Witness Name: Christopher Trubshaw
Statement No.: 1
Exhibits: INQ008983
Dated: 22 November 2024

THE CRANSTON INQUIRY

WITNESS STATEMENT OF CHRISTOPHER TRUBSHAW

I, Christopher Trubshaw, c/o Bristow Helicopters Limited, Redhill Aerodome, Kings Mill Lane, Redhill, Surrey RH1 5JZ, will say as follows:

1 Introduction

1.1 I make this statement in response to a witness evidence requests dated 30 July and 18 October 2024.

2 My role as Captain of the HM Coastguard Helicopter R163 ("the Helicopter") on 24 November 2021

2.1 My name is Christopher Trubshaw. I was the Captain of the Helicopter at the time of the incident on 23 and 24 November 2021 which is presently under consideration by the Cranston Inquiry ("the Incident").

2.2 I have a military background. I joined the Royal Navy in 1984 and I qualified flying helicopters in the maritime domain in 1989. I left the Royal Navy in around 1996 and flew for the Police as a civilian pilot. I remained with the Police until 2001 whereupon I re-joined the Royal Navy and remained there until 2015, when I left the Royal Navy and joined Bristow Helicopters Limited ("Bristow").

2.3 I hold a UK Air Transport Pilots License (Helicopters) (ATPL(H)) and a valid instrument rating. I am qualified on the Augusta Westland 189 (AW189) aircraft and at the time of the Incident was fully current on that aircraft type. I am currently undertaking further training and re-qualification on another aircraft type at Bristow's behest.

2.4 In terms of the training requirements for my role, I must complete initial operational training and then subsequently undertake recurring aircraft and operational training with competency assessments every 6 months. Along with the Technical crew training schedule, this maintains our qualifications. We also undertake "line training", which is training in the actual aircraft, as well as recurrent modular training in accordance with the applicable operations manuals. This allows us to satisfy the Civil Aviation Authority that we are competent and up to date in accordance with our approved Operations Manuals and provides us with authorised alleviation from the Air Navigation Order for Civilian Flying to conduct SAR Operations. Training periods vary in order for them to be achieved. In addition, we are subject to minimum requirements in order to maintain our licenses, which require us to undertake a specified number of instrument and general aircraft handling evolutions.

2.5 All of my training requirements were up to date at the time of the Incident. I know this because at the time of the Incident I was marked as such on ISAR. ISAR is the system which Bristow uses to track all our flight operations, competency and training compliance and plan future evolutions. It is a very comprehensive commercial system that was initially designed for Bristow, and which has now been adapted for and is used by many other organisations.

3 The Helicopter

3.1 The Helicopter, which is the aircraft that I was flying at the time of the Incident, is an Augusta Westland 189 (AW189). The AW189 is a twin engine, modern generation helicopter. We refer to it as an electrical system aircraft; meaning there are electrical generators on board which power both the aircraft management control (computers) and sensor systems.

3.2 At the time of the Incident, there were four crew members onboard the Helicopter, comprising of two pilots (one, me, being the Captain), a winch operator and a winch paramedic. This is the usual number of crew on the Helicopter. The winch operator and the winch paramedic work in tandem with each other while in the aircraft, as they are both competent to operate the search equipment. When engaged in a rescue, the winch operator will use voice commands to direct the final movement of the Helicopter for the pilot to respond to, allowing us to effect a safe rescue. The winch paramedic, who is a trained paramedic, will go down on the winch cable and make an assessment of the casualties or effect the rescue. When we are engaged in a rescue, one pilot will be flying the aircraft and the other will be engaged in monitoring duties.

3.3 <u>Technology on board the Helicopter</u>

3.3.1 In terms of the technology/equipment available in the Helicopter for search and rescue operations, the first is the four crew on board, who will look out of the windows and make a visual search.

3.3.2 The Helicopter has a forward-looking infrared system (FLIR), which is a manually controlled camera that can process and display both video and infrared images.

3.3.3 There is an automatic flying control system that takes commands which the pilot has loaded into the system and automatically 'drives' the Helicopter based on the aircraft systems' computation of wind and GPS position.

3.3.4 The Helicopter also has a search and weather radar. The search function is mainly useful for detecting larger reflecting vessels like ships. In order to get a picture of smaller vessels, such as yachts, more manipulation of the system is required. The main purpose of this system is to allow us to see vessels and land for collision avoidance.

3.3.5 The Helicopter is night vision goggle compatible and each crew member has an individual set (not personally issued) for use when appropriate. These have limitations as, contrary to popular belief, they are not able to see directly into the dark and are image and light intensifiers and therefore require some light source to work. This means that definition across the water using night vision can be variable.

3.3.6 There are some limitations to this equipment. For example, the forward-looking infrared system relies on there being some sort of contrast between the infrared signatures of different objects; this essentially means a difference between the heat of the objects. Therefore, trying to find a small boat or a person in the water without them wearing a light or some kind of reflective aid can be very difficult, although it is not impossible. Success will depend on the search area and a number of factors, such as the heat

differential (i.e. how long an individual has been in the water and whether their body heat has degraded as a result) and the state of the sea. Separately, the forward-looking infrared system cannot see through solid objects and is affected by moisture in the air, meaning that it cannot see through cloud.

3.3.7 The Helicopter has the ability to home to set frequencies (recognised frequencies as set manually) if someone is carrying a distress beacon, but this will depend on the survival aids available to the target. This is known as threat reducing, as by having some sort of life detection source in the water, the threat of missing the target, or going to the wrong subject, is reduced. We use the term 'target' as a generic term to describe any subject that we are attempting to locate or rescue.

3.3.8 The Helicopter has VHF radios, a Maritime VHF radio and a HF long range radio that is used when we are unable to talk on the TETRA system. The TETRA system is the UK emergency services' end-to-end encrypted communications network. This system was used at the time of the Incident. However, as the TETRA system is carried on the mobile phone network, basic physics means that the system can drop out regularly when out of range, which can occur when flying over water or at a low level. The Helicopter has the functionality to allow the crew to communicate with the winch paramedic when they are on the end of the winch cable, through a radio system called Polycon. Generally, the Helicopter can have up to four radio systems selected at once. The crew would usually try and reduce this number down to attempt to reduce the burden of communications, as it can

be easy to get confused through the numerous different communication systems. Any limitations related to communication are predominantly human limitations as opposed to any directly linked to the technical capabilities of the Helicopter itself.

3.4 Endurance of the Helicopter

3.4.1 The endurance of the Helicopter is variable depending on the fuel load and the conditions of the day as well as the performance of the aircraft. If not planned for, there could be situations where we find a target, however the aircraft does not have the endurance to perform within the required safety margins. Although the aircraft is very powerful, there are limitations when it is hovering, and when carrying a payload (people or equipment). Ultimately, in a search and rescue situation, we will push the aircraft to its limits in order to maximise recovery of persons, but as Captain I need to be able to ultimately justify my actions to the CAA.

3.4.2 The Helicopter carries a standard fuel load of 1100kg (agreed for Lydd Operations, this can vary across SAR units operating in different environments), which provides just over 2 hours of flight time. If there is no wind, then 1100kg allows for appropriate hover performance. There are varying states of hover performance which would dictate a pilot's actions in an engine failure situation; standard responses and actions are briefed as part of the dynamic risk assessment every time the crew go to a tasking.

3.5 Comparison between helicopters and fixed wing aircraft in search and rescue operations

3.5.1 There is such a wide comparison between a helicopter and a fixed wing aircraft as they are completely different aircraft, and there are advantages and disadvantages to each and should be considered as a layered approach to SAR.

3.5.2 When compared to a fixed wing aircraft, there can be a fuel limitation with a helicopter, as a fixed wing aircraft does not have the same big power requirements as a helicopter uses in a hover. The limitation of a helicopter to carry out a search and rescue operation is based on endurance versus performance. The advantage of a helicopter, over a fixed wing aircraft, is that you are able to hover over targets and pick people up. You can slow down if the weather is really poor, and creep into land or to get close to a target and of course, operate in the low-level environment. You can lift people up into a helicopter from a boat but you cannot do that on a fixed wing aircraft. A fixed wing aircraft cannot be landed on the surface of the water, with the exception of sea plane; whilst you would not normally choose to do so, it is possible to do this with a helicopter, in extremis, dependent on sea conditions but it is not recommended/cleared within normal operations.

4 Events of 23/24 November 2021

4.1 The tasking on 23/24 November 2021

4.1.1 I cannot remember the exact timing of the tasking late on 23 November/early on 24 November where we were asked to undertake a search. I would defer to the timing recorded in the log from the ARCC, as that would have been the time that they alerted us.

4.1.2 The usual process is that the ARCC will call us and provide us with initial details of the tasking. This allows us to ask further questions relating to the tasking, and the aircraft commander consider the tasking, discuss it with the ARCC and assess to how best respond. We never directly say "no" to a tasking itself. If we do turn down a tasking it is once we understand the details and would only ever be based on issues such as weather, or the detail and feasibility of actioning the tasking and alternatives to immediate launch will always be explored.

4.1.3 On the night of the Incident, our initial tasking was quite vague. We received reports of a distress call from people in the water saying they were in a boat and it was sinking although they did not know where they were. Our initial tasking was to search a large portion of the English Channel in response to this distress call. The English Channel is a very large area of water of course, so I queried what we were specifically being asked to do. I wanted to know exactly what was being asked of us and who or what we were looking for. The people giving us the tasking are only relaying the information that they have available to them at the time, and these calls can be anywhere from 30 seconds to 20 minutes long. As aircraft commander,

I am charged with the safe operation of the shift and correct operation of the aircraft and overall management of the crew. It is our job to put ourselves at a risk outside the normal; if we turned down a tasking on the basis of bad weather, we would never conduct any rescues – people tend to get into difficulty in bad weather. However, one has to realise that if we launch and cannot see anything, we are merely burning holes in the sky and burning the endurance of the crew in the aircraft but we will respond.

4.1.4 To the best of my recollection, we were not aware of the mayday relay call that was broadcast. When we are tasked directly for an incident, we would not normally be advised that a mayday relay was being broadcast. A mayday relay is a broadcast message issued by the Maritime Rescue Co-ordination Centre to alert "any unit" (i.e. any vessels and air assets in the area) that there is an ongoing emergency based on a mayday call having been received. Because we are tasked directly for a specific incident and are working on the directed emergency channels for communication, we are not normally advised of a mayday relay. Everyone has a different response to a mayday call, but if you do respond you are legally bound to take action. It was not necessary for us to be advised of the mayday relay broadcast when we received the tasking – it would have been irrelevant to us at the time as we were being given a specific tasking for a specific incident. The tasking was issued in response to a distress call from a mobile phone. That was all the information the tasker had when it was relayed to us.

4.2 Response time of the Helicopter on 23/24 November 2021

4.2.1 The response time for our search and rescue aircraft at night is 45 minutes from the time we are tasked. For this tasking, on the night of the Incident, due to extended weather considerations and because of a temporary electrical fault with the Helicopter it took us 59 minutes to take off.

4.2.2 The Helicopter has many sensors on it, which continually monitor both mechanical and electrical systems and will highlight any faults that occur. On the day of the Incident, there was a fault identified on the aircraft. The type of fault was in the category of those that we should not fly with. I consulted the Quick Reference Handbook (QRH) as this details what the manufacturer says you should do in response to each fault. The QRH advised that for this fault, if it does not clear then technical assistance should be sought. This was a judgement call for me as you do not want to take an aircraft with a known fault airborne and create further risks. My answer in this instance was no, that the aircraft should not be flown with the fault. If a fault had been identified whilst we were airborne, then my actions would have been different. We were not certain why something had failed and were advised by engineers that our only option was to turn the aircraft off completely to allow the fault to clear. We had to wait for a period of time to allow the electric logic to reset and then start the aircraft up again. The shut down takes a finite amount of time and will depend on the fault, I think it would have taken around 15 to 20 minutes. This gives time for the mechanical systems to cool down and eases the stresses on the engine when it is operating at very high temperatures. A "vent run" also needs be

completed before starting the aircraft again in accordance with the aircraft manufacturer's instructions – this essentially pulls cool air through the engines. After doing all of this, the fault cleared and we were able to take off.

4.3 The search conducted on 23/24 November 2021

4.3.1 I cannot recall the specific details of the tasking or exact timings due to the passage of time since the Incident. I would need to refer to the ARCC log as this will have everything recorded accurately. Our usual protocol would mean that Dover Maritime Rescue and Co-ordination Centre ("Dover MRCC") would have passed the specifics of this tasking, as they were our Controlling Authority. I think they would have told us that they were receiving reports that a boat was sinking. The Controlling Authority receives certain information and that is then retransmitted to us, plus instructions on what we are being asked to do. This would have likely been passed to us through the operating channel, which is Channel 0.

4.3.2 I cannot remember details of any changes to the tasking at the time of the Incident. If a tasking change comes in from the Controlling Authority once we are airborne, we will write this down in the Pilots Log (PLOG). If we were responding to a task, we would merely write down a new position and any revised search instructions and then comply of course, where possible. If there was any change in task that would have been communicated to us by the Incident Commander from Dover MRCC.

4.3.3 I cannot remember if we were made aware that the small boat designated as "Charlie" was sinking. I am sure that our tasking would have noted that

they were receiving reports of a boat that was sinking and that we were required to conduct a search for it, however, I do not know what information the Controlling Authority had at that time. Referring specifically to "Charlie" becomes very specific when compared to the broad tasking to search an area for boats in distress that we were given.

4.3.4 Search planning is all completed by the Controlling Authority, which, as I have said, at the time of the Incident would have been Dover MRCC. Search parameters are passed to us via voice communication on the standard Maritime Channel 0 by the relevant Air or Maritime Rescue Co-ordination Centre, in this case Dover MRCC. This is the usual procedure. These parameters include specific details for track, direction, turn direction, leg lengths and track spacing. For the Incident, these parameters would have been produced by the rescue software used by the Dover MRCC. That software produces some information that is not in the format required to programme the Aircraft Flight Director and Auto Pilot on the Helicopter in order to fly the pattern directed. Not all types of search and rescue aircraft have the same Flight Director equipment, it will depend on the manufacturer. As a result, when search parameters are provided by the relevant MRCC, the pilot has to take the data and input that into the aircraft in the manner that its software requires. This is done using the aircraft's Misson Control Display Unit. The pilot does not alter the directed search parameters, it is simply a case of inputting data in the required format. Once the search parameters directed by the MRCC have been programmed, the pilot gives the aircraft authority to fly that pattern and it is flown automatically. The crew continue to monitor the aircraft systems for safe

and effective flight alongside looking out visually for contacts of interest, sometimes aided by FLIR and night vision equipment if appropriate. Once established in the search pattern, if the aircraft crew experience better/worse conditions than predicted, the aircraft height and speed may be adjusted for safety or more effective search outcomes but the MRCC will be informed if this is the case.

4.3.5 Voice instructions received from the MRCC are not individually recorded. Radio transmissions are recorded as part of the aircraft safety systems but this is on a continuous loop that gets overwritten after a certain time period. I do not know if the MRCC ground station records radio transmissions.

4.3.6 Aircraft navigational trace is not recorded by the aircraft's systems. Navigational data is normally recorded by the AIRBOX application installed on the crew iPads but this is done as a safety enhancement and not as a primary means of navigation.

4.3.7 In this instance we were told to conduct an expanding square search, using the parameters provided by Dover MRCC which I have referred to above. If we had not been given a specific search pattern, the best way to search an area quickly is generally to do a clover leaf search (Sector Search) pattern. We can question the instructions from the Controlling Authority and can make recommendations and suggest alternatives, based on what we are physically able to do in the situation, however they have final say on how we respond.

4.3.8 The expanding square search pattern that we were given by the Controlling Authority at the time of the Incident is an internationally recognised search patten, and it was the one deemed most appropriate for this search by the Controlling Authority.

4.3.9 In terms of the exact chronology of the tasking, search and the Incident, I would need to refer to the information that was logged at the time. I understand our paper PLOG [**INQ008983**] has been made available to the MAIB and the Inquiry. All communications that we made at the time of the Incident were through Dover MRCC, as the Controlling Authority.

4.3.10 There is a voice communication recorder within the Helicopter, however this works on a continuous loop and, in accordance with standard practice, would have been recorded over after a period of time, as there was no request for this evidence. I am not aware of any voice recordings relating to the Incident which are still available.

4.3.11 In terms of the outcome of the tasking, we identified boats in the water, which were not in distress, and we passed on their positions as best as we could. We certainly did not see any people in the water. We located several boats and completed the search as directed.

4.3.12 The timing of the decision to stand down is a matter of record in the logs. We can suggest standing down based on fuel or other factors, however, the instruction to do so is given by whoever is controlling the task and that is logged. If one of the crew reports they are fatigued and not performing to the required standard, I have to declare that, as fatigue is a recognised condition that affects the safety of the crew. On the day of the Incident, after

the initial flight one crew member verbally reported to me that they were fatigued. I had a discussion with that crew member about their capability to continue safely but they believed that their capabilities were compromised by fatigue. I informed the ARCC of this information and requested that we remain at base for flight safety reasons.

Statement of Truth

I believe the content of this statement to be true.

Signed: Personal Data

Dated: 22 November 2024 | 3:57 PM GMT

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