

**ROOKS (CORVUS FRUGILEGUS) AT GIEBELSTADT US ARMY AIRFIELD
PROTECTING THE BIRDS OR REDUCING THE BIRDSTRIKE RISK?**

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Abstract

In spring 2001 the BASH-Team of the USAF-Europe Flight Safety inspected the Giebelstadt Army airfield near Würzburg in the southern parts of Germany. The visit of the BASH-Team was requested by the airfield user, the US Army, because of the possibility of a serious birdstrike caused by rooks (*Corvus frugilegus*) which established a large rookery with around 220 breeding pairs (in 2001) in the trees of the airfield very near to the runway. Because rooks are a protected bird species the BASH-Team recommended the consultation of German authorities to ensure that any actions against the rooks would not violate German laws or regulations.

In the following discussions with the Nature Protection agency of the Government of Lower Frankonia the Biology section of the Bundeswehr Geo Information Office supported the idea of the BASH-Team that the only solution of the birdstrike problem would be the removal of the rookery on Giebelstadt airfield. How this was done and how well it worked will be reported in this presentation.

Key words: Rooks, Rookery, BASH-Team, Protected species, Bird Strike

1. Introduction

In Germany, local and national nature protection authorities are under increased pressure to transform bird protection and conservation laws (national and international) into action. The example of a rookery on Giebelstadt airfield shows that this can result in conflicts between bird conservation and the bird strike hazard prevention.

2. Biology of rooks

Rooks (*Corvus frugilegus*) belong to the bird order Passeriformes and within this order to the family Corvidae (crows and allies). The rook is about 45 cm long and has a wing-span of 81 – 99 cm, the weight varies between 350 and 600 g. The plumage of rooks is black with heavy gloss, adult birds have a bare and pale face (CRAMP & PERRINS, 1994). The diet includes a wide variety of animal and vegetable food. Remarkable is the “intelligence” of these bird species. Shell- or nut-dropping in order to get access to their edible contents can often be observed in rooks. Rooks are highly sociable at all times of the year. They breed in colonies and build their nests in the crowns of high trees, preferred tree species in Germany are oaks (*Quercus*), ash (*Fraxinus excelsior*) and other tall species.

3. Status and conservation

In Germany the rook is an endangered bird species. After years of heavy persecution the population is now slightly increasing but is still far away from the numbers reported from the 19th century (BAUER & BERTHOLD, 1996).

The (old) German “Naturschutzverordnung” (nature protection order) from the year 1963 distinguished between those (bird) species which were allowed to be hunted (by licensed hunters) and those who were not and therefore protected. The rook and the other corvids belonged to neither of these two categories: Everybody could harm, catch or kill them without any permit.

This situation changed drastically in the years 1986 and 1987 with the publication of the new “Bundesnaturschutzgesetz” (Federal nature conservation law) and the “Bundesartenschutzverordnung” (Federal species protection order) which in parts transformed the “Council Directive of the European Communities of 2 April 1979 on the conservation of wild birds” (79/409/EEC) into national law (HAVELKA & RUGE, 1988). Since 1986 all bird species (with the exception of those falling under hunting rights) are protected, including the corvids. This means that it is forbidden to kill or capture the birds, to damage their nests or to remove their eggs or to disturb the birds particularly during the period of breeding and rearing.

Only for a few reasons the government (in this special case the Upper Nature Protection authority of the government of Lower Franconia) may derogate from the above mentioned prohibitions if no other solutions are satisfactory: one is in the interests of air safety.

4. Giebelstadt airfield

Giebelstadt army airfield (GAAF) is located in the southern part of Germany (16 km south of Würzburg) in the state of Bavaria [Figure 1]. Administrative authority is the Government of Lower Frankonia.

The airfield is owned by the Bundeswehr and used by the US Army (e.g. 12th AVN Bde). It has a total size of 265 ha, 200 ha of which are grassland and 30 ha are wooded areas which are in the housing areas of the airfield. The dimensions of the runway are 2134 m x 30,5 m [Figure 2].



Figure 1. Location of Giebelstadt airfield (green dot)

Giebelstadt airfield is located in an area with very fertile soils (Ochsenfurter Gau) which is used for agriculture since the medieval ages. Nearly almost all woods were removed and only some scattered stands of trees remained in the area [Figure 2]. For breeding the rooks prefer almost always trees in those rather isolated groups, but because they are rare, for the rook population in the greater Giebelstadt area not the food but suitable nesting places are the limiting factor.

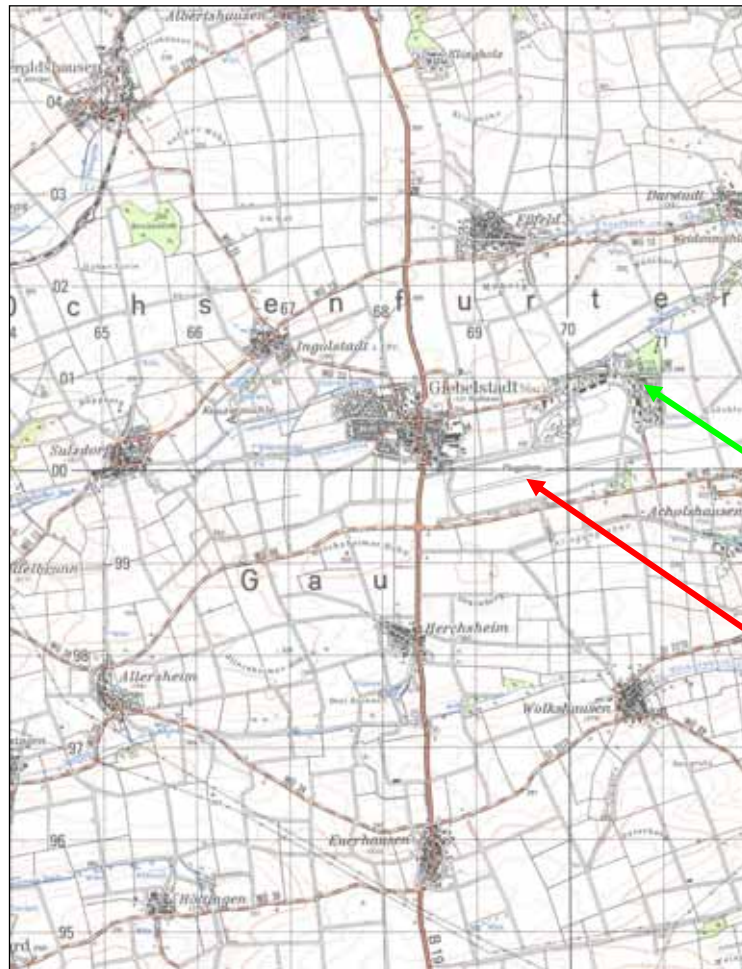


Figure 2. Giebelstadt airfield. The red arrow is directed to the runway, the green one to the housing area with the trees in which the rooks breed

5. Ornithological situation

In 1997 138 breeding pairs of rooks were observed nesting in the trees of GAAF, in 2001 their number had increased to 229 breeding pairs [Figure 3]. With these last mentioned number of breeding pairs the Giebelstadt rookery is estimated to host approximately 50 % of all rooks in Lower Franconia (total area 8531 km²) in 2001.

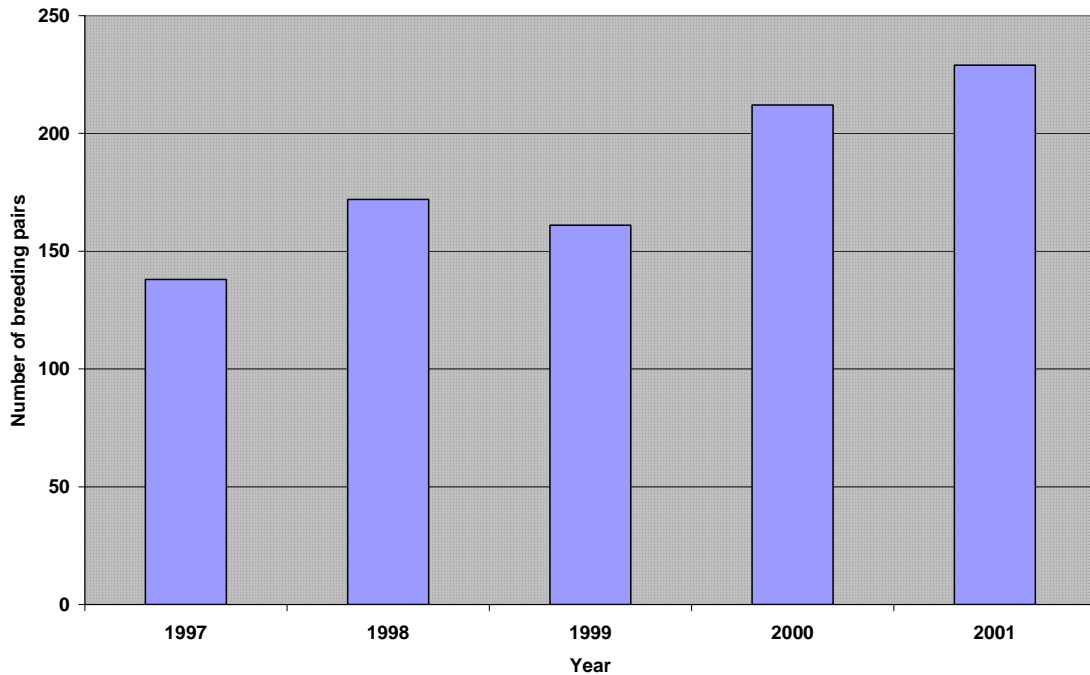


Figure 3. *Number of breeding pairs of rooks on Giebelstadt airfield 1997 - 2001*

229 breeding pairs in 2001 represented 458 adult birds. If we estimate a breeding success of 2.5 fledged young per pair this resulted in additional 572 young birds which added up to 1030 birds in total at the end of the breeding period 2001. Out of these birds the young pose a higher risk of being struck by aircraft than the more experienced, adult birds. The foraging sites of these birds are not only the adjacent agricultural areas outside the airfield but sometimes also the airfield itself. Due to special training requirements (e.g. autorotation with helicopters) and a still missing optimal equipment of the farming section a long grass management on the airfield is not always possible at all times in all areas. Besides that in the past years the rooks were also attracted to the commissary/housing area by the dumpsters which were not closed at all times and therefore provided a ready food source for the birds.

6. Air traffic situation

Up to the year 2000 the rooks were less a problem for flight safety but for hygienic reasons. In February 2002 US General Meigs and German state secretary Kolbow signed an agreement for German civil co-use of the Giebelstadt airfield. Since that time apart from the helicopters of the US-Army also civil fixed wing aircraft like Lear Jets, Falcons and Cessna Citation use the airfield which is to become a regional airport. Therefore air traffic at Giebelstadt is increasing and bird strikes are becoming more of a concern.

Up to now there were 3 documented bird strikes with rooks: June 1st 1999, August 6th 2001 and August 12th 2001.

Time table of the measurements undertaken to solve the bird strike problem at Giebelstadt airfield

- 30 April, 1 May 2001

The BASH-Team of the USAFE Flight Safety visits Giebelstadt airfield. One of the recommendations of the BASH-Team for improving flight safety is: "We recommend the rookery be removed from the commissary area by pruning all the rook nests out of the trees. This may have to be accomplished after the nesting season and with approval of German authorities."

- June 2001

The Bundeswehr Geo Information Office, Biology section, responsible for bird strike prevention in the German armed forces, is involved in the "Rook-problem at Giebelstadt airfield".

- 21 September 2001

Giebelstadt bird-aircraft strike hazard conference. Bavarian state chancellery assists to get permit from the Government of Lower Frankonia/Upper nature protection authority to eliminate the rook colony. The risk assessment reveals that the (protected) rooks are a real danger for flight safety.

- 22 October 2001

Government of Lower Frankonia/Upper nature protection authority agrees to eliminate Giebelstadt rook colony. All actions taken have to be documented. With the elimination permit the Government of Lower Frankonia requires a substitute area for compensation. The necessary 2.5 ha area is provided by the German Finance Administration within the confines of a former German Army ammunition storage site. The intention is to develop this area as a bird protection area.

- January 2002

In January 2002 more than 30 trees with rook nests at Giebelstadt airfield are cut, all other remaining nests are removed by trained people climbing into the trees. (Removing rook nests with high water pressure often fail because the nests are built very strong and they are safely fixed within the branches of the trees).

- February 2002

With the start of the nesting season in February/March the rooks try to build new nests, preferring those trees they used the years before. Helicopters hovering very low over the potential nesting trees to discourage rooks from re-constructing nests show now success. Only by a daily (including weekends) and very intensive use of pyrotechniques with shell crackers exploding near to the potential nesting sites the birds can be discouraged from nest building.

- March 2002

After the approved dispersal and elimination of the rook colony on the airfield the rooks establish new rookeries in the nearer or wider surrounding of Giebelstadt [Figure 4]. Some rooks (about 80 breeding pairs) resettle into the built-up areas of the Giebelstadt Community. These birds are still endangering the air traffic while flying across the final approach of the runway and resting on the airfield sod areas near the runway while searching for food.

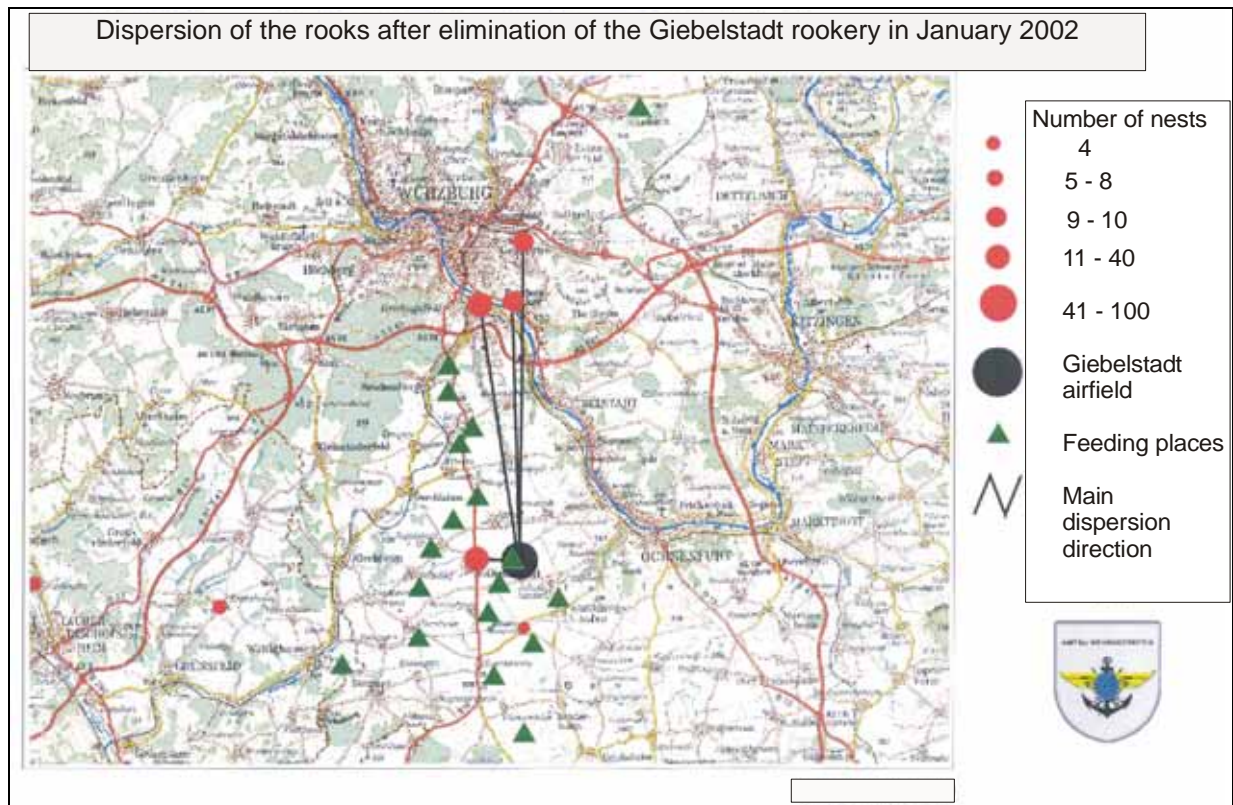


Figure 4. Resettling places of the rooks after the elimination of the Giebelstadt rookery

- January 2003

The Government of Lower Frankonia/Upper nature protection authority again agrees to remove the nests from trees within the Community Giebelstadt latest by 23 February but only as long as no birds are already breeding in the nests. This has to be done in close co-ordination with the affected real estate owners. The follow-on dispersal of the rooks on the airfield using pyrotechniques is also approved.

7. References

- BAUER, H-G. & P. BERTHOLD (1996): Die Brutvögel Mitteleuropas. Bestand und Gefährdung. AULA-Verlag, Wiesbaden
- CRAMP, S. & C.M. PERRINS (eds) (1994): The Birds of the Western Palearctic. Vol. VIII.
- HAVELKA, P. & K. RUGE (1988): Zur artenschutzrechtlichen Lage der mitteleuropäischen Rabenvögel. In: Artenschutzsymposium Saatkrähe. Beih. Veröff. Naturschutz Landschaftspflege Bad.-Württ., 53, S. 125 - 128

