

**SERIOUS INCIDENT**

|  |  |                   |
|--|--|-------------------|
| <b>Aircraft Type and Registration:</b> | Sikorsky S-92A, G-CKXL   |                   |
| <b>No &amp; Type of Engines:</b>       | 2 General Electric Co CT7-8A turboshaft engines  |                   |
| <b>Year of Manufacture:</b>            | 2014 (Serial no: 920242)   |                   |
| <b>Date &amp; Time (UTC):</b>          | 23 August 2018 at 1120 hrs   |                   |
| <b>Location:</b>                       | On Approach to the Brae Bravo platform, northern North Sea                                       |                   |
| <b>Type of Flight:</b>                 | Commercial Air Transport   |                   |
| <b>Persons on Board:</b>               | Crew - 2   | Passengers - 17   |
| <b>Injuries:</b>                       | Crew - None  | Passengers - None |
| <b>Nature of Damage:</b>               | None   |                   |
| <b>Commander's Licence:</b>            | Airline Transport Pilot's Licence  |                   |
| <b>Commander's Age:</b>                | 56 years   |                   |
| <b>Commander's Flying Experience:</b>  | 10,968 hours (of which 2,453 were on type)<br>Last 90 days - 62 hours<br>Last 28 days - 26 hours |                   |
| <b>Information Source:</b>             | Aircraft Accident Report Form submitted by the pilot   |                   |

**Synopsis**

The pilots were operating the S-92A helicopter on a multi-sector route between platforms in the Brae field in the northern North Sea, approximately 150 nm north-east of Aberdeen. On the third sector from the East Brae platform to the Brae Alpha platform, the pilots mis-identified the Brae Bravo platform as the destination and made an approach to the hover above the deck of the platform. The radio operator on the Brae Bravo platform told the pilots that they had made an approach to the wrong deck; following clearance to depart, the pilots continued the flight without further incident.

The operator stated that it would conduct additional training addressing the task management requirements and complexity during shuttling<sup>1</sup> to prevent a recurrence.

**History of the flight**

The pilots reported at 0900 hrs for a multi-sector flight carrying passengers and freight to the Brae field. The routing was Aberdeen/Dyce (EGPD) – Brae Bravo platform (BRAB) – East Brae platform (EBRA) – Brae Alpha platform (BRAA) – Aberdeen/Dyce (EGPD). This

**Footnote**

<sup>1</sup> Shuttling is the act of flying between installation helidecks which are less than 10 nm apart.

was the 3<sup>rd</sup> line training<sup>2</sup> flight for the co-pilot (P2) following conversion to type. The operator had allocated a Sikorsky S-92A, registration G-CKXL, to the flight.

The pilots conducted pre-flight planning, which covered a detailed briefing on the weather, confirmed the routing, and consulted the Heli-deck Directory<sup>3</sup> (HD). The pilots assessed that all three landings required a similar approach path, routing around the flare-stacks on the northern side of the platforms and turning left to land on the helideck in a southerly direction, while accepting light cross-winds. Owing to the wind direction, all the landings were required to be flown from the left seat (LHS). Consequently, the PIC decided that he would occupy the right seat (RHS) carrying out the Pilot Monitoring (PM) role, while the P2 would occupy the LHS carrying out the Pilot Flying (PF) role.

During start-up, the crew entered the route into the Flight Management System (FMS) using the operator's standard route structure amended manually to reflect the in-field routing. The first sector to the BRAB was conducted without incident. On the second sector, the PIC took control of the helicopter from the P2, who was experiencing handling difficulties, while in the hover over the EBRA helideck. During the turn-around on deck, the PIC debriefed the P2 on the handling of the approach. The pilots confirmed the routing to the next destination as the BRAA in accordance with standard operating procedures (SOPs) and noted that the needles<sup>4</sup> slaved to the FMS were pointing in the expected direction.

The P2 flew the departure from the EBRA on a southerly heading before turning right, whereupon the PIC, acting as PM in the RHS, saw the platform as expected. The PIC noted the FMS needles pointed in the expected direction, and visually identified the platform ahead, mentally noting "there's the rig and the flare-stack to fly around", as had been discussed during the pre-flight planning phase. However, he had mis-identified the BRAB, instead of the BRAA beyond, as the destination.

The P2 proceeded to fly manually, without 'coupling'<sup>5</sup> the helicopter. After listening to the approach and landing briefing given by the P2, the PIC used the time available to coach the P2 on the handling of the approach. The pilots carried out Shuttle Final Checks<sup>6</sup> during the transit to minimise interruption during the final stages of the approach, except for the final 2 items, which involve arming the floats and confirming the deck name. (This is normal practice owing to the float arming IAS limitation on the S-92). At this stage the PIC noted the FMS needles still pointed towards the platform and matched his mental picture.

The P2 flew around the flare-stack to the north, turning left onto the approach and flew to the hover over the helideck. Throughout, the radar remained switched off, as permitted by the Shuttle Final Checks. Although the floats were armed during the final stages of the

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#### Footnote

<sup>2</sup> See section – Line Training.

<sup>3</sup> See section – Heli-deck Directory.

<sup>4</sup> A needle is a pointing device displayed on the electronic compass displays, and which indicates the direction of the navigation aid to which it is slaved.

<sup>5</sup> Coupling is the process whereby the flight director is engaged through the use of an automated flight control system to provide automated control of the helicopter's flight controls.

<sup>6</sup> These are an abbreviated version of the Final Checks only used when flying between platforms less than 10 nm apart.

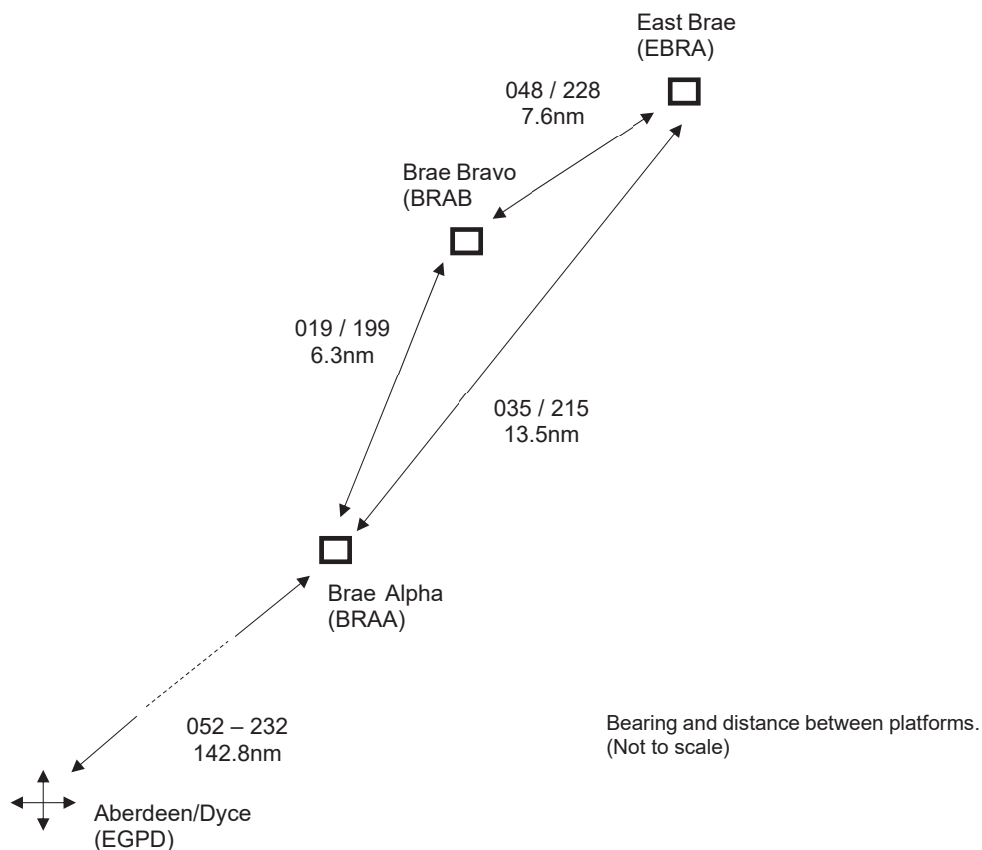
approach, the P2 did not read the deck name. (The PIC was unable to see the helideck throughout the latter stages of the approach and did not prompt the P2 to confirm the platform). Whilst G-CKXL was in the hover, the radio operator of the BRAB contacted the pilots on the radio logistics<sup>7</sup> frequency to advise that they had made an approach to the BRAB platform. The pilots acknowledged and, following confirmation from the radio operator that they could proceed, they departed the BRAB. The remainder of the flight was completed without further incident.

### Personnel

The commander of the flight was an experienced offshore commander and line training captain (LTC), conducting line training for the P2. The P2 was an ab-initio pilot who had recently converted to type. This was his 3<sup>rd</sup> line training flight.

### Brae field

The Brae field consists of 3 platforms - Brae Alpha (BRAA), Brae Bravo (BRAB), and East Brae (EBRA) – roughly aligned in a north-east/south-west direction.



**Figure 1**  
Brae Field


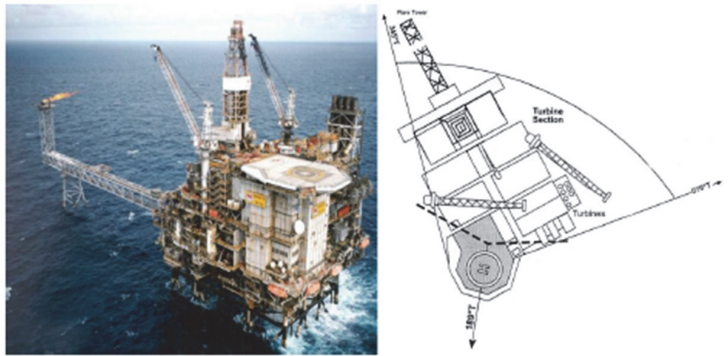
### Footnote

<sup>7</sup> Crews communicate with the with the radio operator of the platform through the logistics frequency referred to as “Log” allocated to the area in which the offshore installation is located.

## Brae platforms

The platforms share a similar physical configuration and infrastructure, with the helideck on each platform situated on the south-south-west corner with similar helideck headings of 198°. However, each of the platforms exhibit two distinct differences:

- Flare-stacks.** The EBRA platform has a flare-stack that rises diagonally from the north-west side, whereas the BRAA platform has two flare-stacks that rise diagonally from the north-west and north-east corners. Meanwhile the BRAB platform has a single flare-stack that protrudes horizontally from the lower side of the platform to the north-west.

|  |                  | HELIDECK INFORMATION PLATE  |               |                               |
|---|------------------|---|---------------|-------------------------------|
| HELIDECK Elev 242 ft  | VAR 0            | POSITION N58 47.5 E001 20.7   | <b>Brae B</b> |                               |
| HEIGHT OF INSTALLATION: 414   |                  | VHF Traf 123.65   | NDB 362       | Issue Date 30 May 2018        |
| HIGHEST OBSTACLE WITHIN 5NM: Miller 541   |                  | Log 129.125   | BBV           |                               |
| FUELLING INSTALLATION: Yes  |                  | Operating Company   |               | Issued By                     |
| STARTING EQUIPMENT: Yes   |                  | Marathon  |               | Helideck Certification Agency |
| HELIDECK D value: 22.8  |                  |   |               |                               |
| P/R/H Category: F   |                  |   |               |                               |
| Max Weight: 21.0  |                  |   |               |                               |
| Wind (T <sup>2</sup> )  | Kts              | Limitation / Comment  |               |                               |
| • 345-070<br>• 345-070  | • 20-45<br>• 45+ | Platform<br>• Table 1 (T) if overflight of 5:1 infringements listed below are unavoidable<br>• All types use Table 2 weights<br>• No landings<br>• Daylight Only  |               |                               |
|   | 5:1              | <b>Non Compliance</b><br>Anti turbulence panel NW corner<br>Foam monitor platform on South corner & East side<br>Various deck structures below helideck East side |               |                               |
|   | Misc             | No circle and H Lights Fitted   |               |                               |

Copyright HCA

**Figure 2**  
Brae Bravo Platform (HCA)

- **Derricks.** The EBRA and the BRAB platforms each have a single vertical derrick while the BRAA has 2 vertical derricks on the same side of the platform as the flare-stacks. Each of these derricks are 'skidded' and can be moved left and right to the full extent as well as inwards to a more limited extent to allow access to the various well slots on the platform.

### Heli-deck Directory

The Helicopter Certification Agency<sup>8</sup> (HCA) is the organisation responsible<sup>9</sup> for the inspection and certification of all helidecks on offshore vessels and installations operating in UK waters on behalf of the oil companies, helicopter operators and other clients. It conducts helideck inspections on a 2-year cycle and uses the guidance in Civil Aviation Authority (CAA) publication (CAP) 437 '*Standards for Offshore Helicopter Landing Areas*'<sup>10</sup> as the basis for the criteria for certification and the format of the HD.

Flight crews use the HD as a guide primarily for the purposes of flight planning. The HD consists of the Helicopter Landing Area Certificates, Heli-deck Information Plates and the Heli-deck Limitations List (HLL), which includes any Temporary Limitation Notices (TLNs), for all helidecks. These provide details of any helideck limitations together with pictorial representations (photographic and diagrammatic where available) of each offshore location and its helicopter landing area, recording all necessary information of a permanent nature using a standardised template<sup>11</sup>. The HD entries show the most recent status of each helideck concerning non-compliance with applicable national standards. Flight crews utilise the information provided in the HD to identify key issues that may affect the safe operation of the flight during approaches and departures to and from the helidecks.

During the pre-flight briefing, the pilots consulted the HD, and reviewed the HCA plates for the platforms as well as Annex 1 to Part E in the (HLL). These provided the pilots with deck information, limitations, wind sectors, restrictions arising from turbulence and non-compliances for the Brae platforms. While the pilots did discuss the flare stacks, they did not use the plates primarily to identify the platforms.

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#### Footnote

<sup>8</sup> [www.helidecks.org](http://www.helidecks.org)

<sup>9</sup> As required by EASA under Annex V to Commission Regulation (EU) 965/2012 Part SPA Subpart K Helicopter Offshore Operations (HOFO). This only came into force in July 2018.

<sup>10</sup> CAP 437 presents the criteria required by the UK CAA in assessing the standards of offshore helicopter landing areas for world-wide use by helicopters registered in the UK.

<sup>11</sup> CAP 437 was updated in September 2018 with the introduction of Part SPA.HOFO and the format for the template will be based on the advice given in AMC1 SPA.HOFO (115).





13:50 Tue 5 Mar 45%

HELICOPTER  
[BRAE A] Brae A 26 Sep 18

|                                    |           |                                   |                                      |                           |
|------------------------------------|-----------|-----------------------------------|--------------------------------------|---------------------------|
| HELIDECK<br>ELEV 236               | Var<br>0° | Position<br>N58 41.5<br>E001 16.8 | <b>BRAE A<br/>FIXED PLATFORM</b>     |                           |
| HEIGHT OF INSTALLATION: 394        |           | VHF<br>Traffic 123-65             | NDB<br>'BAF'<br>328                  | BRAE A                    |
| HIGHEST OBSTACLE WITHIN 5NM: CHECK |           | Log 129-125                       |                                      | 26 SEP 18                 |
| FUELLING INSTALLATION: Yes         |           | DECK MARKINGS                     | OPERATING<br>COMPANY<br>Marathon Oil | APPROVAL<br>AGENCY<br>HCA |
| STARTING EQUIPMENT: Yes            |           | SIDE MARKINGS                     |                                      |                           |
| HELIDECK D value: 22.2m            |           |                                   |                                      |                           |
| P/R/H Category: F                  |           |                                   |                                      |                           |
| MAX WEIGHT: 27778lbs / 12600kg     |           |                                   |                                      |                           |

**LIMITATIONS / COMMENTS:**

- Wind 305° - 067°(T) All kts. See reverse or HCA part E for specific restrictions regarding turbulence. Turbulence reports requested.
- Consult table 1(T) if overflight of Tropo dish on west side and various deck structures below helideck east of platform is unavoidable.
- Circle and H lights fitted.

**NON COMPLIANCE:**

- 5:1 gradient infringed by Tropo-dish (west side) and generator intakes east side of the deck.

**Misc:**

- Rig has two flare stacks, at least one of which will always be unlit depending on production and wind direction.

NAVBLUE - 1nbraa1aocg0

EXIT MENU

Figure 4

Brae Alpha platform (Navblue Charts+)

## Aids to navigation

The FMS, providing GPS guidance, is the primary electronic aid to navigation while operating offshore. It is loaded with a standard aviation database together with the operator's specific database appropriate to the area of operation. Guidance is achieved when the FMS is selected as the primary navigation source to which the helicopter automation is 'coupled'. The flight plan, together with the offshore installations as GPS waypoints, can be overlaid

on the navigation screens, which can also display the radar picture at the same time. This enables GPS waypoints to be overlaid on radar returns. There is also the ability to select the FMS as the navigation aid source for the needles on the compass displays, whereby the direction and distance to the active waypoint in the FMS can be displayed. This replicates the display of other electronic navigation aids, such as an NDB needle, and enables the GPS to replace the NDB as the primary means for platform identification. These techniques enable pilots to maintain situational awareness and ensure correct identification of the installations, particularly in low visibility, while operating offshore.

## Communications

Pilots communicate with the radio operator of the offshore installation through a logistics frequency. A separate traffic frequency is used for the passing of flight-watch<sup>12</sup> details, enabling flight crews to maintain awareness of other flights operating to different installations in the same area, and to obtain 'helideck availability'<sup>13</sup> from the helideck crews<sup>14</sup>. These frequencies are not specific to the offshore installation but are determined by the area in which it is located. Pilots communicate to the installation on these frequencies using their second VHF radio and monitor both frequencies using both VHF radios once the radar service provided by ATC has been terminated while offshore.

## Line training

Line training is conducted whenever a pilot is new to the operator, role, or area of operation. It seeks to develop the skills and knowledge of the pilot and standardise him in the operating procedures as laid out in the Operations Manuals (OM). The focus during the early sorties of line training for an ab-initio pilot is on the handling of the helicopter by the pilot, both through use of automation and manual flying, but with a greater emphasis on manual flying at appropriate stages, while, at the same time introducing the operating flow of a sortie.

## Operator standard operating procedures

Prevention of wrong-deck landings (WDLs) are specifically addressed in the OM Part A, using a 5-stage process, which states:

### ***'A1 8.2.10 The Avoidance of Wrong Deck Landings (WDL)***

- 1. As part of the pre-flight planning process discuss the routeing in relation to the other platforms or rigs nearby and the possibility of a WDL. This should include approach directions and deck orientations. If the destination is a NUI, then consideration must be given to completing a pre-landing orbit to confirm identity, weather permitting;*

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## Footnote

<sup>12</sup> Flight-watch is a service provided by the platforms in the absence of a radar service being provided by ATC.

<sup>13</sup> Flight crews request 'deck availability' from the helideck crew of the destination platform to establish that the helideck crew have prepared the helideck and are ready for the helicopter to land.

<sup>14</sup> The helideck crews are responsible for the manning and running of helideck operations and are led by a Heli-deck Landing Officer (HLO).



2. *Always put the full route in the FMS, using route discontinuities to ensure the next destination is held. Where possible, add other nearby locations to improve situational awareness. What is possible will depend upon aircraft type and guidance will be added to each Part B.*
3. *Confirm that the route as planned matches the route manifested by the client and the route programmed into the FMS.*
4. *Pilot monitoring to use the HCA app on company iPads as part of the approach brief. A quick review of the picture, layout and any limitations serve as a useful prompt.*
5. *Finally, read the name on the destination and cross-check with the other pilot against GPS/FMS bearing and distance. This really is the final barrier and has prevented a number of WDL's. Pilots need to be wary of 'expectation bias'; i.e. seeing what you expect to see'*

## Analysis

The incident arose from the pilots initially misidentifying and selecting of the BRAB as the destination and subsequently not detecting this incorrect selection.

## Prevention and recovery controls.

Analysis identifies the following prevention controls proved ineffective:

- The pilots did not explicitly establish a shared understanding of the potential for incorrect platform selection during the pre-flight planning phase through the use of the HCA plates to establish key identifying features and differences between the platforms;
- The pilots did not maintain adequate situational awareness in-field and did not make appropriate use of cues by reference to the electronic navigation tools available and which would have alerted them to the incorrect selection of the destination platform:
  - No reference was made to the FMS range to the platform displayed in the navigation source on the multi-function displays (MFD) which is on both the primary flight display (PFD) and Nav pages displayed, nor to the FMS routing displayed on the MFD showing the Nav page;
  - The radar remained in standby; this further reduced the likelihood of the attention of the pilots being drawn to the MFD with the Nav page displayed, which also shows the FMS routing.
  - The pilots did not make use of the Navblue Charts+ app on the operator's EFB during the brief on the deck of the EBRA iaw SOPs.

- The WDA path being flown to the BRAB by the helicopter at the time that 'deck availability' was requested and given could not be detected by the helideck crew on the BRAA.
- The pilots did not detect and recognise the WDA through reading the platform name in accordance with SOPs.

However, the following recovery controls successfully prevented the WDA from being converted into a WDL.

- The BRAB radio operator advised the pilots of a WDA, when the helicopter was in the hover above the helideck;
- The pilots responded appropriately.

Several factors led to these prevention controls being ineffective:

1. **Platform alignment.** Although the FMS routing was correct and the display of the FMS needle pointing in the correct direction was checked by the pilots, the alignment of the BRAB and the BRAA platforms, coincident with the routing, undermined the assurance of this check; the BRAB, being the nearest platform, was the most salient target. This alignment may also have contributed to the BRAA being obscured behind the BRAB. This deprived the pilots of adequate situational awareness following departure from the EBRA at the point which the PIC visually acquired the BRAB and selected it incorrectly as the destination, as well as the ability of the pilots subsequently to identify this error.
2. **Platform characteristics.** The three platforms in the Brae field share an overall visual similarity in configuration and infrastructure. This lends the BRAB to display many decoy characteristics with the other platforms in the field. Each of the platforms do have distinctive differences, in particular the BRAB with its horizontal flare boom. However, when approached from certain directions, these differences are unlikely to be sufficiently obvious, following an incorrect selection of one of the platforms as the destination, to override the existence of any expectation and confirmation bias during a high workload environment, and to enable the pilots to trap any selection error. The skidded nature of the derricks could mean that the location of the derrick would be marginally inward from the edge of the deck or on the opposite lateral corner from that indicated on the plate. When approached from certain directions, this might fundamentally alter the visual aspect from that determined at the pre-flight planning stage by the pilots through consultation of the plates. However, on this occasion, because of the direction of the flight path flown, any differences are unlikely to have had any influence.

3. **Helicopter Directory.** The limitations of the HD hinder the use of the plates by pilots to identify key features for the purpose of visual identification of the platform. The helidecks are reviewed on a 2-year inspection cycle and the photographs used are not routinely updated and may therefore present a visual image that is many years old. Visual aspects, such as platform colour, and the location and visual aspect of the name signs may have changed in the intervening period from when the photograph was taken. The direction from which the photographs were taken is not consistent throughout the HD. There is no reference to the skidded nature of the derricks in the plates. Together, these undermine the ability of the crew to use the plates as a means for establishing visual identification cues.

The differences between the platforms are not obvious from the plates and require closer scrutiny to identify key identification features. While the pilots did discuss the flare stacks, the plates were not drawn upon primarily for means of identification; the PIC considered the pictures are only of benefit if approaching from the same direction as that of the photograph of the plate. He noted some plates do not even provide photographs and many platforms look very similar.

4. **Operator EFB.** The pilots had an electronic version of the plates for the platforms available to them in the cockpit through the Navblue Charts+ iPad app on the operator EFB. However, the information provided did not differ in quality or in visual imagery to that provided by the HCA plates which the crew consulted during the flight planning phase. It is considered unlikely that further consultation of the plates in the app by the crew during the brief on the deck of the EBRA would have highlighted the key identification features that had not been previously detected during the flight planning phase. Its use by the pilots during the transit to corroborate correct identification of the platform would have been inappropriate due to the short sector and associated high workload
5. **Familiarity.** A perceived sense of familiarity by the PIC, from previous flights to the Brae platforms, combined with the time pressures that exist, particularly in early line training sorties, to achieve an on-time departure, are likely to have overridden a more detailed scrutiny of the HCA 'plates' during briefing, which would most likely have led to the highlighting of the differential characteristics of the platforms.
6. **Weather.** The wind direction combined with the similar position of each of the helidecks on the platforms established similar approach paths. This created the same mental model for the PIC for each approach. The good in-field visibility enabled the pilots to place a lesser reliance upon the FMS as the means for navigation and destination selection, particularly when airborne, when the workload required a focus on helicopter handling and monitoring of the PF by the PIC.

7. **Use of FMS.** The pilots entered the correct routing into the FMS which matched the route manifested by the client. In addition, the pilots correctly followed procedures by inputting a discontinuity<sup>15</sup> after the destination platform to ensure that the FMS did not cycle, during the transit, to the next waypoint.

After the initial confirmation of the route and noting the direction of the FMS needles while on deck of the EBRA, the PIC subsequently identified the destination platform visually. With the good visibility and the short nature of the sector, the choice by the P2 to fly manually was appropriate for the stage of training. However, this choice removed the protection that the use of FMS guided automation would have afforded the crew while potentially highlighting the incorrect visual selection of the destination when the helicopter would have flown past the BRAB towards BRAA.

The pilots did make use of the directional information that the FMS needles provided, but at the time, owing to the alignment of the platforms, there was not enough disparity between the direction of BRAA and that of the BRAB to highlight to the crew that they had selected the incorrect platform as the destination. The pilots did not draw upon the distance clues provided by the FMS, which could have alerted them to the incorrect selection of the BRAB as the destination.

8. **Expectation and Confirmation Bias.** The confirmation of the route by the pilots on the deck of the EBRA, that established in which direction the destination platform lay, set up the expectation by the PIC that the destination platform would be sighted during the right turn following a southerly departure. This expectation was subsequently met by the proximity of the BRAB, with its decoy-pairing characteristics.

The similar approach paths for each of the platforms had set up the conditions for confirmation bias to take hold once the incorrect selection of the destination had been made. In the words of the PIC, on seeing the BRAB, he mentally noted “there’s the rig and the flare-stack to fly around”. This matched the approach flight path that had been identified in the pre-flight briefing.

9. **Workload.** Two elements contributed to a very high workload that hindered the ability of the pilots to make the correct selection, and then to trap this incorrect selection.
  - a. **Shuttling.** The sortie was a multi-sector flight involving in-field shuttling. This involves a high intensity workload both for the PF from the helicopter handling perspective while flying between platforms, as

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**Footnote**

<sup>15</sup> A discontinuity is a means to freeze the flight plan from progressing to the next waypoint in the route.

well as for the PM, owing to the compressed sector times to conduct the required checks while monitoring the flight path and the handling of the helicopter by the PF. These factors would have afforded a very short opportunity for the visual acquisition and scrutiny of the BRAB by the pilots. This led to its incorrect selection as the destination.

- b. Line training.** This sortie was the 3<sup>rd</sup> line trip for conversion to role for the P2 following conversion to type. The focus of the PIC, as the PM, was the monitoring of the handling of the helicopter by the P2, specifically during the final stages of the approach to a platform. This placed a very high workload on the PIC as LTC, while acting as PM, and led to reduced scrutiny by him when selecting the BRAB as the destination. Once selected, the PIC focused on the more immediate priority of the safe handling of the helicopter to the detriment of other sortie management priorities, including the confirmation of the helideck name, in accordance with SOPs. This effectively removed the opportunity for the pilots to trap the incorrect selection of the BRAB as the destination.
- 10. Multi-crew environment.** At this early stage of line training with an ab-initio pilot, many of the defences that are derived from operating in a multi-crew environment were undermined or effectively removed. The P2, as PF, primarily would have been concentrating on the manual flying of the helicopter. He would have had limited capacity to contribute to the broader elements of sortie management, through providing additional scrutiny of the selection and identification of the platform. The P2's focus on the helicopter handling in the final stages of the approach will have drawn his attention away from reading the name of the platform on the helideck, as required by SOPs.
- 11. Brae Alpha platform helideck crew.** The HLO of the BRAA would not have been able to identify that a WDA was being made at the time that the pilots requested 'deck availability'. The helicopter would have been at about 7 miles distant from the BRAA, at which range it is highly unlikely any of the helideck crew would have sighted the helicopter; nor would they have been able to detect an incorrect flight-path. In this situation, visual identification by the helideck crew cannot be guaranteed as a reliable prevention control. The request and confirmation of 'deck availability' regularly occurs at or beyond the visual line-of-sight of the helideck crew and before the turn onto the final flight path is made, as this action is carried out by the PM at an appropriate point in the approach.
- 12. Brae Bravo platform radio operator.** Although a WDL was averted by the radio operator on the BRAB alerting the pilots that they had made a WDA, this occurred at a very late stage when the helicopter was in the hover over the deck of the BRAB. At this point, there would have been no helideck

crew on the BRAB to visually identify the flight path of the helicopter and for the HLO to alert the pilots that a WDA was being made. (The helideck crew would have completed their helideck duties following the departure of the helicopter from the BRAB earlier in the sortie.) The radio room primarily monitors radio calls, rather than visually identifying helicopter traffic.

## Conclusion

The pilots made a wrong-deck approach to the Brae Bravo platform during an in-field shuttle. This incident arose from the pilots initially misidentifying and selecting the Brae Bravo platform, instead of the Brae Alpha platform, as the destination and subsequently not detecting this incorrect selection. Several prevention controls that should have alerted the pilots to the incorrect platform selection and subsequently aided them in identifying the incorrect-selection proved ineffective.

Contributing factors included platform alignment and characteristics, coupled with inadequate identification by the pilots of the key features and differences of the platforms in the Brae field. The choice to fly the short sector manually and to navigate visually, which was appropriate for the good in-field visibility and this stage of line training, resulted in an increased workload for the PIC, as PM, and reduced the attention given to the electronic cues that existed in the cockpit. The short sector provided a very small window of time for the pilots to identify, select and confirm the destination platform with little subsequent opportunity to review. The inherent nature of the early stages of line training increased the workload on the PIC, as PM, and effectively nullified the protections afforded from operating in a multi-crew environment. This high workload, combined with the overriding influences of expectation and confirmation biases, undermined the ability of the pilots to make the correct identification in the first place and then, subsequently, to trap this incorrect selection.

This event highlights the challenges that exist while flying off-shore, even during benign conditions, during a typical sortie flown in the early stages of line training. Many of these factors highlighted above have previously been identified<sup>16</sup> as typical factors that contribute to wrong-deck landings.

## Safety action

The operator identified the following safety actions to be carried out:

- Training to highlight complex requirements of shuttling and need to concentrate on all aspects of SOPs
- Highlight of importance of following checklists at appropriate times.
- Review shuttle checks
- Highlight task management during the brief for a shuttling line training flight

## Footnote

<sup>16</sup> Wrong Deck Landings Research and Investigation Report dated 11 December 2015; Jarvis Bagshaw limited, commissioned by CHC on behalf of HeliOffshore.