Norwegian approach to Helicopter Safety
Head of Helicopter Section - NCAA

Chairman of The Committee for Helicopter Safety – Inland Operations. ("Inland Committee")

Chairman of the Committee for Helicopter Safety on the Norwegian Continental Shelf. ("Offshore Committee")
I will talk about:

* Accident statistics.
* Norwegian Public Reports.
* Helicopter Safety Studies (HSS – 1-3)
* The Committee for Helicopter Safety on the Norwegian Continental Shelf (Offshore Committee)
* The Committee for Helicopter Safety - Inland Operations (Inland Committee)
* The Helicopter Safety Study – Inland Operations
* CAP 1145
Fatality numbers - all offshore helicopter operations in Norway since 1987:

- 19 fatalities in offshore related helicopter accidents (Zero after 1997 – the Norne accident)
The good offshore statistics due to...

* Helicopter Safety Study (HSS) 1, 2 and 3 with recommendations.
* NOU 2001 and 2002 (Norwegian Public Reports) with recommendations.
* Norwegian Oil and Gas guidelines. Stricter requirements than enforced by the authorities.
* Ability and willingness to accept cost to improve safety
* Open attitude...
  * Reporting (NF2007)
    * 2006 – 5 reports from offshore helicopter operations
    * 2011 – 624 reports
* Cooperation and Communication...
  * between: the helicopter operators, Norwegian Oil and Gas, Avinor, N-CAA, Petroleum Safety Authority Norway, Ministry of Transport, labour unions, and the Committee for Helicopter Safety on the Norwegian Continental Shelf.
First recommendation in the two public reports:
- Establish a Committee which shall work with helicopter safety in the Norwegian sector of the North Sea.

Offshore committee formed by the Director N-CAA in 2003, as a coordinating forum for helicopter safety offshore.

Consists of members from:
- The authorities (N-CAA, Petroleum Safety Authority)
- The helicopter operators (CHC HS, Bristow, Blueway, NHS)
- Public Service Providers (Avinor – ATC)
- Labour unions (Oil worker unions, helicopter operators, Pilot unions, ATC union, etc.)
The Offshore Committee shall work for a **significant increase in helicopter safety** on the Norwegian continental shelf.

The Committee shall **be a driving force** towards the authorities and others so that recommendations made by NOU 2001:21 and 2002:17 are closed.

- (Recommendations done by HSS-3 are also part of the mandate).

The Committee **can raise any question** related to helicopter safety offshore, and **follow up with suggestions** for actual implementations.
A small, but important, element in the efforts to increase safety.

Reports directly to the Director N-CAA and the MOT.

No formal authority, but has respect as an expert panel.

- Media and people listen!
- Operators, organizations and authorities act!

A driving factor in all helicopter safety related matters.
Committee for Helicopter Safety on the Norwegian Continental Shelf.
Some important results of safety work where the Committee has played a role...

- HUMS – research, development and interpretation
- Development of standards and required equipment.
- Better meteorological information offshore.
- Improved working environment for air crew.
- Increased training requirements for air crew (simulator).
- Improved cooperation between the North Sea states.
- ADS-B / Controlled airspace offshore.
- GPS approaches to rigs.
- Research (HSRMC).
* Helicopter Safety Study number 3.
* Paid for by the oil industry and the authorities.
* Published in April 2010.
* Third study by SINTEF.
* Covers the period 1999-2009 and gives estimates for the future, up to 2020.
* A total of 42 recommendations to improve helicopter safety.
The work is split between:

- The Offshore Committee (Appointed by the MOT to lead the work)
- Norwegian Oil og Gas
- Helicopter Operators (CHC HS, Bristow)
- Avinor (ATC)
- Petroleum Safety Authority Norway
- N-CAA
The ten prioritised recommendations for 2010-2020 (estimated to represent 23% risk reduction):

1. Improved technical analysis of criticality (Failure mode, effects and criticality analysis - FMECA)
2. Use of last generation proven helicopter technology.
3. Implementation of automated approaches to rigs and ships.
4. Improve the authority’s inspection and surveillance programs (risk based inspections).
5. Apply the Norwegian Oil and Gas recommendations.
6. Minimize flights in night conditions and reduced visibility.
7. Extend pilot training and improve simulator requirements.
8. Extend training for technical personnel.
9. ADS-B / Controlled airspace offshore
10. Focus on communication among all offshore operators, in order to learn from experience.
Future.

* Introduction of ADS-B (Ekofisk, Balder)
* Controlled airspace in the North Sea
* Further ADS-B along the coast.
* Follow up recommendations in CAP 1145

* And...
* Oil exploration/development in the Barents Sea!
  * **Concerns:** Limited helicopter range, emergency landing limitations, no refueling possibilities, limited SAR efficiency, use of “point of no return”, flight following and communication, poor met observations and forecasts.
As new activity requires new thoughts...
  * Have we thought it all through?
  * Have all possible actions to prevent accidents been implemented?
  * What about mitigating the consequences of an accident?

We don’t know what we don’t know – so...
  * Do we have any unpleasant surprises coming?
Now a switch from offshore to inland operations...
Offshore helikopter - ulykker og aktivitet

Antall ulykker

Flytimer

0 1 2 3 4 5 6
0 10 000 20 000 30 000 40 000 50 000 60 000


Ulykker uten omkomne
Fatale ulykker
Flytimer
Inland...
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• **19** fatalities in offshore related helicopter accidents (Zero after 1997 – the Norne accident)
• **58** fatalities in inland accidents:
  – Finnmark 1990 (Swedish pilot, Norwegian pax – reindeer herding)
  – Gildeskål 1996 (Swedish pilot, Norwegian pax – reindeer herding)
  – Kapp Heer, Spitsbergen, 2008 (3 Russians)
  – Mosjøen 2012 (Swedish pilot, Norwegian pax – reindeer herding)

* 15 fatalities, a total of 15 accidents (Norwegian) since 2010.*
We have reason to believe...

* … that the **respect** for rules and regulations has been reduced.
* … that there is a **lack of flight safety awareness** among the NPHs, the pilots and the customers/users of helicopter services.
* … that we experience **under-reporting** of incidents and serious incidents.
* … that safety attitude and a realistic **realisation of own limitations** are lacking.
* … that ”other issues” (read **profit**) are more important than safety.
* … that rules and regulations are broken
  * of financial reasons (within both commercial and private aviation)
  * to please the customer (customer pressure).
* … that risk and adrenaline kicks have become an industry.
Inland helicopter

- Considerable increase in activity.
- 55 000+ flight hours/year (equal to offshore).
- Many small and medium operators.
- Many pilots with low experience level.
- Many helicopter types with different performance and suitability.
Committee for Helicopter Safety - Inland Operations was established May 2009.

- Meets minimum 4 times per year, two day meetings.
- Meets primarily in the period Sept-May to avoid the main helicopter season.
- N-CAA covers all meeting expenses for the members.
Vital conditions for the Committee:
- Political support (MOT)
- Authority support (N-CAA)
The Committee is lead by the N-CAA, but is independent.

Reports directly to the Ministry of Transport.

All inland helicopter AOC-holders are invited as members, including Police and Air Ambulance.

N-AIB observer.
The Committee shall work for a substantial improvement of flight safety for inland helicopters, with zero accidents as a goal.

The Committee shall be an influencing factor towards the authorities and the operators. The Committee shall raise questions and problems related to flight safety and come up with recommendations for improvement.

The Committee shall, in addition to working on a national level, cooperate with international organizations working with helicopter safety.
Helicopter Safety study – Inland Operations

SIKKERHETS-STUDIE INNLANDS HELIKOPTER

SAFETEC
Ministry of Transport financed a Safety Study for Inland Helicopters in 2011.

Study performed by SAFETEC.

Finished February 2013.

Study made 41 recommendations.

MOT appointed the Committee for Helicopter Safety – Inland Operations to lead further work with the recommendations.
The number of Aerial Work related accidents in inland operations have been unchanged for the period 2005-2011.

The development is still disturbing because the number of fatal accidents has increased.

Summary
Highest probability for fatal accidents:
- Pax (A to B)
- A to A
- Survey flights
- Ferry flights
- Private flights
- Foreign operators

These are the types of operations which the industry consider has the lowest risk.

These are the types of operations which is flown by the pilots with least experience.
The following conditions increase the probability for an incident to end up as an accident:

- Weather
- Lack of planning
- Loss of control
- Pilot age
- Pilot experience (less than 1000 fl.hrs or more than 5000)
- Operator (private, operators without AOC, small Aerial Work operators)
The majority of the Aerial Work-operators have had a negative financial result the last 5 years.

In spite of repeated loss, the industry is fed new capital.
Among customers/users of helicopter services, price is the primary criteria for selection of operator.

This is also true for companies where the Government is main shareholder, and public agencies.

Pushed prices causes cut in cost and reduced flight safety work.

Cut in cost, in particular within filming and reindeer herding, is stimulated by:

- Competition from private pilots without any commercial approval
- Extended use of foreign operators with different framework and lower operating costs
Summary

* In the future we can expect:
  * 2 accidents annually
  * 55% chance for fatalities
After 2013 we can expect an increase in the number of accidents and the chance for fatalities unless measures are implemented.

The Safety Study has made 41 recommendations with various effect.
The most effectfull recommendations are:

1. Adjustment of regulations to suit helicopter inland operations.
2. Strengthened supervision and audits.
3. Increased control of foreign operators.
4. Increased control of private pilots.
5. Increased requirements for AOC and Aerial Work permits.
6. Establishments of a branch union.
7. Tender criteria must focus on safety – not on price.
8. Professionalization of the customers/users.
Recommendations

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Committee work in progress... (1)

- Finished or almost finished:
  - Freelance pilots (participation in all safety work, minimum a days payment)
  - Safety related equipment in helicopters
  - Safety Guide in all companies
  - Increased training (simulator)
  - Increased financial audits and improved competence for CAA inspectors
  - Required power reserve in all inland operations (10%)
  - Involve the insurance business and customers in safety work.
  - Get approval for mission related training (flight schools and management)
  - System for GPS marking of obstacles
The Norwegian Power Industry’s Recommended Guidelines for Use of Helicopters

- Tender must focus on issues other than price
- Professionalization of the customers/users
- Committee decisions/agreements must be more binding for the committee members and respected by the customers
- A committee standard for mission specific training and competence for pilots and crew members.
We see that the work of the inland committee improve safety, and we hope to avoid some of these in the future...
Work on the CAP 1145 started shortly after the Shetland accident.

Statistics in UK sector since 2000:
- 14 accidents...
- 5 fatal accidents
- (In Norway: 1 emergency landing - 2002)

Media asked: «Why do we crash in the UK sector, but not in the Norwegian?»

UK-CAA invited N-CAA to participate in the work.

CAP 1145 published in February 2014.
Norwegian view...

* CAP 1145 is a good study, made in a remarkably short time and making some good recommendations.

* But –
  * N-CAA did not participate in the work with the recommendations.
  * We think that important recommendations in the study is reactive instead of proactive.
  * We think that the timing of some of the recommendations is unrealistic.
  * We think that the consequences for some of the action items are not properly evaluated. (EBS, Sea State 6, prohibit pax not seated adjacent to emergency exits, king size pax prohibited).
  * We are concerned that it will cause difficulties if we have different regulations in the North Sea.
  * We are concerned that EASA OPS will include some of the UK requirements which we are not prepared to implement.
However:

- Norway is not forced to implement CAP 1145 recommendations unless EASA decides otherwise.
- From the HHS-3 and other research, we have established our own list of priorities (action items) which we will finish first.
- We have studied CAP 1145, and the Offshore Committee will make recommendations to the N-CAA and the MOT for action.
- N-CAA will implement recommendations if we agree and when we are ready.
Thanks for your attention.

Questions?