4.9. REPORT TO BIRD STRIKE COMMITTEE, EUROPE JUNE 20, 1974.
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During the past year the Associate Committee on Bird Hazards to Aircraft has continued research on reduction of bird hazards under a number of conditions.

Vancouver Airport has been the scene of special studies on gulls and dunlins because those species have been involved in hazardous bird strikes and more needs to be known about their presence on the airport particularly with regard to numbers, timing and location. Many methods of dispersing dunlins have been tried without success. A new method involving radio controled model aircraft has undergone preliminary trials. More extensive trials of more sophisticated equipment are planned.

The gull study located sources of gulls and the routes they used across the airport in relation to time and weather conditions. Knowledge of the numbers involved and the routes used have led to suggestions for modifying the attractions which caused some of the movements. All the attractions and concentration areas are off the airport, so the reduction of the problems caused by gulls depends on cooperation of agencies not under control of airport officials. Co-operation among several independent agencies is required to reduce the gull hazard.

At Toronto International Airport, we have had a number of costly encounters between jet engines and snowy owls and other raptors. We have gone back to the source of the problem, and are studying the small mammal population on the airport to learn how to do really effective reductions of vole populations. It appears that there are a number of sources from which large populations of these small mammals spread. If we can reduce the numbers in the source areas we may be able to reduce total populations. In the meantime, live trapping and removal of raptors has been carried on with some success. Snowy owls are not easy to trap but a technique has been worked out which effectively removed more than 30 during the past winter. Unfortunately in spite of that program two DC-8 engines were seriously damaged and two main-line flights delayed.

Over the years we have conducted studies on physical methods of controlling earthworm populations. Some methods work effectively under laboratory conditions but their cost and difficulty of application make them very costly for use on airfields. Recently a fungicide used for controlling Dutch Elm disease has been found to kill earthworms. Fortunately the material is harmless to birds and mammals in the dosage required to kill worms. A trial application has been made on an airport in southern Ontario. Strips of grass each side of runways have been sprayed with the chemical. Worm counts in the soil weremade before the application. Counts will be repeated for some time after the spraying to assess the effectiveness of the material. The material is sold under the trade name "BENOMYL" (Dupont). It has some effect on fish and could not be used safely on an airport where much drainage water entered neighboring rivers. Another fungicide is now under consideration which appears to have a rather simialr effect on earthworms but without the unwanted side effects on fish. Trials of that material will be undertaken later on.

We are still continuing a review of the effect of light on birds. It is now common for many air carriers and military transport aircraft to use landing lights and/or strobe flashers at all times below 10 thousand feet. The lights are used mainly as a precaution against aircraft collisions on a "see and be seen" basis. They appear to have some beneficial effect in giving advance warning to birds of the approach of aircraft. Our laboratory studies on the effect of

flashing lights on birds have been hindered by a lack of suitable staff. We hope they will soon proceed as planned.

Recently, officials in one of our electronic research organizations have learned of the direct reception by the human brain of pulsed high frequency radiation. As their studies continue we may find that other living creatures have the same reception capability. It may be possible to provide unpleasant sensations to birds by that means. We are not doing research in the field but are watching closely the work of our colleagues in the communication field.

We recently conducted a test of our bird migration hazard forecast system for civil operators at Winnipeg, Manitoba. There was a late spring and the latest arrival in 40 years of 1.4 million snow geese into the staging areas near Winnipeg (2 weeks later than average). The weather remained for nearly two weeks with forecasts of light and variable winds. Our forecast system works better with more definite weather trends so we did not attain as high a level of forecast accuracy as we have in our military forecasts at Cold Lake, Alberta. Finally, toward the end of the period in which migration out of the area usually occurs large goose flights departed under less than optimum conditions. We need more practice in the Winnipeg area with a wider variety of migration scheduling.

During the Winnipeg forecast experiment Dr. Fred Hunt, a member of the Radar Working Group, tested new radar recording equipment he has developed. The equipment records the number of large bird echoes with time. A controller does need to watch the bird echoes on the scope but can be warned when the number of echoes per area per time unit reaches a predetermined level. Fred's equipment counted the echoes very well and could give the controllers the kind of information needed to differentiate between high and low hazard situations without the need to watch bird echoes on a scope. We are pleased with the equipment. Dr. Hunt has already told the radar group about its development. I believe the equipment would work equally well in other areas and that it may encourage controllers to make more use of bird hazard data in providing warnings to aircraft captains.

The book on Bird Hazards to Aircraft written by Mr. Blokpeol and Mr. Kuhring is now being edited. We hope to show the edited copy and illustrations to a number of potential publishers within the next 3 months. If we can make good arrangements with a publisher we may have the book available for distribution early in 1975. If commercial publishers are not interested the Wildlife Service or the National Research Council will produce the book. In any case, everything we know about bird hazards to aircraft from our 12 years of work, will be available in one book sometime in 1975. I want to thank all members of Bird Strike Committee, Europe for their help in providing information to aid Mr. Blokpoel.

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Chairman,
Associate Committee on
Bird Hazards to Aircraft.
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