

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

2006 Bird Strike Committee USA/Canada, 8th
Annual Meeting, St. Louis, MO

Bird Strike Committee Proceedings

August 2006

REMOTE SENSING OF BIRDS AROUND AIRPORTS – PRESENT EFFORTS IN GERMANY

Wilhelm Ruhe

Bundeswehr Geo Information Office, Traben-Trarbach, Germany

Reinhold Hill

Institute of Avian Research, Helgoland, Germany

Follow this and additional works at: <https://digitalcommons.unl.edu/birdstrike2006>



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

Ruhe, Wilhelm and Hill, Reinhold, "REMOTE SENSING OF BIRDS AROUND AIRPORTS – PRESENT EFFORTS IN GERMANY" (2006). *2006 Bird Strike Committee USA/Canada, 8th Annual Meeting, St. Louis, MO*. 6. <https://digitalcommons.unl.edu/birdstrike2006/6>

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 2006 Bird Strike Committee USA/Canada, 8th Annual Meeting, St. Louis, MO by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

(5) **REMOTE SENSING OF BIRDS AROUND AIRPORTS – PRESENT EFFORTS IN GERMANY**

Wilhelm Ruhe, Bundeswehr Geo Information Office, Biology Section, Mont Royal, D-56841 Traben-Trarbach, Germany; *Reinhold Hill*, Institute of Avian Research – Vogelwarte Helgoland, An der Sapskuhle 511, D-27498 Helgoland, Germany

As birds around airports and military airfields are a potential danger for air traffic, there are ongoing efforts, also in Germany, to monitor birds in conflicting airspaces. Besides other factors the spatial scale very much determines system demands and the resolution of detections. Based on the well known time lapse photography technique, digital video recording of radar screens is still used in long term (e.g. 2 years) bird monitoring studies at German airports. The technical equipment is easily installed and the remote controlled systems are working very reliable. However, data analysis is time consuming and needs a good deal of expert knowledge. Currently the prototype of a new military two-dimensional airport surveillance radar is tested by the German Bundeswehr. Data processing of this primarily air traffic control radar also includes signal analysis for severe weather pattern and bird detection in real time. First results are promising. However, the newly available information on potential bird hazard cause so far unknown problems for air traffic controller. Mobile radar systems based on marine radar technology are relatively cheap and are an option for local bird movement studies and as sensors of real time warning systems at critical local areas. However calibration and validation is a significant problem. New remote controlled military infrared sensors are capable for high resolution and fairly long range (approx. 1 – 2 miles) bird observation. They allow to gather information on birds, even species, around an airfield during phases of flight and at rest throughout the day, limited by the temperature difference to the background. Combined with laser systems they also provide information on flight altitudes and positions. A research project at a German military airfield is presently conducted to test the accuracy of different sensors. Several systems and their setups are presented, their specific capabilities, advantages and limitations are outlined. How these techniques can be utilized to reduce bird strikes around airports will be indicated.