USE OF PLASTIC NETTING TO CONTROL BIRDS IN AIRCRAFT HANGARS 1/,2/

BY

CAPTAIN GEORGE K. PRATT, USAF, BSC
DIRECTORATE OF ENVIRONMENTAL PLANNING
AIR FORCE ENGINEERING AND SERVICES CENTER
TYNDALL AFB FL 32403 U.S.A.

ABSTRACT

Two techinques are summarized for installing plastic netting in aircraft hangars in the United States to control damage from birds. Advantages and limitations associated with this control measure are discussed.

Birds create numerous structural pest problems at Air Force installations each year. These result primarily from the roosting, nesting, and loafing of pigeons (Columba livia), starlings (Sturnus vulgaris) and/or English sparrows (Passer domesticus) in hangars, warehouses, and other large structures. Various control techniques recommended by Lucid and Slack (1980) include: (1) altering the concept, (2) altering the situation, (3) exclusion, (4) repulsion, and (5) depredation.

Structural bird problems frequently last for many years and occur in locations permitting a constant influx of new birds. Solving pest bird problems in hangars is often aggravated by the frequent or permanent leaving of doors open in the warmer months for either ventilation or servicing of planes. Therefore, pest management personnel often achieve only temporary success when employing the use of avicides or selective shooting to reduce or eliminate pest bird populations in work areas.

Netting is one of the techniques which can be used to exclude pest birds from roosting either on the inside or outside of a structure (Anonymous, 1981; Gorenzel and Salmon, 1982). This paper summarized two techniques which have been employed to install plastic netting in large aircraft hangars in the United States. The smaller hangar had an internal area of 5,625 square meters, while the larger one had an internal area of 24,570 square meters.

Various types of plastic netting have been manufactured to prevent or minimize damage from birds in orchards, vineyards, and other agricultural environments (DeHaven and Hothem, 1982). Conwed$^{(R)}$ plastic netting was used in both hangars discussed in this paper. The netting has a mesh 1.9cm x 1.6 cm.

The major difference in the two techniques evaluated by the Air Force involves the mechanism used for anchoring the netting to the metal beams and other components of the hangar's superstructure. The first system relies on securing the netting to beams solely by means of bailing wire when the beams possess no curvature. When the beams are curved, then the netting is stapled to 2.5cm x 5.0cm wood slats which have been previously secured to the beams with bailing wire.

No wood slats are used in the second anchoring system. Instead beam clamps are attached to the metal beams. Then the netting is secured to the clamps via the use of plastic self locking ties. When the netting is secured to concrete surfaces, a different type of metal anchoring clip was used which was secured to the concrete via masonry screws. Further, a gridwork of support wires are used to provide additional structural integrity for the netting and to minimize wind damage.

Effectiveness:

The installation of plastic netting has greatly reduced the intensity of bird activity in the affected hangars. Of the two systems evaluated, the one using a bailing wire and wood slat anchoring system was less expensive with a finished contract cost of $3.92/square meter. That factor has had a significant influence in subsequent cost analyses, since the other system has a finished contract cost of $8.41/square meter. However, the metal beam anchoring clamp system provides a higher level of structural integrity which is a factor that should be considered.

Limitations:

Probably the two biggest limitations to installing netting are cost and inadequate design. U.S. Air Force installations

recognize that netting can provide a long-term, environmentally acceptable solution to existing pest bird problems, but cannot obtain sufficient funding to implement this control technique. Inadequate design also severely limits the effectiveness of a netting project. If the hangar is not thoroughly evaluated during the pre-award phase of the contract, the project may not reduce bird activity to an acceptable level. It should be self-evident that bird activity is closely correlated to the size and number of openings in hangar superstructures. However, people frequently underestimate the ability of birds to squeeze through openings above or around sliding doors, broken windows, or missing or damaged sheets of metal siding. As a result, techniques have to be devised to remove trapped birds from above the netting.

The effectiveness of netting contracts can be significantly improved by including requirements to replace broken window panes, attach metal flanges over sliding door runs, and repair and/or replace damaged or missing metal siding panels. Increased effectiveness can be achieved by including some type of warranty or "supplemental construction clause" to modify the building or patch holes in the netting that were not noted during the installation phase. These additional measures may not completely eliminate birds during the warmer months when hangar doors are frequently left open. However, their implementation can often eliminate, or at least greatly reduce, the presence and intensity of bird activity in hangars after the netting has been installed.

Conclusion:

Our evaluations indicate that plastic netting can provide an effective long-term method for controlling pest birds in aircraft hangars. However, great attention must be given to determine and correct other building modifications during the design phase of a project to maximize the reduction in bird activity.

REFERENCES:

Anonymous, 1981. Bird control problem solved with netting. Pest Control 49(6): 28-29.

DeHaven, R.D., and R. L. Hothem. 1982 Bird damage control in agricultural crops in California, 7 pp. (In the workshop seminar manual "Solutions to California Agricultural Bird Problems," Tenth Vertebrate Pest Conference. Monterey, California 23-25 February 1982).

Gorenzel, W. P., and T.P. Salmon. 1982. The cliff swallow - biology and control, pp 179-185. In, Proc. Tenth Vertebrate Pest Conference (R.R. Marsh, ED). University of California Press, 245 pp.

Lucid, V.J., and R.S. Slack 1980. Handbook on Bird Management and Control. (AFESC-TR-80-01). Air Force Engineering and Services, Tyndall AFB FL, 185 pp.

FOOTNOTES:

1/ The opinions and assertations contained herein are those of the authors and are not to be construed as views, either official or unofficial of the U.S. Air Force or the Department of Defense.

FOOTNOTES CONTINUED:

2/ Mention of a proprietary product in this paper does not constitute an endorsement of the product by the U.S. Air Force or the Department of Defense.