

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

2002 Bird Strike Committee-USA/Canada, 4th
Annual Meeting, Sacramento, CA

Bird Strike Committee Proceedings

October 2002

Bird Detection and Radar Wind Profilers

Scott McLaughlin

Applied Technologies, Inc., 1120 Delaware Avenue, Longmont, CO

Follow this and additional works at: <http://digitalcommons.unl.edu/birdstrike2002>



Part of the [Environmental Health and Protection Commons](#)

McLaughlin, Scott, "Bird Detection and Radar Wind Profilers" (2002). *2002 Bird Strike Committee-USA/Canada, 4th Annual Meeting, Sacramento, CA*. 13.

<http://digitalcommons.unl.edu/birdstrike2002/13>

This Article is brought to you for free and open access by the Bird Strike Committee Proceedings at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in 2002 Bird Strike Committee-USA/Canada, 4th Annual Meeting, Sacramento, CA by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Bird Detection and Radar Wind Profilers

Scott McLaughlin, Applied Technologies, Inc., 1120 Delaware Avenue, Longmont, CO 80501 USA

Radar wind profilers (RWPs) are a very sensitive class of operational and research-grade meteorological radars designed specifically to detect clear air turbulence in the atmosphere. These systems have been designed with frequencies ranging from 50 MHz to 3 GHz and antenna sizes from about 1 m to >1 ha. Unlike NEXRAD systems, the antennas do not move or scan but rather are stationary and use phase-shifter arrangements to point the beam. Using the Doppler-shifted backscatter return, winds profiles can be measured from near the ground to as high as 20 km in 5- to 60-minute intervals. RWPs have been used now for over 10 years for operational weather forecasting and atmospheric research, with upwards of a hundred or so operating throughout the USA. From the beginning, it became obvious that birds flying at various altitudes could interfere with the gathering of quality wind data. In particular during bird migration events in the spring and fall, significant amounts of wind data can be lost. Algorithms have been developed to screen out contaminated data, but the contaminated data, potentially useful to ornithologists, is not currently further processed. This paper will present information about various types of clear-air radar wind profilers, how they operate, the data products they produce, current users of RWP data, and the possible use of RWP data in the bird strike community.