

**ANALYSIS OF BIRDSTRIKES WITH MILITARY AIRPLANES IN  
CZECHOSLOVAK PEOPLE ARMY FROM APRIL 1987 TO  
DECEMBER 1992**

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**ABSTRACT**

Presented report represents the data results obtained by classifying incidents of military airplanes with birds for the period from 1987 to 1992, when the split up of Czechoslovak republic into two separate states came about and consequently also Czechoslovak army has split up. In that time there were handled data - the number of incidents, type of technics, bird species composition and so on.

## Analysis of birdstrikes with military airplanes in Czechoslovak People Army from April 1987 to December 1992.

Presented report represents the data results obtained by classifying incidents of military airplanes with birds for the period from 1987 to 1992, when the split up of Czechoslovak republic into two separate states came about and consequently also Czechoslovak army has split up. In that time there were handled data - the number of incidents, type of technics, bird species composition and so on.

We succeeded to register totally 219 birdstrikes data in Czechoslovak People Army (ČSLA). Their statistic value is lessened by the fact, that in quoted period the birdstrike entries were not written down into a uniform BSCE's birdstrike form. This is the reason why we could not obtain very important data for statistics. Another minus is that the data of total number of flight hours as also the number of takeoffs and landings could not been yielded to us. So I consider this report only as an information.

In ČSLAs Air Forces from 1987 to 1992 there were 219 birdstrikes. 26 of them were with helicopters, 27 were with turbo screw-propelled planes and 166 with jet planes.

Numbers of birdstrikes shows **Table No. 1** :

Helicopters :	Turbo screw-propellers :	Jet planes :	
<b>Mi-2</b> .. 5	<b>L-410</b> .. 15	<b>Mig-21</b> .. 57	<b>Su-7</b> .. 4
<b>Mi-8</b> .. 5	<b>An-12</b> .. 2	<b>Mig-23</b> .. 19	<b>Su-22</b> .. 21
<b>Mi-17</b> .. 10	<b>An-24</b> .. 6	<b>Mig-29</b> .. 4	<b>Su-25</b> .. 14
<b>Mi-24</b> .. 6	<b>An-26</b> .. 4	<b>L-29</b> .. 9	<b>Jak-40</b> .. 1
		<b>L-39</b> .. 34	<b>Tu-134</b> .. 3

### **Bird species that share the incidents.**

Birds that caused incidents in period from 1987 to 1992 were accurately identified in 84 cases - it is 38.3 %

**Table No.2**

Individual bird species that shared birdstrikes

Species	Latin name	number
house-martin	(Delichon urbica)	1
swallow	(Hirundo rustica)	14
swift	(Apus apus)	6
goldfinch	(Carduelis carduelis)	2
sparrow	(Passer domesticus)	2
blackbird	(Turdus merula)	2
rook	(Corvus frugilegus)	2
skylark	(Alauda arvensis)	4
ducks	(Anseriformes)	3
partridge	(Perdix perdix)	1
quail	(Coturnix coturnix)	1
long eared owl	(Asio otus)	1
pigeon	(Columba livia)	10
gulls	(Larus)	17
kestrel	(Falco tinnunculus)	5
buzzard	(Buteo buteo)	9
starling	(Sturnus vulgaris)	1
meadow pipit	(Anthus pratensis)	1
bat	(Chiroptera)	2

**Data separation according to the flight altitude.**

From total number of incidents where the altitude in the moment of birdstrike was found out in flight altitude 0 - 10 m there were 20 birdstrikes. So we can say, that most of accidents happen on runway or in low altitudes. In altitudes above 500 m in area of former Czechoslovakia the birdstrikes were with swallows and with buzzards.

From total number of birdstrikes 48 of them were on runway or in close surroundings.

**Table No.3 :** Bird species and birdstrike altitude (in metres).

Gulls (Larus)	runway, 4, 10, 15, 30, 300, 800
Pigeon (Columba livia)	10, 15, 20, 80, 150, 400
Swift (Apus apus)	15, 200, 400
Swallow (Hirundo rustica)	runway, 10, 20, 100, 120, 800, 1000
Buzzard (Buteo buteo)	runway, 10, 15, 75, 450, 800, 900, 1200
Kestrel (Falco tinnunculus)	5, 60

**Accidents separation according to date of birdstrike**

The number of accidents rises from the period of spring migration till the end of nesting period and to the period of autumn migration. Mentioned dynamics was influenced by the fact that the main part of the pilots training took part in summer months.

Tab

year
month
january
february
march
april
may
june
july
august
september
october
november
december
total in
year

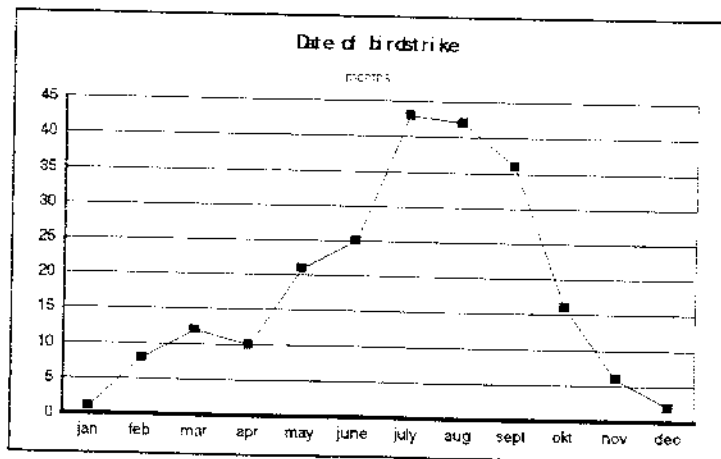
Tab

Table No. 4 :

year	1987	1988	1989	1990	1991	1992	total in months
january	X	1	0	0	0	0	1
february	X	1	2	4	0	1	8
march	X	2	1	7	1	1	12
april	X	3	2	1	1	3	10
may	2	4	8	5	0	2	21
june	6	5	4	2	1	7	25
july	8	8	9	9	4	5	43
august	8	11	9	4	5	5	42
september	4	9	11	3	1	8	36
october	2	1	1	4	2	6	16
november	2	1	0	2	1	X	6
december	1	0	0	0	1	X	2
total in year	35	46	47	41	17	38	219

X - no obtained data

Table No.5 :

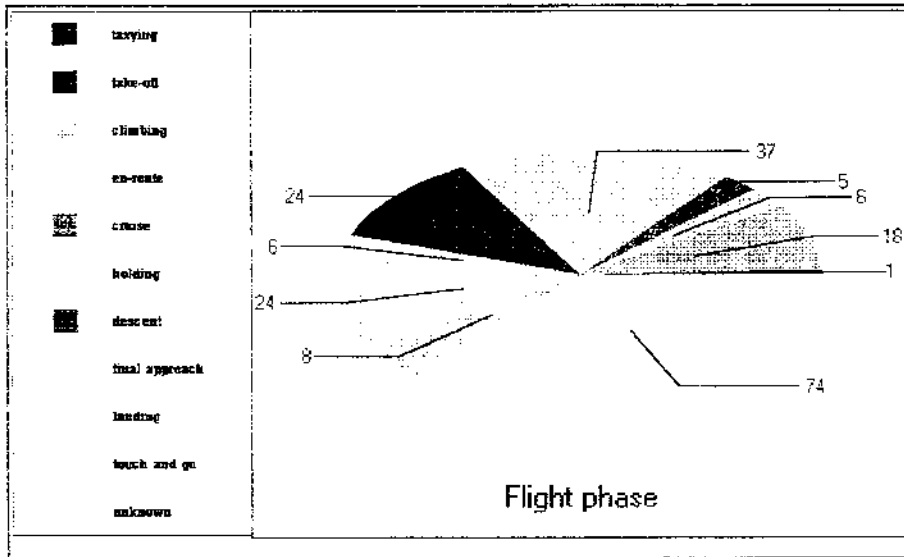


**Data separation according to flight phase :**

During flights in ČSLA there were most accidents in phases "take-off + climb" and "descent + landing" it means - in close surrounding of airport what includes outer ornithological protective zone (4 km from the ends of runway and 1 km from it's sides). This fact corresponds with Graph No.6.

BIRD STRI

**Graph No. 6:**



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**Summary**

We analyzed 219 birdstrikes from the period from April 1987 to December 1992 in relation to particular aircraft types, altitude and flight phase and also to bird species that caused incidents. The rate of birdstrikes grows from the period of spring migration till the autumn migration - what relates to the growing of the birds population in this period and also to stay of migrating birds on our territory and to natural reproduction.

The most frequent were the birdstrikes in small altitudes. Some damage occurred at 58 incidents it means 26.5 %. There was not recorded any serious birdstrike with serious damage to the aircraft, that would had influenced the flight.

From the data we obtained most of the birdstrikes were with one (single) bird and most frequent were following species :

swallow, gull, pigeon, buzzard, swift and skylark.

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one case th  
was 16,806  
species - so  
(Streptopel

There was  
engine (two