Guano Problems And Solutions

7.1 Introduction

Bird/guano infestation problems are routinely encountered on Installations in some areas on the United Kingdom Continental Shelf (UKCS) in particular when the Installations are normally unattended. The effects of bird/guano infestation on the safety of offshore helicopter operations, personnel health and the additional maintenance costs incurred, cannot be ignored.

Various species of gulls and other seabirds use NUIs as roosts in the middle of their feeding areas and migrating species use them as rest stops on their annual flight paths. Normally manned Installations are less affected because the 'onboard' activities generally tend to scare the birds away.

The presence of both individual seabirds and flocks of gulls and other species in the vicinity of helicopters and Installations presents a number of problems for the Dutyholder.

7.2. Main References

- CAP 437 [Ref: 51]
- Operations Notice No 39 – Guidance on Identification of Offshore Installations, Issued by Health and Safety Executive – Offshore Safety Division (HSE-OSD) December 1997 [Ref:41]
- HSE OTO Report No 00:131 - Bird Guano Accumulations & Their Effect On Offshore Helicopter Operations [Ref: 43]
- HSE OTO Report No 00:067 - A Review of Wrong Deck Landings, Status Lamps and Signalling [Ref: 44]

7.3 The Problems

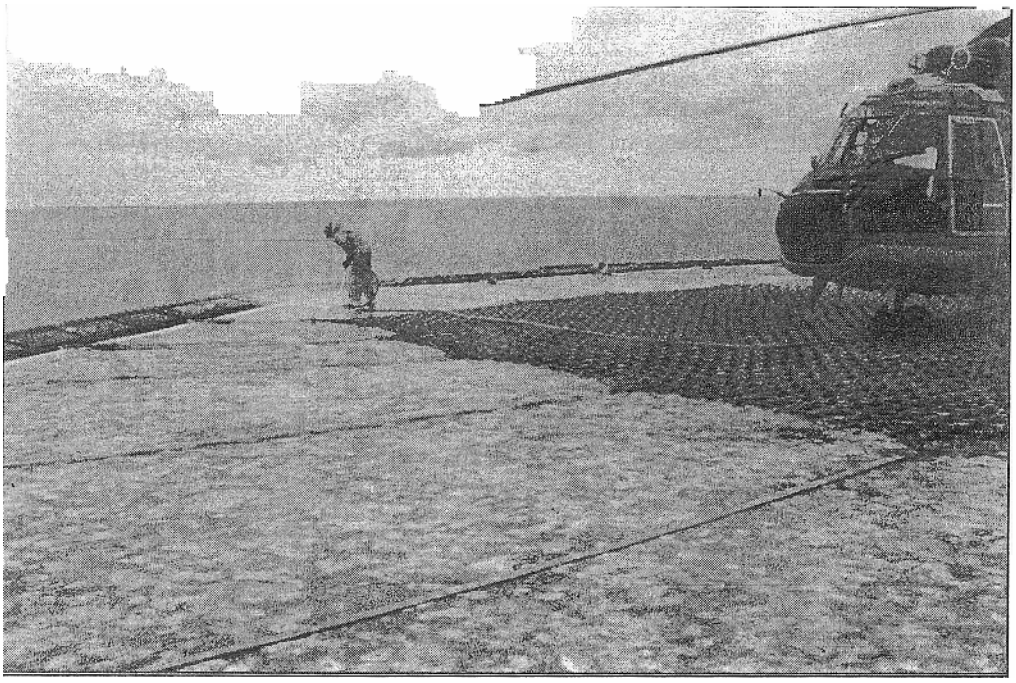

Figure 10.2 An Example of the effects of Guano Infestations on a Helideck Surface
(Photograph courtesy of TotalFinaElf)

The following problems are generally associated with the presence of seabirds in the vicinity of helicopters and offshore Installations:

- Potential for a 'bird strike' damaging and/or bringing down a helicopter as it approaches to land or is taking off from an Installation
- Additional cost of aborting landings on an Installation because the birds will not move away
- Obliteration of helideck markings and lighting by guano making helideck landings in daylight more difficult and potentially unsafe at night. Obliterated markings also have the potential for causing a 'wrong deck landing'
- Potential for helideck crews and helicopter passengers to lose their footing on wet guano
- Potential for diseases that can be transmitted by contact with gull quano or by inhaling dried guano dust
- Costly deterioration of the Installation structure and its fittings caused by the acidic guano
- Increased costs of cleaning programmes associated with clearing up guano and other detritus

7.4 Helideck Condition Monitoring

The levels of operational acceptance for helideck surface condition aadopted by the helicopter operators are shown in the table below. Any reported surface deterioration above Level 7 would incur flight restrictions thus limiting operational helideck availability.

Level	Surface Condition/restriction
1	Clean.
2	Small isolated bird droppings.
3	Noticeable, but no operationally significant bird droppings
4	Markings beginning to be degraded
5	Obvious bird usage.
6	Noticeable degradation of markings
7	Bird usage causing operational problems
8	Substantial degradation of markings.
9	No night operations
10	Totally obscured – daylight cleaning operations only

NUI flelideck condition monitoring and reporting is co-ordinated by BHAB Helidecks and is a measure of the importance attached by helicopter operators for properly managing the problems caused by bird/guano infestation. The problems range from obscured helideck markings causing wrong deck landings, cancelled or aborted sorties, to bird strikes or near misses etc. Routinely, flight crews are therefore required to complete and file helideck condition reports that indicate the condition of the helideck surface, whether a helideck net is fitted, windsock and windsock illumination.

7.5 Mitigating Measures

The problems caused by the presence of seabirds and guano infestation on and around an Installation helideck should be thoroughly investigated, documented and, following production of a risk analysis/Safety Case and consultation with the BHAB/CAA, best available solutions implemented to mitigate the effects.

However, finding permanent solutions to the problem js very difficult due to the forces of nature. It must be recognised that the 'bird' problem has persisted in general aviation as well as offshore for many years, yet to date, the optimum solution has so far eluded the aviation industry.

Active measures taken to discourage seabirds from roosting on a helideck may include an automatic bird deterrent system that creates a 'hostile' environment for the birds in a given area of an Installation. The use of such systems should consider:

- The long term acceptance (habituation) by the birds of a 'deterrent' system. This may require a sophisticated design that provides random changes to the 'distress call' outputs etc
- The value of remote controlled startup and shutdown of the deterrent to coincide with commencement of helicopter operations
- Using an exclusion system that is only activated by bird movements, with automatic and random changes to the bird distress calls
- The potential for the deterrent system to cause birds to flock onto adjacent Installations (or to migrate to other parts of the same Installation) and interfere with helicopter operations at a new roosting site
- The value of using a database that provides local observation and recording of the bird species involved (eg North Sea Bird Club). This can provide useful input for determining the best solution to employ

7.5.1 Exclusion Measures

Installing specialised equipment onto NUIs is generally a requirement to combat the problem of seabirds on helidecks. When the equipment is fitted it also needs to be maintained.

There are three classes of mitigation systems that can be used for dealing with the bird problem - proofing, scaring and control.

Control (culling) is not a realistic option in the offshore environment and would also be publicly unacceptable.

Proofing is used but this has generally been limited to fitting bird spikes on the perimeter lighting. However, in recent times the attachment of brightly coloured ty-raps onto the helideck net has been reasonably successful. This system is still subject to evaluation and Dutyholders will be required by the Health and Safety Executive and CAA to demonstrate (by risk assessment/Safety Case) that the arrangements used, poses no additional problems for helicopter operations.

The offshore industry has generally accepted bird scaring as the principal means of dealing with the problem.

Audio bird scaring systems are the most commonly employed devices and these reproduce bird distress and predator calls through loudspeaker systems controlled by microprocessor to randomise various characteristics of the sound. Such an arrangement produces 'a constantly changing audible hostile environment' which, although disliked by the birds, is harmless to them.

The effect of bird decoys - static models of predators - is very short lived

Water-spray systems, where they can be installed, have been found effective, but require constant surveillance and system activation from a remote location to control the problem.

It should be noted that individual bird exclusion devices are reported to have only low to moderate success on most Installations.

Combined systems have been more successful. For example, the use of a Gullscat bird-scaring device in conjunction with a water spray automatically activated when birds encroach onto the helideck area, has proved to be successful.

Current exclusion methods have only partially solved the bird/guano problem therefore, the search for new and innovative methods should continue.

7.6 Routine Cleaning And Maintenance

The most effective management solution to the 'guano problem' is to recognise when there is a persistent problem (it may be seasonal) and then accept that regular helideck cleaning and maintenance is required.

Cleaning and maintenance work should to be done prior to guano infestations reaching levels where flight restrictions have to be imposed by the helicopter operators. Helicopter operators will continually monitor and assess the levels of guano contamination on NUIs. Where excessive levels of contamination are noted this is likely to have an effect on operations (eg night restriction imposed).

Other than those Installations where guano infestations are a limited problem, an ad hoc approach to guano removal is unlikely to provide the best solution. Helideck washdown, cleaning and repairs should be a priority activity planned within the normal Installation maintenance schedule.

Measures taken to clean and repair the areas affected by guano should be properly assessed for their health and safety effects on personnel. There detailed Control of Substances Hazardous to Health (COSHH) assessmemt should be undertaken.