International Civil Aviation Organization

Sixth Meeting of the Asia/Pacific Wildlife Hazard Management Working Group (AP–WHM/WG/6)

Bangkok, Thailand, 14 to 17 May 2024

Agenda Item 3: Global, Regional and National Guidance/Best Practices on Wildlife Hazard Management

NOCTURNAL BIRD/WILDLIFE HAZARD – AN EMERGING PROBLEM FOR AIRPORTS OPERATIONS

(Presented by India)

SUMMARY

This paper presents the emergence of the problem of nocturnal bird/wildlife hazard during night operations at aerodromes. Bird/Wildlife Hazard management has limited scope during night with the visibility minima, however mitigating the threat around the aerodrome due to nocturnal mammals is going to be an emerging task for the aerodromes.

1. INTRODUCTION:

1.1 Airports are located in strategic place, hence has experienced rapid urbanization considering its economic significations. This sort of development often leads to impacts on the local ecosystem, affecting habitats, biodiversity, and natural resources. Urbanization often involves cutting down trees to make space for buildings, roads and other infrastructure that repeatedly led to habitat loss, fragmentation and disturbance of bird/wildlife corridors impacting the balance of the local ecosystem and impacting the wildlife. While diurnal birds can be managed by active control measures, the nocturnal bird movement emerged to pose a serious threat on aircraft operations. Most prominent and eminent risk posing species among the nocturnal birds are Fruit bats. They are colonized birds and a single roost contains above 2000+ individuals. They use echolocation for their movement during night, hence they are highly prone to collision with aircraft and often they are adopted to new locations and routes due to the following:

- Bat colonies are disturbed due to urbanization and its associated impacts such as tree cutting/Construction dust, vehicle movement, sound, illumination etc.
- Urbanization associated with habitat loss throws out bats into new areas.
- Settles as colony in available area even close to airport surrounding.
- Choose to adapt to the noisy environment rather than remaining in highly polluted areas.
- Forms up moving corridors for their daily feeding, gaming etc.
- High intensity illumination from high raised buildings drives them away to darker areas for their movement, this often leads them to the aircraft movement path, which normally has lesser intensity of illumination.

- Bats use echolocation for their movement hence these species are highly vulnerable to conflict.
- Fruit bats make their movement direction based on the food availability. This often depends on the seasonal fruit cultivation happening around the airport area.
- These species generally travel between 9-30 km distances for their feeding needs and try up to 100 Km at times based on the feeding sites.
- Also, they use the area over the approach/take off path to cross over since these are the area less illuminated zones over airport area. They move into take off path since this area is not disturbed with even approach lights.
- The threat posed by the nocturnal birds cannot be envisaged since there is no mechanism to assess their movement path. This increased trend has added responsibilities to the aerodrome operator to consider importance of wildlife hazard management during night.

2. DISCUSSION

2.1 Since these species are crossing over the aircraft movement path especially close to the critical phase of flight operation during landing/take off, their movement can pose serious impact on aircraft operations especially taking off aircraft.

2.2 There is limited access to collect the data since these species are nocturnal and they preferred to dark.

2.3 The available source of data for investigation are bird strike reports with the time, Location of the incidents and carcasses if retrieved from critical area.

2.4 Preventive measures

Wildlife strike analysis and Wildlife Hazard Assessment survey and identification of hazardous species

- Wildlife strike reports are assessed based on the species and action plans are formulated based on the analysis of the aggregate data. The action plan may include taking up the case with the local municipal authorities for the management of the area outside the airport.
- A proper system of continuous survey of the area around the airport can identify the threat posed by different wildlife species for the aerodrome and the sources of attractions available in that area.
- Identify whether any new species are seen or found settling in the proximity of airport.
- Initiate timely action to remove them away from the airport area.
- Identification of the inventory of attractions around the airport and its origin.
- Initiate measures as appropriate to manage the attractions of birds around the airport.

2. 5 Efforts initiated at Bangalore Airport

- Surveyed the roost and collected details about the new roost from the nearby villagers.
- Found out about the roost as a newly formed colony 6 months old.
- Taken up case with State Forest department for relocation measures. State Forest support is awaited, meanwhile.
- Engaged interim measures such as:
  - Flashing lights on its movement path to prevent bat moving towards operational area without impacting aircraft operations. Found out the bats distracted with this measure and kept away from movement path.
  - Conducted awareness among stakeholders about the hazardous situations around the airport and initiatives by airport in the best interest of safety.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) share the emerging risk of nocturnal wildlife risk to aerodromes.

b) urge all States for risk-based approach for wildlife hazard management.

c) discuss any other best measures practiced by other airports to mitigate such hazardous situations; and

d) Discuss any relevant matters as appropriate.

—END—