

To illustrate how to compute the measures of accuracy, the **naïve model** will be used to forecast one period into the future. The naïve model does not attempt to address any of the components of a time series, but it is very quick and easy to use. A naïve forecast for the next time period is the actual value that was observed in the current time period. For example, suppose someone asked you to forecast the high temperature in your city for tomorrow. If you forecast the temperature to be whatever the high temperature is today, your forecast would be a naïve forecast. This technique is often used if a forecast is needed quickly and accuracy is not a major concern.

Consider the Walker Distributors sales of wireless speakers shown in Table 5.1. Suppose that in the past, Walker had forecast sales for each month to be the sales that were actually achieved in



IN ACTION

Hurricane Landfall Location Forecasts and the Mean Absolute Deviation

Scientists at the National Hurricane Center (NHC) of the National Weather Service have the very difficult job of predicting where the eye of a hurricane will hit land. Accurate forecasts are extremely important to coastal businesses and residents who need to prepare for a storm or perhaps even evacuate. They are also important to local government officials, law enforcement agencies, and other emergency responders who will provide help once a storm has passed. Over the years, the NHC has tremendously improved the forecast accuracy (measured by the mean absolute deviation [MAD]) in predicting the actual landfall location for hurricanes that originate in the Atlantic Ocean.

The NHC provides forecasts and periodic updates of where the hurricane eye will hit land. Such landfall location predictions

are recorded when a hurricane is 72 hours, 48 hours, 36 hours, 24 hours, and 12 hours away from actually reaching land. Once the hurricane has come ashore, these forecasts are compared to the actual landfall location, and the error (in miles) is recorded. At the end of the hurricane season, the errors for all the hurricanes in that year are used to calculate the MAD for each type of forecast (12 hours away, 24 hours away, etc.). The graph below shows how the landfall location forecast has improved since 1989. During the early 1990s, the landfall forecast when the hurricane was 48 hours away had an MAD close to 200 miles; in 2009, this number was down to about 75 miles. Clearly, there has been vast improvement in forecast accuracy, and this trend is continuing.

Source: Based on National Hurricane Center, <http://www.nhc.noaa.gov>.

**MAD (in Miles)
of Hurricane Landfall Location
Forecast 1989–2009**

