Helicopter Flight Operations to Offshore Windfarms

Offshore/Onshore Aviation Conference
2nd – 3rd September 2013, Kuala Lumpur

Steffen Bechtel
windpark heliflight consulting GmbH
Am Kiel-Kanal 1
24106 Kiel
Germany
www.windpark-heliflight.de
Contents

1. Offshore Wind
2. Flight Operations
3. Specifics for offshore wind
4. Facts & Data
1. Offshore Wind in Germany

**North Sea**
- 2 windfarms in operation
- 23 are licensed
- 47 in licensing process
1. Offshore Wind in Germany

Baltic Sea

1 windfarm in operation
5 are licensed
8 in licensing process
1. Offshore Wind

2. Flight Operations

3. Specifics for offshore wind

4. Facts & Data
2. Flight Operations
Transport of personnel and cargo
Transport

A109 "S"
Transport

S-76B
Transport

AW-139
Transport

Definition of a departure day/night
Transport of personnel and cargo

Lighting of WTG Towers for safe navigation
2. Flight Operations

Transport of personnel and cargo
Transport

EC-135 P2+
Legal requirements

- Air Traffic Act (LuftVerkehrsgesetz)
- JAR-OPS3 (commercial passenger transport)
- General administrative regulations (Allgemeine Verwaltungsvorschriften)
- HSE requirements

usually not sufficient to cover all cases
2. Flight Operations

Demand of windfarm operators are higher than legal requirements.

Part of the HSE concept.

Presentation...
2. Flight Operations

Legal / Operational requirements

Offshore equipment

IFR (Instrument Flight Rules)

Performance Class 1
Requirements for hoist operations

„Single-engine-capability“
acc. JAR-OPS 3.005(h)
2. Flight Operations

Requirements for:

JAR-OPS 3.005(h)

„During HHO, the helicopter must be capable of sustaining a critical power unit failure with the remaining engine(s) at the appropriate power setting, without hazard to the suspended person(s)/cargo, third parties, or property. „
## 2. Flight Operations

### Requirements for Hoist Operations

**Performance Charts**

**Increased Power Demand**

**Limited Payload**

---

**FLIGHT MANUAL EC 135 P2+**

**Performance Data**

**HOVER CEILING OUT OF GROUND EFFECT**

**2.0 Min. Power**

**ZERO WIND OR HEADWIND**

**BLEED AIR: OFF**

**NOTE:** Wind accountibility is untested

---

**Fig. 5-35** Hover ceiling out of ground effect - OEI, 2.0 min power

**EFFECTIVITY** Not for U.S. registered helicopters

**EASA APPROVED**

**Rev. 0**
2. Flight Operations

Requirements for hoist operations

- 5m minimum distance
- 5-7m range

Aiming System
2. Flight Operations

Requirements for hoist operations

Hoisting on a "Dead Turbine Positioning of the WTG not always possible Calculated for 0kts wind (worst case)
2. Flight Operations

Requirements
Offshore Wind Helicopters

2. Flight Operations

Requirements

Procedures

Risk Assessments

Standard operating procedures (SOP)
1. Offshore Wind

2. Flight Operations

3. Specifics for offshore wind

4. Facts & Data
- Distances
- Weather
- New courses
- Development
3. Specifics for offshore wind

Distances

30NM
17min
3. Specifics for offshore wind

Distances

- Refueling
- Alternate airfield
- Routing System
- Rescue
Weather
Offshore Wind Helicopters

3. Specifics offshore Weather
3. Specifics for offshore wind

New courses and qualifications
3. Specifics for offshore wind

Development of new procedures
Content

1. Offshore Wind
2. Flight Operations
3. Specifics for offshore wind
4. Facts & Data
# 4. Facts & Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>OWF connected:</td>
<td>3</td>
</tr>
<tr>
<td>OWF under construction:</td>
<td>8</td>
</tr>
<tr>
<td>OWP licensed:</td>
<td>29</td>
</tr>
<tr>
<td>OWP planned:</td>
<td>97</td>
</tr>
</tbody>
</table>

Presently 89 turbines in operation
Equals 385 MW

2020: 10,000 MW planned
4. Facts & Data

Hoist Cycles:  > 9,000

Hoist PAX:    > 6,500

Accident free so far!
“There are old pilots and there are bold pilots. There are, however, no old bold pilots!”