

INCIDENT

Aircraft Type and Registration:	Sikorsky S-92A, G-VINL	
No & Type of Engines:	2 General Electric Co CT7-8A turboshaft engines	
Year of Manufacture:	2014 (Serial no: 920226)	
Date & Time (UTC):	22 August 2014 at 1805 hrs	
Location:	Golden Eagle complex, North Sea	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 2	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	None	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	49 years	
Commander's Flying Experience:	5,700 hours (of which 401 were on type) Last 90 days - 70 hours Last 28 days - 18 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The helicopter was operating a multi-sector flight, between rigs located approximately 60 nm north-east of Aberdeen Airport, when it landed on the wrong helideck, which was unmanned. On the third sector, it was required to fly from the Paragon Midwater Semi-Submersible 1 (MSS1) rig to the Buzzard complex helideck, a distance of 7 nm on a track of 205°M. However, the crew misidentified the Golden Eagle complex, on a bearing of 354°M from the Paragon MSS1 at a distance of 3 nm, as the Buzzard complex and landed there instead.

History of the flight

The crew were briefed to carry out a multi-sector flight from Aberdeen Airport, routing to the Scott platform, the Paragon MSS1 semi-submersible rig and the Buzzard complex, before returning to Aberdeen. Two passengers and some freight were carried outbound; one passenger was flying to the Scott platform and the other to the Buzzard. Three passengers were then due to be flown from the Buzzard complex back to Aberdeen.

The crew carried out a full pre-departure briefing, which included reviewing the weather, the route and the helidecks to be used, noting their relative positions in the complexes. The routing is shown in Figure 1.

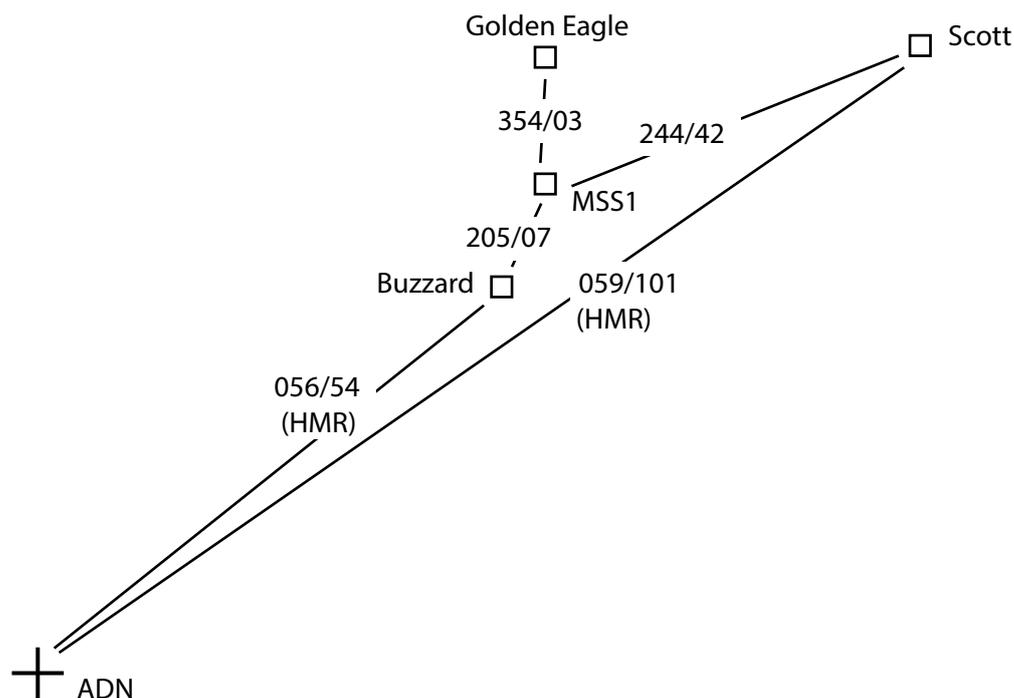


Figure 1

Helicopter routing with bearing and distances ($^{\circ}$ M/nm) to the next waypoint.
(For illustration purposes only and not drawn to scale: HMR = Helicopter Main Route)

The commander, occupying the right seat, was an experienced offshore pilot. The co-pilot, however, had only recently completed his line check and had limited offshore experience. Both pilots were relatively new to the helicopter type. The commander would have preferred to have been the Pilot Monitoring (PM) for this short multi-sector route: operating the radio, completing the associated payload information and navigating in this busy, high workload offshore environment. However, the motion (pitch, heave and roll) of the Paragon MSS1, while within limits, was such that the commander was required to occupy the right seat to carry out the landing. In addition, the prevailing wind direction meant that the landings on the other helidecks would also be carried out by the pilot in the right seat. Therefore, the commander would have to be pilot flying (PF) throughout the offshore sectors.

Two radio frequencies are used by helicopters operating offshore. The Logistics frequency is used for obtaining weather and load information and has the callsign 'Log'. This frequency is normally selected on VHF communications box 1. The second frequency is used to maintain a helicopter's 'flight-watch' and for providing information on other helicopter movements. It has the callsign 'Traffic' and is also the frequency used by the crew to contact the Helicopter Landing Officer (HLO), to establish helideck availability. It is normally selected on VHF communications box 2.

The departure from Aberdeen was flown by the co-pilot but the commander took control in the cruise. The sectors to the Scott and on to the Paragon MSS1 were uneventful, with the helicopter landing on the Paragon MSS1 helideck on a heading of about 330° M. The

co-pilot, as PM, was faced with a high workload, requiring the commander to assist him with some of his tasks.

Whilst on the Paragon MSS1 helideck, the co-pilot had some difficulty obtaining the return payloads to Aberdeen from the Buzzard Log operator, but learned that another company helicopter was due to arrive at the Buzzard helideck at about the same time as G-VINL. He eventually established that their anticipated return payload, of three passengers, was cancelled and there would be no passengers on the flight to Aberdeen. Meanwhile, the other helicopter elected to slow down to allow G-VINL to land on the Buzzard helideck first. The discussion between the commander and co-pilot in G-VINL, and the high level of RTF transmissions regarding this issue, were described by the crew as 'busy and confusing', with contradictory information coming from Buzzard Log regarding the return loads for each helicopter.

The crew discussed the next sector (to the Buzzard complex) and identified the large grouping of platforms ahead of them, in their 12 o'clock, as the Buzzard complex. It looked large enough and appeared to conform to the picture provided in their Helicopter Limitations List (HLL). They were unaware that it was the Golden Eagle complex and not the Buzzard complex.

Due to the close proximity of the next destination (the Golden Eagle complex), the crew decided that they would fly the sector manually, at an altitude of 500 ft amsl, without using the Universal Navigation System (UNS) Flight Management System (FMS) to drive the lateral navigation mode of the Auto Flight System. The crew commenced the Before-Departure Checks, where the next sector's track and distance is confirmed using the FMS, when they were interrupted by the Buzzard Log operator advising them of another change to their onward payload to Aberdeen. This had reverted to the original three passengers. At no point was the compass, area Rixmap or the FMS used to confirm the position of the next landing point, although both flight crew were sure that the Buzzard was selected as the next waypoint on the FMS.

Both pilots had their Navigation Displays (ND) selected to 'sector', as normal when operating offshore, resulting in the Buzzard waypoint being outside the 40° arc displayed either side of the helicopter's heading.

The takeoff was uneventful and the commander, as Pilot Flying (PF), turned the helicopter towards the Golden Eagle complex, climbing to an altitude of 500 ft. The transit time was three minutes and the crew decided to leave the landing gear down, the brakes ON and not to re-synchronise the compass.

The co-pilot, as PM, requested "DECK AVAILABILITY" (the call required to confirm that the helideck is ready and available for landing) from the Buzzard HLO and received confirmation that the Buzzard helideck was available.

The crew then carried out the abbreviated Final Approach checklist, the first item of which states '*Landing Point.....IDENTIFIED*'. At this stage, the name painted on the helideck

was not visible and the commander advised the co-pilot that confirmation of the helideck name would occur later in the final approach. As the co-pilot performed item 2, arming the flotation equipment, the crew were interrupted by the Paragon MSS1 Traffic operator asking if they had switched to the Buzzard Log. The co-pilot asked him to standby because they were at a critical stage of flight. Whilst the co-pilot was on the radio, the commander recalled identifying the helideck at the far end of the complex, as they had expected, but with its name unreadable at that stage. The superstructure of the complex passed down the right side of the helicopter but, due to the orientation and position of the helideck, they could not see it fully until they were almost alongside.

The helideck name appeared upside down, from their perspective, but, as the helicopter landed, the commander saw the helideck name 'ENSCO 120' in his rear quarter. Although the helideck was unmanned, there was no activity taking place in the vicinity of the helideck such as crane or equipment operation.

Realising their mistake, the crew immediately advised the Ensco 120 Log operator of their error and transmitted the standard on-deck radio call, stating the helicopter's callsign and the name of the deck on which they had landed.

The commander knew of the company requirement to remain rotors running on the helideck until cleared to take off by the HLO. However, he observed that there were no apparent structures or obstructions ahead and no cranes in operation, giving the helicopter an unobstructed and clear takeoff path. Aware of the helicopter's all up mass and the wind speed of 20 kt, he also estimated that it had single-engine hover performance, reducing the chance of ditching. The commander therefore considered that taking off immediately, minimising the time on deck without any fire cover (estimated to take 10-15 minutes to arrange), would be the safer option. In addition, he was aware that the other helicopter was inbound to the Buzzard complex and he did not want to cause any further delay.

The commander advised the co-pilot of his decision to take off and transmitted his intention to depart immediately to the Ensco 120 Log operator. The Log operator acknowledged the radio call and confirmed that there was nothing to affect the helicopter's departure.

The single passenger was briefed that a wrong deck landing had occurred and that they were not yet on the Buzzard helideck. A full set of Before Departure checks were carried out and the crew identified, by reference to the FMS, the correct position of the Buzzard complex. The Before Take-Off checks were completed and the helicopter departed. The flight continued without further incident and G-VINL landed on the Buzzard complex helideck, to resume its planned operation.

Meteorology

The flight was conducted in daylight and the weather offshore was good outside rain showers. The conditions at the time of the incident were reported as: surface wind from 330°-340°M at 15-20 kt, visibility greater than 10 km, scattered cloud at 1,800 ft, with moderate rain in the vicinity of the Buzzard complex. This rain obscured the Buzzard complex from the crew during the sector from the Scott platform to the Paragon MSS1.

Helideck information

The Helideck Certifications Agency (HCA) is responsible for the inspection and certification of helidecks on offshore vessels and installations operating in UK and Norwegian waters. Offshore helidecks are required to hold a valid certificate issued by the HCA on behalf of the UK operator. All helidecks mentioned in this report had valid HCA certification.

The Buzzard complex

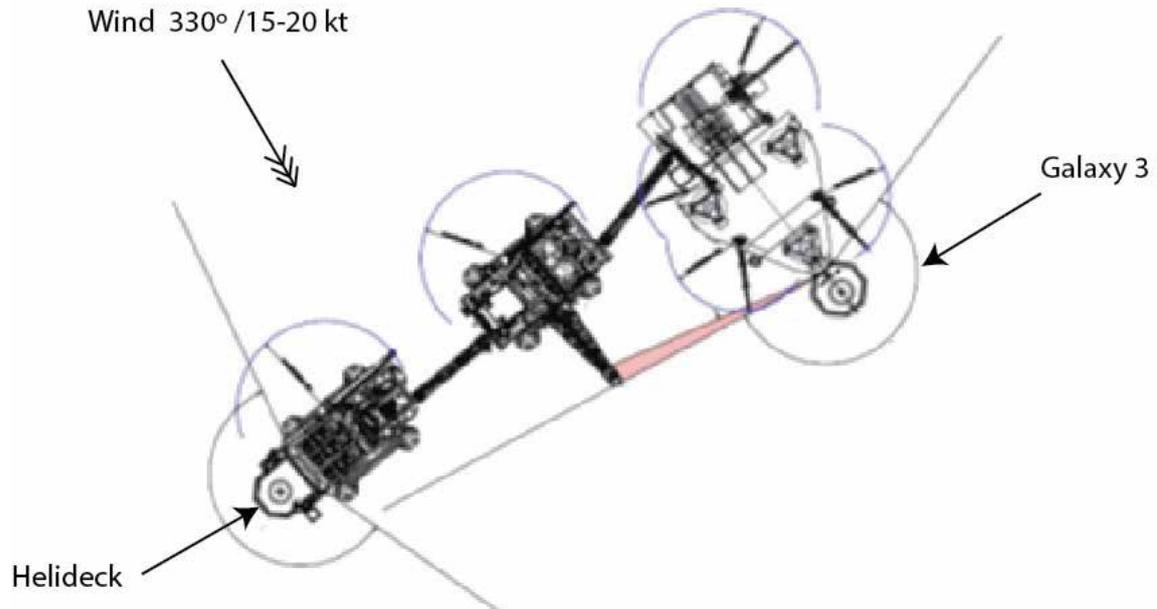


Diagram provided by the operator

Figure 2
The Buzzard complex

Three separate, fixed platforms make up the Buzzard complex (Figure 2), with the helideck on the south-western end of the complex. The average orientation of the complex is 050°/230°M. The Galaxy 3 jackup rig is attached to the south-easterly side of the most eastern platform. The Buzzard complex lies on a bearing of 205°M from the Paragon MSS1, at a range of 7 nm. When arriving from the Paragon MSS1, the commander expected the line of platforms to pass down his right side, before turning to the right to land into wind (330°-340°M at 15-20 kt).

Golden Eagle complex

Two separate, fixed platforms make up the Golden Eagle complex (Figure 3). The helideck is on the Ensco 120 jackup rig, which is attached to the northern side of the northern platform. The Safe Caledonia semi-submersible is attached to the southern side of the southern platform. The average orientation of the complex is approximately 170°/350°M. It lies on a bearing of 354°M from the Paragon MSS1, at a range of 3 nm. From the Paragon MSS1, it would appear as a large mass of structures, with indistinguishable individual installations.

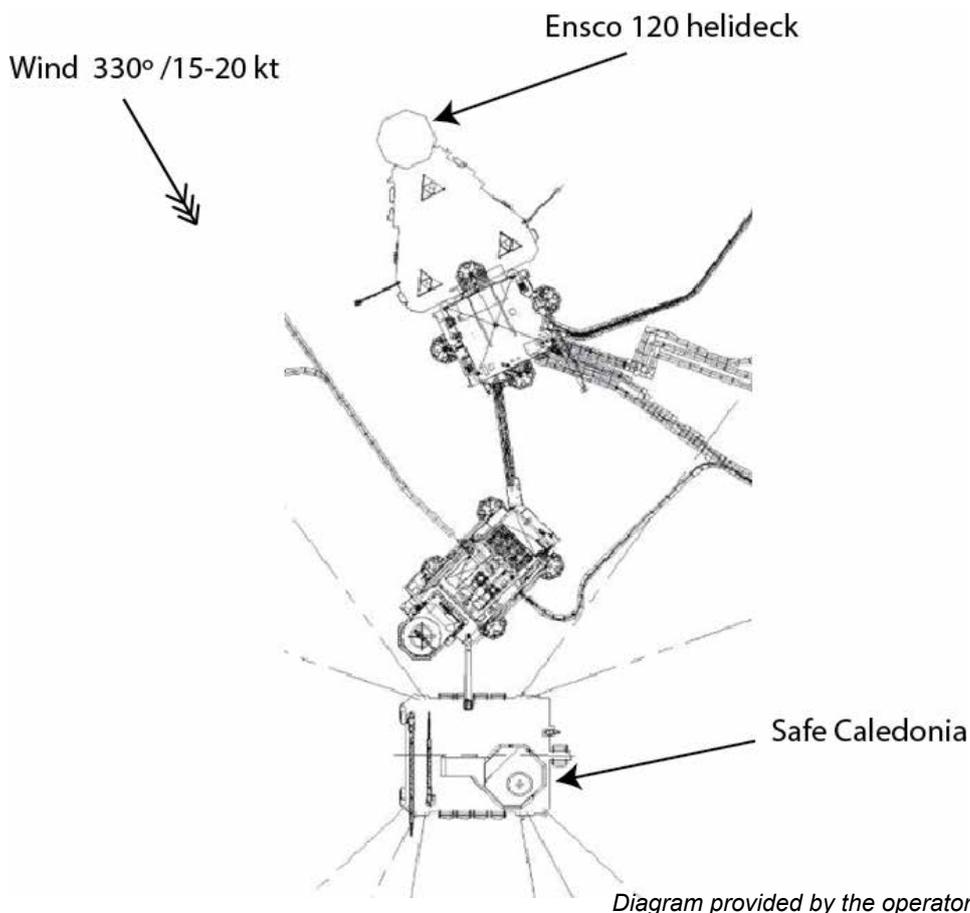


Figure 3

Golden Eagle Rig complex

Navigation

The operator's policy on the navigational equipment to be fitted to its aircraft is contained in its Operations Manual. It states:

8.3.2 Navigation Procedures

8.3.2.1 General

Company aircraft will be fitted with navigational equipment appropriate to route and type of operation and will include:

GPS receiver with associated flight management and display systems

VOR/DME receivers and associated display systems

ADF receivers and associated display systems

Weather radar

Maps and charts for visual navigation

Where appropriate, the Company will provide in the aircraft library a guide to the use of navigational equipment.'

In paragraph 8.3.2.4 'The use of GPS for Offshore Helicopter Operations', the procedures require crews on helicopters fitted with an FMS to use GPS for offshore operations, when out of range of navigation aids. The procedures also cover such matters as database validity, entering manual waypoints/routes in the FMS and the RAIM¹ (Receiver Autonomous Integrity Monitoring) check.

The FMS in G-VINL was serviceable and had been in use up to the landing on the Paragon MSS1. It would have provided the bearing and distance from the Paragon MSS1 to the Buzzard complex, had that been the next waypoint selected.

Landing on the wrong rig

The operator's Operations Manual, *Part A – Section 8 – Operating Procedures*, provides the actions to take following a landing on an incorrect rig. It states:

'8.5.10 Helideck Misidentification

If a landing or an approach to a low hover has been made at a helideck other than that for which a clearance has been given, the following action is to be taken:

If in the hover, complete the landing if safe to do so.

Complete the after landing checks.

Remain running on deck unless an immediate take-off is the safest option.

Advise the installation operator of the presence of the aircraft.

Advise the intended destination helideck of the whereabouts of the aircraft.

Confer with the installation operator about further intentions.

Ensure that the helideck is properly manned before contemplating taking off again.

Do not take-off until cleared by the HLO.'

These actions were applicable after the helicopter landed on the Ensco 120 helideck. The commander considered the item '*Remain running on deck unless an immediate take-off is the safest option*' and considered that the safest option was to depart immediately.

Analysis

The crew conducted a full pre-departure brief, which included the weather, the route plan, and the rig briefs. They also reviewed the HLL chart for all the offshore destinations.

The commander correctly identified that the highest workload during the multi-sector flight would be experienced by the PM. With a relatively inexperienced co-pilot, he would have preferred to carry out that role but had to fulfil the role of PF for the offshore sectors, due

Footnote

¹ RAIM monitors the integrity of GPS signals in a receiver system.

motion of the Paragon MSS1 and the wind direction. This had the effect of increasing his (PF) workload, when assisting the PM.

Whilst on deck on the Paragon MSS1, the commander misidentified the Golden Eagle complex as the Buzzard complex because it was a large complex of installations and fitted his mental image and expectation of the orientation of the Buzzard complex. He did not use the FMS, Compass or Rigmap to determine the correct destination, and the limited familiarity of the co-pilot with the area may have led him to accept the assessment of the commander. The crew were also distracted during their Before Departure checks, by radio calls from the Buzzard Log operator regarding payloads.

The knowledge that another helicopter was inbound to the Buzzard but that G-VINL was number one to land, added a perceived time-pressure. However, there was no safety critical reason to expedite their departure.

During the final approach to the Ensco 120 helideck, the crew called for and obtained “deck availability” from the Buzzard HLO, supporting their belief that they were approaching the correct installation. The crew then carried out the abbreviated Final Approach checklist item, ‘*Landing Point....IDENTIFIED*’, but were not able to read the name on the helideck and the commander was not aware that he was approaching the wrong deck. The commander had advised the PM, in his briefing, that confirmation of the helideck’s name would occur later on final approach, due to the rig orientation.

After realising they had landed on the incorrect rig, the crew carried out the ‘*Helideck Misidentification*’ procedure. They completed the first six of the eight actions correctly but, considering the circumstances, the commander believed that he was complying with the requirement to ‘*Remain running on deck unless an immediate take-off is the safest action*’, by taking off. Although the helideck was not properly manned, the crew interpreted the radio operator’s response that there was nothing to affect their departure as tacit approval of their decision.

In summary, the following factors probably contributed to the commander believing that the Golden Eagle complex was the Buzzard complex:

1. The Golden Eagle complex resembled the Buzzard complex when viewed from the Paragon MSS1 helideck.
2. As they approached the Golden Eagle, the complex opened out and it was seen to be a line of installations, considered similar to the Buzzard complex.
3. The crew had received “deck availability” from the Buzzard HLO.
4. The Ensco 120 helideck was located at the far end of the complex, similar to that expected on the Buzzard complex.

The co-pilot’s lack of familiarity with the area may have led to him accepting the assessment of the commander. However, the commander’s assumption that the Golden Eagle complex was the Buzzard complex would have been clarified had they used the FMS, as required in the company navigation procedures.

Conclusions

The visual appearance of their next destination, whilst on deck on the Paragon MSS1, was the sole method of identification used by the crew. During the subsequent short flight, the Golden Eagle complex continued to meet their expectation of the appearance of the Buzzard complex. They did not refer to the information provided by the FMS on the range and bearing of the Buzzard complex, as advised in the company's operations manual.

After landing on the Golden Eagle complex (Ensko 120 helideck), which was unmanned, the commander assessed it to be safer to take off immediately, after receiving confirmation from the Ensko Log operator, by radio. This also met a perceived time-pressure to arrive at the Buzzard complex before another inbound helicopter, which was expecting to land there after G-VINL. The flight to the Buzzard complex, and onward to Aberdeen, continued without further incident.

Safety actions

The operator carried out a prompt internal investigation into the incident and identified a number of potential safety actions for internal consideration. The following are of relevance to this report:

- 1. Section 8.3.2 of the [company] Operations Manual should be reviewed with regards to using multiple sources of information to confirm navigation.*
- 2. All Checklists (normal and abbreviated) should be reviewed in order to incorporate an action to positively select appropriate navigation aids.*
- 3. The S92 Operations Manual Final Approach Checklist (abbreviated) should be reviewed with a view to incorporating the words 'HELIDECK NAME..... confirm' as part of the checks.*
- 4. The S92 Operations Manual Final Approach Checklist should be reviewed with a view to reordering the checks and making the Landing Point check the final action.*
- 5. All offshore Radio Operators should be informed of the significance of landing on the wrong helideck with regards to the fire, crash and rescue cover. They should also be informed of the recommended actions which should be carried out post an unexpected helicopter landing on their helideck.*
- 6. All current [company] pilots are to be made aware of the significance of landing on the wrong helideck by the means of a Flight Safety Circular using this incident as an example. The Flight Safety Circular should include the potential hazards and state the actions required as per the Operations Manual.*
- 7. The training department should review the adequacy of teaching Unintentional Deck landings in both the Initial Line Training Lectures and also in the Command Course Syllabus.'*