IFALPA
The Global Voice of Pilots

Position

12POS04 22 September 2011

Bird detection techniques

Executive Summary

Bird strikes constitute a major risk for aviation safety, since 1988 they have cost the lives of 229 people. Therefore, IFALPA welcomes the development of bird detection techniques which are aimed at reducing or mitigating the risks of bird strikes. However, IFALPA strongly believes that the capabilities and limitations of these technologies must be fully assessed before implementation at an operational level. Furthermore the Federation believes that at the present "state of the art" while these technologies can be a valuable resource for strategic planning of airport use, they have limited capability in the tactical environment and the information derived from the systems should be advisory only. In addition, as the technology progresses, it is vital that standard definitions and phraseologies are developed to ensure globally harmonised procedures. With these caveats, it is the IFALPA view that takeoff is postponed if a timely, accurate bird warning is received.

Background

Bird strikes constitute a major risk for aviation safety, since 1988 they have cost the lives of 229 people. Therefore, IFALPA welcomes the development of bird detection techniques that are aimed at reducing or mitigating the risks of bird strikes. Ideal bird strike prevention is focused on enabling birds to avoid collisions with flying aircraft, by warning the birds in time and giving them enough time to react properly. Since we can't guarantee birds will be able to avoid aircraft with the current technical status of systems, more knowledge on bird mobility is needed.

Traditional bird strike prevention is aimed at a "bird free airport", assuming that birds on an airport will fly unpredictably. Nevertheless bird strikes remain a significant problem for aviation and a new approach towards bird strike prevention is needed. Next generation bird strike prevention requires additional techniques that assist in acquiring extensive bird movement knowledge. Two different applications of bird detection techniques can be recognised: a strategic one and a real-time tactical application.

Strategic Application

Strategic application of bird detection techniques is used to improve knowledge of local and regional bird movements in the airport vicinity. With this long term bird movement knowledge, trends around airports can be recognised for different purposes: First of all, this knowledge will enhance our understanding of bird behaviour and factors that influence this behaviour, e.g. weather and seasons. With this understanding an effective local bird hazard prevention programme can be developed. Secondly, by identifying where the potential high risk areas are, it can help improve the airport design and use. Based on the information given by these new techniques, an adapted runway assignment or changes in departure or arrival procedures could reduce the risk of bird strikes. The same

information could be used for fundamental airport design in order to significantly reduce the bird strike risk. This shall always have highest priority. Finally, increased knowledge of bird movement behaviour will enhance knowledge on factors outside the airport fence that can influence this behaviour, e.g. crops, vegetation and water management. This gives increased insight in effects of land use management (town and country planning) and enables improved spatial planning.

Real-time Tactical Application

Real-time tactical application is the application of bird detection techniques information during the flight operation itself by wildlife control personnel, air traffic controllers and flight crew, e.g. by postponing the take-off or discontinuing the approach in case of a bird alert in the vicinity of the runway, etc. Tactical application of bird detection techniques will provide wildlife controllers with timely and accurate information on bird flocks at or near the aerodrome. This will increase the controller's efficiency (being in the right spot at the right time, deploying countermeasures more effectively and possibly enabling automatic deployment of such countermeasures).

IFALPA Position on tactical application for ATC and flight crew

While IFALPA fully supports the strategic application of bird detection techniques, The Federation cannot, at the current status of research and assessment, fully support the real-time tactical use of these technologies for use by ATC and flight crew.

Application is very complex and its feasibility is still evolving. Beyond the commercial aspects, two major issues are at stake: flight safety and the legal responsibility of the flight crew and air traffic controllers. Tactical use for ATC and flight crew can be considered after bird detection techniques have proven to meet validity requirements, such as path trajectory, detection of bird size and amount, especially in flocks. IFALPA is of the opinion that any tactical application of bird detection techniques and the resulting measures or warnings shall be advisory only, with the final authority to determine the appropriate action (e.g. conducting specific manoeuvres) rests with the pilot-incommand. As the technology progresses, it is vital that standard definitions and phraseologies are developed to ensure globally harmonised procedures. Nevertheless, it is recommended that take-off is postponed if a timely, accurate bird warning is received.