

MEASURES TO AVOID BIRDSTRIKES DURING FLIGHT

lecture by Ensign Drs. P. van der WIELEN.

Airborne birds are present at all times, even at night. The density of birds varies from time to time and from place to place. Therefore only two types of warnings for bird concentrations in the air are possible, namely:

- warnings for bird-hazard moments;
- warnings for bird-hazard places or
- a combination of both.

WARNING FOR BIRD-HAZARD MOMENTS.

The first type of warning is the most important one. Low flying aeroplanes always run a risk to strike a bird. In migration periods low flying can be very dangerous. Within the migration periods the number of flying birds varies from day to day and from hour to hour.

General rules are:

- most bird-movements take place between the first of March and the 15th of May and between the first of September and the 15th of November.
- birds migrate more in the morning than in the afternoon and more in the first than in the second half of the night.

Weather-conditions, bird distributions in the surrounding country and other factors make it necessary to know the density of birds in the air at every moment.

Part of the bird movements we can see visually. Another part is visible with the help of radar. Visually, we can only see the lower part of migration. With the help of radar we observe high flying birds. We can't see with radar:

- the number of individuals of each birdblip;
- the species;
- the very low flying birds.

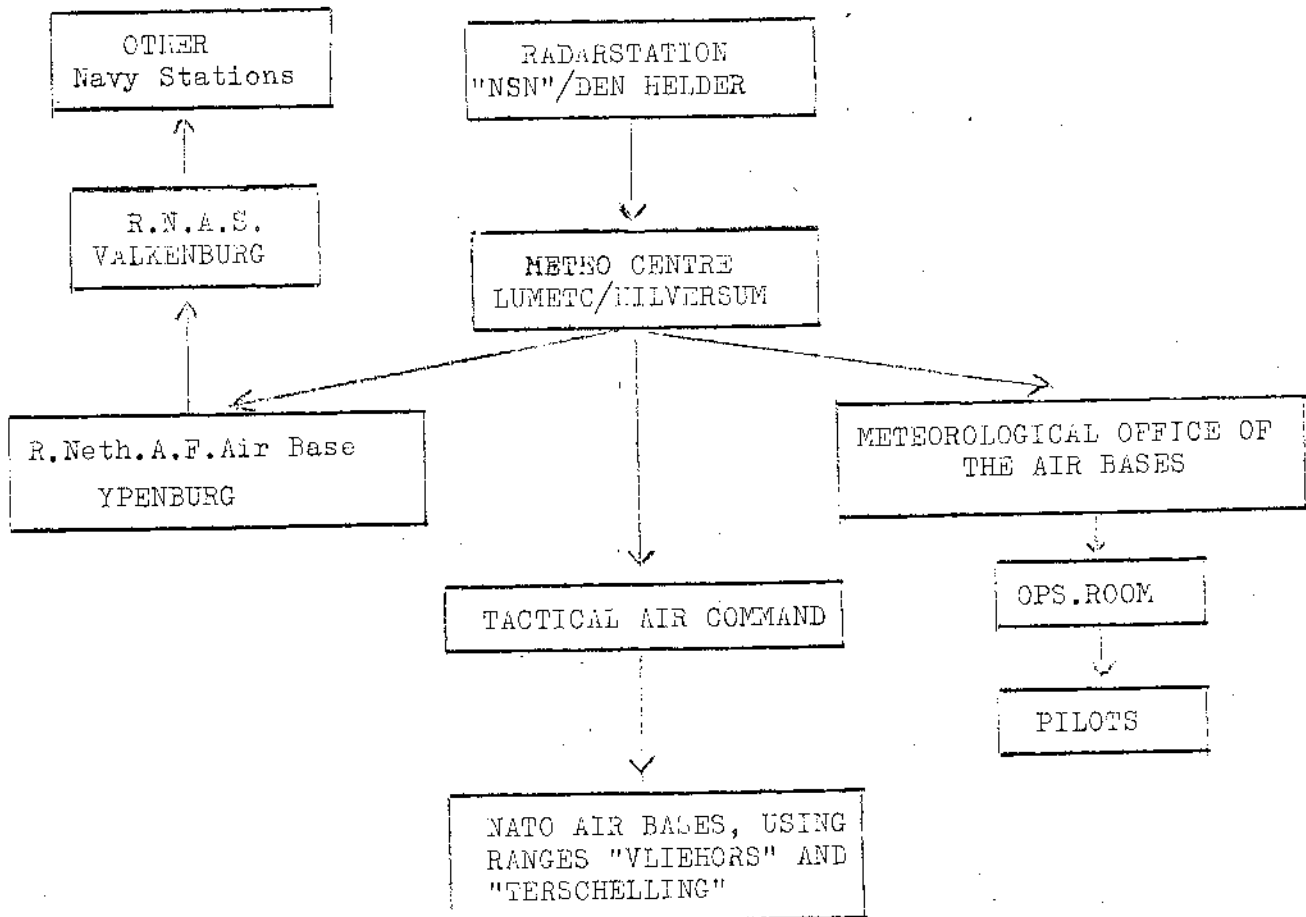
The intensity of blips on the radarscope is not necessary in relation with the intensity of birds in the air. For we don't know whether a blip represents one eagle or hundred nightingales. But in general there should be a relation between blip-intensity and bird-intensity.

- Based on radar- -

Based on radar-observations a warning-system has been set up in Holland.

This system works as follows:

- 8 times a day a polaroidpicture is made at the radarstation of Den Helder. The exposure time of each picture is 15 minutes.
- The bird-blip intensity is telephoned to the meteorological centre of the Royal Netherlands Air Force in Hilversum.
- From here the message is sent on by the meteorological tele-printer (TAB-net) to all R.Neth.A.F. bases.
- The Meteorological Office of the airbase passes each warning to the Ops.room, from where the pilots are informed.
- Our Royal Navy has no contact with Hilversum/LUMETC. The warnings are sent by airbase Ypenburg to R.N.A.S./Valkenburg by phone and from there other Navy Air Stations are informed.
- When intensity 6 or higher is reached all NATO-airbases, using our ranges "Vliehors" and "Terschelling" receive warnings from our Tactical Air Command.



This Spring for the first time "Anti Bird Strike Measures for Jet Aircraft" have been established in an operational instruction. These measures are as follows:

minimum altitude above:			
intensity	Netherlands, except for 2 ATAF linkroutes ranges and range-routes.	low level areas linkroutes and rangeroutes.	ranges
0,1,2,3,4	no special restrictions	no special restrictions	no special restrictions
5	1500'	500'	no special restrictions
6	1500'	500'	300', except one type of excercise
7 - 8	2500'	no operations	no operations

This new warningsystem works very rapidly and without many mistakes but the estimation of the birdintensity is not always possible for the following reasons:

- periodical maintenance of the radar
- radar elevations scanning, unsuitable for bird observation
- difficulties on account of jamming, rain or anomalous propagation.

For this reason warnings are sent at 2/3 of all possible warning-times. From other countries we only received some NOTAM's warning for crane migration sent by the German Air Force.

RESEARCH.

The most important aspect of the analysis of our 16 mm-films of the radar-scope for this moment is the question "to what extend is our 23 cm-radar suitable for birdobservation ?" Only if we have a perfect radar for bird observation and only if we know exactly what we can see and what we cannot see with this radar, it is possible to start research on the correlation between weather and bird-movements.

Analysis of our 16mm-films shows that our radar is suitable for research to a certain extent only. The 23 cm-radar of Den Helder is used for operational purpose and not for bird-observation. Therefore the use of this radar depends on the operational need. The result of this is that, when interceptions take place, we can't use our 16mm-films on account of irregular use of the radar. For instance the following situation: a warning for intensity 6 is in force. For interception-exercises the radar tilt is changed, through which the blip intensity increases to intensity 7, while the bird density in the air remains the same.

In short: it is necessary to know the possibilities and the limitations of our observation-instrument in this case our 23 cm-radarset.

For research we need optimal cooperation between radar-observers and visual observers. These visual observers should be good ornithologists. Cooperation between radarpeople and civil biologists is nearly impossible through classification of the radar data.

BIRD MOVEMENTS OUTSIDE THE MIGRATION PERIODS.

Outside the migration periods intensive bird-movements take place as we can see on our radar films. The most important movements are:

- roostmovements
- poraging movements.

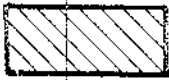
Radar research on these movements should be desirable.

WARNING FOR BIRD HAZARD PLACES.

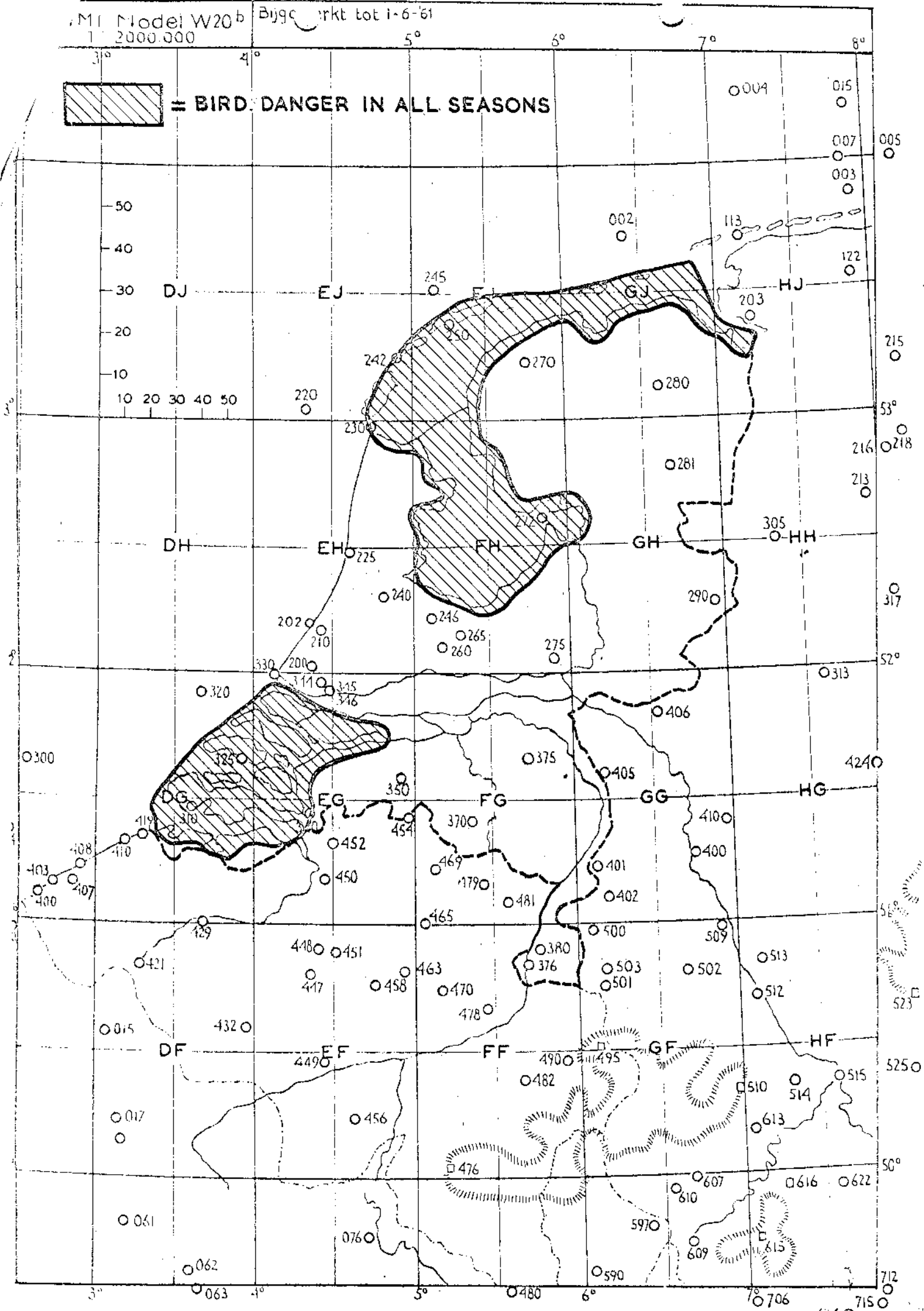
To warn for places with bird concentrations it is necessary to make a birdmap of Europe with all-seasons-HAZARD places. Last year a German birdmap was printed with BIRD-HAZARD places as well as migration routes. In Holland migration take place over the whole of the country in an almost homogenous way, therefore it isn't necessary to draw migration routes over Holland. Our map should be extremely simple with only two big BIRD-HAZARD places, namely:

- the "WADDENSEA"-area, with great numbers of birds in the breeding season as well as in migration periods (in August about 3/4 of a million of birds were counted, see Limosa, 39 no 4, 1966, 175-181).
- the "DELTA"-area (with fewer birds than the "WADDENSEA"-area).

It is not very difficult to make a European bird-map in cooperation with other countries, if only the most important bird areas are considered.



= BIRD DANGER IN ALL SEASONS





= BIRD DANGER IN ALL SEASONS

