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REAL BIRDS VERSUS WHIRLY BIRDS: BIRD STRIKES TO CIVIL HELICOPTERS IN THE USA, 1990-2005

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To our knowledge, there has been no published analysis of bird strike data specific to helicopters. Our objective was to conduct a comparative analysis of strike reports involving helicopters and fixed-wing aircraft from the Federal Aviation Administration's Wildlife Strike Database. From 1990-2005, 370 (0.6%) of the 64,734 reported bird strikes to civil aircraft involved helicopters. Of the 370 reported bird strikes involving helicopters, 186 (50%) indicated damage and 67 (18%) indicated substantial damage. In contrast, only 15% of bird strikes with fixed-wing aircraft resulted in damage and 4% resulted in substantial damage. Whereas helicopters accounted for only 0.6% of all bird strikes, helicopters accounted for 13% (2) of the 16 aircraft destroyed and 24% (34) of the 141 injuries caused by bird strikes. For helicopters, 63% of bird strikes and 77% of damaging strikes occurred during the en-route phase of flight compared to only 2% and 7%, respectively, for fixed-wing aircraft. The much higher en-route strike rate for helicopters is related to the lower height at which helicopters typically fly compared to fixed-wing aircraft. For helicopters, about 52% of strikes occurred from 501-2,000 feet AGL compared to 14% for fixed-wing aircraft. This is a height zone frequently used by many bird species, especially gulls, waterfowl, raptors and vultures, the species most commonly struck by helicopters. For helicopters, 97% of strikes causing damage occurred at an indicated airspeed of more than 60 knots. Windshields represented 41% of helicopter components reported as damaged by bird strikes compared to only 6% for fixed-wing aircraft. The disproportionate number of windshields damaged and resulting human injuries indicates that improvements are needed in windshield design and strength for helicopters.