

14th Meeting on Bird Hazards to Aircraft (BSCE 14)

The first ten years of BSCE

Vital E Ferry, France

Introduction

During the BSCE 11th meeting it was decided that someone had to review previous reports and try to prepare a summary for the benefit of participants who have not been in position to attend all previous meetings.

It was also decided to prepare a list of all working papers delivered during these meetings arranged by matters using the present working group distribution as a reference.

As the only complete set of reports (or almost complete) was in the hands of the then Chairman of BSCE, it was decided that this task should be discharged by the chairman with a fixed deadline.

However, the ever increasing number of lectures imposed a limitation to this research work and it was felt that a covering period of 10 years could offer the best compromise and offer a relatively large coverage of the BSCE past deeds.

Nor was it possible to allow each working paper to W Groups as these groups have been nominated at different periods of time and papers very often cover more than one field of research. So deliberately it was left to the reader to guess to what W G the lecture applies (some of them are yearly reports with general conclusions and the total list covers almost 120 lectures).

Present working paper is divided into 3 parts

- part 1 short history of BSCE 1966 to 1975
- part 2 list of lectures (omissions unavoidable, accept apologizes)
- part 3 list of the recommendations agreed at the 1st meeting (farming)

- 1973: Meeting in Paris on 23 and 24 of June 1973
Chairman: L^{ieut} Colonel SCHNEIDER
70 participants - 16 lectures - 1 film
Reports of activities of BSCZ and W G's delivered
for the first time. Formal recommendations
appear, one from the Committee, and various
from W G (SI, Hottel);
W G "Transmission" changed to "Communications"
- 1974: Meeting in Frankfurt am Main from 18 to 21 June 1974
Chairman: L^{ieut} Colonel SCHNEIDER
71 participants - 16 lectures
2 recommendations from the Committee - 19 from W G
New chairman elected for a 2-years period: Mr V Ferry.
- 1975: Meeting in Stockholm from 9 to 13 June 1975
Chairman: V FERRY
81 participants - 23 lectures
21 recommendations adopted by the Committee
"Structural testing" W G formed
First time a cover in colours appears.

Part 2 List of lectures 1966-1975

Year	Author	Title	Reference
1966		Statistics concerning bird strikes at the BAF 1956 to 1965	I/1-
1967	E A SEAMAN	Recent Research findings of U S A.F in Bird control at airfield	II/1
	C W STORTENBACKER	Birdstrike Problems at Schiphol airport	II/2
	W KEIL	Ecological Research at Hamburg airport	II/3
	P VAN DER WIELEN	Measures to avoid Birdstrikes during flight	II/4
	W KEIL	First results on crane migration	II/5
1968	M S KUHRING	Progress in the effect of micro-wave radiation.	III/1
	J W SLOT	Hawk at Leeuwarden Airbase	III/2
	H R FINELY	Birdweight and airport manual	III/3
	J HILD	Agricultural investigation for expelling birds from German bases	III/4
	D W STORTENBACKER	Progress report of Schiphol airport	III/5
	V PERRY	Birdwarning with the aid of airfield radar	III/6
	J HILD	Vulnerability maps	III/7
	E W HOUGHTON	Research on the radar properties of birds in UK	III/8
	V E F SOLMAN	Amino acid contents of birds	III/9
	J HILD	Reports on birdstrikes in Germany	III/10
	VAN BERWIELEN	Report on the 2nd Radar W G meeting	III/11
	BROADFOOT	Progress in the detection of bird movements at Gold Lake	III/12
	J HILD	European Bird Migration Map	III/13
1969	J HILD	Progress report European Bird Movement WG	IV/1
	M S KUHRING	Local and migratory movements of birds	IV/2
	H N WOLLESWINKEL	Bird impact capacity of civil aircraft	IV/3
	J HILD	Birdstrikes in the GAF during 1968	IV/4
	J P C DE BRUIN	Bird warnings and birdstrikes in the PNLAF	IV/5
	E W HOUGHTON	Radar echoing areas of birds	IV/6
	J HILD	Agricultural investigations on German air bases	IV/7

Date	Author	Title	Reference
1969	J HILD	Methodological aspects on agricultural methods of scaring birds	IV/8
	F B M MIKX	Bowke at De Bovenarden air base	IV/9
	J HILD	Bird observations on airfields during 1969	IV/10
	J HILD	Some data on the efficiency of radio-labeled seed packages	IV/11
	BSCE survey	Radar control of flight traffic during 1969	IV/12
1970	J HILD	Birds in Germany 1969	V/1
	C F A VAN BEZOOIJEN	Birds and bird strikes in the EMEA 1969	V/2
	J HILD	Measures to the GAF for prevention of birdstrikes	V/3
	J HILD	Ecological research at Decimomannu airfield (Sardinia)	V/4
	E W HOUGHTON	Bird/weather and anomalous propagation echoes on radar	V/5
	J HILD	German system of visual observation of bird migration	
1971	T BROUGH	Experimental use of long grass in the UK	VI/1
	H LIND	An attempt to reduce Herring Gull population on Saltföla	VI/2
	G MØLLEN	Use of Distress Calls for scaring birds on airfields in Norway	VI/3
	J HILD	Mixtures of grass-seed for airports	VI/4
	F RODRIGUES DE LA FUENTE	Talcoors for the control of birds on airports	VI/5
	group	Progressreport from Belgium	VI/6
	W KEIL	Birdstrike situation in Lufthansa 1970	VI/7
	J HILD	Birdstrikes in GAF -1970	VI/8
	W KEIL	Exchange of information about birdstrikes	VI/9
	V E F SOLMAN	Report from the Bird/Radar/Weather W G	VI/10
	H NOER	Recent Development of the Danish Bird Migration Forecast system.	VI/11
	E W HOUGHTON	ATC and the bird radar surveillance without radar	VI/12
	B BRUDERER	Bird/Weather/Radar work in Switzerland	VI/13
	J HILD	Report about Bird Movement W G	

Date	Author	Title	Reference
1972	F BLACKWELL	Use of bird activity modulation waveforms in Radar identification	VII/1
	M LOUETTE	The Distribution of the black headed-gull in Belgium	VII/2
	E W STORTENBECKER	Bird dispersal with acoustical and visual means	VII/3
	V E JACOBY	Ornithological researches in the USSR (Birdstrike problems)	VII/4
	B BRUDERER	Bird problems as discovered at Zürich airport	VII/5
	W KEIL	Ecological research in Aerodrome traffic zone and its results	VII/6
	M S KUHRING	Projects of the Canadian BSC	VII/7
	J HILD	Bird hazard maps for Europe	VII/8
	J HILD	Bird strike situation in GAF	VII/9
	J O GEZELIUS	Bird-aeroplane collisions at low altitudes	VII/10
	W KEIL	An analysis of the bird strike reports from Lufthansa	VII/11
	J THORPE	Analysis of bird strikes	VII/12
	V E FERRY	Radar observation methodology and procedures used by ATC	VII/13
1973	M LOUETTE	Bird migration forecasting	VIII/1
	R ROBJIN	Computational procedure for bird migration forecasting	VIII/2
	J HILD	Result of bird movement W G	VIII/3
	J HILD	Procedure of birdstrike warning forecasting advisory in GAF	VIII/4
	M LATY	Information to pilots	VIII/5
	E W HOUGHTON	Highlights of the NATO-Gibraltar bird radar study	VIII/6
	M CLAUSEN	Electronic counting of birds	VIII/7
	J BECKER	General considerations about entomological investigations	VIII/8
	J HILD	Special considerations about handling of grassland areas	VIII/9
	J KARLSSON & L-O TURESSON	Preliminary works before the opening of Malmö/Ågärd airport.	VIII/10
	J THORPE	Six years of birdstrikes in the UK	VIII/11
	E SCHNEIDER	The result of prevention of bird-strikes in Denmark	VII/12
	J HILD	Public relations in Germany	VIII/13
	G LID	Bird strike problem and public relations in Norway	
	M LATY	Research activities on bird problems in France	

Date	Author	Title	Reference
1973	H. BLACKPOLL	The flight of the blackbird	VIII/16
1974	A. SALTER	The flight of the blackbird	IX/1
	J. THORPE	The flight of the blackbird	IX/2
	A. J. BRADY	The flight of the blackbird	IX/3
	W. A. GORVACHEV	The flight of the blackbird	IX/4
	H. BOLSTE	The flight of the blackbird	IX/5
	J. HIND	The flight of the blackbird	IX/6
	B. BRIDGER	The flight of the blackbird	IX/7
	J. HANDEL	The flight of the blackbird	IX/8
	G. H. F. SOLIHAN	The flight of the blackbird	IX/9
	M. LATY	The flight of the blackbird	IX/10
	T. ALBERSTAM	The flight of the blackbird	IX/11
	K. LOUETTE	The flight of the blackbird	IX/12
	M. LUTMAN	The flight of the blackbird	IX/13
	F. R. HUNT	The flight of the blackbird	IX/14
	N. BLACKWELL	The flight of the blackbird	IX/15
	T. BROUGH	The flight of the blackbird	IX/16
1975	E. W. HOUGHTON	The flight of the blackbird	X/1
	J. THORPE	The flight of the blackbird	X/2
	A. SALTER	The flight of the blackbird	X/3
	J. F. STOUT	The flight of the blackbird	X/4
	J. F. BOOMANS	The flight of the blackbird	X/5
	J. HEIRMAN	The flight of the blackbird	X/6
	J. HEIRMAN	The flight of the blackbird	X/7
	G. SOETENS	The flight of the blackbird	X/8

Date	Author	Title	Reference
1975	M LATY	The blackheaded gulls with their assigned quarters in Nice	X/9
	H BLOKPOEL	Prediction of the spring migration of snowgeese	X/10
	H CESBRON-LAVAU	Global statistical approach of the birdstrike	X/11
	L STAHL	Studies of birdreactions caused when exposed to laser light	X/12
	L S BUURMA	Birdstrike prevention success and malaise in the RNLAF	X/13
	A H JOENSEN	European bird hazard maps	X/14
	S SUARETZ	Bird strike problem at Ben-Gurion airport	X/15
	T ALERSTAM	Spring migration of cranes over southern Scandinavia	X/16
	J KARLSSON	Bird strikes in Sweden 1967-74	X/17
	A HOLM JOENSEN	The use of waterfowl count data in birdstrikes work in Denmark	X/18
	F R HUNT	Automatic warning of hazardous bird conditions	X/19
	A ROED	Bird strike problem from air-technical point of view	X/20
	S ULFSTRAND	How many birds are there	X/21
	S L SEUBERT	Current activity concerning the US Bird/plane strike problem	X/22
	H BLOKPOEL	Bird hazards to aircraft	X/23

Meeting ... 20/21 July, 1966

The ... of ... and ...

1. ... all the airbases ... regarded as ... by the other
2. When ... of airbases the local ... should be ... to
3. The ... as well as bird migration ... drawn up by GAF ... These ... of their own ... of the other Committees ... flight safety ... eventually be drawn ... respectively ... information of ... charts
4. ... as the correlation ... are essential. Canada would ... research and observation results ... as these cannot automatically be ... all interested European countries ... as this is feasible, to do ... in close cooperation ... services. In doing so, ... as well as air pressure, ... of the atmosphere should be taken
5. The countries ... as far as they are in a position ... national flight safety agencies ... of all bird migration ... migration periods, giving the ... flight level and ... work necessary for ... following nations ... to be represented: R Neun ... Givary. These countries were

selected because of problems of distance, but other countries, are obviously welcome to participate at any time. This working group will issue specific recommendations from time to time to all countries concerned. Nations are requested to inform the working group in the near future of the possibilities of bird observations in their respective countries and of the practicability of transmitting relevant information.

6. The object of the observation of and reporting on bird migration will be to issue a forecast; this will, however, only become possible if and when the influence of weather conditions on the behaviour of the birds has been investigated.
7. It is recommended that each of the countries concerned should set up radar observation of bird migration; it is understood, however, that much will depend on the local and technical possibilities and conditions in the various countries. The Canadian methods of bird observation over radar can be taken as a guidance. If we are to gain knowledge of bird movement, as many widely spaced radar stations as possible, will be required.
8. It would seem to be necessary to take more and better measures against birds in hangars. Canada has done some work in this field.
9. All partners are agreed that an extensive exchange of information on the results of research work and observations, as well as on the measures taken against bird damages to air traffic is an urgent necessity. Circulars and reports on this subject might be forwarded to the national representatives from time to time.
10. The representatives of the nations taking part in today's meeting consider it advisable that a specialist should be appointed in each of the countries concerned to study the problems of bird strikes, as far as the military is concerned, and to evaluate the results of his studies and of (radar) observations.
11. The evaluation of damages to aircraft by birds on the basis of reliable and extensive reporting is an essential prerequisite to the preparation of useful proposals and suggestions to the technical agencies.

The reports on bird strikes in civil aviation are sent to ICAO and also to the Canadian National Research Council; those on the military sector are collected and evaluated by GAF, Director Flight Safety. Evaluations results and conclusions are reported at the respective meetings.
12. The future international cooperation should not be limited to the items mentioned under 8), but should also extend to personal contacts and exchange of information between the representatives of neighbour countries who mostly are faced with similar problems.

13. The German Board would be prepared to advise the Armed Forces of Friendly Nations stationed in Germany on these and related problems, should such advice be requested.
14. The next meeting is envisaged to take place in spring of 1967. Amsterdam was suggested as the place for this meeting. A final decision about meeting place will be taken during the next meeting of the Air Force Flight Safety Committee in Sept. 1966, at London.

Frankfurt, 21st July 1966