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Jayde M. King
kingj14@my.erau.edu

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**ATC Weather Knowledge Skills:
A Contributor to the Aviation Weather Problem**

Jayde King, B.S., Yolanda Ortiz, M.S., Beth Blickensderfer, Ph.D.
Embry-Riddle Aeronautical University

Weather phenomena continues to challenge General Aviation (GA) operations. The majority of weather related incidents that result in fatality occur within the GA community. One causal factor could be the lack of in-depth aviation weather knowledge amongst GA pilots and Air Traffic Controllers (ATC). While extensive research has been conducted into GA pilot's understanding of aviation weather knowledge, little to no research has been conducted to evaluate ATC's knowledge of weather principles and skills. Nor has available research extensively investigated ATC's role within weather related emergencies. The purpose of this paper is to describe and discuss the role of ATC in the GA community within weather related incidents. This paper reviews aviation weather concepts, describes ATC's function during inadvertent meteorological conditions, identifies deficiencies and limitations pilots and ATC confront during meteorological related incidents, and suggests recommendations to mitigate ATC operating limitations. ATC challenges include a possible lack of aviation weather knowledge, insufficient practice on weather emergency scenarios, and a disadvantage in regards to weather equipment and tools. Recommended solutions to these challenges include innovation of weather products and technology and new ATC training protocols to accompany these technological advances.

Keywords: aviation, aviation weather, GA weather-related accidents, ATC weather knowledge, GA limitations, ATC training, GA weather products