

ENR 5.6 BIRD MIGRATION AND BIRD CONCENTRATION IN DENMARK**1. BIRD MIGRATION**

Bird migration occurs during the whole year, but culminates in the periods end of March to Mid-May (spring migration) and beginning of September to Mid-November (autumn migration). Bird intensities are measured by radar and graduated from 0 to 8 (9):

0 = No birds observed.

8 = Bird intensity very high.

9 = No observation due to weather or technical problems.

2. SPRING MIGRATION

Spring migration culminates in the period end of March to Mid-May, and peak numbers for most species occur in April with very frequent intensities above 5. The most important factors inducing heavy migration are a rise in temperature over Central and Western Europe, light winds, and southerly winds.

MIGRATION PATTERNS AND ALTITUDES

At night migration is generally in broad outline covering the entire country and its surrounding waters, with mean direction north-Northeast. Most birds come from Central and Western Europe. In day-light migration tends to concentrate along guiding coasts. The most important points of concentration area:

1. Skagen, 5745N 01035E.
2. Fornæs, 5625N 01055E.
3. NE Fyn, 5520N 01045E.
4. N & E Sjælland, the area from 5600N 01140E to 5520N 01230E.

Generally the altitude of migration at night is higher than by day. At night the average altitude is about 3.000-5.000FT, by day 1.000-3.000FT.

3. AUTUMN MIGRATION

Autumn migration culminates during the period beginning of September to mid-November, and peak numbers for most species occur in October with intensities frequently above 5. The most important factor inducing heavy migration is fall in temperature over Central and Northern Scandinavia. High intensities coincide also with winds from N-NE, light winds, little cloud-over and high atmospheric pressure.

MIGRATION AND ALTITUDES

At night migration is in broad outline covering the entire country and its surrounding waters with mean direction south. Most birds come from South Norway and South Sweden. By day migration tends to concentrate in the eastern part of Denmark and along guiding coasts. The most important points of concentration are:

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| 1. | Falsterbo (S Sweden) and Stevns | 5525N 01250E - 5520N 01230E |
| 2. | Gedser - Rødby | 5435N 01155E - 5440N 01120E |
| 3. | Skælskør | 5515N 01118E |
| 4. | Southern Langeland | 5445N 01040E |
| 5. | Blåvand | 5535N 00805E |

Generally the altitude of night migration is higher than by day.

At night the average altitude is about 3.000-5.000FT, by day about 1.000-3.000FT.

4. NUMBERS OF BIRDS

At least 100 million birds passes over Denmark and its surrounding waters during autumn. Smaller passerines are dominating, several species occur in great numbers and are most hazardous to aircraft: starlings, thrushes and finches. Very numerous and hazardous are also crow-birds, ducks, gulls, waders, pigeons and birds of prey, occurring from tens of thousands to several millions.

5. RESTRICTIONS FOR FLIGHTS

Tactical Air Command, Denmark (TACDEN) has published the following general restrictions for military flying over areas where a birdintensity can be obtained:

Jetfighter and large transport aircraft

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| Bird intensity 7-8: | Minimum height 2.000FT by day and 3.000FT at night. |
| Bird intensity 5-6: | Generally as for birdintensity 7-8. However, local air bases may reduce the minimum height to 1.000FT by day and 2.000FT at night. In addition flights below 1.000FT by day around individual targets/target areas may be authorised when deemed necessary for tactical training requirements. |
| Bird intensity 0-4: | No restrictions. However, if concentration of birds are visually observed 2.000FT minimum is recommended. |

Light aircraft and helicopters

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| Bird intensity 5-8: | If, when flying below 2000 FT, the airspeed is adjusted to 110 KIAS or lower, there are no restrictions. If concentration of birds are visually observed 2000 FT is recommended. At airspeeds above 110 KIAS, the minimum altitude is 2000 FT. |
| Bird intensity 0-4: | No restrictions. However, if concentration of birds are visually observed 2000 ft is recommended. |

No observations

If observations cannot be made, due to weather or technical problems, the intensity in the birdstrike warning will be "9".

If observations for a specific area are not available, the observations for the other area will be "in force", in the extend they are available, as follows:

If no observations are available, the flight should be planned as if the intensity was 0-4.

6. PROMULGATION OF INTENSITIES

When the bird intensity is 5 or more Bird Risk Warning will be promulgated Monday through Friday (except holidays etc.) at 0700 (0600), 0930 (0830) and 1130 (1030)Z. Example of bird risk warning is shown below.

() is summer period.

<u>Heading</u>	:	Birdstrike Warning
a. Issuing station	:	Self explanatory
b. Valid from	:	DTG - UTC
c. Valid until	:	DTG - UTC
d. Intensity of bird migration	:	0-8 (9 = no observation)
e. Geographic reference	:	GEOREF
f. Lower altitude limit of the hazard	:	AGL (Heightband in feet. If no information is available insert "xxx".
g. Upper altitude limit of the hazard	:	AGL

The latest information of bird intensity is available from any RDAF ATC-unit.

7. PERMANENT BIRD CONCENTRATION AREAS

The permanent bird concentration areas are shown on page ENR 5.6-4 which primarily indicate concentration areas for breeding and resting waterbirds (swans, geese, ducks, coot, waders and gulls). Denmark and its surrounding waters contain some of the largest concentrations of these species in Europe. If avoiding low flying over the areas indicated, a large proportion of the bird-strike risk is eliminated.