

aerodynamic effects be included in the ice type definitions.

The FAA does not concur. The FAA acknowledges that glaze ice, particularly if horns are present or if the ice is relatively rough, is likely to be more detrimental to flying qualities than rime ice, particularly if the rime is conformal to the airfoil and relatively smooth. However, determination of ice type from the cockpit is challenging and may be extremely difficult. Thus, misidentification of ice type by pilots, particularly when visibility is limited by night or other circumstances, may be a common event. If such misidentification is associated with erroneous expectations as to the aerodynamic effect of the ice, potential hazards to the safety of flight may be increased.

*22. Request To Reword Definition of "Rime Ice"*

One commenter noted inconsistencies in the wording of the definitions of rime and glaze ice, and requested that these inconsistencies be corrected.

The FAA concurs and the wording has been clarified.

*23. Request To Not Include Clear Ice as a Separate Term in List of Definitions*

One commenter requested that clear ice be referenced in the definition of glaze ice, and that it be deleted as separate entry in the list of definitions. The commenter noted that the proposed definitions indicate identical formation mechanisms for glaze ice and clear ice, and provided no reason to differentiate between the two.

The FAA partially concurs. Clear ice is a commonly used term within the aviation community. It is retained, therefore, as a separate entry in the list but the reader is referred to the definition of glaze ice which has the same formation mechanism.

*24. Request To Reword Definition of Mixed Ice*

One commenter requested that the word "characteristics" be added at the end of the first sentence in the definition of mixed ice.

The FAA concurs. Accordingly, the word "characteristics" has been added at the end of the first sentence in the definition of mixed ice.

*25. Request To Either Delete the Term "Known or Observed/Detected Icing" From the List of Definitions or To Combine It With the Term "Known Icing Conditions"*

One commenter requested that the FAA delete the term "Known or Observed/Detected Icing" or else combine it with the term "Known

Icing." The commenter believed that there was not a sufficiently clear distinction between the two terms and that retention of both would cause confusion.

The FAA does not concur, but agrees that there is a possibility of confusion. Therefore, it has replaced the term "Known or Observed/Detected Icing" with "Known or Observed/Detected Ice Accretion" in order to avoid such confusion. The FAA believes that there is a clear distinction between Known Icing Conditions and Known or Observed/Detected Ice Accretion.

*26. Request To Clarify the Meaning of "Approved" in Definition of "Forecast Icing Conditions"*

The FAA concurs that clarification is needed and has revised the definition to state that the weather provider must be FAA-approved.

*27. Request To Revise Definition of "Potential Icing Conditions"*

Two commenters request that the definition of "potential icing conditions" be revised for improved clarity and accuracy and so that it will not be confused with "forecast icing conditions."

The FAA concurs. Potential icing conditions are typically defined by airframe manufacturers relative to temperature and visible moisture that may result in aircraft ice accretion on the ground or in flight. Because the airframe manufacturers are aware of areas on the aircraft, such as the engine induction system, that may accrete ice under certain atmospheric conditions, aircraft manufacturers are considered to be the best source for this information. The potential icing conditions are typically defined in the airplane flight manual or in the airplane operation manual. Forecast icing conditions are predicted by weather providers.

*28. Either Delete the Definition of "Known Icing Conditions" in the List, or Else Align the Definition With That Used in the Relevant NTSB Cases*

The FAA does not concur with this request because it believes that there is no conflict between the revised definition and the NTSB cases. Essentially the proposed definitions of "Known Icing Conditions," "Known Ice," and "Forecast Icing" are in agreement with the recent court cases. In the case of *Irmisch v. McLucas* Civil No. 76-4273 (CA 2, filed May 2, 1977) the court understood Known Icing to mean icing that is known to the pilot. The FAA is not in conflict with the NTSB in its interpretation of forecast icing since forecasted icing conditions

existed at the time of the aircraft icing events in the three cases cited by the commenter.

Forecast icing conditions represent the best estimate by the National Weather Service that icing conditions will be present at a certain time over a certain geographic area. A forecast of icing conditions does not mean that there is an absolute certainty that icing will occur. It does mean, however, that a pilot must take into account forecasted icing conditions during flight planning so that the pilot, whose aircraft may not meet the requirements of the regulations, avoids actual icing. The FAA sees no conflict between the proposed definitions and what is required by the regulations.

*29. Reword Definition of "Freezing Rain (FZRA)" for Improved Clarity, Etc.*

Several commenters requested that the FAA reword the definition of "freezing rain (FZRA)" for improved clarity, accuracy, utility, and consistency with other terms.

The FAA partially concurs. One commenter stated that there is no mention of size distribution in the definition. There ought not to be—the definition applies to individual drops. There is no "freezing rain distribution" and to attempt to define such would add unnecessary complexity to this definition. This applies to freezing drizzle as well.

Another commenter notes the work that is being done to characterize freezing rain and freezing drizzle in terms of drop size, liquid water content, etc. and is concerned with possible conflicts between this definition and what may come of that work. The size definitions included in the proposal are those that appear in the Glossary of Meteorology; these are generally accepted by meteorologists and have been for some time. It is highly unlikely that new definitions of these terms will arise from the characterization work. Rather, the results of the environmental characterization will serve to provide envelopes of possible environmental conditions where freezing rain and freezing drizzle are found, in enough detail to enable engineering specifications for possible compliance to an expanded icing envelope, and avoid conflict with existing terminology.

Another commenter suggests that the freezing rain and freezing drizzle definitions be expanded to include the atmospheric conditions often associated with them. The FAA believes this could be misleading since the conditions a) can overlap for freezing rain and freezing drizzle and b) can be present