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## AMERICAN METEOROLOGICAL SOCIETY – SEPTEMBER SCIENCE HIGHLIGHTS

Following are story ideas and tips about upcoming AMS meetings, papers in our peer-reviewed journals, and other happenings in the atmospheric and related sciences community.

**Measuring The Value of Probabilistic Forecasts for Airports** A study featured in the August issue of the American Meteorological Society's *Weather and Forecasting* does just that by introducing financial data into the decision-making process for fuel carriage by aircraft. The authors note that by using specific operating costs for a given flight, an optimal decision probability threshold can be calculated that identifies whether that flight should carry extra fuel, in case of adverse weather conditions and subsequent diversion. Forecasts of these adverse conditions can then be applied to a critical threshold to make a real-time decision regarding the carriage of additional fuel. Eighteen daily flights by American Airlines were examined during a 14-month period, a total of approximately 7500 flights. The study found that by using statistical, probabilistic forecasts rather than categorical forecasts, a significant saving is made in operating costs. For each of the flights investigated in this study, the total cost of using probabilistic forecasts was less than that of using terminal aerodrome forecasts. An average of \$23,000 is saved per flight during this 14-month period. Projecting these figures over all American Airlines flights, a potential annual savings of approximately \$50 million in operating costs would be realized by using probabilistic forecasts of adverse landing weather conditions instead of the traditional TAF. For a copy of the paper contact Stephanie Kenitzer.

**Find Out What Kind of Weather Lewis and Clark Wrote About In Their Journals** Love the weather? Love history? Then the American Meteorological Society has the book for you. The new [Lewis & Clark: Weather and Climate Data from the Expedition Journals](#), edited Vernon Preston, is a collection of weather observations and data from the Lewis and Clark journals as they crossed the country to discover America. The 544-page volume is organized by date and includes descriptions of where the expedition was in

their 4,162-mile journey as they experienced the weather and climate. From a bitterly cold winter in South Dakota at the last mapped outpost in a largely unexplored territory, to an 18-mile portage around roaring falls and a race over the Rockies to beat the fall snow, the Lewis and Clark Expedition of 1803–06 experienced a wide range of weather and climate—and systematically recorded their data as they went.

The book also includes many explanations of their editorial procedures, articles about the importance of this first-of-its-kind meteorological undertaking, and color photographs of their route. Interested in doing a review? Please contact Sarah Jane Shangraw at (617) 227-2426 ext. 265. Review copies are available.

**How Good Are Those Forecasts?** That's a pretty common question for meteorologists around the world. A new AMS statement addresses the current state of the science of weather forecasting and analysis from short-term severe weather events to monthly and seasonal forecasts. A few highlights:

- The 2006 average 48-hour forecast hurricane track error in the Atlantic basin was 111 miles, as compared with 336 miles in 1985.
- 48-hour precipitation forecasts are now as accurate as 24-hour forecasts were a decade ago.
- Winter storm watch lead time for the season ending in 2006 was 17 hours, an increase of 70% since 1999.
- Three-day forecasts of 1 inch or more of precipitation are as accurate as two-day forecasts were in 1998.
- The skill of operational forecasts of U.S. temperature and precipitation for an average of 6–10 days has more than doubled since the 1970s.
- For major cyclonic storm location and intensity, five-day predictions are as skillful as three-day forecasts were in the early 1990s.
- Surface temperature forecasts for the U.S. now show considerable skill on days three through five, with the skill decreasing to more marginal levels by day six.
- Significant room for improvement remains in forecasting high-impact weather such as hurricane intensity and winter storms.
- The current skill in forecasting daily weather conditions beyond eight days is relatively low.
- Products designed to highlight significant trends (e.g., warmer than normal, wetter than normal), such as 6–10 day and 8–14 day temperature and precipitation probability outlooks, often have useful skill.
- Monthly and seasonal forecasts will likely never include day-by-day detail but will predict temporal averages and variability over substantially longer periods.
- The skill of monthly and three-monthly forecasts of average temperature and precipitation approximately doubled between 1995 and 2006.
- While much has been accomplished in improving weather forecasts, there remains much room for improvement.

The complete statement is online at <http://www.ametsoc.org/policy/2007weatheranalysisforecasting.html>

Other AMS statements are also available online at  
[http://www.ametsoc.org/policy/amsstatements\\_inforce.html](http://www.ametsoc.org/policy/amsstatements_inforce.html)

### **Upcoming Meetings**

The **AMS Seventh Conference on Coastal Atmospheric and Oceanic Prediction and Processes and the Seventh Symposium on the Urban Environment** will take place September 10-13, 2007 at The Catamaran Resort Hotel in San Diego. The Conference on Coastal Atmospheric and Oceanic Prediction and Processes will address both basic and applied research issues involving the understanding, analysis, and prediction of the coastal atmosphere and ocean, with a special emphasis on coastal atmosphere–ocean phenomena and processes, approached as a coupled system. The Urban Environment Symposium will examine all subjects dealing with urban atmospheres, including observational, modeling, theoretical, forecasting, and applied studies. Media are invited to attend and should register in advance by contacting Stephanie Kenitzer. For more information see <http://www.ametsoc.org/meet/fainst/20077Coastal7Urban.html>

The **AMS Fire and Forest Meteorology Symposium** will be held 23-25 October 2007 in Bar Harbor, Maine. The conference will focus on impacts of weather and climate on wildfire; operational forecasting (short to long term) of fire weather for wild, prescribed, and fire use fires; model studies and development, including coupled fire-atmosphere models and mesoscale models; use and assessment of climate forecasts in fire management planning; smoke and fire decision support tool development; techniques in smoke management and mitigation; improvements to fire danger and fire behavior systems related to meteorology; and field studies of fire-atmosphere interactions. Media are invited to attend and should register in advance by contacting Stephanie Kenitzer. For more information see <http://www.ametsoc.org/meet/fainst/20077firenortheast.html>

The **AMS 88<sup>th</sup> Annual Meeting** will be held January 20-24 in New Orleans. Many details are already online. See <http://www.ametsoc.org/meet/annual/> and make plans to join us for one of the nation's largest atmospheric science meetings.

With more than 12,000 members, the AMS (<http://www.ametsoc.org>) is the nation's leading professional society for those involved in the atmospheric and related sciences.

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