

## TSRA ANALYSIS FOR KIND

These charts were generated using observations from KIND from January 1995 to December 2005. Observations that contained –TSRA, TSRA or +TSRA were separated for further analysis. The dataset from 1995-1999 did not include any SPECI observations but SPECI's from 2000-2005 were included. Some observations were thrown out because of poor quality such as reporting a thunderstorm with SKC for sky cover. This analysis is only for KIND. Other TAF sites will be analyzed separately as time permits.

The charts contain information on flight categories that occur during thunderstorms at the Indianapolis International Airport.

This analysis was done in order to aid the aviation forecaster while preparing TAFs during convective season.

The percentages represent the total percent of thunderstorm observations that fell within each flight category. For instance, *when* TSRA was reported at KIND, 0.42% of those observations had ceilings that fell within the VLIFR category.

The majority of both ceiling and visibility flight categories fell within the MVFR or VFR category. The data suggests that when forecasting TSRA for KIND, the forecaster should look for MVFR or VFR ceilings. Visibility was a little more evenly spread across the IFR, MVFR and VFR categories.

### Comments below from John K:

To minimize **average** error, (measured by number of flight categories the forecast is off), the best forecast is **MVFR** for both ceilings and vsbys.

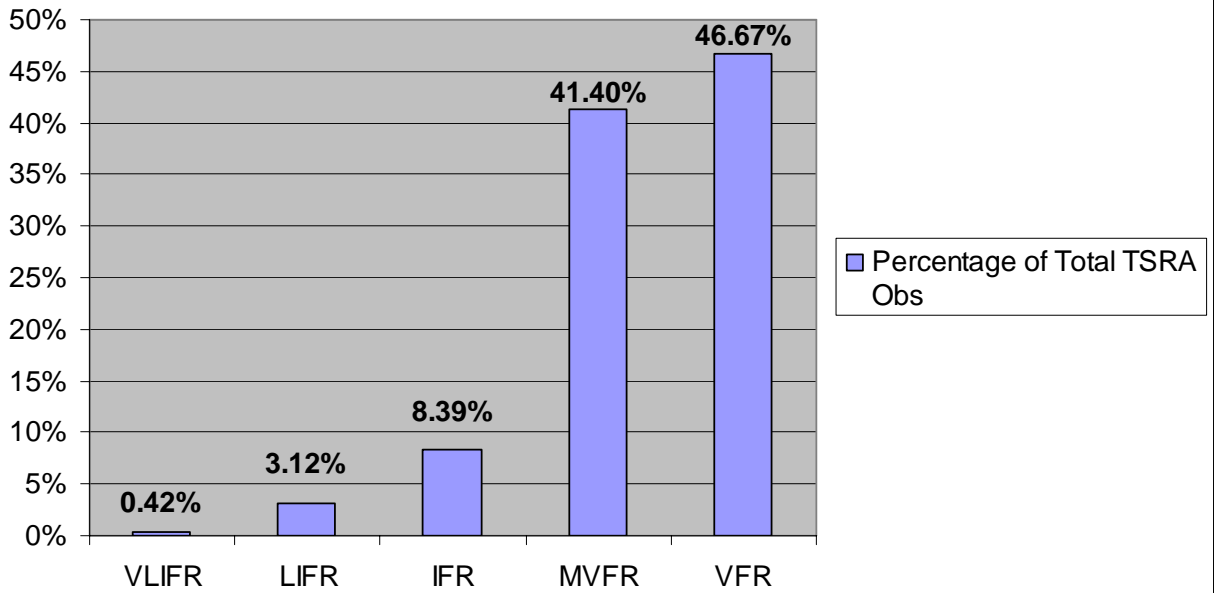
For visibilities, your graph shows it well. Suppose you forecast MVFR during thunderstorms. You will be right sometimes, and rarely wrong by more than a category. IFR forecasts will be totally right more often, but you will get a number of big errors from VFR. In many verification schemes, predicting IFR would do worse over time than forecasting MVFR.

This isn't sleight of hand. It's often more important to minimize big mistakes than to hit exactly. Verification programs often attempt to capture that.

For ceilings, technically MVFR is the also best forecast given a thunderstorm. However, the difference from forecasting VFR is small.

Whether this is significant depends on what aviation customers want. But for top verification, the science says forecast MVFR.

### KIND CIG IN TSRA - FLIGHT CATEGORIES



### KIND VIS IN TSRA - FLIGHT CATEGORIES

