SOME NOTES ON ANALYSIS OF BIRD STRIKES TO UK GENERAL AVIATION AIRCRAFT 1968 - 1977

(Aircraft of weight less than 5,700 Kg)

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1. In the 10 years there were 400 reported strikes. This is about one seventieth of the rate for aircraft of over 5,700 Kg.

2. The birds struck are similar to those struck by the large aircraft group (in brackets), Gulls 54% (53.2), Lapwings 18% (12.1), Pigeons 9% (6.0), Swallows 3% (3.6). Two large birds, a Greylag goose (Anser anser 3.2 Kg) and a Gannet (Sula bassana 3.5 Kg) were struck, in each case very considerable structural damage was done.

3. 50% of strikes to light aircraft are during landing, and 44% during take-off and climb. These percentages are identical to those for the large aircraft group. During cruise 4% of strikes occurred, compared with 2.1% on large aircraft, almost certainly due to the small aircrafts' lower cruise altitude.

4. It is not possible to determine if there is a difference between all-grass and other aerodromes.

5. The airspeed at which the birds are struck is markedly different from large aircraft, 55.3% of strikes were below 80 kts, compared with 20.6% on large aircraft. It was noticeable that 21% of strikes were below 60 kts, it may be that the quieter and smaller general aviation aircraft do not provide the same alert response in birds.

6. 85% of strikes are between ground level and 200 ft, with only 1% above 2,500 ft. These are similar to the large aircraft group.

7. The parts struck were very different from large aircraft, the wing accounting for 33% of strikes (compared with 16.5%).

	General Aviation Aircraft	Large Aircraft
Fuselage	6%	13%
Nose/Radome	11%	32%
Windscreen	11%	14%
Engine/Propeller	23%	19%
Wing	33%	16.5%
Landing Gear	11%	5%
Empennage	3%	1%

As could be expected on single-engined aircraft the propeller/engine are struck rather than the nose.

8. On large aircraft only 18% of strikes cause damage, whereas on general aviation aircraft 23.5% of strikes cause damage. The major effects were skin denting in 12% of strikes, however 9 incidents involved structural deformation. There were 4 cases of windscreens being smashed, 2 of them causing minor injuries to the pilot. A gyrocopter was ditched in the sea when severe vibration was experienced immediately after passing through a flock of gulls.

9. The monthly variation is almost identical to that on large aircraft. August is the worst month for strikes, the same as for large aircraft, the flying peak coinciding with the bird population peak.

Discussion on WP 32

Bruderer: Is perhaps the frequency of bird strike reports so low because cases with severe damage are quite rare?

Thorpe: That is likely.