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## Elmendorf AFB BASH Program

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*DEPARTMENT OF THE AIR FORCE, PACIFIC AIR FORCES*

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**DEPARTMENT OF THE AIR FORCE  
PACIFIC AIR FORCES**



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Flight Safety Officer

**Elmendorf AFB BASH Program**

1. Elmendorf AFB, located in Anchorage, Alaska, is home to over 60 aircraft to include F-15s, C-130's, E-3's, C-12s, and Army Citations. In addition, it's a major hub for both military and contract strategic airlift enroute to the Pacific. The large airspace training areas make Alaska an ideal environment suitable for large scale flying exercises. The result is several different types of aircraft from military sister services and foreign countries based out of Elmendorf throughout the year.
2. General and commercial aviation flights are even busier in Anchorage's FAR Part 93 airspace. Known as the "Anchorage Bowl", special use airspace has been created to allow VFR and IFR traffic to flow in and out of four airports within a three-mile area. Lake Hood has the densest sea-plane traffic in the world, Merrill Field is one of the busier general aviation airports in North America, and Anchorage International Airport (AIA) is a major stop for commercial airline and freight companies enroute to the Pacific. Anchorage offers such a strategic advantage for flights transiting North America to Asia that Alaska Airlines, Federal Express, and Atlas have created hubs at AIA.
3. As the city adds lawns, parks, and golf courses, geese and other birds flock to these "feeding grounds". Nearby lakes and ponds attract the birds as well. Given restricted hunting practices and few natural predators, Anchorage is a virtual goose Garden of Eden.
4. A quick look reveals that over 5,200 Canada geese called Anchorage home in the fall of 1996. At Elmendorf alone over 8,900 birds were dispersed the same year. Overlay the tremendous volume of air traffic on the huge numbers of birds in a confined area and your bound to have collision problems between birds and aircraft. In fact, Elmendorf lost 24 lives when an E-3 AWACS crashed in the fall of 1995.
5. 3rd Wing vowed to never again allow birdstrikes to take the lives of any aircrew flying in and out of Elmendorf. The result was a four-pronged attack. First, identify hazardous flight path areas and exclude all birds from these areas. Second, deter birds by changing the physical landscape. Third, create dispersal teams that discourage birds from calling Elmendorf home. Fourth, and most importantly, elicit military and civilian community to support a BASH program that balances wildlife and aircraft safety.
6. Elmendorf has created two distinct zones around the airfield to target unique bird threats. The Bird Exclusion Zone (BEZ), referring to the exclusion of all birds in this zone, includes an area in close proximity of all runways where wildlife activity might pose an immediate threat to aircraft. This zone is outlined by signs during the height of migration season (1 Apr-31 Oct). The airfield is called Bird Watch Condition (BWC) Severe anytime one of the conditions are met in the BEZ: 1) dispersal operations are being conducted; 2) any large bird or flock of birds is on or above the runways or in the arrival or departure routes; or 3) a flock of more than 15 large birds or 30 small birds is in the BEZ. BWC Severe restricts aircraft from landing or taking off at Elmendorf. BWC Moderate will be called anytime a flock of 5-15 large birds or 15-30 small birds are in the BEZ but not on or above the runways or in the arrival or

departure routes. This action mitigates the chance of birds being dispersed into the flight path of landing or departing aircraft. In BWC Moderate aircraft are allowed to recover into Elmendorf, but not allowed to takeoff. The Waterfowl Exclusion Zone (WEZ) includes all “open areas” south, east and west of 37th Ave outside the BEZ. The area to the north is not included since most of this area is wooded, and dispersal operations, covered later, from lakes might cause birds to fly into the BEZ. Smaller birds in the WEZ’s open areas do not provide an immediate threat to aircraft and will not be dispersed. Defining the zone is necessary when dealing with waterfowl, i.e. ducks and geese, since waterfowl are potential threats to aircraft when dispersed from these areas due to their size. No BWCs’ are reported with birds in these areas. As a result, aircraft are not restricted from takeoff or landing. The goal of the Waterfowl Exclusion Zone is to make Elmendorf an unattractive habitat for these larger birds.

7. One way the 3rd Wing discourages birds from nesting at Elmendorf is to physically change the landscape. Birds don’t like concrete, but it’s unrealistic and too expensive to concrete our entire base. Besides, our goal is to run a BASH program that promotes the exclusion of birds and manages a balanced wildlife plan. Are these goals at odds? Yes and no. Can you have one with the other? Yes and no. It depends on how you approach the problem. 3rd Wing biologists have worked closely with members of the US Department of Agriculture (USDA), Animal and Plant Health Inspection Service, National Wildlife Research Center, to determine how we can exclude birds in certain parts of the airfield and maintain a balanced wildlife plan. In addition, minimizing costs is a significant and appropriate part of the equation. According to their joint article in the *Wildlife Society Bulletin*, Volume 27, Number 3, Fall 1999, *Vegetation Preferences of Captive Canada Geese at Elmendorf Air Force Base, Alaska*, “The most common approach to reducing airfield use by birds is habitat management limiting vegetation height at 17 to 35cm. Long grass restricts the line of sight of birds, making them vulnerable and nervous about unseen approaching predators (Brough and Bridgman 1980, Conover and Kania 1991). However, in Hawaii, long-grass management was not effective, because it attracted many granivorous birds and it caused territorial lesser Pacific golden-plovers to move onto runways and taxiways where they increased the hazard of bird-aircraft strikes (M.A. Linnell et al., unpublished report, Utah State University, Logan, Utah, 1996). Mowing and fertilizing grass as practiced at some airports encourages new growth and attracts geese (Owen 1975). At EAFB, long-grass management (mowed once/year, >30 cm height) was being used in the infield areas at the time of the 1995 AWACS crash. An alternative to long-grass management for bird control is to establish a less preferred vegetation type. Important characteristics for an ideal vegetation for airfields include minimal seed production, drought resistance, unattractiveness to invertebrates, poor rodent harborage, ability to exclude other plants, relatively non-flammable, resistance to vehicular traffic, ability to grow to a desired height, and minimal maintenance (Austin-Smith and Lewis 1970; M.A. Linnell et al., unpublished report, Utah State University, Logan, Utah, 1996).” Base biologist research shows how certain vegetation is a viable method to deter Canada geese. The planting of native bluejoint reedgrass, beach wildrye, and the poisonous lupine plant disrupts the bird’s diet and landing patterns, and, in turn, makes Elmendorf a less desirable place to park. Vegetation management is part of the 3rd Wing’s long-term bird management techniques at a reasonable cost.

8. Another part of the solution is to “carry a big stick”. The 3rd Wing has contracted USDA, Wildlife Services, to operate wildlife detection and dispersal teams 24-hours each day, 1 Apr-31 Oct. These dates target the Spring and Fall migration seasons. The USDA dispersal teams keep a not-so-silent watch over the airfield using non-lethal means to disperse birds. Of course, lethal means are used in certain circumstances to rid the base of pesky birds who continue to interfere with aircraft traffic. The USDA teams are specially train and hold both federal and state permits to conduct wildlife management. In fact, every year Elmendorf biologists ensure the 3rd Wing is in strict compliance with environmental assessments of wildlife management. Operational details of USDA teams are simple, but ensure that all necessary agencies are in the loop of dispersal operations. The teams are in contact with tower any time dispersal operations are underway. Tower permission is required to disperse birds in the BEZ. This prevents birds from flying into aircraft on short final or initial takeoff. Tower is notified of operations in the WEZ with specific location and details. This simple call keeps Tower in the loop of potential bird problem areas. If dispersed birds fly toward the BEZ, USDA will inform Tower and the airfield will be called BWC Severe. Again, a Severe scenario restricts aircraft from landing or taking off. The USDA contract began in 2000 and was a huge success. Elmendorf recorded the lowest number of birdstrikes in the local

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pattern since 1996 thanks in large part to USDA and everyone who made a phone call to report bird activity.

9. The lynchpin to the entire BASH program at Elmendorf is to gain public support, to include the military community on base and civilian community off-base. Everyone on base is educated about BASH prevention via the 3rd Wing Safety website. During in-processing all base personnel receive a wallet-sized card which on one side includes a map of the 2,400-acre Bird Exclusion Zone, surrounding both runways, and on the other side a bird hazard hotline number--552-BIRD. Anyone seeing a bird in the BEZ is encouraged to call the USDA hotline, which can stop flying operations. Their call can definitely be the difference in saving an aircraft from a birdstrike. Off-base the city of Anchorage created a bird management plan as a result of the AWACS crash. The management plan was preceded by an Environmental Assessment (EA) and Finding of No Significant Impact by the US Fish and Wildlife Service. One result of the plan was to create an action team known as the Anchorage Waterfowl Working Group (AWWG), an informal coalition formed to share information and make recommendations for goose management to government agencies. The AWWG is comprised of staff from the US Fish and Wildlife Service (USFWS), Alaska Department of Fish and Game (ADFG), Municipality of Anchorage (MOA; specifically Cultural and Recreational Services, Health and Human Services, and Merrill Field Municipal Airport), Elmendorf Air Force Base (EAFB), Fort Richardson Army Base (FR), Anchorage International Airport (AIA), US Department of Agriculture Wildlife Services (WS, formerly Animal Damage Control), Federal Aviation Administration (FAA), Anchorage Audubon Society (AAS) and the National Audubon Society. The AWWG established a population goal of 2,000 geese for the Anchorage Bowl by the end of 2001. The Canada goose population first exceeded 2,000 birds in 1992, about the time airports began to experience an increasing need to haze geese. This population level will benefit the human environment by increasing airport safety and by reducing public nuisance and health concerns over feces on lawns and declining water quality. Maintaining a population of 2,000 geese will reduce the annual effort and cost to maintain a larger population, reduce public and agency costs to haze geese and clean up feces, and kill fewer geese in the long term than if a larger population is maintained. Relocating goslings, collecting eggs, and killing adult geese on airport property are direct means used to control population methods. Airports are required, however, to minimize the number of non-local geese killed and to use hazing and habitat modification. Once the goose population is reduced to 2,000 birds, the population level will be maintained by killing approximately 150 adults and removing 100 goslings (or the equivalent number of eggs) each year. The US Fish and Wildlife Service and Alaska Department of Fish and Game will monitor population levels and airport take to determine exactly how many geese to remove in order to maintain the goal of 2,000 geese. Annual planning and implementation of goose removals and relocations will be adaptable and subject to re-evaluation, based on the most recent data on population size and productivity. Most importantly, AWWG members have lectured on urban goose biology, safety hazards, and reasons not to feed geese in a variety of forums (including schools, public meetings, environmental group meetings, and service organization meetings) since 1996. Temporary displays have been placed at libraries and public buildings. In 1997 the Anchorage Civil/Military Aviation Council, with technical support and some funds from the AWWG, produced and distributed a brochure that discouraged feeding waterfowl. These brochures are still available at the Alaska Public Lands Information Center, Loussac Library, USFWS, ADFG, AIA and Merrill Field, and municipal parks and water quality offices. They have also been distributed in limited numbers at popular feeding areas. ADFG, USFWS, and WS are producing a Homeowner's Guide to Goose Solutions that will provide information needed by Anchorage residents to control geese on their property. MOA Cultural and Recreational Services and Health and Human Services staff, with technical support from the AWWG, are developing several versions of "no feeding" signs to discourage waterfowl feeding. These signs will be placed at Loussac Library and popular feeding areas. The education process has been slow and tedious, but the efforts of the AWWG and Elmendorf BASH team are starting to pay off.

10. Looking at the metrics quickly shows that the bird threat to aircraft is slowly being reduced. In fact, the population goal of 2,000 Canada geese in Anchorage is within reach. The number of Canada geese has fallen from a high of 5,232 in 1996 to 2,854 in 2000. The total number of birds dispersed at Elmendorf has fallen from nearly 9,000 in 1996 to just over 2,000 in 2000. In fact, numbers are down at Elmendorf across the board. Of course, the threat of birds will never be eliminated in Anchorage, but we

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can learn from the past and do everything in our power to prevent future birdstrikes. Elmendorf will only be satisfied with one goose egg-zero loss of life and aircraft to bird strikes.

11. Elmendorf faces a number of future issues concerning bird and aircraft strike hazards. In particular, the 3rd Wing is starting to target areas of flight in Alaska outside the Anchorage bowl. Our aircraft operate on standard low-level military training routes, military operating areas and bombing ranges. Right now there is no process in place to predict the potential for birdstrikes in these areas. Developing the Bird Avoidance Model will enable all 3rd Wing pilots to fly in these areas cognizant of bird activity throughout all seasons of the year.