

Reflecting on your current working practice, describe your working routine for a day, showing how you prioritise, delegate, and deliver tasks, and how you ensure that they meet the required standards within the time available. How do you manage the need to communicate effectively with different audiences?

As an aerial survey investigator specialising in reconnaissance working for Historic England, one of the main functions of my role is to conduct aerial surveys. The purpose of each aerial survey I conduct varies depending on the time of year and type of targets. Each flight I plan is bound by these factors as well as weather conditions, pilot availability, and in the summer months, crop conditions. For the purpose of this document, I will explore the processes involved in conducting a successful aerial survey for a day, including the planning stages, the survey process itself, and the post-flight processes, including data downloading and documentation.

Planning a flight

When planning a flight, I must first consider any target requests from other colleagues and prioritise those that have deadlines before others. Some target requests can only be photographed at certain times of the year due to seasonal factors, including light levels or foliage coverage. Buildings targets can't be photographed during the winter months as there are too many shadows, whilst some targets can only be photographed during the winter months when tree and shrub foliage is at its sparsest. Some earthworks are hidden for most of the year because of their position within woodland or under dense bracken; When the leaves have fallen and the bracken has died back, this can be a good time to prioritise these targets. It is important to discuss these factors with colleagues when asked for coverage of specific targets to give them an estimated time when the survey can be conducted, to capture the sites at the optimum time of year. Open conversations enable time to plan their projects and give me a good indication of when the photographs need to be ready and if they can realistically be photographed within the given time frame. In addition to balancing target priorities, it is essential for each flight that the targets coincide with the best areas of weather. The weather ultimately determines where the flight will take place, but when the weather is clear for most of England, it is important to use target prioritisation to help decide where to go. Another key aspect of the planning stages is ensuring that there are pilots available

for each flight. I must keep in contact with all five of the pilots, so I know who is available, as they all hold full-time roles. Once a pilot is booked for the day, it is my responsibility to brief them on the intended area of the survey. I usually do this the day before the flight to give them a chance to assess both the weather as well as the airspace and consider any areas that need avoiding.

Survey Checks and Safety

The survey day usually begins with a discussion of the intended area of the survey with the pilot after they have had a chance to assess it. If there are areas of airspace we cannot enter or have height restrictions, this can affect the overall flight plan, as the safety of the flight takes priority over everything else. With safety in mind, the pilot also must check over the aircraft to ensure it is safe to fly, using a tick sheet provided by me to ensure everything has been checked. It is my responsibility to make sure they have done this, signing off the checklist. It is also my responsibility to ensure all my equipment is charged and set up with the correct settings and that the time on the cameras is calibrated with the time on the GPS unit in the plane. This particular step is essential, as the time stamps need to match, for the archive team to use the flight tracks from the GPS to match where the photographs were taken, an integral part of the archival stages. Once all the necessary checks have been completed and my equipment is ready, we can conduct the survey flight.

Making decisions for unexpected conditions

For each flight, I will check the weather the night before as well as just before the flight to make sure the area chosen for the survey is suitable. However, even with all the planning unexpected weather can occur, whether it be more clouds or higher wind speeds than expected. If there are too many clouds, we can try a backup flight plan to a different location, which I always make just in case this happens. However, if the wind speed gets too high, usually the flight will be called off as the wind makes the flight too bumpy, resulting in blurred images due to camera shake. It is always useful to have one or two backup survey areas in case the weather is not as predicted; this ensures the effort to plan the flight and get a pilot for the day is not wasted. Making a judgment call can sometimes be tricky when you have targets that need to be done by a certain date, but ultimately, if the conditions are not right, it is best to find an alternative solution and try to make the best out of the day elsewhere.

Sometimes the pilots can find it a little frustrating to change plans, as this is the area they have prepared for, but for the needs of our type of survey, it can be necessary to make last-minute changes, especially in summer when we are conducting cropmark reconnaissance. On occasion, the area chosen to survey for cropmark reconnaissance may not produce many cropmarks, and other areas may need to be surveyed instead, whether it be to look for cropmarks elsewhere or to survey different types of targets, such as registered parks and gardens or scheduled monuments. In this role, it is essential to be able to adapt to the conditions on the day and have plenty of backup options to fall back on if needed. With a change in the type of target also comes a change in survey and photography style. I must be conscious of this, as it can be easy to get stuck in a rhythm of working style, whether it be the angle of turn when taking the photographs or the height at which we are flying.

Communication in the air

Within this role, communication plays a huge role in the success of a survey. Whether it be communication with the pilots before flying to ensure their availability and readiness for a flight, or communication during the survey to instruct and direct them to fulfil the needs of the targets. Communicating with pilots in the air is a skill that I have developed over time and requires both clear instructions and descriptive skills. When we are approaching a target, I must direct them to the target areas and ensure the correct positioning of the plane. This can be done through clear directions, but it can also be helpful to describe what the target looks like as well as its position within the surrounding landscape. This sounds simple enough but sometimes when you are flying in a very homogeneous landscape with fields of similar colour, shape, and size, it can be extremely challenging. One way I have overcome this is through discussing the descriptive process with my pilots and deciding on a 'code' of descriptive colours which can be useful to discern between different fields of crops. We have built up an understanding of how to describe different colours; for example, instead of describing a field as green, I will use the language of light-yellow green, which helps to set it apart from other tones of green. This has been extremely beneficial both for the pilots and me, as often if they spot

something I haven't seen, the same descriptive language can help me to identify the site they are looking at.

Completing the Survey process

Once the survey has concluded, it is important to complete the flight log for the day. This is where important details of the flight are recorded, including flight times and conditions, as well as any decisions made during the flight and the circumstances surrounding these. It is also important to download the GPS data, which includes the flight tracks straight after the flight, as the GPS unit is left inside the aircraft and cannot be accessed once I leave the airfield. When I next go into the office, I also download all of the images from my cameras and create backup copies, which are saved in a different location. I also digitise the flight logs, which are sent along with the flight traces to the archive team, so they have a fuller picture of the survey day, including weather conditions and reasons for decisions made during the flight.

Communicating with wider audiences

After some flights, if I have visited any particularly interesting sites or aesthetic areas and captured these using my mobile phone, I will share some highlights on social media about my day. This can be a great way to showcase my work and provide insight into my role. Sharing my work on social media platforms, such as LinkedIn, can be a great way of interacting with colleagues at Historic England both within and outside of my department, but also other specialists working in the field of aerial archaeology and within archaeology roles more widely. This form of communication is not a mandatory process, but I find it benefits both the 'brand' image of Historic England as an organisation as well as helping to broaden audience interaction with my work and start conversations about certain types of sites or aerial survey investigation as a role. I use this as a form of networking which is especially important as an early career archaeologist.

Conclusion

This role demands the capability to prioritise my own workload and adapt to changing variables to conduct a successful survey. Often controlled by external factors, I must constantly assess and decide the best course of action to deliver work

to a high standard, contributing to various projects conducted by colleagues in wider teams. Through different modes of communication, I can both successfully understand the requirements of different targets and their intended purpose, whilst using communication to ensure the survey runs smoothly to achieve the best results.