SAFETYSENSE LEAFLET 10c
BIRD AVOIDANCE

1 INTRODUCTION

Many pilots do not realise that if they collide with a soft feathery bird, the effect of speed turns it into a missile capable of inflicting considerable damage. This has included smashed windshields (killing pilots), blocked engine air intakes, broken pitot heads, damaged brake hoses, holed structures and helicopter tail rotor damage. Out of about 100 incidents *reported* each year by UK general aviation pilots, about 5% result in damage or caused an effect on the flight. The advice given in this Leaflet may provide greater awareness of the problem, and perhaps further reduce the number of collisions as well as help pilots to minimise the consequences if a bird strike does occur.

2 PLANNING THE FLIGHT

a) Check aerodrome documentation and NOTAMs (issued by some countries as BIRDTAMs) for information about permanent or seasonal bird problems at both departure and destination aerodromes.

b) Plan to fly as high as possible, only 1% of general aviation bird strikes occur above 2,500 ft (although a jet airliner struck a vulture at 37,000 ft off the W. African coast!).

c) Do not fly over bird and wildlife sanctuaries detailed in UK AIP ENR 5.6.3 or marked on aeronautical charts.

d) Avoid flying along rivers or shore lines, especially at low altitude. Birds as well as pilots use these useful navigational features.

e) Note also that inland waters and shallow estuaries, even outside the breeding season, may contain large numbers of gulls, waders and wildfowl which make regular flights around dawn and dusk. In order to minimise the possibility of bird strikes and unnecessary disturbance of birds, DO NOT fly low over such areas. Note: It is an offence to deliberately disturb nesting birds - pilots have been successfully prosecuted for doing so.

f) Avoid off-shore islands, headlands, cliffs, inland waters and shallow estuaries, so as not to disturb nesting colonies.

g) Helicopters cause more disturbance to bird colonies than fixed-wing aeroplanes.

h) Birds **do** fly at night.

i) If there are two pilots, discuss emergency procedures before departure, including those if the cockpit communications are lost.

j) Up to 80–90 kt, birds often have time to get out of your way, but the higher the speed, the greater the chance of a strike.

k) If your flying requires lengthy periods at low level, consider wearing head protection with polycarbonate visor. Pilots' lives have been saved by their helmets, particularly in helicopters. Use goggles and a head protection during air racing.

l) In July and August the risk of a strike is at its greatest because many inexperienced young birds are present. Also, the flying abilities of adults may be impaired as they moult their flight feathers.

m) Birds of Prey have been known to attack aircraft!

3 AT THE AERODROME AND IN FLIGHT

a) In springtime, **pre-flight** the aircraft thoroughly as birds can build a nest almost overnight. Any signs of grass etc. may necessitate further investigation of hard-to-inspect corners. A nest under the cowling could catch fire, or one in the tail area can restrict the flying controls.

b) Before taxiing, listen for warnings of bird activity on the ATIS, e.g. a mass release of racing pigeons.

c) While taxiing, look for birds on the aerodrome. The most frequently struck birds, gulls, have a grey or black back which makes them hard to see on concrete or tarmac runways.

d) In general terms, the slower a bird's wing beat, the bigger the bird and the more hazardous it could be.

e) If birds are observed on the aerodrome, request aerodrome personnel to **disperse** them before you take off. This is particularly important for turbo-prop and jet-powered aircraft operating at aerodromes mainly used by smaller general aviation aircraft (the birds may have got used to slow aircraft).

f) **Never** use an aircraft to scare birds away.

g) Some aircraft have windshield heating - remember that its use, in accordance with the Pilot's Operating Handbook or Flight Manual, will make the windshield more pliable and better able to withstand bird impact.

h) Use landing lights during take-off, climb, descent, approach and landing. Although there is no conclusive evidence that birds see and avoid aircraft lights, their use **will** make the aircraft more visible.

i) If you experience a bird strike during the take-off run, provided there is sufficient runway remaining – **stop**. Taxi off the runway and shut down. Inspect the intake, engine etc. for damage/ingestion, or for bird remains blocking cooling or other airflow ducts. Several airline incidents have occurred where turbine engine damage or high vibration developed during subsequent flights because of undetected engine damage. Don't forget to check landing gear and brake hydraulic lines, downlocks, weight switches etc.

j) Where the take-off must be continued, and the strike produces an engine problem, properly identify the affected engine and execute emergency procedures, then tell the aerodrome why you are returning. It is essential to FLY THE AIRCRAFT.

k) If you see birds ahead of you, **and it is safe to do so**, attempt to pass above them as birds usually break-away downwards when threatened. Be particularly careful when near the ground, and **never** do anything that might lead to a **stall** or **spin**.

l) As you pass through a flock, or feel a strike, FLY THE AIRCRAFT. Maintain the correct speed and use whatever performance remains to reach a safe height.

m) If structural or control system damage is suspected (or the windshield is holed) consider the need for a controllability check before attempting a landing. During such a check at a safe height, do **not** slow down below threshold speed. Be wary of unseen helicopter tail rotor damage.

n) If the windshield is broken (or cracked), slow the aircraft to reduce wind blast, follow approved procedures (depressurise a pressurised aircraft), use sunglasses or smoke goggles to reduce the effect of wind, precipitation, or debris, but remember to **fly the aircraft**. Don't be distracted by the blood, feathers, smell and windblast. Small general aviation aeroplane and helicopter windshields are not required to be tested against bird impact and the propeller gives little protection. Gulls, pigeons, lapwings and even swifts can hole light aircraft windshields.

o) If dense bird concentrations are expected, avoid high-speed descent and approach. *Halving* the speed results in a *quarter* of the impact energy.

p) If flocks of birds are visible on the approach, go-around early. The approach may be clear on a second attempt.

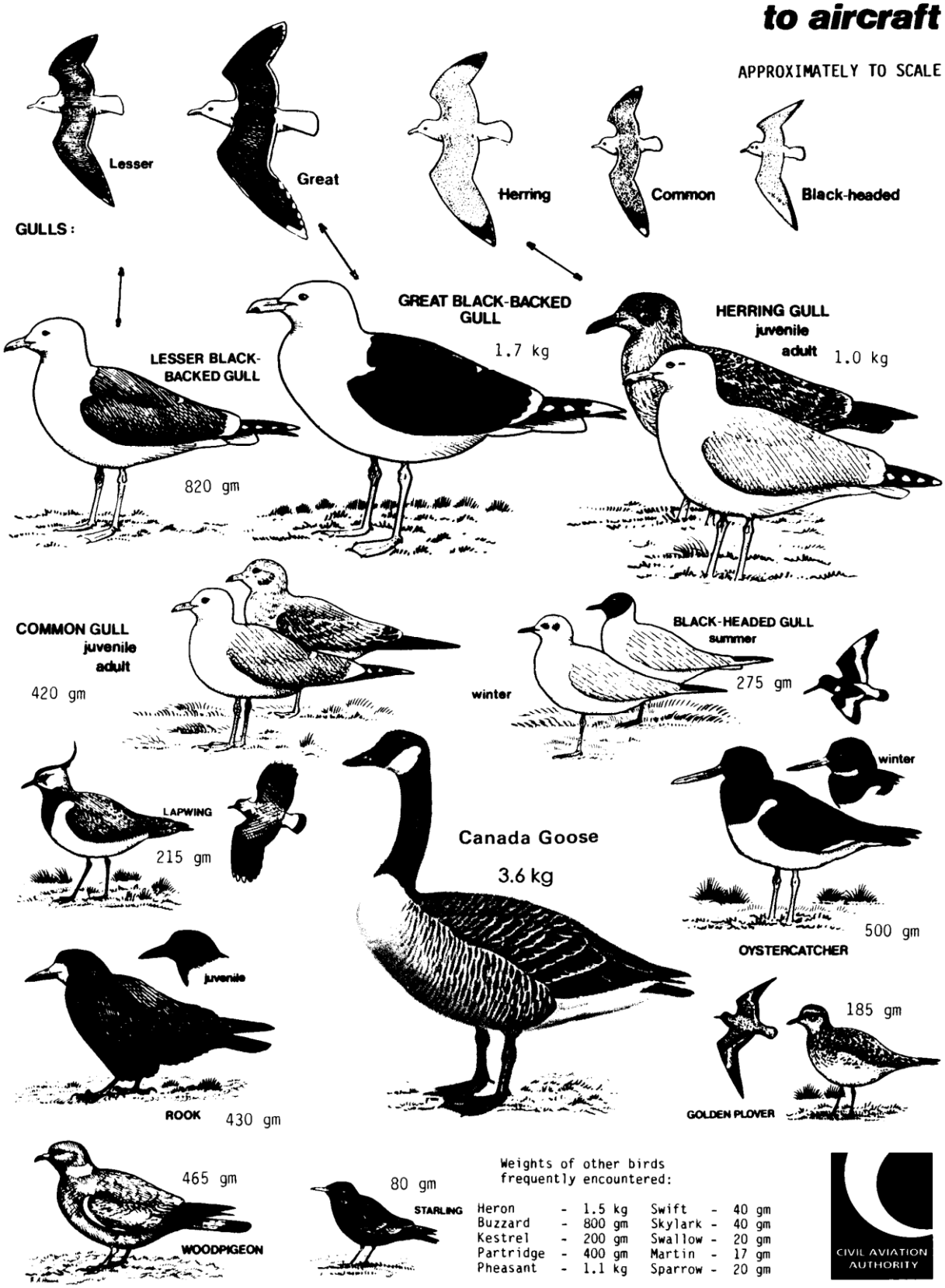
4 AFTER FLIGHT

a) After landing, if you have had a bird strike, check the aircraft for damage.

b) Inform the aerodrome owner or operator of the circumstances and all details. They have further guidance in CAP 772 “Birdstrike Risk Management for Aerodromes”.

c) Article 227 of the ANO 2009 requires pilots to report **all** bird strikes to the CAA. As described in AIC 66/2008 (White 152), use the Online Birdstrike Reporting System at *www.caa.co.uk/birdstrikereport* or fax a copy of the Birdstrike Occurrence Report Form (SRG2004) to 01293 573971.

LOOK OUT FOR THESE BIRDS - they can be a hazard to aircraft



Weights of other birds frequently encountered:

Heron	-	1.5 kg	Swift	-	40 gm
Buzzard	-	800 gm	Skylark	-	40 gm
Kestrel	-	200 gm	Swallow	-	20 gm
Partridge	-	400 gm	Martin	-	17 gm
Pheasant	-	1.1 kg	Sparrow	-	20 gm

CIVIL AVIATION AUTHORITY

BIRDSTRIKE OCCURRENCE FORM - (Amended 05/2012)

To be completed on discovering evidence that a birdstrike has occurred.

To be completed for **all** confirmed, unconfirmed, or 'near miss' birdstrike occurrences, in accordance with the guidance and information in Chapter 5 of CAP 772.

Please note that Birdstrike Occurrences should be submitted using our online system. Please use the following link to access this system: http://www.caa.co.uk/birdstrikereporting

Civil Aviation Authority

Reporter Details

Name.....Role.....

Employer .....

Tel no .....Date .....

Email.....

Birdstrike Details:

Confirmed ☐ Unconfirmed ☐ Near Miss ☐

Aircraft Operator.....

Aircraft type & series.....

Aircraft reg. .....

Date (dd/mm/yy) ...../...../.....

Time (local) .....: .....Hrs (24 hr)

Dawn ☐ Day ☐ Dusk ☐ Night ☐

Precipitation:

None ☐ Fog ☐ Rain ☐ Sleet/Snow ☐

Aerodrome (or Enroute) .....

Runway in use .....

Height (agl) ..... ft

Speed (IAS) .....kt

Phase of Flight

Taxi	☐	Descent	☐
Take-off run	☐	Approach	☐
Climb	☐	Landing roll	☐
En Route	☐	Ground checks	☐
Go Around	☐		

Part(s) of Aircraft		Struck	Damaged
Radome		☐	☐
Windshield		☐	☐
Nose (if not one of the above)		☐	☐
Engine nos:	1	☐	☐
	2	☐	☐
	3	☐	☐
	4	☐	☐
Propeller		☐	☐
Wing/rotor (inc high lift devices)		☐	☐
Fuselage		☐	☐
Landing Gear		☐	☐
Tail		☐	☐
Lights		☐	☐
Other (specify in remarks field)		☐	☐

Send to:
CAA, Aerodrome Standards Dept, 2W Aviation House, Gatwick Airport South, West Sussex RH6 0YR
Fax No 01293 57 3971 **Web site:** www.caa.co.uk
Email: birdstrikes@caa.co.uk

Effect on flight

None	☐	Returned	☐
Aborted t/off	☐	Diverted	☐
Loss or malfunction of any essential service			☐
Other	☐		

Other Reports raised

Mandatory Occurrence Report (MOR)	☐
Air Safety Report (ASR)	☐
Other (specify)	☐

It is important to identify the species of bird whenever possible.
Bird Species/description (e.g. Herring gull, Woodpigeon)

.....

Any Remains Found Yes ☐ No ☐

If you are not ***certain*** of the bird species, please send a *copy* of this form and *any* remains or digital image of the remains (even the smallest of remains are useful) to: -
WILDLIFE MANAGEMENT UNIT, THE FOOD ENVIRONMENT RESEARCH AGENCY (FERA), SAND HUTTON, YORK YO41 1LZ, UK.

Please mark the container **"Bird Remains"** Costs for this identification service are charged directly to the customer. For further information see the FERA web site http://www.fera.defra.gov.uk/wildlife/birdManagement/ or email birdmanagement@fera.gsi.gov.uk

Bird remains sent for identification Yes ☐ No ☐

Number of birds

	seen	struck *(enter actual number if known)*
1	☐	☐
2-10	☐	☐
11-100	☐	☐
100+	☐	☐

Pilot warned of birds Yes ☐ No ☐

Note 1: The reporter should ensure, irrespective of this report having been filed, that details of this birdstrike occurrence are notified to the appropriate airline or aerodrome operator, as soon as practicable.

Remarks and other relevant information:

Form SRG 2004 (Previously CA1282), Issue 2

5 SUMMARY

- Check NOTAMs/ATIS for bird activity at departure and destination aerodrome.
- Plan to fly as high as possible, most birds fly below 2,500 ft.
- Avoid bird sanctuaries and coastlines in spring.
- Pre-flight the aircraft thoroughly, birds nests can be built (or rebuilt) in a few hours.
- Many hazardous species are coloured such that they merge into the background.
- If you see hazardous birds on or near runways, get aerodrome personnel to move them BEFORE you take off.
- The higher the speed, the greater the risk and consequential damage.
- Birds usually escape by diving, so try to fly over them, but do NOT risk a stall or spin.
- Most general aviation aircraft windshields etc. are NOT required to be able to withstand bird strikes.
- If the windshield is broken, avoid distraction – FLY THE AIRCRAFT.
- Report ALL bird strikes, ideally using the online Birdstrike Reporting System.