurricane hunter planes and bolster research.

But forecasters, researchers and other experts say that’s not nearly enough to fix the nation’s hurricane program.

The Herald’s examination of every hurricane that reached land since Andrew, which includes information from audits, e-mails, government databases, maintenance records, accounting reports, congressional testimony, flight logs and the Weather Service’s own forecasters, found:

• The Weather Service, whose sole mission is to warn the public about severe weather, has failed to repair and upgrade weather-observing equipment crucial to hurricane prediction, saddling forecasters and the supercomputers they rely on with inadequate or incomplete information -- or no information at all.

Buoy sensors from Punta Gorda to Bocashapes the forecast could have been down in high winds more than 60 times the state in 2004, the devices shut -- some more than once, records show.

Dropwindsondes, released from hurricane hunter planes to peer inside the depths of storms, fail at least half the time in strong winds -- the very thing they are supposed to measure. With dropwindsondes costing $600 apiece, the government has been losing an estimated $180,000 on bad ones every hurricane season even though the technology to fix the problem has been available for years.

• The Weather Service spent almost $2 billion in the 1990s for high-tech Doppler radars and electronic weather sensors only to discover that they die at the most critical time: during severe weather.

Radar allow forecasters to peer inside an approaching hurricane as early as a day before landfall. But lightning has crippled the radars, including Miami’s last summer -- twice -- at the height of one of the busiest hurricane seasons on record. A plan to protect the radars from strikes was proposed years ago, but the Weather Service hasn’t approved the money.

The weather sensors, which measure wind speed and rainfall and help forecasters plot the path of hurricanes on land, number about 70 in Florida alone. During the four hurricanes that struck the state in 2004, the devices shut down in high winds more than 60 times -- some more than once, records show. The equipment was built without extensive backup power to keep it running during severe weather.

Hurricane Center forecasters noted the problem in their analysis of Hurricane Charley, which disabled 14 weather sensors from Punta Gorda to Boca (Continued on page 8)
It wasn't until Aug. 26 -- about 2 ½ days than once in the early stages of Katrina warning had the jet been flown more to give New Orleans greater advance acknowledgments he may have been able to.

Beyond the Florida forecast, Mayfield said the reluctance to fly the jet in the hours before landfall. "I didn't want to break the bank," Mayfield said. "I've actually had to go out there and reboot the radar myself during storms to make it come back up," said Weather Service meteorologist and union steward Rodney Hinson, in Greer, S.C.

But during the last three hurricane seasons, they've been diverted for weeks at a time to study monsoon effects in Mexico, air quality in New England and squall lines in the Midwest.

NOAA's high-flying Gulfstream jet is just as important because it swiftly relays information to forecasters about weather conditions in the environment around hurricanes. During Hurricane Isabel in 2003, forecasters used the jet to resolve a complex steering flow pattern, and with dead-on precision, predicted Isabel's North Carolina landfall. The Gulfstream is so effective that NOAA scientists say it has improved storm-track prediction in the computer models as much as 25 percent.

But the jet is budgeted to fly only 250 hours this season, not nearly enough to get a continuous read on shifty storms. In fact, as Katrina bore down on Florida on Aug. 25, researchers were riled over the Hurricane Center's decision not to get a continuous read on shifty storms. By then, the jet was flying regularly to measure the conditions around the hurricane.

The years of denials and neglect have their limits.

HIGH IN THE SKY SATELLITES HAVE THEIR LIMITS
The Doppler radars, for example, were initially expected to cost $340 million in 1980. Final tab: $1.4 billion. And there are still problems. At some sites, upgrades have been delayed; at others, breakdowns have come at critical times.

Besides the $20 million allotment from Congress last year, NOAA has pumped money into satellite and aircraft upgrades. But to fully arm the Hurricane Center and forecasting field offices with the equipment and research support needed to overcome blind spots, it would take at least $350 million, according to public records and NOAA officials.

Little has been said publicly, however. In 40 Hurricane Center forecast verification reports reviewed by The Herald, almost nothing has been mentioned about vulnerable radars, the diversion of hurricane hunter planes, dropwindsonde failures, broken buoys, gaps in upper-air observations.

Going public with such problems would have consequences, said former Hurricane Center Director Neil Frank. "Woe be to me if I phoned a senator," said Frank, now a television meteorologist in Houston. "There was all this internal pressure. I wasn't free to call and say, 'We need more money down here.'"

A 2004 agency memo drives the point home: NOAA chief Conrad Lautenbacher told employees not to talk with lawmakers about budget issues without explicit approval, saying the agency must provide "a unified message.

"I could be fired," Mayfield said. "Woe be to me if I phoned a senator." He's chosen his words carefully, at times drawing criticism from some who say he should have been more outspoken.

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The Democratic Party is seeking to give New Orleans greater advance warning had the jet been flown more than once in the early stages of Katrina's approach.

Mayfield, a 33-year NOAA employee, has been told repeatedly to work within the bureaucracy's budget process. "There was all this internal pressure. I wasn't free to call and say, 'We need more money down here.'"

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The uncertainty has also prodded forecasters -- and that's produced errors.

Educated guesses about the whims of storms, not what's underneath. For that, forecasters and the computer models rely on weather observing devices, including buoys, weather balloons and dropwindsondes. When that data is sparse or nonexistent, the models become skewed and forecasts can go awry.

The lack of weather balloon data, forecasters say, contributed to the flawed forecasts in 1998 during what became one of the deadliest hurricanes in history.

The Hurricane Center predicted Hurricane Mitch would move northwest in the Caribbean when steering currents over the western Gulf of Mexico actually pushed it west and then south. Mitch settled over Honduras and Nicaragua for days, washing away entire villages and leaving 9,000 people dead.

Forecasters admit they couldn't detect the steering currents because they received only two weather balloon readings from the Caribbean and Mexico, records show. Much of the equipment had failed. The Weather Service agreed years ago to help support launches in Caribbean countries to protect the region as well as provide early storm warnings for the United States.

"They didn't have a chance with those bad forecasts," said former Hurricane Center Director Jerry Jarrell, who retired in 2000. "It's frustrating. You're seeing people die because what you did was not good."

Faced with blind spots, the Hurricane Center’s meteorologists must make educated guesses about the whims of storms -- and that's produced errors.

The uncertainty has also prodded forecasters to issue hurricane warnings stretching hundreds of miles, which has drawn criticism.

Hurricane Center officials say that every hurricane that has struck land, including Charley in 2004, has fallen within warned areas.

But some independent meteorologists and other scientists say those warnings often cover such a broad area that it's nearly impossible for forecasters to make a mistake.

"They've covered their uncertainties," said Floyd Hauth, a retired Air Force colonel and meteorologist who has studied the Weather Service for Congress.

Researcher Black believes if the equipment was in place -- and the computer models upgraded to process it -- those uncertainties could be reduced. He estimates track forecasts could improve by 20 percent, intensity forecasts by 50 percent.

Equipment upgrades, including new weather balloons, a second Gulfstream jet and more firepower for NOAA's computers, would run about $300 million, according to cost estimates. Annual expenses, including more flight hours on NOAA's hurricane hunter planes, are $45 million more.

Critics say the blame lies with NOAA and Congress. This year, while NOAA's administrative costs grew to $446 million -- $90 million more than last year -- the Weather Service had to cut $37 million from its budget. Put on hold: fixes for equipment and training for forecasters.

Weather Service officials counter that equipment is expensive to buy and maintain.

"Could the Hurricane Center do a better job? Yes. . . . But we're working within a resources available environment," said Weather Service Chief D.L. Johnson.

Private forecasters have a huge stake in the system: They rely on the Weather Service's equipment to produce hurricane forecasts for airliners, citrus growers, oil companies, cruise lines and the shipping industry.

Mike Smith, founder of Kansas-based WeatherData, said if the Weather Service doesn't provide better weather observation equipment to eliminate blind spots, "they can't make accurate hurricane forecasts -- and neither can I."

Former Hurricane Center Director Frank said those kinds of cuts continue to weaken the nation's warning system against hurricanes.

"People are going to start asking, 'What in the world is going on here?' And that's going to turn this thing around," he said.

Today, during one of the deadliest hurricane seasons ever, a new buoy in the Caribbean is adrift and isn't scheduled to be put back in place until November. Radars are vulnerable to lightning. Countries across the Caribbean are grounding weather balloons.

And next summer in the height of hurricane season, one of NOAA's hurricane hunter planes heads to Texas -- to study air pollution.
DISASTER REDUCTION

This 2005 has been the one of the most active weather related natural disasters years. At the time I am writing this view from the chair, there have been 23 tropical storms in the Atlantic. For the first time in my 18 years career, I have seen a “hurricane” created at Madeira and facing west to Spain. All of us have been talking about severe weather in our weather programs. This year, again for the first time in my channel, we created a severe weather strategy after a tornado outbreak with 8 tornadoes in two days near the city of Barcelona, some of them at the Barcelona airport.

We are facing more and more that something is happening to our “normal weather”, and that it is not only to talk about the forecast, but also to create a culture of preparedness in our society.

I believe that IABM and its members can be very helpful to assist society in better facing and recovering from natural disasters.

We find in the document “Facing the Challenge of Natural Disasters in Latin America and the Caribbean”; the IDB action plan, (http://www.iadb.org/sds/doc/env-disasteractionplan.pdf) that 59% of the natural disasters were wind and flood related, and another 9% were from landslides, which probably resulted from weather. So, this means that 60-70% of all disasters there result from weather. It is a wise approach to put a strong focus on weather disasters. There is a lot that can be done to prepare for, and take appropriate precautions from, weather disasters.

We, broadcast meteorologist, play a very important role in the process of natural disasters reduction:

• **First is to forecast the severe weather event.**

• **Second to bring the best information to the public.**

• **Third to let people know what to do in the occasion of a severe weather event.**

• **And forth, built the culture for a fast and better recover from a weather disaster.**

I strongly believe that some of the challenges that IABM is undertaking will help in this change of natural disaster paradigm.

We bring our “new” point of view to some organizations that had very poorly developed the last step of the problem: the information to the public, to the society.

We are working in our accreditation scheme for broadcast meteorologist based in the continuous professional development, and with emphasis placed on the need, during periods of severe weather, to always use and credit the official watches and warnings issued by the National Meteorological Service.

We plan to continue with the organization and the participation in international conferences for broadcast meteorologist, that will spread certain good practices in relation to the information provided to the public concerning emergencies, and speak with one single, unambiguous voice.

I am sure that all of us should be very active in our own countries to bring our experience in the Media, and with the public, to create a disaster preparedness and mitigation culture.

We should use the credibility that weather gives us to better serve our community.

Tomàs Molina
Chief Meteorologist Televisió de Catalunya
Chairman IABM
Minutes of the meeting held on Wednesday 3rd August 2005 at 1730 at the Omni Shoreham Hotel in Washington, DC, USA, during the American Meteorological Society’s 34th Conference on Broadcast Meteorology


1. Apologies for absence, and notification of postal votes.
   Written Apologies were received from Dr John Zillman, Daniel Corbett, Gemma Puig, Ian Miller, Steve Quoa, Albert Bernard, Monica Lopez.

   Adoption of the minutes were proposed by Paul Gross, seconded by Dan Satterfield and approved by the members.

3. Any matters arising.
   There were no matters arising.

   First, I have to say that this has been my first time in a chair of an international association, and it has been a great experience. I have to say that has been, mainly, because of the great committee we all at IABM have.
   After the Barcelona Conference, I think our association has become more mature and has granted even more international respect.
   In this year we have re-activated UP FRONT, thanks to our editor John Teather. It has now more color, more participation among the membership. It is now send to all Permanent Representatives of WMO (the directors of the National Weather Services) this will help to built/strength relationships between NWS and media in every country.

We have read in the last edition of UP FRONT that we have set the basis for the Accreditation Scheme. We will focus in the will for continuous development, run by National Meteorological societies, and with the compromise to credit the watches and warnings issued by the NWS. We continue to make progress on this, and we already have been approached by several Met. Societies from Africa and Europe.

During this year, we have begun to develop more initiatives around the world.

In Europe we participate at the European Meteorological Society meeting in Nice and Claire Martin and myself are members of the organizing committee of the Forum International de la Météo that will take place in October in Toulouse, where many of us will have the chance to meet.

From the EMS event, we co-opted Steve Quao to be part of the IABM committee as an African Representative, that will allow us to be more active in Africa from the inside, to provide training and help them to build capacities.

In Asia, we have got serious approaches from Hong Kong and Japan. I was invited to be member of the jury of the Japan Weather Festival. I have to say that there are a number of things to learn on how the Japanese people present the weather information on TV. There is a formal proposal of cooperation with Meteorological Business Support Center of Japan.

As every year, we were present at the Executive Council of WMO; I have participated in the elaboration of the Technical Note on Socio-economical Impact of Climate information.

Gerald Fleming is the new chair of Public Weather Services program, and John and Bill have been doing some training for meteorologist from developing countries.

As you have seen in last edition of UP FRONT, we have begun with the elaboration of a video gallery of weather presentations from the whole world. Many of you have sent their videos. Keep in mind that if you do so, you will have a copy of the gallery for a cost price.

We are working very actively for the Second World Conference on Broadcast Meteorology to be held in Monterrey (Mexico) in 2007. Thins are going OK in the preparation of this big event. Make a hole in your agenda.

We are not as happier with the financial matters. Gerald has done a great job with the little money we have, but we need more income to fulfill all the activities we are running nowadays. Please, make sure to pay your membership dues.

For the future, we are quite excited. We have the World Conference of Monterrey and the video gallery that allow us to know better what’s happening around the world and know each other, we are in conversation with the World Bank and others to seek for financial help, we want to develop a regular training activity as an association, and we will try to increase our membership.

Big challenge! Our forecast is that we will achieve it!

5. Report of the outgoing Honorary Secretary, Bill Giles.
   The Honorary Secretary reported on the two committee meetings held during the year. He then read the following statement from the African Representative on the committee:

Mr. Chairman,

I must say with all gratitude and sincerity that putting Africa on your Agenda for discussions is a clear manifestation of the bond of fellowship that we share as Meteorologists.

Mr chairman, I feel that, the time has come when the IABM must excel where the world population will have no choice than to listen to us. I hope you will be guided by the shrewdness and intelligence of your mind to formulate pragmatic policies that will go a long way to help the Association. I know the challenge is great as you attempt to deal with the many demands this situation creates, I have no doubt at all that you will be able to do it. We in Ghana recall with pride the strides made by the IABM.

(Continued on page 12)
Formation Of Regional Associations.  
Mr Chairman, you will agree with me that, we have been called to conscientise the minds of the world population about the change in the weather and climate that has devastated many countries.

A case in point is the recent Tsunami that hit the Asian coast and also The Hurricane Denis, which devastated the U.S.A. That is why I find the formation of regional Association relevant.

With regards to the above, we in Africa would like to say with pride and gratitude that ‘Barcelona 2004’ was a nice recipe and a wake-up call for the birth of the Association of Africa Broadcast Meteorologists.

Mr. chairman I wish to also to take this opportunity to present the following proposals for considerations by the executive body:

Name Of The Association.
That the Association will be known and called “The Association of Africa Broadcast Meteorologists”

Membership.
Membership of the Association will be open to all interested meteorologists or journalists who would like to be trained to become One.

Steering Committee.
A 7-member committee has been proposed. This will comprise of both Anglophone and Francophone countries. I have talked to Aziz Diop of Senegal about it. I am however yet to hear from him.

Constitution.
The Association will adopt that of the IABM except where there is the need to alter few sentences to suit our region.

Registration.
Registration of members will start in earnest when the house endorses the formation. We hope to finish that by the end of this year and then I will forward the list to your office.

Activities.
We would attempt to hold the first regional meeting in June next year.

Funding/ Sponsorship.
This will be mainly from the NGO’S and other governmental organizations. The assistance of the mother Associations will be sought from time to time. That’s why I personally hail the suggestion by Tomas to seek Assistance from the World Bank is relevant.

This will encourage full participation in programmes organized by the IABM.

Accreditation Scheme.
On the above subject, Mr. Chairman, I have floated the idea awaiting responses from my colleagues. Sister Lucy from Zambia requested for a direction. She is a new colleague. Mr. Fleming has referred this issue to me. I have addressed her as such. Mr. Chairman, accreditation scheme in Africa is a very big issue which has to be tackled diplomatically because most of the meteorologists in Africa are Civil Servants. Any of such move will quickly be misconstrued. I will have to discuss in detail with them to know what pertains in each country.

Mr. Chairman, it is our expectation that at the end of the deliberations, you will arrive at decisions and policies that will push the Association forward. As I have told you already, I am currently in New York but I can’t come because of financial constraints. We wish you all successful deliberations.

Rev. Steve Nyarkotey Quao.  
(Africa Representative).

(Continued from page 11)

The IABM only survives through the funds raised by subscriptions. Have you paid yours? You can do it on-line through our website at www.iabm.org
It is widely demonstrated that, with a timely and effective weather broadcast, we can save lives, protect properties and additionally create an environmental conscience.

Our region, as the whole planet, is very sensitive to weather and climate variability. But weather broadcasters are in embryonic stage of development (small market, strict control over meteorological data by NMHS’s, limited access to communications and technology). Such status may vary a little bit from country to country.

In Argentina, the first radio weather broadcast begins in 1932. The first television weather forecast was broadcasted in 1952, with a meteorologist showing a weather map drawn with chalk in a blackboard. Little by little, with some “technological improvements” (metal board and magnetic symbols, the printed blurry sepia satellite images, and the firsts electronics graphics), the weather broadcaster becomes part of our daily life.

In the early 1990’s, with the advance of electronic design tools, it was easier to broadcast the weather. Furthermore, it was more attractive. I had the pleasure to create and to lead the first broadcast Branch at the Argentine NMS in 1992: “Special Forecasts Division”, an office created to satisfy different needs for the media and specific users. Less than a year later, the main national TV Stations, most of the national and local newspapers, and a lot of different small, medium and big users had a tailored product in a specific production format. We had a Video Edition equipment, computer aided graphics tools, graphic designers, and a team of more than 60 meteorologists working in shifts. This demonstrates that the needs were settled. ... This shows that all users needed was a reliable provider.

With improvements of computer aided design tools, cheaper PC’s, the Internet’s boom and more accurate NWP, we had more precise forecasts. At the same time, foreign weather providers landed (AccuWeather was one of them). This leads the creation of small regional private weather providers. Thus, we had more weather forecasts and related info in newspapers. The development of weather broadcast on TV was similar... more time was dedicated to the weather at the news. But in several TV stations, the weather broadcast was done by a second class actress, or by a professional commentator. Both transmitted the forecast in a “pretty” way, acting or reading the forecast, but with no scientific or meteorological knowledge.

The top on this matter takes place in 1997, when “The Weather Channel” arrives in the Latin American paid TV system. Soon, “El Canal del Tiempo” becomes a daily referral for millions of viewers (only in Argentina more than 54% homes has paid TV). The most fascinating issue in “El Canal del Tiempo” was that it was done by meteorologists that had excellent communication skills. Unfortunately, TWC LA left the region in 2002, but this presence also left its marks.

At that time, I heard people who said that TWC forecasts were better than NMS forecasts. What people did not know was that TWC forecast was... done by NWS.

That fact demonstrates that the same forecast could be “better” just by improving the way it was communicated. ... And if that communication was done by a meteorologist, much better.

From the above, I believe that some of the deficiencies the region has are:

- No professional training or academic formation, related to broadcast meteorology. Most of weather broadcasters are “self-made broadcasters”
- No links between weather broadcasters at a national or regional level.
- In some cases, the NMS’s could see independent weather broadcaster like rivals, even if this weather broadcaster mentions the source (NWS) and always having the commitment to follow the WMO principal “Single Official Voice”, at times of severe weather.
- No accreditation of a level of achievement in broadcast meteorology and scientific knowledge, like “AMS Seal of Approval”. That type of accreditation grants major hierarchy to
It is time for the IABM to increase their activities in Latin America. Interaction between IABM, NMS’s and Latin American weather broadcasters will contribute to minimize risks and to have a better disaster management (both through improved communication of warnings and special reports to the general audience) and to led a better use of weather and climate information in agriculture, health and an intelligent use of every nation’s natural resources (through advises or tips related to a good environmental attitude).

In this regard, I expect the IABM, through their Latin American Chapter will have to:

- Coordinate the identification of capabilities, resources and needs of the region.
- Lead an academic open Meteorological Broadcasting course, co-sponsored by WMO, NMS’s and Regional Training Meteorological Centers.
- Ensure activities of Continuing Professional Development.
- Promote and coordinate the exchange of information between members.
- Promote the relationship between NMS’s and IABM members, specially in cases when the IABM member does not belong to the NMS.
- Promote a commitment to follow the “Single Official Voice” statement, in case of severe weather.
- Ensure a minimum of activities in Spanish and Portuguese.
- Contribute to the development of new tools in order to provide weather and climate information and derived products.

We have the frame, we have the potential, we are interested. This is the moment to take the first step towards a Latin American community of Broadcast Meteorologists, within the context of the International Association of Broadcast Meteorology.

Mauricio Norman SALDIVAR
Canal 13 Buenos Aires
TN - Todo Noticias Cable News

Argentina’s Weather Proverbs

Below are some of the weather sayings from Argentina, with “no poetic” translation (rhymes only in spanish).

"Viento del este, lluvia como peste“ (literally: “When the wind is from the east, a plague of rain”)

"Cielo roja a la alborada, cuidar que el tiempo se enfada“ (literally: “Red sky in the morning, take care: weather gets angry”)

"Luna anillada o rojiza, que lloverá profetiza“ (Moon ringed or reddish, that will rain prophesies - Folklore says moon with halo means rain)

"Animales perezosos, tiempo tormentoso“ (Lazy animals, stormy weather)
The Bill Giles Report

Historical Weather

The history of the British Isles has been shaped and moulded over the last millennium by great Statesmen, Generals, Air Marshals and Admirals, and in no small part much of their success was due to the weather.

From the Norman invasion by William the Conqueror (which, incidentally was the last successful one when force was used) through the Spanish Armada to the Allied Invasion of the Normandy beaches in 1944 the weather has always played a major part, but no more so than in 1688 when William of Orange and Mary attempted to ascend the throne in London.

William was born in The Hague, Netherlands, in 1650 and on his father's death became the ruler of the Dutch republic.

As usual Europe was in turmoil with Catholic countries aiming to spread their religious beliefs across the whole continent whilst the northern Protestants were equally intent on stopping them. Louis XIV of France, the leading catholic monarch, was planning to take over as much of the crumbling Spanish empire as he could, which included invading the Protestant Netherlands. William and his armies eventually managed to repulse the French thus retaining the independence of their own country and its colonies.

Meanwhile life was not that simple in England, a protestant country over the past 100 years after Henry the eighth had broken from the Pope in Rome, because of his insistence of having one of his many marriages annulled. James the second, a Catholic, was on the throne and was having great difficulty in working with the predominately Protestant parliament, and because of his insistence on appointing his catholic cronies into positions of power, and this came to a head in 1688 when James and Louis XIV of France got together and formed an unholy alliance.

There were many altercations between Parliament and the King, who at that time was still the absolute ruler and in many situations a dictator. Parliament decided enough was enough, and that since there was a definite possibility of James's heir being a Catholic urged the Protestant William to claim the throne. William, by this time, had married an English princess, Mary a protestant, in fact the eldest daughter of James the second.

So the scene was set for yet another invasion of England.

It was a dark November day in 1658 when William and Mary, together with his army set sail from the Netherlands.

Eastern Europe was under the influence of the Scandinavian High pressure giving quite strong easterly winds across northern Europe and down through the English Channel. These strong winds blew the Dutch sailing ships swiftly westwards down the channel, past the Isle of Wight and indeed even past the most westerly islands of the Scillies.

Meanwhile the English fleet, under the orders of the Catholic James (William's father-in-law) had got word of the intended invasion and got fully rigged to attempt to intercept and destroy this fleet before it had time to land its army on English soil. They were, however, moored in the Thames estuary and with a raging easterly wind found it almost impossible to tack their state of the art sailing ships out of the estuary and into the English Channel and thus engage the Dutch fleet.

By this time William and Mary together with their invading army were being pushed further and further out into the Atlantic but, some say, by the grace of God a depression to the south of Iceland was steering its associated weather fronts towards the coast of Ireland, and with those fronts came a change in the wind direction to south and then eventually southwest. His fleet then made its passage back towards mainland England. As the southwesterlies swept further and further up the channel so the English fleet managed to get out of the Thames Estuary and tack their way down the Channel to meet the Dutch. But they were too late and William and Mary landed at Brixham in south Devon.

The local peasant populace, who were God-fearing Protestants, welcomed the royal party with open arms and swelled the ranks of William's army as they marched from the westcountry unopposed towards London.

James realised any resistance to William would be futile and tried to flee, but in a very magnanimous gesture William and Mary decided, in order not to make him a martyr in the Catholic cause, allowed him to leave the country and the two of them ruled the country as joint monarchs until Mary's death from smallpox in 1694.

So, because of the Scandinavian High Pressure establishing itself quite early in the winter season of 1688, the invasion was successful and bloodless, and since then no member of the Catholic faith has been allowed to ascend the throne of Great Britain and Northern Ireland.

Bill Giles O.B.E.

RATHER ODD?
Recently the British Government advertised for a new Chief Executive of the UK Met Office. But the advert did not once use the word meteorology or even allude to it. It was an advert for someone to drive the business.

Ed.
Climate and climate variability have assumed a new importance and demand for more attention both nationally and internationally.

Climate has varied slowly over the past millennia, centuries and decades and will undoubtedly continue to do so in the future. The change of most significance in the past few millennia were those occurring in and around the sub-tropical deserts of the northern hemisphere especially the Sahara.

Many changes in the general circulation of the atmosphere are certainly an important factor. But human activities also assisted the process on the desert margins. Over pasturing or over cultivation have set in motion feedback process that intensified the tendency towards the drier regime.

**DROUGHT**

The chief climatic scourge is drought. Droughts in parts of Africa can be lethal, as certain important crops grow only in a strip of land. The Sahelian drought of 1968 to 1973 and other alternating subsequent years called public attention to the reality and its significance for humanity. From the early 60’s onwards, the Sahelian region suffered a progressive decline in the rainfall which culminated between 68 and 73 and other subsequent years.

In a drought so severe that it starved flocks and herds, killed an unknown number of inhabitants, damaged soil and natural vegetation, especially natural species. The Ghanaian experience in 1973 which degenerated into very wild bushfires and loss of both animal and human lives is a typical example. The effect spread at times into Somalia, Tanzania, Kenya, Northern Nigeria, Namibia and Mali to mention just a few.

The economic and social effects of drought on these African nations have been drastic and give rise to a number of questions. The desertification process associated with the Sahelian drought also poses a serious threat to many other arid and semi-arid countries. Ghana for instance which used to have a rich vegetation cover is fast loosing this rich heritage at a faster rate.

**CLIMATE & FISHERIES**

In view of the importance of fish as an item of diet for most people in Africa, this is a cautionary tale in how fish population respond to climate change. Climate change is are reflected in the rise and fall of fish yields. One example is the variation in herring and sardine catches in the West African coast.

A couple of years ago, catches in the Senegal and Niger rivers fell dramatically while in lake Chad, which shrank to almost a quarter of its 1963 size, the migratory species that precisely made up the bulk of the fishery have almost disappeared.

**SOCIAL IMPACT**

These climatic events of recent years not only droughts and floods, but tropical storms have stimulated much interest and research into their broad societal impact, the basic processes that lead to their formation and the ways in which our vulnerability can be reduced.

**HEALTH**

Changes in climate have either directly or indirectly had a tremendous effect on the population of Africa. The occurrence of flash floods, land slides and storms surge directly cause damage, mortality, erosion and saline intrusion, decrease agricultural quality and productivity.

In Africa, vector-borne diseases are the major cause of illness and death. Water and food-borne diseases also put general health at risk. Heavy flooding from increased precipitation storage normally causes cholera, dysentery and diarrhoea. Humidity and high temperatures also lead to cases of food poisoning, such as atmospheric conditions allow the survival and proliferation of bacteria and flies. Outbreak of insects over the Sahelian region almost each other year is a great bother and threat to productivity.

Incidences of respiratory disorders are caused primarily by dust and polluting gases in the atmosphere.

**CONCLUSION**

I must say that all countries like Africa are vulnerable to climate variation. It would interest you to note that the recent Katrina’s, the Rita’s, Ophelia etc. originated from Africa. For this reason, and in view of the increasing demand for resources by the growing world population that strives for improved living conditions, there is an urgent need for the development of a common global strategy for a greater understanding and a rational use of climate.

Rev. Steve Nyarkotey Quao.
(Africa Representative).
The new WMO Guidelines on Weather Presentation


Behind this rather unwieldy title are gathered together the thoughts and views of no less than ten contributors who are all experienced in different aspects of weather broadcasting. The impetus for the publication came primarily from the desire of WMO to provide guidance material to those National Met Services whose staff broadcast directly to the public on either radio or television. The Guidelines are divided into two sections: the first dealing broadly with television, and the second concentrating on radio.

Section 1 – mostly about Television. The Guidelines open with some thoughts on the nature of the Broadcast Meteorologist. What sort of person should they be? How much training and forecast experience should they have? If they move from the rather closed world of a National Met Service (NMS) to the public glare, through the media, then how will that affect their relationships with their NMS colleagues? What benefits accrue to an NMS (or any other meteorological service provider) when one of their staff becomes “the face of weather”? The Guidelines go on to lay out the structural, editorial and contractual considerations that arise when an NMS develops a relationship with a media organisation. It attempts to describe the expectations that will exist on the media side, and prompts NMS staff to be aware of these expectations and to have effective responses to them. This section emphasises the need for an NMS to have a clearly defined view of its own role and capabilities before entering into discussions with a media organisation with a view to providing a service through them.

Moving on from the business elements, Chapter 4 of the Guidelines deals with the challenge that faces every weather broadcaster, every day, in creating a two-minute weather “story” out of the mass of meteorological information that confronts us. There is advice on how to recognise and filter out the most important, or relevant, weather data. There are some thoughts on how much an average TV viewer can be expected to absorb. The next chapter then goes on to consider the “visualisation” of weather through the bulletin. Television is a visual medium, and our graphics systems offer us a visual toolbox to be employed in illustrating the important points of the weather story. Many people will watch a weather bulletin but will not be able to hear it; in a busy home at tea-time, for example, or in a public concourse where there is a lot of background noise. Do the pictures tell the story adequately, even without the commentary? Chapter 5 offers many simple pointers to achieving good visual structure in your weather broadcast.

Moving on to the spoken word, Chapter 6 deals with the effective use of language in weather bulletins. Many of us come to the small screen from a background in meteorology or forecasting, where we have picked up the phrases of science and the jargon of the job. When broadcasting, we need to re-train ourselves to use simple, clear language to express our thoughts. However we also need to remember that the viewer experiences weather as a sensory phenomenon; they feel cold, or wet, or hot, etc. We should, therefore, use descriptive adjectives that give a sense of this feeling. Most of us need regularly to review and expand our vocabulary; we tend otherwise to continually draw from the same, rather small, pool of words and phrases.

What makes some weather broadcasters “click” with the viewer, while others can work on for years, achieving competence but never quite reaching excellence? Chapter 7 looks at how we can develop our personal skills in weather broadcasting. It takes it to be fundamental that it is the responsibility of the broadcasters themselves to develop, maintain and renew their skills; no-one else will take that responsibility for us. The Chapter offers advice on everything from wardrobe and dealing with problem hair to using your eyes effectively and building up emotional connection with the viewer.

The Guidelines then go on to examine the anatomy of a weather broadcast, dealing with each of the constituents (introduction, present weather, temperature, winds, marine weather, biometeorology etc) in turn and offering some suggestions and ideas as to how each element might be approached. They proceed to tackle the difficult issue of communicating uncertainty in weather information; a new and difficult challenge with the increasing use of ensemble forecast products in the medium-term, and lately even in the short-term.

The first section of the Guidelines concludes with a review of dissemination technology. Weather information is now available on a huge variety of platforms, from internet to mobile phones to PDAs. Without conducting an exhaustive survey of such technologies (which would, after all, become outdated very quickly) the Guidelines attempt to describe the strategy that an NMS or other service provider should adopt in attempting to ser-

(Continued on page 18)
Section 2 – The spoken word, on Radio.

Radio is one of the oldest and most reliable forms of mass communication, yet in the context of weather broadcasting, it is something of the “poor relation” to television. It has obvious strengths in the developing world, where the technology for transmission and reception is far less expensive and far more robust than the corresponding television technology. In the developed world too, however, radio still plays an important role. How many hours of radio do car-bound commuters listen to each week? When weather turns into disaster, as with Hurricane Katrina this summer, radio may be the only reliable communications medium which can continue to operate normally, while simple, battery-powered transistors can enable reception long after the mains electricity has failed.

The section of the Guidelines dealing with radio are intended to stimulate a fresh look at radio broadcasting among NMS’s and other weather service providers, and also to act as a resource in helping to establish and maintain high-quality services. The First Chapter emphasises some of the unique aspects of radio as a medium, examining how well these match the strengths and weaknesses of weather organisations.

Chapter Two tries to distil some of the essence of radio as a medium. It deals with how people receive and retain information aurally, and the overarching importance of the quality of voice in unlocking the attention of the listener. There is a discussion on the importance of identifying and knowing your audience, and a summary of advice on how to structure radio scripts, both for delivery by professional forecasters and others, such as newsreaders.

Chapter Three considers the broadcasting of weather information during “normal” weather conditions; the daily and sometimes humdrum forecast services that represent the greater part of weather information on radio. These services generate the background level of quality which the public come to expect.

Chapter Four examines how weather information should be handled on radio during periods of severe weather. These occasions put great strain on forecast offices and on forecasters themselves, yet the reputation of a weather service provider can be either severely damaged or greatly enhanced at such times. As in all walks of life, planning and preparedness can help to ensure that the challenges of broadcasting during times of severe weather are met and surpassed.

Finally, Chapter Five looks beyond the forecast at weather discussions in the form of interviews. This Chapter deals with how a broadcast meteorologist can be proactive in generating radio coverage for the science of meteorology and for broader issues within meteorology and climatology. Techniques for dealing successfully with interviewers – either face to face or over the telephone - are outlined.

WMO as an organisation provides training courses in weather broadcasting, primarily, but not exclusively, to those in the developing world. To round out the Guidelines, Appendix One defines a template for WMO training courses in weather presentation. This section deals with the practical and even mundane – what size room is adequate, what facilities should be provided – to an attempt to define the competencies and skills that are relevant in weather broadcasting. The Appendix then goes on to give a template for a one-week “basic course” in weather broadcasting, a fuller two-week course, a one-week “refresher course” and a one-week “advanced / train the trainers” course.

While primarily prepared with a view to providing guidance to those in developing countries, the Guidelines encapsulate a substantial amount of knowledge about our business, and which of us does not need the occasional reminder of best practice to keep us at the peak of performance? The Guidelines should also be useful to anyone who needs to train-in new broadcast staff, be they from a meteorological background or otherwise.

The IABM have received a bulk delivery of copies of these Guidelines from WMO and they are being sent out to all members who are currently subscribing to the Association. Make sure the IABM have your subscription for the current year – and your up-to-date address.
The launch of the second Meteosat Second Generation (MSG) satellite, Meteosat 9 / MSG-2 has been delayed by difficulties with the schedule of the Ariane launcher. These were caused by the failure of another satellite during the launch campaign, and pollution problems on the upper stage of the launcher. The launch is now planned for December 20th from Kourou in French Guiana.

Assuming a successful launch and operational deployment of the new satellite, the older Meteosat 7 service will cease on June 14th 2006. All weather broadcasters who use EUMETSAT imagery should ensure that their graphics systems are ingesting the new MSG data well before this date, via the EUMETCast data distribution service, to ensure continuity of images in your broadcasts. You can keep up with the news regarding the launch of the new Meteosat on the newly-redesigned EUMETSAT website, which is at www.eumetsat.int.

FIM 2005

The Forum International de Meteo took place this year from October 14th to 16th, at the “Meteopole”—the fine campus in Toulouse where Meteo France have their national forecast centre.

The organisers – Société Météorologique de France – put considerable effort into assembling an excellent range of presentations from a distinguished list of speakers and contributors. The social side was not neglected, with a visit to the “Maison Midi-Pyrénées” where the excellent food and wine of the region was liberally sampled, to the strains of a lively jazz quartet.

EUMETSAT News

(Continued from page 6)

to small residences and utility buildings with a minor amount of curtain wall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the centre of the hurricane. Flooding near the coast destroys smaller structures with larger structures damaged by battering from floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required. Hurricanes Jeanne and Ivan of 2004 were Category Three hurricanes when they made landfall in Florida and in Alabama, respectively.

Category Four Hurricane:
Winds 131-155 mph (114-135 kt or 210-249 km/hr). Storm surge generally 13-18 ft above normal. More extensive curtain wall failures with some complete roof structure failures on small residences. Shrubbs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the centre of the hurricane. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km). Hurricane Charley of 2004 was a Category Four hurricane made landfall in Charlotte County, Florida with winds of 150 mph. Hurricane Dennis of 2005 struck the island of Cuba as a Category Four hurricane.

Category Five Hurricane:
Winds greater than 155 mph (135 kt or 249 km/hr). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the centre of the hurricane. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required. Only 3 Category Five Hurricanes have made landfall in the United States since records began: The Labour Day Hurricane of 1935, Hurricane Camille (1969), and Hurricane Andrew in August, 1992. The 1935 Labour Day Hurricane struck the Florida Keys with a minimum pressure of 892 mb—the lowest pressure ever observed in the United States. Hurricane Camille struck the Mississippi Gulf Coast causing a 25-foot storm surge, which inundated Pass Christian. Hurricane Andrew of 1992 made landfall over southern Miami-Dade County, Florida causing 26.5 billion dollars in losses—the costliest hurricane on record. In addition, Hurricane Gilbert of 1988 was a Category Five hurricane at peak intensity and is the strongest Atlantic tropical cyclone on record with a minimum pressure of 888 mb.
The newly elected Association Committee

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<td>Stephen Quoa</td>
<td>Yoshikazu Idesako</td>
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These are the current committee members of the Association who were elected at the Annual General Meeting.

The IABM is an organisation that is run by volunteers who give their time freely to advance the profession of Broadcast Meteorology.

IABM WEATHER VIDEO GALLERY

We need to know what’s is happening around the world on the weather TV presentations. If you contribute with your weather program, we will give you access to the whole video gallery for a cost only price, we will only charge the production costs.

Please contact or send your videos to: Imagina Centre Audiovisual, TVC Netmedia, IABM weather video gallery, Carrer Gaspar Fabregas 81 2a. 08950 Esplugues del Llobregat, Spain

To the attention of Carlos Boque, with contact information, specially telephone number and e-mail

Here is the list of what we have at the moment:

- France 2  France
- M6  France
- ZDF  Germany
- Channel 10  Israel
- ETB  Bask country
- KHWB  Houston (USA)
- RTE  Ireland
- TV Russia  Russia
- BBC  United Kingdom
- RAI  Italy
- TV3  Catalonia

We all wait for your videos! Send it to us now!