

# **AURORA AD VESPERAM CARPE DIEM**



# **POOLEYS INTERNATIONAL DAWN TO DUSK COMPETITION 2024**



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## SETTING THE SCENE

Over 2000 years ago, in 55BC, the Roman Governor of **Gaul** (France) and future Roman Emperor, **Gaius Julius Caesar**, formed an alliance called the **1<sup>st</sup> Triumvirate** with two other Roman Consuls, General **Pompey the Great** and **Marcus Licinius Crassus**. As part of their political and military programme, **Caesar** was to lead an invasion of the land across the sea to the North, a place called **Britannia**, in order to subjugate the local tribes, access resources, and increase the territory of the Roman Republic. For the next 500 years, the Romans occupied parts of the island of **Britannia** (Britain) to varying degrees, depending on the aims of the Emperor in power at any given time and the military and political strength being experienced across the whole of their vast empire.



**GAIUS JULIUS CAESAR – BORN 100BC – ASSASSINATED 44BC**

Now, 2,079 years later, we could ask ourselves the famous ‘Monty Python’s Life of Brian’ question – ‘What have the Romans ever done for us?’ By examining evidence gained through archaeological ruins and digs, surviving papyrus and stone tablet journals, inscriptions and tombs, sculptures, treasure troves, ancient maps, and historical literary sources, the answer would of course be ‘quite a lot.’ There’s sanitation, medicine, education, wine, public order, roads, aqueducts, fresh water systems, and public health for starters !! And if we look closely around us, we can still see the signs of the Romans in our modern world, through surviving building remains, earthworks and structures, the layout of many British town and city centres, and of course the famous straight roads which now form large parts of our long-distance road transport infrastructure.

In 55BC little was known about **Britannia** at the time by the Romans, but it was believed to be a triangular shaped island around seven hundred miles wide by eight hundred miles long, a belief mainly derived through ancient Greek writings from 250BC, which called the land **Albion**. The Romans began their occupation by landing on the Southeast coast of **Britannia**, initially through an expeditionary force of eighty ships carrying two full Roman Army **Legionum** (Legions) consisting around 10,000 troops, plus a further eighteen ships carrying horse cavalry. They sailed from their

port called **Portus Itus**, which is Boulogne in France. The initial landing point was planned to be at Dover, which geographically had a river with small hills either side of its banks, as this would provide the chance to build a harbour and place defensive positions, so allowing consolidation of the invasion force and a supply chain to be set up.



The local tribes, such as the **Cantiaci**, the **Regnenses**, the **Trinovantes**, and the **Catuvellauni**, who did not take kindly to hostile invaders, had other ideas and used the cliffs and high ground to hurl missiles and projectiles at the approaching Roman fleet. This forced **Caesar** to make a tactical decision to sail seven miles up the coast to the flatter beachfronts near Deal. Even then it wasn't an easy task as there was further heavy resistance from the native tribes, but eventually the Roman **Legio X** (10<sup>th</sup> Legion) established a beach head and the tribes withdrew to regroup. After an attack by the tribes using chariots with scythes on their axles, a weapon made famous by the later Briton Queen **Boudicca** in battles with the Romans 100 years later in 60AD, the strength and discipline of the Romans won through and the tribal leaders sued for peace. **Caesar** and his forces only stayed a few months, retreating back to **Gaul** before winter set in, but now he had the lie of the land as well as having peace treaties and trade agreements in place. He also had several hundred Britons which he took as hostage, just to ensure there was no trouble.



**RESTLESS NATIVES !!**

A year later in 54BC **Caesar** decided to return and start a more robust campaign, this time bringing six hundred ships, along with twenty-eight war galleys, and an army of five Roman **Legionum** which was made up of twenty five thousand troops and two thousand cavalry. Despite the previous treaties, the **Catuvellauni** led by **Cassivellaunus** waged guerilla warfare against the invading Romans, knowing that they could not beat them in conventional battles. In spite of this, **Caesar's** forces reached the Thames, circumventing a fortified river crossing manned by the local tribe, in what is most probably today's City of London. Battles continued as **Caesar's** occupation took more territory but slowly tribe after tribe surrendered to the might of Rome as their lack of resources and infighting amongst their leaders took their toll. Only **Cassivellaunus** remained in defiance and he launched a last-ditch all-out attack with an alliance of four tribes on the beached fleet of over 750 ships near Deal, which were guarded by only a small number of the occupying Roman forces. The Romans with their advanced weaponry and tactics won a decisive victory and the disheartened and exhausted tribesmen agreed a further surrender. The Southeast of **Britannia** was now part of the Roman Republic. With further treaties in place, including the payment of taxes to Rome by the tribes, **Caesar** and his army once again returned to **Gaul**. He very soon became involved in a civil war back in Rome where he defeated his former ally **Pompey**, becoming the Emperor in 49BC. With further territorial campaigns in Spain and Africa and his assassination in 44BC, he never returned to **Britannia**. His successor, **Caesar Augustus**, continued to receive the taxes and dues from **Britannia** for a while but these soon stopped as there was no Roman force in the country to enforce payments. In spite of campaign plans to invade **Britannia** in 34BC, 27BC, and 26BC, **Augustus** never carried these out and **Britannia** remained free of Roman occupation for over 70 years until 41AD when Emperor **Claudius** started again where **Caesar** had left off. This would however be a proper occupation and conquest and the Roman Empire, which had replaced the Roman Republic, would really leave its mark on **Britannia** and lead to this Dawn to Dusk challenge.

The famed Roman **Legionum**, the formidable fighting units of their Army which conquered and occupied such a large part of the Old World, including **Britannia**, marched under their individual standards topped by a symbolic **aquila** (eagle), borne aloft by a **Legio** member called the **aquilifer** (the eagle bearer). Let us then go for a trip along the routes where the **Legionum** went, flying high above their conquests and using our aircraft to see what remains of their world as though through the eyes of an **aquila**. Veni, vidi, vici !!



**AQUILA LEGIO STANDARD**

## COMPETITION GOAL ‘AURORA AD VESPERAM - CARPE DIEM’

‘*Aurora ad Vesperam – Carpe Diem*’, or Dawn to Dusk – Seize the Day in English, is our challenge to fly from one of the most Southerly points in the Roman occupation at **Dubris** (modern-day Dover) all the way up the island of **Britannia** to the most Northerly known Roman archaeological site, a signal tower at Tarbat Ness near Portmahomack to the North of Inverness in **Caledonia** (modern-day North Central and Northern Scotland), reflecting the sphere of influence that this mighty Empire once had and the legacy and history it left behind. From our lofty eagle eye viewpoint, we will see some of the settlements that they established and which have grown through the ages to become modern towns and cities of the UK. We will follow the paths of some of their military roads, which allowed the Romans to move men, weapons, and supplies with ease across the length and breadth of the country. We will see where they crossed rivers. We will see the impressive and large-scale military structures which were used to both conquer and then maintain control, such as the defensive Hadrian and Antonine Walls. We will see the many marching camps which allowed the Army to progressively move up the country, rest, and consolidate, before moving on to the next conquest. We will see evidence of some of the forts and fortlets which housed troops, builders, logistics personnel and the families who travelled with them all whilst serving Rome. We will see the sites of signal towers, which allowed communications to be passed between forts and military units. Finally, we will see the varied and marvellous scenery of our beautiful island, as we pass from the South to the North. Form up behind the **aquilifer** and let’s go !!

## INSPIRATION, RESEARCH, & ROUTE PLANNING

### INSPIRATION

A lot of my flying is done in Scotland and the North of England due to my location base at Prestwick in Southwest Scotland. On many trips I often see archaeological sites of interest, particularly earthworks and the shapes of long-gone structures, both in winter when highlighted by the snow, or in summer when crops have been cut or fields have been dressed. Some of these are the well-defined shapes of Iron Age hill forts, or Roman camps and forts. Considering the age of the sites and the technologies available back then for building, they are always impressive and make you wonder just what they looked like and what life must have been like. As you fly effortlessly above them, you question how they navigated and travelled such vast distances with thousands of troops and support personnel.



AERIAL VIEWS OF A ROMAN FORT SITE IN WINTER

Although not everything they did was good, you still can't fail to be inspired by the advances made by the Romans over their period in history in construction, transport, health, and government. They have of course also inspired me to put together some of the things I've seen in the past as part of this Dawn to Dusk challenge. Initially I thought I could perhaps just do Hadrian's Wall, the Antonine Wall, and some of the forts and camps in Sothern Scotland and the Borders. But the more I thought about it, the more I realised that these would only cover a small part of the Roman's occupation of Britain and there was so much more that could be covered in a day's flying. The decision was made that the flight would be from one end of Britain to the other, taking in their most Northerly point of conquest and that in the South where they first established themselves on these islands more than two centuries ago.

## RESEARCH

Initial research was to find out where the Romans were known to have been and how they travelled throughout Britain. Although the Romans first landed near Deal in 55BC and 54BC, they never built any permanent settlements during the first two occupations and only stayed for a few short months each time. The first main port that appears to have been constructed came in a later invasion almost one hundred years later and was called **Portus Dubris** (Dover.) This would form one end of the challenge. Continuing my research chronologically, the Romans started to build roads and from **Dubris** came Watling Street, which passed through the Roman settlement at **Durovernum Cantiacorum** (Canterbury) to the river crossings at **Durobrivae** (Rochester) and **Darrent Ford** (Dartford), then the settlement at **Noviomagus Cantiacorum** (Crayford), before passing through **Londinium** (London). Although the road continued all the way as far as **Viroconium Coroviorum** (Wroxeter) on the Welsh border, our interest would end at Dartford as due to airspace and legal constraints we would have to circumvent the London area from there in a single piston engine aircraft.



MAP OF ROMAN ROADS AND TOWNS - 150AD





With the basic route now researched, more detailed information was now needed to ascertain (as far as practicable) the actual routes of the roads in Roman times, as well as all the possible sites along the way. Several sources were used to find this information, initially using websites which were dedicated to specific features such as the roads and the walls, as well as a Roman Britain generic site. These gave the likely historic site locations and paths of the roads, which could then be marked as waypoints using my favourite flight planning tool, the world beating SkyDemon App (other planning applications are available). With a rudimentary set of waypoints (and lots of gaps), more crystallised information was then sought using the online Ordnance Survey (OS) map facility on the Streetmap website. Starting at Dover, the entire route was reviewed and marked Roman sites and roads on the OS maps were then either cross checked against existing SkyDemon waypoints I had already entered, or added in as new ones which helped fill up some of the gaps. After many days of burning the midnight oil finally the most Northerly OS map section was reached, culminating in a grand total of 603 manually input waypoints to use in flight planning. Phew !! The entire route was also then checked using satellite mapping, and where Roman remains or features were visible, these were then cross checked in SkyDemon using their Aerial Photography tool to make sure that the waypoints entered were actually over the visible feature. Some examples appear below.



**ORDNANCE SURVEY MAPPING PLUS SATELLITE VIEW OF VINDOLANDA ROMAN TOWN**



**HADRIAN'S WALL SITES INSERTED AS SKYDEMON USER WAYPOINTS**



**SKYDEMON AERIAL PHOTOGRAPHY OF USER WAYPOINTS**

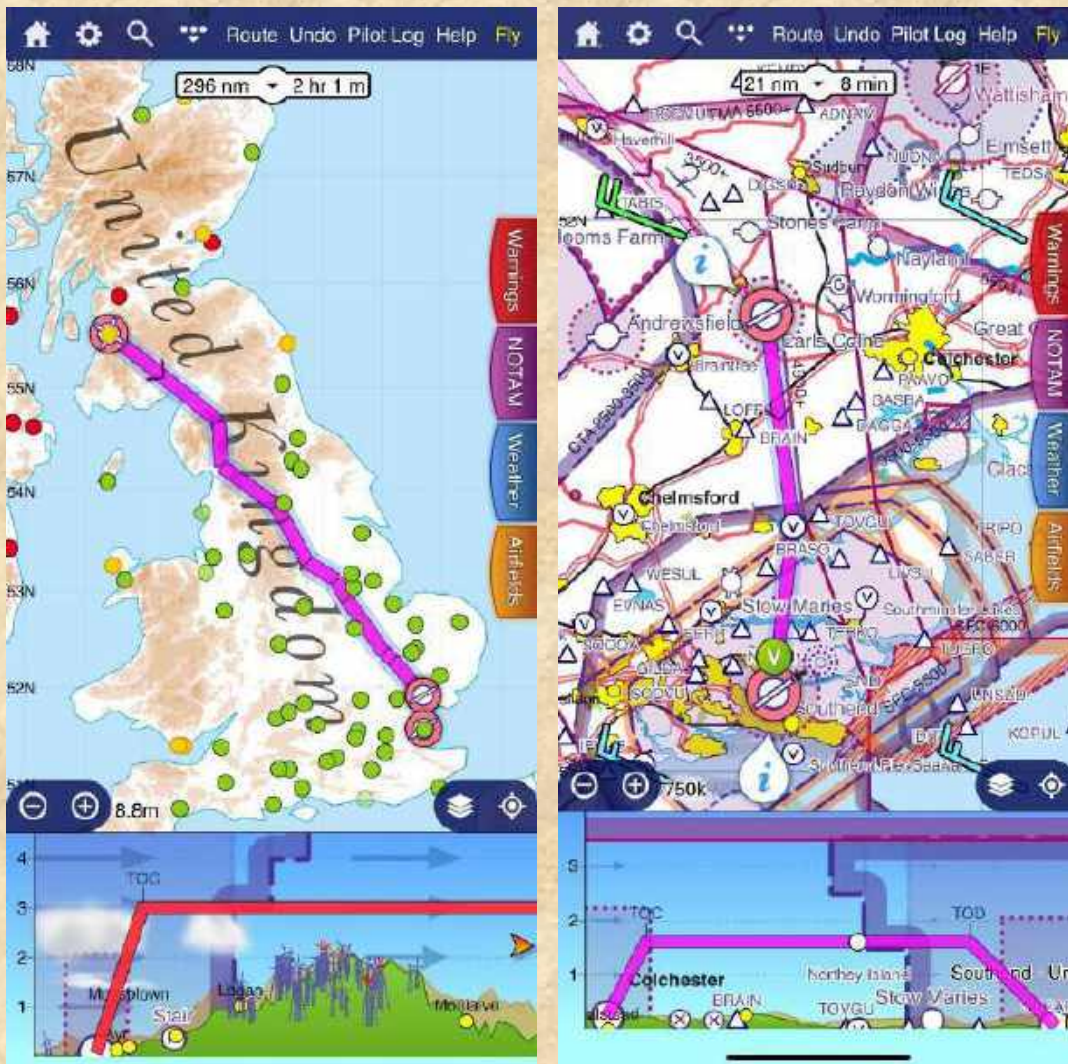
With a route and points of interest now finalised, historical reference books and Internet sources such as Wikipedia and niche Roman Britain websites were researched to provide the history and further information on relevant places and events. The gleaned information could then be used in the narrative of the challenge, as I'm sure you'll be reading soon. After around a month of solid research and data input, it was time to plan the trip !!

### **ROUTE PLANNING**

With our base at Prestwick in Scotland and an intention to undertake the trip during the longest periods of summer daylight, it was feasible with our aircraft to do the entire trip in a single day, although it would involve a distance of around 1400 Nautical Miles (NM) and over 10 hours in the air. This would introduce an increased chance of fatigue, especially when factoring in technical and comfort stops, as we'd likely be 'on duty' for upwards of 14 hours. To mitigate against that, it was decided we would plan a night stop to allow us to either position to the start of the challenge the night before or overnight at the end of it with a return the following day. As the flight could be flown in either direction it wouldn't really matter which option was chosen, but ultimately it felt best to start as the Romans had, on the South coast. With a South to North route chosen, we would position the aircraft near the South Coast to allow us an early start to reach Dover. Looking at the various airfield options in the area we found some that were relatively cheap to use but had little in the way of accommodation nearby, we found some that wouldn't open till 0900 or later in the morning which would impact on getting an early start, and others that had other factors which made them less than ideal. On balance, Southend was our best option as it had good opening hours availability, reasonable fees, and on-site hotel accommodation. They also had AVGAS available but it was a little bit more expensive than the nearby Earls Colne so we would drop in there first on the way down from Prestwick to fill up the tanks. As with every flight we undertake, and although not a flight taking place on the actual challenge day, we applied the same due diligence in planning the route, airspace constraints, fuel requirements, and relevant permissions as we would for the Dawn to Dusk legs.

For completeness of this log, the still air planning figures for the positioning leg are shown below. The aircraft, Vans RV8 G-WEEV, has a fuel capacity of 158 Litres of either 100LL Avgas or UL91 Avgas. Normal fuel burn is between 30-35 litres an hour

<b>LEG</b>	<b>PLANNED DISTANCE</b>	<b>PLANNED TIME</b>	<b>PLANNED FUEL BURN</b>
PRESTWICK -EARLS COLNE	296NM	2 Hrs 01 Min	72L
EARLS COLNE - SOUTHEND	21NM	8 Mins	13L



### SKYDEMON PLANS FOR POSITIONING FLIGHTS FROM PRESTWICK – EARLS COLNE – SOUTHEND

With the aircraft now theoretically at Southend, the planning for the challenge proper could commence. First of all, with all the SkyDemon waypoints in place and the route inserted, we assessed the airspace, both in terms of Controlled Airspace, Danger Areas, and other hazards.

Our first constraint would be the Shoeburyness Danger Area complex (EGD138) lying to the Southeast of our departure point. This would be relatively easy to address as we could plan to fly at a weekend when it was not active, or either get a crossing clearance from Southend or avoid it to the West with a minimal track mileage increase if we were flying when it was active. The next constraints would be the Temporary Danger Areas (TDAs) in the vicinity of Dover (EGD098 complex) which stretched across the Channel, associated with surveillance activities by Border Force. Fortunately, there is an arc around Dover itself which the complex does not cover, and the area around the White Cliffs to the East has a ceiling of only 800' Above Mean Sea Level (AMSL) so with careful manoeuvring and monitoring we would be able to position ourselves over Dover before starting to follow Watling Street. Following our proposed route we would transit the Rochester (EGTO) Aerodrome Traffic Zone (ATZ) marginally, but with an early start they would still be closed and failing that then we would give them a call with our intentions. With a single engine aircraft, our route all the way to London itself would not be legally possible under the Air Navigation Order, never

mind trying to get a clearance from Heathrow !! The best and simplest option would be to turn early and remain below the London City (EGLC) Control Area (CTA) which starts at 1500' AMSL, in the vicinity of the Queen Elizabeth 2 Bridge at Dartford. If we happened to fly on a Saturday, when the City Airport is closed, it might be possible to get a transit closer to London from Heathrow Radar, but in all honesty, it would add little to our route in terms of Roman relevance. Skirting around London airspace to pick up the track of Ermine Street just to the North of Enfield was therefore the most logical plan. Our next airspace to negotiate would be the Stansted (EGSS) CTA but provided we had our transponder on and remained below 1500' AMSL then we could slide underneath it without bothering them.



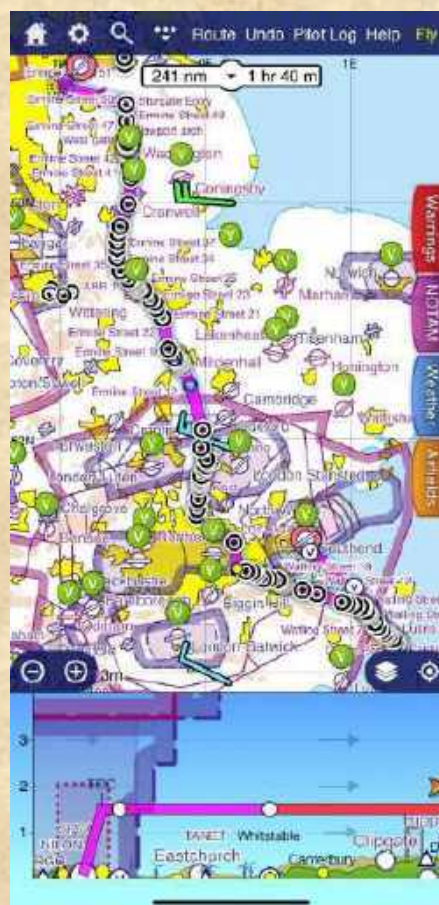
### SKYDEMON USER WAYPOINTS IN THE VICINITY OF LONDON AND THE SOUTHEAST

Free of the complexity of Southeast airspace, our next watch out hazard would be passing by Gransden Lodge gliding site. Our route would be passing a few miles to the East of it, so we wouldn't have a bad day with some launch cables, but of course dependent upon the runways in use, we would still have to keep a very good lookout for departing or landing gliders, or indeed aerotow combinations. Continuing North, we would need to transit Peterborough Conington (EGSF) ATZ, so we would either call them or jink a few miles to the West to keep clear if the traffic situation was not favourable. A few further miles on and we would be in the vicinity of the Peterborough Sibson (EGSP) parachute jumping area, another hazard which could ruin your day. Again, a quick call to find out their activity status, or heading a few extra miles clear to the East would be our strategy to get safely past.

Immediately after this we would come across the RAF Wittering (EGXT) ATZ and Military Aerodrome Traffic Zone (MATZ). If flying during a weekday, then we should be able to get a MATZ crossing clearance from Wittering Zone. If flying on a weekend, then we could cross the MATZ, making blind calls for the provision of situational awareness to other pilots in the area, whilst we would be unlikely to get any response from anyone at the airfield Air Traffic Control (ATC) unit and would have to remain clear of the ATZ itself as Government Aerodrome ATZs are active permanently unless

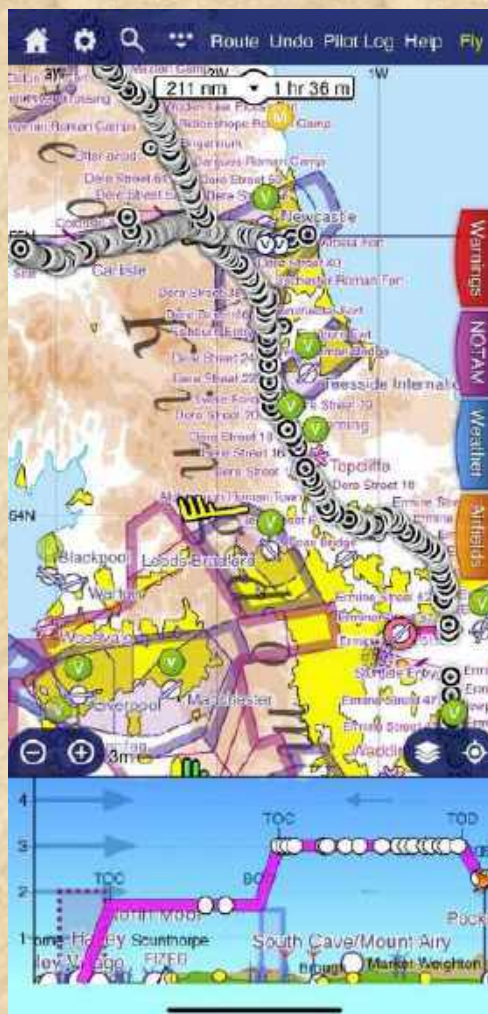
otherwise notified. Yes, even if there's no one there and no activity !! In terms of our challenge, all we would be missing in any case would be following the exact route of Ermine Street, with no known visible sites of antiquity in this portion of our flight. The exact same scenarios would be the same for our transits of the Barkston Heath (EGYE) and Cranwell (EGYD) combined MATZ and individual ATZs as well as those of Waddington (EGXW). In these cases, for weekdays we would call for clearances, but if at a weekend then we would take a different tack and climb above the ATZs, which extend from the surface to 2000' Above Ground Level (AGL). The minimum altitude would be around 2400' AMSL to achieve this for all three aerodromes. As RAF Waddington is now the home of RAF drone operations, we would also need to check on the status of the associated Danger Area (EGD324A) which can be active to allow autonomous drone launching and recovery, albeit generally only on weekdays and infrequently used at the moment. Further cogniscance of the Restricted Area used by the Red Arrows to the North of Waddington in the vicinity of the now disused and former RAF station at Scampton (EGR313), would also be essential. This area is only active when notified but could be on any day of the week to allow the Red Arrows to either practice or recover from participating in displays across the country.

Around this area, we'd have been airborne for a planned 1 hour or so, so it seemed like a good spot to make our first stop of the day for refreshments and a refuel. There are several airfields in the vicinity which offer good facilities but with a planned early start it was likely that many of them wouldn't be open at the time we arrived. Sandtoft (EGCF) however would and ticked all the boxes with cheap fuel and a good café on site. Lying only 11NM West of Ermine Street, it also wasn't too much of a diversion to take as well as conveniently avoiding us flying near the busy Hibaldstow parachuting site too.



**SOUTHEND TO SANDTOFT VIA WATLING STREET AND ERMINE STREET**

After Sandtoft, we'd head back on to follow Ermine Street over the River Humber, before heading Northwest and passing close to Full Sutton (EGNU) gliding site. Although we'd be tracking clear of the airfield itself vigilance for gliders would be a priority when passing by. Flying Northwards over Yorkshire, there would be a couple of more military areas to transit, those at Topcliffe (EGXZ) and Leeming (EGXE). Standard procedure again would be a clearance request on weekdays or entering the MATZ with blind calls but remaining clear of the ATZs on weekends. We would then skirt the Teesside (EGNV) CTA, but could call for a clearance if necessary, and thence onwards up under the Newcastle (EGNT) CTA to Corbridge. From Corbridge, we'd then head Eastwards along towards the mouth of the River Tyne, which would require an ATC clearance from Newcastle (EGNT) as we'd be crossing their extended runway centreline as well as entering their CTA and Control Zone (CTZ). A telephone call in advance so they had our flight profile would hopefully assist them in giving us a clearance. If they were unable to accept the flight as requested on the day, then we'd see what we could negotiate and deal with it tactically. Assuming a clear run from Newcastle in to and out of their area, we'd then fly back Westwards, avoiding the RAF Spadeadam Electronic Warfare Training Range (EWTR), the EGD510 complex, if active or alternatively getting a clearance through. Once more, a weekend flight would remove the problem of course as it would be closed. Thereafter we would look to land at Carlisle (EGNC) for a break and a refuel. This would also handily give us a clearance in to their ATZ, which overlays part of Hadrian's Wall.



**SANDTOFT TO CARLISLE WITH WAYPOINT OVERLOAD, VIA HADRIAN'S WALL !!**



From Carlisle, we'd finish the route of the Wall on the bank of the Solway Firth and then return to the Corbridge area to pick up Ermine Street once more and resume our trek Northwards. A potential stumbling block on this route was the extensive Army Danger Area at Otterburn (EGD512 complex), which is generally open every day of the week. If active, then we could route clear of it, but we would miss some very visible Roman camps and forts. An alternative would be to speak to the Range Officer and find out if there were any gaps in the planned firing activities which we could maybe use to get permission to transit the areas. A much better option would be to find some dates when the area was actually closed (generally one or two days a month) and then to plan to fly on one of those, with a double check on the activity state conducted with the Range Officer in advance. Moving further North, we would next encounter the airspace around Edinburgh (EGPH) and would need a transit of their CTA and CTR to fly over several Roman sites, thence along the course of the Antonine Wall which would require a transit of the ATZ at Cumbernauld (EGPG), and then the Glasgow (EGPF) CTA and CTR. In all cases, some prior notice of our profile would be passed and we would then deal with whatever came our way in terms of any clearance or restrictions on the day, particularly at Edinburgh and Glasgow which can have some very busy periods with airliner traffic. Heading Northeast from the Glasgow area, the airspace and hazards would reduce drastically and we would make another landing, this time at either Fife (EGPJ) or Perth (EGPT) for crew comfort and fuel.



**CARLISLE TO FIFE VIA THE ANTONINE WALL**

Our final Controlled Airspace transit requirement would be with Aberdeen (EGPD) for access to their CTA and CTR, with more prior notification to try and smooth the way. Later there would be a short transit of the RAF Lossiemouth (EGQS) MATZ, but regardless of the day of the week it would be prudent to give them a call as they mount a round the clock Quick Reaction Alert (QRA) role at the base and heavily armed Typhoons with live missiles and guns could get airborne at any time to respond to a threat to UK sovereign airspace. We'd rather not meet one of those when they're angry!! Only two more airspace crossings to go and it's Inverness (EGPE) ATZ for a transit, followed by the Tain Range (EGD703) if during a weekday but closed at weekends. Here we would end our Roman roaming's and if fuel and daylight permitted, we would return down the Great Glen and the West Coast of Scotland back to Prestwick (EGPK). Our back up plan would be to land at Easter airfield and overnight there, but it wasn't really anticipated as being required unless something had gone wrong somewhere along the way earlier in the day.



**FIFE TO PRESTWICK – THE LONG WAY ROUND !!**

The still wind predictions for the planned legs were as follows:

LEG	PLANNED DISTANCE	PLANNED TIME	PLANNED FUEL BURN
SOUTHEND - SANDTOFT	241NM	1 Hr 40 Mins	64L
SANDTOFT – CARLISLE	209NM	1 Hr 24 Mins	52L
CARLISLE – FIFE	269NM	1 Hr 51 Mins	66L
FIFE – PRESTWICK	380NM	2 Hrs 35 Mins	98L
<b>TOTALS</b>	<b>1099NM</b>	<b>7 Hrs 30 Mins</b>	<b>280L</b>

With the route, airspace considerations, and fuel planning complete, the next step in the process was to pick some suitable dates. Of prime consideration was of course crew availability and the aircraft being in check and airworthy. Thereafter we wanted dates which gave us lots of daylight, so ideally sometime around the June Solstice which fell on the 20<sup>th</sup> of June in 2024. Looking at the airspace considerations, whilst not essential, a weekend date would be less constrictive with respect to military activity and choosing a date which deconflicted with weekend activity at Otterburn would be the perfect solution. Putting all the factors together, we chose a couple of weekends in June. One was based around Saturday 1<sup>st</sup> or Sunday 2<sup>nd</sup> June, with a weather back up on Saturday 22<sup>nd</sup> or Sunday 23<sup>rd</sup> June. The latter dates had the advantage of being during an Otterburn closure but, given the weather unpredictability we ‘enjoy’ in the UK, we would take the first day that looked suitable. All we had to do now was wait for the forecasts and see what would happen. I wondered if a silent prayer or two to *Jupiter*, the Roman God of the Weather might help our case !! Or maybe sacrificing one of my children might give us more chance ? If they’re reading this, that was only a joke ----- I think 😊

As the first date approached, various non-aviation related issues came up and so we fell back on our second set of dates with a plan to fly down to Southend on Saturday 22<sup>nd</sup> June and then complete the Dawn to Dusk flight on Sunday 23<sup>rd</sup> June. Long range forecasts during the preceding week looked favourable, but as we all know, you never count your chickens until they’re hatched. The Flyer Magazine Livestream on the Thursday preceding the weekend always has a pretty reliable forecast on it from Simon Keeling, who operates a Weather School training facility, and his predictions were broadly tying in with those that had been coming out from the BBC, the UK Met Office, and the Windy App, amongst others. An evening check of the Met Office F215 and longer range rainfall and cloud cover models indicated a cold front moving Eastwards with associated clearing weather behind it at around 1200UTC on Saturday so a late afternoon or early evening flight down to Southend from Prestwick looked to be on the cards for Saturday. Rainfall and cloud cover also looked flyable on the Sunday, with some light cloud cover over the East and Central parts of England but looking clear in the Southeast and further Northwards for much of the day. It looked like *Jupiter* was on our side !!

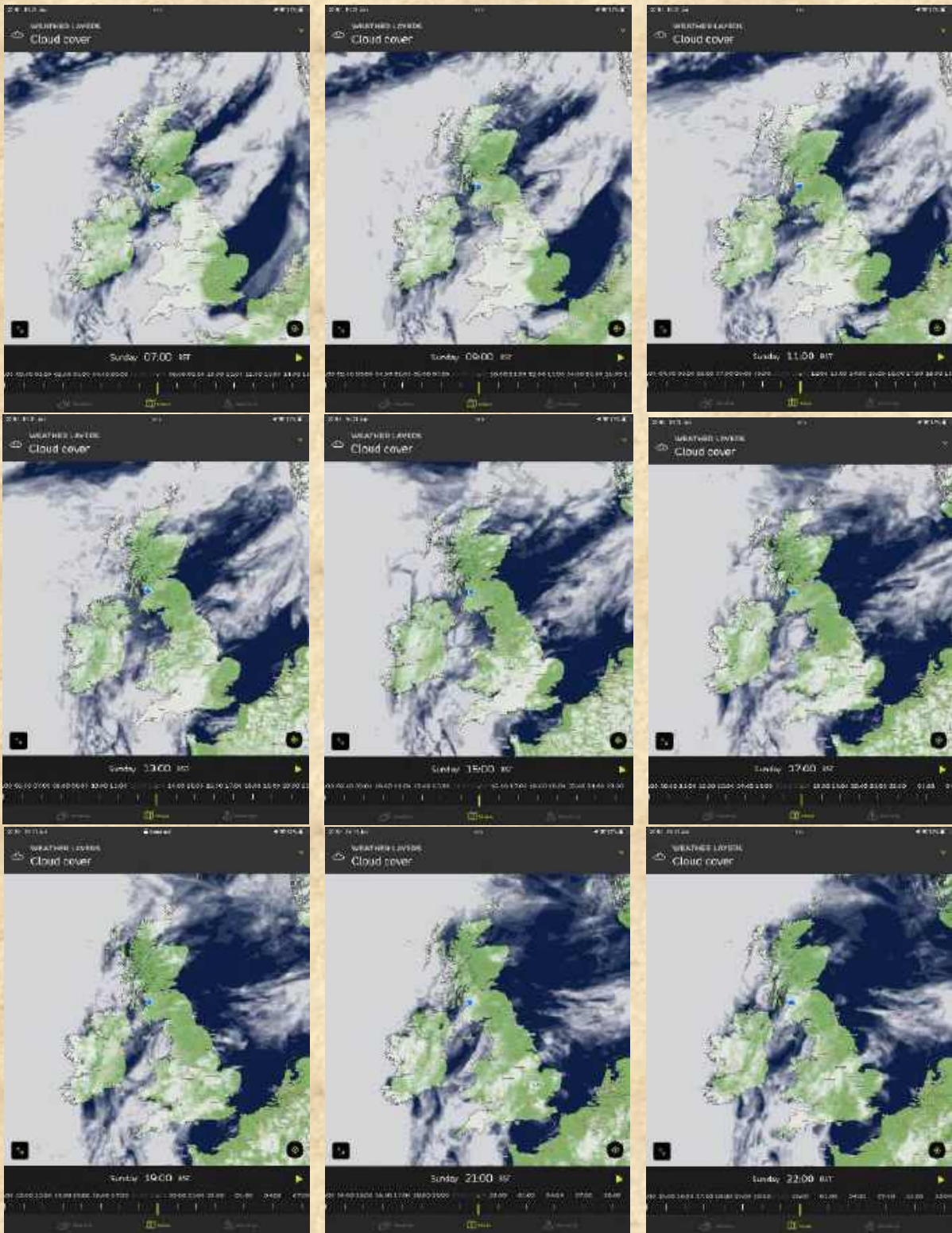




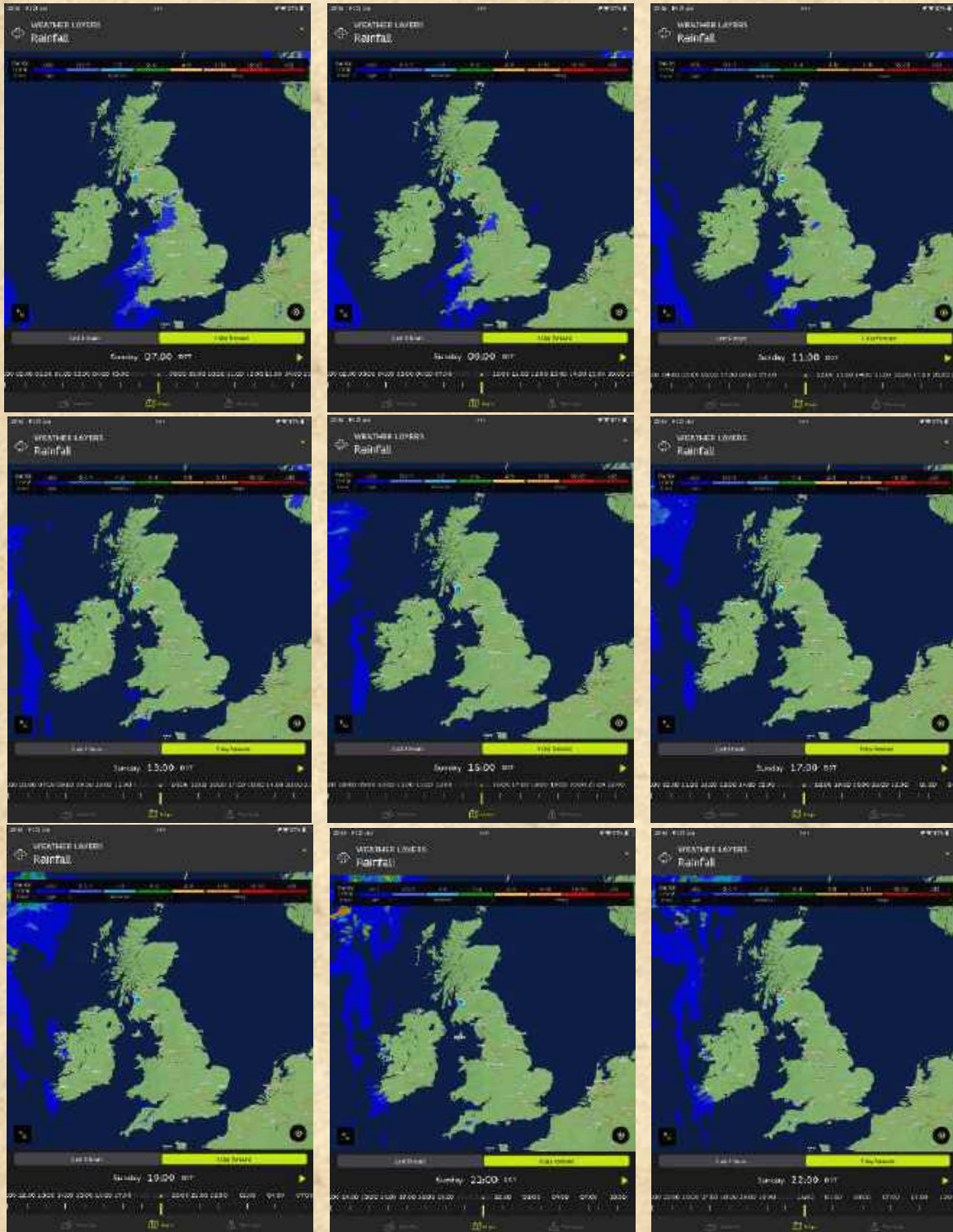
**SATURDAY 22<sup>ND</sup> JUNE CLOUD COVER FORECASTS**



**SATURDAY 22<sup>ND</sup> JUNE RAINFALL FORECASTS**



**SUNDAY 23<sup>RD</sup> JUNE 2024 CLOUD COVER FORECASTS**



**SUNDAY 23<sup>RD</sup> JUNE 2024 RAINFALL PREDICTIONS**

To prepare the aircraft for the flight in advance, a 25-hour maintenance check was carried out a few weeks before the flight, including an oil and filter change with the oil topped back up to the normal touring capacity of 6 Quarts. As per the successful Dawn to Dusk challenge conducted in 2023, the aircraft covers were removed the day before, the cockpit and equipment, including charts, was all laid out, plus the GoPro cameras were mounted internally and externally. Every little thing we could

do beforehand removes time potentially wasted on the day of the flight. With everything prepared and an anticipated departure time in the mid-afternoon of Saturday 22<sup>nd</sup> June 2024, all we had to do now was wait, conduct final weather and airfield checks, and then fly !!

## **POSITIONING FLIGHT – 22<sup>ND</sup> JUNE 2024**

### ***PRE-FLIGHT***

The day before the proposed positioning flights, Friday 21<sup>st</sup> June, final preparation checks were undergone. The various Met forecasts were still looking good with flyable conditions on both Saturday 22<sup>nd</sup> and Sunday 23<sup>rd</sup> as seen in the illustrations above. The airfields at Southend, Sandtoft, Carlisle, Fife, Perth, and Easter were all contacted to check availability over the coming days, including opening times, and to obtain PPR (Prior Permission Required) where it was needed. Carlisle was hosting a detachment of Dutch military helicopters for an exercise and weren't sure of the military flying programme on Sunday so they advised giving them a call on the morning of the proposed visit to double check availability as staffing deployment to refuel helicopter traffic may mean restricted access to Avgas supplies. In the back of my mind, we would use Fishburn as an alternative if we weren't able to use Carlisle. I also contacted the Range Officer for the Otterburn Army Range just to make sure that the publicly notified closure for the weekend was correct. He advised that there would indeed be no heavy arms firing and although the range is permanently notified as active, we were allowed to transit it. He also advised that we might see troops and vehicles in various places on the Range as they would still be conducting dry training with no weapons being fired. Rather tongue in cheek, he finished by explaining that if we were being shot at, then it wouldn't be by the Army !!

Our planned departure from Prestwick would be at 1300UTC (1400L), so myself and my fellow Dawn to Dusk crewmate, Kate Turner, met around 1 hour before to allow the aircraft to be preflight checked, fuelled and oiled, loaded with baggage, booked out with ATC, and a final check done of all our paperwork and plans. It was time to go, but not before our favourite aerobatic team, The Red Arrows, arrived.



***THE ROYAL AIR FORCE AEROBATIC TEAM 'THE RED ARROWS' ARRIVE AT PRESTWICK TO SEE US OFF***



## FLIGHTS

As the positioning flights are not part of the challenge, there follows a very brief summary only of the trips.



***'ARMATUS ET PARATUS AD PROVOCATIONEM' – ARMED AND READY FOR THE CHALLENGE !!***

### **LEG 1: PRESTWICK – EARLS COLNE**

***Airborne 1301Z (1401L) – Landed 1500Z (1600L)***

Airborne on time, the good weather allowed as direct a route as possible over the terrain in Southern Scotland and Northern England, before passing between the Controlled Airspace between Leeds Bradford (EGNM) and Manchester (EGCC) Airports, using the Secondary Surveillance Radar (SSR) Frequency Monitoring Codes (FMC) which allowed us to pass close by as a known aircraft using our Mode S callsign but without talking to the ATC units. It's a really useful tool to use, especially when the frequencies may be busy and the Controller may not want you to call but they can have peace of mind by knowing they can call you if the situation requires it, for example, to find out your intentions or warn you of a possible impending airspace infringement. Happily, neither unit contacted us. Passing over Sheffield, we noted the now closed city airport there, which was a great facility but alas with a truly short life. We gave Netherthorpe (EGNF) a quick courtesy call as we passed by their ATZ, but there was nothing in the area to affect us. A few miles South however we did see a Cessna 150 conducting aerobatics and we routed away from the area beneath it, followed shortly afterwards by spotting and avoiding several gliders, who were also showing on the SkyEcho

ADS-B-In device and flagged up on the live SkyDemon display. Being a Friday afternoon, the RAF had most likely gone home as we got no replies when calling the MATZ controllers at Cranwell (EGYD) and Wittering (EGXT) but made blind position calls anyway. Similarly, there was no response from Cambridge (EGSC) as we passed through their extended centreline but we did hear traffic calling within their circuit, which was well clear of us. Switching to the Stansted (EGSS) FMC and listening out with them, we spotted the ADS-B returns of several aircraft on the SkyDemon display as they were vectored in for final approach. Passing below their airspace, we spotted at least one EasyJet Airbus and a Ryanair Boeing 737 descending above us as they turned on to final. I'm sure they could see us too on their displays. Switching quickly to Earls Colne (EGSR) after clearing Stansted's area, we obtained the airfield information and carried out an overhead join to land on Runway 24, with a short taxi to the fuel pumps and just under an hour to spare before they closed.



***'WEE VANS' DEPARTS PRESTWICK – 'SMOKE ON ... GO !!'***



***THE LAKE DISTRICT AND THE YORKSHIRE CITY OF HUDDERSFIELD***



***THE NOW DISUSED AIRPORT AT SHEFFIELD AND THE RIVER TRENT NEAR NEWARK***



***THE ROMAN GOD OF FIRE WAS VULCAN – WE WOULD FIND 4 OF THEM ON OUR ADVENTURES***

***AVRO VULCAN B2 XM594 AT THE NEWARK AIR MUSEUM***



***ARRIVAL AT THE FANTASTIC EARLS COLNE AIRFIELD***



***POPPY FIELDS IN ENGLAND'S GREEN AND PLEASANT LAND***

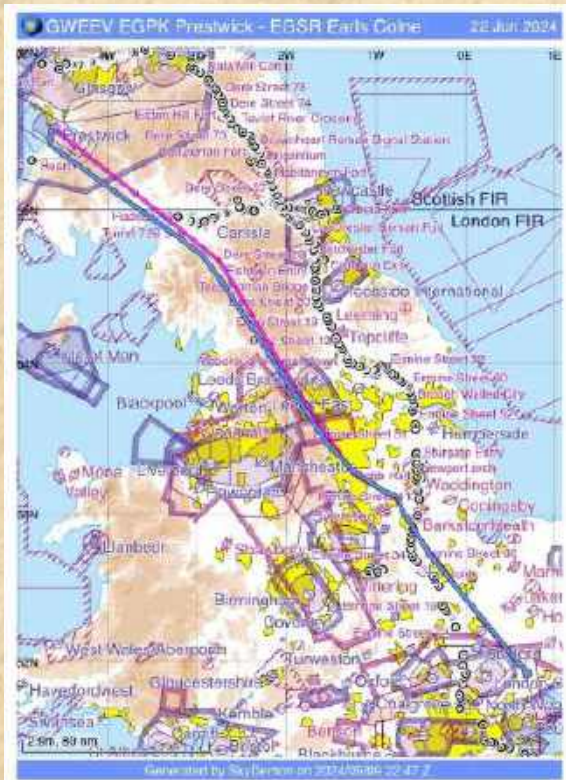
**LEG 2: EARLS COLNE – SOUTHEND**

***Airborne 1549Z (1649L) – Landed 1605Z (1705L)***

Refuelled to our full 158L AVGAS capacity, and with the crew refreshed with a quick drink and bit of cake from the café, we got airborne once more for the short trip to Southend. Leaving the Earls Colne ATZ, we immediately changed to Southend who were expecting us and we were cleared to enter their airspace via the Visual Reporting Point (VRP) at Northey Island and then to final on Runway 23. As we approached however, there was an inbound airliner and the plan changed so we were instructed to orbit over the River Crouch. After 3 orbits, we were cleared to position behind the airliner on short final and landed uneventfully on the long Southend runway before taxiing to park on the large Apron, only a short walk from the terminal and our airport hotel. A good day and hopefully a good premonition for the Dawn to Dusk challenge in the morning.



**WELCOME TO SOUTHEND !!**



**ACTUAL ROUTES FLOWN**

**POSITIONING FLIGHT STATISTICS**

LEG	PLANNED DISTANCE	PLANNED TIME	PLANNED FUEL BURN	ACTUAL DISTANCE FLOWN	ACTUAL ELAPSED TIME	ACTUAL FUEL BURN
PRESTWICK - EARLS COLNE	296NM	2 Hrs 01 Min	72L	305NM	1 Hr 59 Mins	73L
EARLS COLNE – SOUTHEND	21NM	8 Mins	13L	32NM	16 Mins	13L

**DAWN TO DUSK COMPETITION TASK– 23<sup>RD</sup> JUNE 2024**

**LEG 1 : SOUTHEND - SANDTOFT**

**Airborne 0719Z (0819L) – Landed 0906Z (1006L)**

Awakening to a beautiful sunny morning after a comfortable night in the Southend Airport Holiday Inn, a hearty breakfast was had as we spent time checking the weather for the day and NOTAMS which might affect our challenge, a procedure which we'd follow at every stop, although I don't mean the breakfast part of course 😊 Everything looked good and although we'd planned a 0730L departure, the sunshine and friendly people here gave us no reason to rush. We went quickly through the helpful and efficient security screening at Southend and prepared the aircraft. On our trip we were to be accompanied by several furry friends, namely Paddy the Stuffed Collie, a long-term mascot in my aircraft, as well as 'Wee G' and 'Doddie', a pair of cheeky stuffed giraffes associated with the charity called 'Giraffes on Tour' which raises fund for the children's cancer ward

at the Great Ormond Street Hospital (GOSH.) The original giraffe associated with the charity was called Geoffrey and the companion of a young girl called Louise Conway, who sadly passed away in 2013 at the age of nine. Several years later, aviation enthusiast friends of Louise's parents secretly obtained a similar giraffe to the original Geoffrey and over the course of a year they arranged for him to fly in all sorts of wonderful aircraft, including the RAF Battle of Britain Flight Lancaster, the Red Arrows, a Typhoon fighter taking part in HM Queen Elizabeth II's birthday flypast, and even to the edge of space in a US Air Force U2, all unbeknownst to the Conway family. After showing the family all the wonderful things that Geoffrey had been up to, the charity was born and people obtained lots of replica Geoffrey's in countries all over the world, taking them on adventures both in the air and on the surface, to raise awareness and funds for the charity. To date over £70,000 has been raised and the global family of giraffes have flown in almost every military aircraft type and with almost every Air Force in the Western world, including F15s, F35s, F22s, B52s, B1s, A10s, Tornados, and Typhoons. The charity has also occasionally run fund raising flights, generously organised by the RAF in Voyager tanker aircraft, where hundreds of people's giraffes are sponsored to fly on board a mission. My own giraffes fly regularly in my RV8, Wee Vans, and help raise money for the charity through the generosity of my passengers. Long may this amazing charity flourish.



***LOUISE CONWAY AND GIRAFFES ON TOUR CHARITY***



***GEOFFREY THE GIRAFFE ON BOARD SOME FANTASTIC JETS***



**PADDY, WEE G, AND DODDIE ARE ALL SET – AS ARE THE HUMANS !!**

With ATC approval to start and taxi from the helpful Southend controller, we taxied out to depart to the South and onwards to Dover to begin our journey which would take us almost the entire length of Britain. It was time for the Roman *aquila* to fly and for us to take you on our Dawn to Dusk expedition. In calm conditions we got airborne from Runway 23 and were cleared to leave the CTR via the Southend pier and Sheerness Docks VRPs under Visual Flight Rules (VFR). We soon passed the pier, which extends 1.33 miles (2.14KM) into the Thames Estuary and is the longest pleasure pier in the World, having been built originally of wood in 1829 and rebuilt with iron in 1889. A request to cut the corner on a direct track for Whitstable VRP was approved and this track would take us almost directly towards our ‘start point.’ Over the Thames we spotted several ships underway, offshore wind farms turning slowly in the gentle breeze, and various wartime Maunsell forts standing like War of the Worlds fighting machines rising out of the sea. Coasting in at Whitstable, famed for its local quality seafood such as Native Oysters, which incidentally have been harvested since Roman times, we could see the many colourful beach and fisherman’s huts, mainly in use by tourists today. Our transit over the pretty Kent countryside was uneventful and the airspace a lot quieter, and indeed safer, than it would have been when the dogfights of the Battle of Britain were being fought in these very same skies above us. Our target today, however, was not another aircraft or a bombing run, but ahead on the South Coast we could see the town of Dover, our first ‘stop’ on our historical journey.



**LONDON SOUTHEND AIRPORT**





**SOUTHEND PIER AND WHITSTABLE**

Approaching Dover Castle, we could clearly see the French coast on the other side of the Channel and could imagine the sight of the battle fleet of **Julius Caesar** sailing towards us with menace over two thousand years ago. We made sure that we remained outside the TDAs and flew a lazy left-hand orbit along to the East, taking in views of the famous White Cliffs which would have been easily visible to the Roman mariners and soldiers also. Coming back towards today's Dover Castle, it was easy to see why the Romans eventually put up a settlement here, called **Dubris**, the closest point to their Empire on our shores.

With the River Dour offering fresh water and the possibility of a natural sheltered harbour, plus the advantage of high ground either side of it on the Eastern and Western Heights, various temporary structures were built, starting in around 50AD. Over time more permanent buildings were constructed, including a 29 acre town site which was used for trading, three successive forts as well as two lighthouses, called **pharos** by the Romans. The **Classis Britannica** (the Roman Navy detached to Britain) are known to have occupied the port and built a fort covering 2 acres below the Western Heights from 130AD to 208AD. They are also believed to have been responsible for constructing the **pharos**, massive stone structures used not in the role of modern-day lighthouses warning of hazards but instead to guide Roman ships sailing from and to **Gaul** (France). The **pharos** were octagonal on the outside and rectangular on the inside, rising to a height of around 80' (24M), and comprising of eight stories. One of these still stands today, albeit with only four surviving stories, and is the tallest surviving Roman structure in Britain. Around the 3<sup>rd</sup> Century AD, the fleet left **Dubris** and never returned and the fort was abandoned. The Roman Army however were experiencing increasing attacks across **Britannia** from Saxons coming from Northern Germany and the Low Countries of Europe. They constructed a more substantial fort called 'The Fort of the Saxon Shore,' which partially encompassed part of the Naval fort and also took in some of the civilian buildings which lay to the North. This fort had a massive defensive stone wall which was 10' (3M) thick and was also reinforced at intervals using stone bastions and was surrounded by a ditch 40' (13M) wide and 10' (3M) deep. Remains of timber buildings, as well as some wall structures, metalled roads, and a bath house have been found, but most of the Roman occupation evidence has long been buried under later developments throughout the centuries. The fort was one of nine mentioned in a 4<sup>th</sup> Century document which details how they were located along the coast from Norfolk to Hampshire. There is evidence that they remained occupied by the Romans till somewhere around 550AD, after which they are generally believed to have finally left **Britannia** for good.



*ARTIST'S IMPRESSION OF THE ROMAN TOWN OF DUBRIS IN THE 3<sup>RD</sup> CENTURY AD*



*DUBRIS TODAY*



***THE SURVIVING ROMAN PHAROS NEXT TO THE 11<sup>TH</sup> CENTURY CHURCH***



***DOVER CASTLE AND THE ROMAN PHAROS***



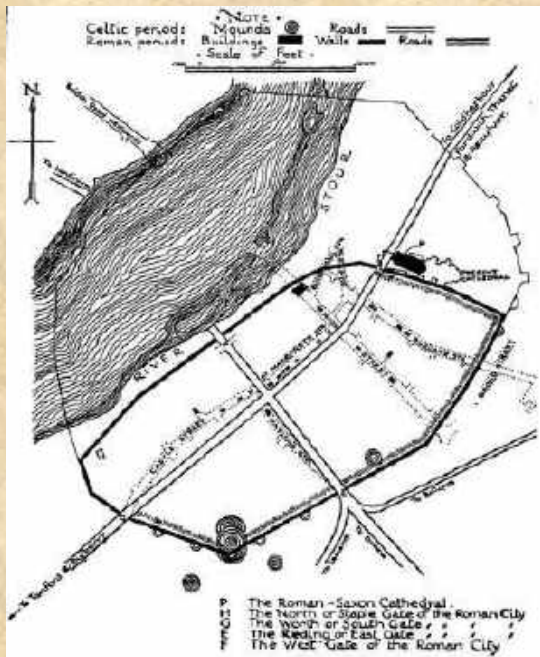
***THE WHITE CLIFFS OF DOVER – TOO SCARY FOR JULIUS CAESAR !!***

With our 'beach head' firmly established and overflowed, it was time to set course Northwards and follow the path of the Roman road, Watling Street. This road had two branches, one which commenced here at ***Dubris***, and another which ran from the very first Roman landing point at ***Rutupiae*** (Richborough near Sandwich) known by the Romans as the Gateway to Britain. The two road branches of Watling Street met at the Roman town of ***Durovernum Cantiacorum*** (Canterbury) and it was one of the most important roads ever built by the Romans as it enabled fast and efficient transport from the Roman Empire to ***Britannia***, and vice versa. The road was metaled for its entire length and was the equivalent of a modern-day motorway. Flying along the path of the ancient road, it was quite easy to see that the A2 road followed it almost exactly. What did the Romans ever do for us, eh ? On this stretch of the route there are still a few Roman artefacts around, although sadly none are really visible from the lofty flight of the eagle we were simulating. Far below us the foundations of several Roman villas have been found and excavated, the site of a bridge at Bourne to the South of Canterbury has also been discovered and a milestone has also been retrieved close to Canterbury. The Romans placed milestones at towns or other important locations such as forts and were generally stone pillars which were erected when the road was first constructed or when it was repaired. The stones were inscribed with details of the next location, the distance to it, the name of the ruling Emperor at the time it was inscribed, and the year it was put in place. Over one hundred have been found in Britain, so far anyway.



***REPLICA MILESTONE AT VINDOLANDA***

Soon we were over the famous city of Canterbury, which has had a rich and varied history through the ages. The Roman name **Durovernum Cantiacorum** reflects the capture of a settlement there in the 1<sup>st</sup> Century AD populated by the **Cantiaci** tribe. It means ‘the stronghold of the **Cantiaci** by the alder marsh’ also reflecting that it was built on the banks of the River Stour. The Romans laid out a new settlement with their common grid pattern of houses and roads, also adding an amphitheatre, temple, forum, and bath house. In the late 3<sup>rd</sup> Century AD, a town wall was built to defend the inhabitants from hostile forces, including seven defended gates. The size of this ‘new town’ was around 130 acres and it remained in use until the Romans left in the 5<sup>th</sup> Century AD.



**MAP AND ARTIST'S IMPRESSION OF ROMAN CANTERBURY**



**DUROVERNUM CANTIACORUM TODAY WITH WATLING STREET EXTENDING TOP LEFT OF CENTRE**

Leaving overhead the site of the 'London Gate' in *Durovernum Cantiacorum*, we continue up Watling Street, following the A2 road towards Sittingbourne. We have been receiving an ATC service from Southend since departure but it's now time to thank them for all their friendly assistance and change to our next frequency. As Rochester (EGTO) were now open and we would be passing close to their ATZ, I called them to pass on our details for their information. They had no traffic operating at this time and once I cleared their extended centreline, I said my goodbyes and switched to monitor Thames Radar and transmit their SSR FMC on my transponder. There was no intention of entering any of the busy London area airspace of course but it's better safe than sorry. Simultaneously we were approaching Rochester Castle and the River Medway. *Durobrivae* was the Roman name for Rochester and was a minor fortified settlement and river crossing. The name means 'the walled town of bridges.' Originally the Roman settlement was surrounded by a turf rampart, built in the 2<sup>nd</sup> Century AD, but this was replaced by stone walls in 225AD. A Roman milestone has been discovered about 3 miles West of Rochester and several swords were found when the River Medway was dredged in the vicinity of the existing castle. Otherwise, there is very little remaining of the Romans here. On an aviation theme, the Shorts Brothers had a manufacturing plant on the River Medway during the First World War, not far from the castle. The factory produced the 2-seat reconnaissance bomber called the Shorts Admiralty Type 184, but also commonly known as the Shorts 225, referencing the 225HP engine it used. This was the first aircraft in the World to launch a torpedo. The company was formed in 1908 at Battersea and opened their seaplane factory in 1915. Over one thousand aircraft were built by Short Brothers during World War 1 (WW1) and after the War they continued to build flying boats, including the famous Sunderland, a type which featured in my Dawn to Dusk entry in 2023. With the advent of World War 2 and an increase in demand for their aircraft, the site became a target for the Luftwaffe and was heavily bombed so the company constructed underground production facilities to provide increased production in safety. Hundreds of metres of tunnels were constructed in 1941, with the 120,000 square feet space creating room to house machine tools, a hospital, secure vaults, and air raid shelters. After the war, the demand for seaplanes waned and Short Brothers moved in 1948 to their new base at Sydenham in Belfast. The Rochester factory sites continued in non-aviation use until the 1990's when they were demolished and a housing development now covers the site. The tunnels however are still in existence and can be toured by arrangement with English Heritage.



**ROCHESTER CASTLE AND PROBABLE SITE OF ROMAN RIVER CROSSINGS**

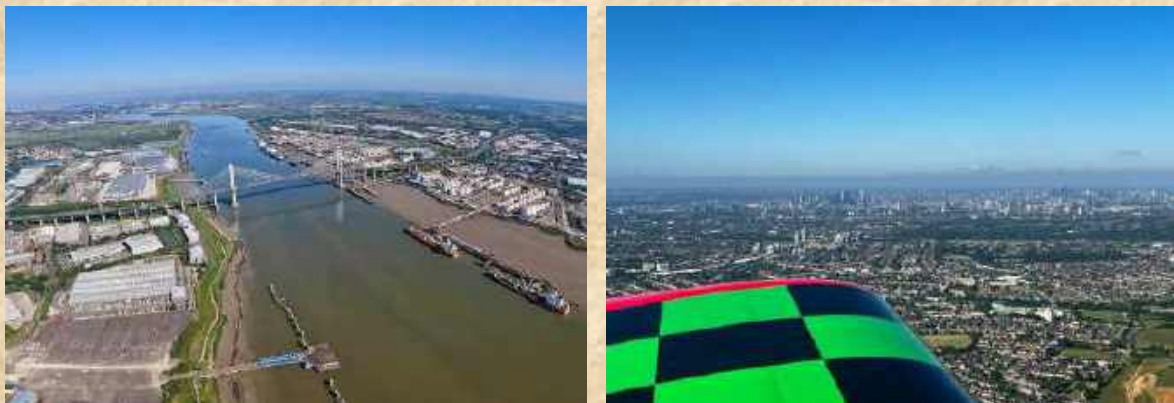


**THE RIVER MEDWAY AND DUROBRIVAE TODAY**



**SHORT BROTHERS ROCHESTER SEAPLANE WORKS**

Continuing along Watling Street whilst listening to the busy radio chat on Thames Radar, we would soon have to break off this portion of our Roman odyssey to avoid entering London airspace, even if we are the Roman *aquila*, the eagle eyes in the sky. The road continued onwards without us, towards *Londinium* (London), another fortified river crossing settled and used by the Romans throughout their tenure. It was settled during the *Claudian* invasion of Britain, overseen by General *Aulus Plautius* during 43AD. *Plautius* halted his advance on reaching the Thames and sent word to Emperor *Claudius*, as the latter wanted to come and take the personal glory of conquering *Britannia* at last. The Emperor arrived many months later from Europe, bring heavy artillery as well as a troop of exotic war elephants in order to show his strength. The armies then marched to *Camulodunum* (Colchester), the *Catuvellaunian* capital, where 11 British Kings surrendered to *Claudius*. The four *Legionum* that had come over to conquer *Britannia* would now be used to push outwards from *Londinium* and extend the boundaries of the Roman Empire. *Legio XX*, the Roman 20<sup>th</sup> Legion, was given a *cognomen*, or regimental nickname of *Valeria Victrix*. They would remain in place at Colchester and ensure the peace was kept with the native tribes who had surrendered. *Legio II Adiutrix Pia Fidei*, the Roman 2<sup>nd</sup> Legion and led by *Vespasian*, pushed Westwards, taking over many hill forts and subduing two powerful tribes before setting up their base in the Exeter region. *Legio XIV Flavia Firma*, the Roman 14<sup>th</sup> Legion, extended Watling Street towards the Midlands, establishing a base at Leicester, whilst *Legio IX Hispana*, the Roman 9<sup>th</sup> Legion, would push Northwards and build a route that we will fly over later, Ermine Street. They also established a camp at *Lindum Colonia* (Lincoln). Reaching *Darrents Ford*, (Dartford), we turn to the right, taking care to remain below 1500' AMSL base of the London City CTA as we cross the River Thames alongside the Queen Elizabeth II Bridge. Skirting around the outskirts of Greater London, we have an excellent view towards the 'City,' glistening in the bright sunshine.



**SITE OF THE ROMAN CROSSING AT DARRENTS FORD AND LOOKING TOWARDS LONDINIUM**

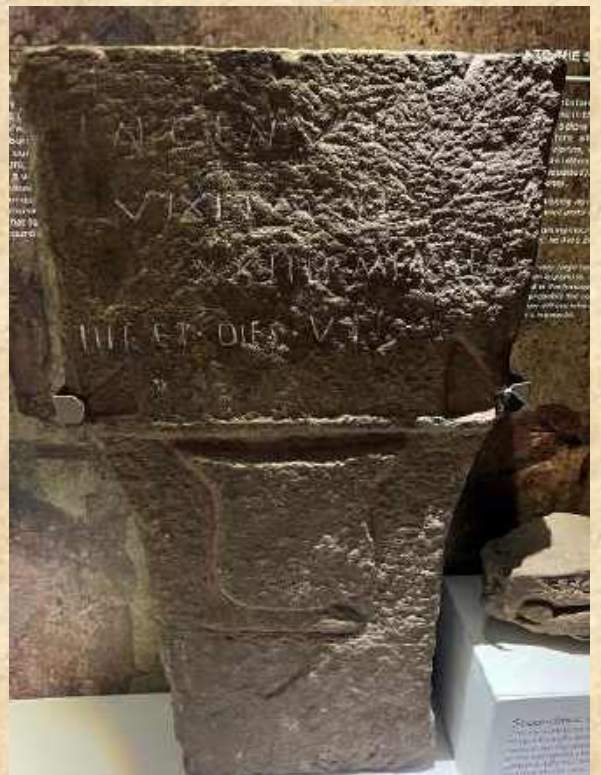
Once around the North of the London City CTA, we continued on a North-westerly heading until we intercepted the route of Ermine Street, another major artery in the Roman roads network, running from *Londinium*, off to our left, Northwards to *Lindum Colonia* (Lincoln) and thence onwards towards *Eboracum* (York). We would be stopping at Sandtoft however, a little way to the North of *Lindum Colonia*, before reaching *Eboracum*. We picked up the track of road, clearly seeing it running off to our right in a pretty straight line towards the Northerly horizon, from Bulls Cross near Enfield. Clear of London City airspace by a comfortable margin, we switched now to Stansted (EGSS) and monitored their frequency whilst wearing their assigned SSR FMC squawk. Paralleling the Lee Valley on our right, and Ermine Street on our left, we were making good time and fuel burn was as



expected. As we passed by the Ware VRP, we passed over the site of the Romans crossing point on the River Lea. This spot was probably chosen as there were numerous natural weirs located here on the river, giving plenty of opportunity to cross on foot or to construct bridges. As with most river crossing points used by the Romans, a sizeable settlement was established, providing rest facilities for those on the march as well as a defensive location to protect the traffic crossing the river. Foundations of several buildings have been found in Ware, including a temple and two Roman cemeteries. One skeleton, that of a young Roman girl, has also been found near Ware and she was named Ermintrude because she was found close to the Ermine Street roadway. Romans, like Britain, had a mixture of inhumations (burials) or cremations for their dead. Their traditions of having the occasion of their passing marked was dependent on their wealth and status, which also remains true to this day in our modern-day societies.



***JOINING ERMINE STREET NEAR WALTHAM ABBEY AND CROSSING THE WARE FORD***



***ROMAN TOMBSTONES OF AN UNKNOWN FEMALE (3<sup>RD</sup> CENTURY) AND A MALE CALLED INGENUUS***

Continuing past Ware, we follow the straight line of the High Road, a more modern name for what is in fact Ermine Street, before we come across Rib Ford, which unsurprisingly was the crossing point for the River Rib. Although Ermine Street continues in its straight line, we take a slight detour a mile or so off to the right to overfly Braughing. Originally a **Catuvellauni** settlement and trading post which used the River Rib to navigate using small boats to the River Lea and Southwards, the Romans took over the settlement during their road building activities as it was the junction of both Ermine Street and the Stane Street. Stane Street ran from here Eastwards to the major Roman settlement in **Camulodunum** (Colchester). Two settlement areas were established over 220 acres on Wickham Hill and Skeleton Green, but no defensive structures were built to enclose them. The houses were thatched timber buildings and are believed to have been in use until 60AD, after which substantial masonry buildings were erected, including a bath house, market hall, and temple. The village continued to develop in the 2<sup>nd</sup> Century AD, with the addition of commercial premises, domestic buildings, and workshops. Iron, bronze, and bone working were all present, however the major activity was the large-scale production of pottery, much of which spread throughout **Britannia** and the rest of the Roman Empire. Skeleton Green eventually became, as the name might suggest, the Roman cemetery. The last Roman activity before it was abandoned was believed to have been around 408AD, due to coins bearing the seal of Emperor **Arcadius** and other archaeological artifacts confirming the date of the relics as being the youngest found on the sites.



**ANCIENT MEETS MODERN.**

**ERMINE STREET ON THE LEFT THROUGH THE VILLAGE,  
THE MODERN A10 ROAD CENTRE, AND HIGH CROSS AIRSTRIP ON THE RIGHT**



***THE Y-JUNCTION OF ERMINE STREET AND STANE STREET AT BRAUGHING***



***ROMAN POTTERY RECOVERED FROM ALL OVER BRITANNIA. MADE IN BRAUGHING ?***

It was now time to leave the Stansted frequency and we contacted London Information, operating a busy frequency in the pleasant weather so we just listen in. We fly high above the A10 road as it stretches in to the distance, straight as an arrow, until we reach the town of Royston, which lies on the Greenwich Meridian. Royston was the junction of Ermine Street and the Icknield Way. Whilst we know by now that the former is most definitely Roman, the latter predates it and was a prehistoric

thoroughfare, although it was upgraded and repaired by the Romans to allow access into the hinterland of **Britannia**. Here the A10 leaves us and heads towards **Duroliponte** (Cambridge), whilst the A1198 takes over the mantle of Ermine Way. Passing in to Cambridgeshire, we pass the disused RAF airfield at Bassingbourn, one of the bases supplying RAF bomber aircraft in the 1942 'Thousand Bomber' raid on Cologne, and which also served the 8<sup>th</sup> US Army Air Force later in World War 2 (WW2). It was the scene for much of the filming of the original documentary film 'Memphis Belle' and one of the aircraft's actual propellers is on display at the gatehouse, which now forms part of the current resident's barracks, the British Army. The base was also unusual in that it painted the runways green during the War for camouflage purposes. Off to our right we soon pass close by another wartime airfield at Bourn, used for a long time for general aviation in peacetime, but now sadly lost to developers who will shortly be turning it in to a 'garden village.' Meanwhile on the other side of Cambourne, adjacent to Bourn, there is another large housing development going up there too. I just hope there's no complaints from the current townspeople about the loss of their peace and quiet !!

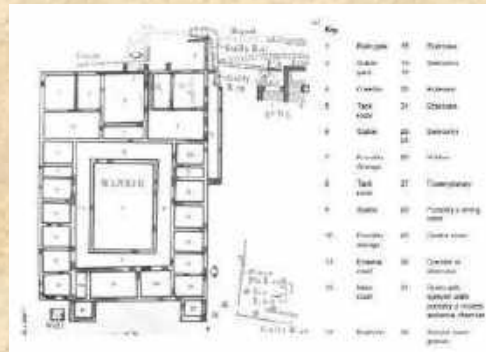
Our next Roman site is **Durovigutum** (Godmanchester), a settlement and fort at the crossroads of Ermine Street, the **Via Devana** which ran from Colchester to Cambridge to Chester, and an unnamed Roman military road which ran from Sandy. This was a key Roman town, established from the remains of earlier settlements which had been destroyed by Queen **Boudicca's** armies during her war with the Romans. The return of Roman occupation took place in 61AD, and initially the returning civilians and Romans lived in Celtic style round houses before it was rebuilt with stone and wooden rectangular building including a **mansio**, or travellers inn. Meanwhile, with the belief in lasting peace and stability in the region, the Roman military moved on to pastures new and the fortifications were abandoned although the town continued to grow and develop. Records say that by 120AD the **mansio** was a 95' (29M) long building, with stables, accommodation, and a colonnaded garden. It was used almost exclusively for those on Government or Imperial Roman business. Food served included oysters, pike, beef, and chicken, with travellers journeying onwards taking food with them for sustenance. What have the Romans ever done for us ? Well, there's the packed lunches !! A bath complex was found nearby, along with a temple dedicated to the local God **Albandinus**, the God of the close by River Ouse. Excavations have shown that Ermine Street running through the town was 43' (13M) wide and solidly built. In fact, it was so solidly built that an 18<sup>th</sup> Century mansion called Montagu House was built using it as part of the foundations. By the 3<sup>rd</sup> Century AD the town was going from strength to strength, with over three thousand inhabitants recorded and the town also had its own **basilica**, or town hall, signifying that it largely self-ruled. Commerce was thriving and the market traded in local farm produce as well as pottery, plus iron and bronze ware. In 286AD, the military Commander of **Britannia**, **Marcus Aurelius Mausaeus Carausius**, usurped power from Rome and declared himself the Emperor of **Britannia** and Northern **Gaul**. His 'reign' lasted only 7 years as he was assassinated by his treasury keeper, **Allectus**, who seized power for himself in 293AD. Meanwhile the Emperor in Rome, **Constantius Chlorus**, decided to mount a campaign to reclaim the lost parts of his empire and launched an invasion force to **Britannia** in 296AD, overthrowing **Allectus** and killing him in battle. The 10 years or more of uncertainty throughout these turbulent times had resulted in many towns reinstating or building fortifications and this included Godmanchester. Unfortunately, before the walls could be finished, the town was sacked by Saxon invaders. The settlement mainly survived the raid however and continued to exist throughout the 4<sup>th</sup> Century AD, with new buildings being erected. With the gradual decline of the Empire and a recession under way, the town eventually began to fall apart and at some point a Saxon war leader called **Godmund** eventually took over the ruined site, giving his name to the one it bears today.



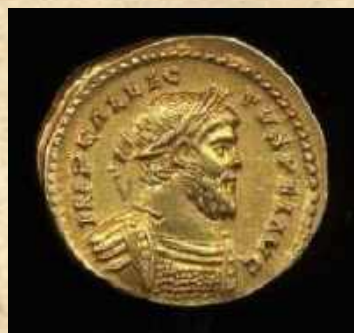
**ROYSTON SITS ON THE GREENWICH MERIDIAN AND FORMER RAF BASSINGBOURN AIRFIELD**



**NEW DEVELOPMENTS SURROUND CAMBOURNE AND DUROVIGUTUM TODAY**



**THE DUROVIGUTUM MANSIO**



**EMPERORS CARAUSIUS, ALLECTUS, AND CONSTANTIUS CHLORUS**

Immediately after Godmanchester we fly over Huntingdon. It has no claim to being Roman and was built by the Anglo Saxons and Danes several centuries after the Romans had left this island, however, it was the site of The Muddy Hoard which was discovered in 2018. This was a massive number of coins, numbering 9,274, which were hidden in 274AD. The coins were dated to the reign of **Tetricus I** and **Tetricus II**, who had broken away from Emperor **Aurelian's** reign in Rome. Our next waypoint is over the former RAF air base at Alconbury, which operated US Air Force jets during the Cold War until the late 1990's. There remains a military presence today on a small part of the base and if I tell you that the street names are Michigan, Iowa, California, and Georgia, amongst others, then you can guess who still operates it. The majority of the base however is being redeveloped, including the runways, hangar areas, and parking hard stands, with a new garden village called Alconbury Wealds springing up. This redevelopment has given the opportunity for some archaeological excavations to take place, and indeed the TV programme 'Digging For Britain,' featuring Professor Alice Roberts and a team from Oxford University, filmed an episode covering one such dig in the summer of 2023. The film was released in January 2024 as Episode 2 of Series 11 and can still be viewed on the BBC iPlayer platform should you be interested. Spoiler alert, they found lots of late era Roman coins and over 100KG of relatively good condition pottery. The archaeologists believe that it wasn't a permanent settlement but rather indicative of an area that ancient peoples visited, perhaps to offer gifts to the Gods. A quick radio change was next as we ceased monitoring London Information and switched to Peterborough Conington (EGSF) to obtain permission to transit their ATZ. There was an aircraft landing from the opposite side of the ATZ but no other traffic to affect us and we zoomed through with no problems. We quickly changed frequency when clear of the Conington ATZ to call RAF Wittering (EGXT) just on the off chance that there might have been someone there at a weekend but all we got was silence so we would have to position a little offset to the East of our planned route and fly through the MATZ but remaining just outside the ATZ, which allowed us to shadow Ermine Street from a mile or two away as it lies inside the ATZ. The left offset, although not ideal from a task point of view, was however helpful in taking us well clear of the parachuting operations at Peterborough Sibson (EGSP) meaning we had no need to give them a call. Clearing the Wittering MATZ, we leave their unmanned frequency, select Cranwell (EGYD) on the radio and continue up Ermine Street as it heads up towards Lincolnshire. It has now become the A1M or the Great North Road. Almost everywhere along this section of the route you can see an airfield, mostly disused ones from WW2, but also some which remain in military service to this day. It must have been mind blowing, but also frightening, to see so many aircraft operating from different bases in close proximity to each other.



**RAF ALCONBURY IS NOW A SMALL ENCLAVE WHILST THE AIRFIELD BECOMES ALCONBURY WEALD**

We pass over Stamford, where **Legio IX Hispana** forded the River Welland in 61AD whilst on their way towards **Lindum Colonia**, with Queen **Boudicca** in hot pursuit. Once more we fly over a disused airfield, RAF Woolfox Lodge, which was a bomber station during the war but fell in to disrepair when hostilities ended. The station got a new lease of life when it became a site for RAF Bloodhound surface to air missiles in the 1960's as part of the UK's Cold War Air Defence system, although it only lasted 5 years before it was returned to civil use for agriculture. As seems to be the current rage, the owner is proposing that the site now be developed as a garden village. Off to our left we pass the long runway of the former RAF station at Cottesmore, once the home of the Tri-national Tornado Training Establishment TTTE whose role was to teach aircrew from the UK, Germany, and Italy to fly the multi role Panavia Tornado fighter in the 1980's and 1990's. Minutes later, it's the turn of RAF North Witham to appear under our eagle eye gaze. The station saw use as a transport base during WW2 with the RAF and the US Army Air Force flying Airborne divisions on C47 Dakota aircraft and Waco CG-4 gliders. It continued in use as a maintenance facility until the 1950's and is now mostly under the control of the Forestry Commission who have planted extensive tracts of oak and conifers between the runways. The site also hosts a butterfly reserve as well as a small industrial area. The old control tower remains and walking the runways amongst the quiet stillness of the trees on a hot summer's day (anyone remember those ?) is said to be very atmospheric. Passing abeam the town of Grantham to our left, we spy another not so obvious but still visible disused airfield. Originally established as a Royal Flying Corps (RFC) station in 1915, RFC Grantham became RAF Grantham in 1918 before changing its name to RAF Spitalgate in 1942. Primarily a training base, it did see some combat sorties as Polish paratroopers departed from here to take part in Operation Market Garden, the ill-fated 'Bridge Too Far' mission. After the war it became an Officer Cadet training base in the 1950's before becoming the Women's Royal Air Force (WRAF) non-commissioned training depot. In 1975 all aviation links disappeared when it became the Prince William of Gloucester Army Barracks. The weather aloft from our eyrie now seems to be changing slightly with cloud up ahead replacing

the blue skies, as we are finding scattered wisps of cloud around the 2500' AMSL mark, our altitude selected to remain clear the ATZs at RAF Barkston Heath (EGYE) and RAF Cranwell.

We give Cranwell a call, both on the Zone frequency and on the Cranwell North gliding frequency but it seems there is no one home here either. Cranwell also control the Barkston Heath MATZ so there's probably no traffic there, but we still need to avoid their ATZ. Barkston Heath was another US Army Air Force transport base during WW2, flying C47's in various campaigns such as the D-Day landings before all the squadrons moved to France to continue the battles on the march towards Germany. The station then became another Bloodhound missile site during the Cold War, operating in that role up until 1989. In 1995, the Joint Elementary Flying Training School (JEFTS) used by the RAF and the Royal Navy located here and operated until 2003 when the RAF decided to do its own thing. Renamed the Defence Elementary Flying Training School (DEFTS), the Royal Navy and the Army Air Corps continued to use the station until 2021 when the Army decided to also part company as they decided to only train pilots on rotary wing from ab-initio going forwards. The Royal Navy are still there though and now fly as No 703 Naval Air Squadron !! Just Northeast of Barkston is RAF Cranwell (EGYD), arguably the spiritual heart of the Air Force. They've even got a Latin motto, possibly borrowed from the Romans – **'Altium Altrix'** or Nurture the Highest. Seems kind of appropriate as we overfly it !! One of the earliest military aviation bases in the UK, it was established in 1915 by the Royal Navy as a flight training school. Since then it's moved in to the hands of the RAF but has remained as a training base throughout its entire history, housing the RAF College as well as various flying units. It's future looks even more concrete as the basic recruit training school at RAF Halton will also move there in 2025, meaning that basic training for all ranks from officer to airmen will now all be in one location.



**RAF WOOLFOX LODGE AND RAF NORTH WITHAM**



**RAF SPITALGATE WHILST ERMINE STREET RUNS STRAIGHT AS A DIE ACROSS LINCOLNSHIRE**





**RAF BARKSTON HEATH AND RAF CRANWELL**

Leaving the Cranwell frequency as we leave their MATZ, my next call is to RAF Waddington (EGXW) for another attempt at a weekend military ATZ transit. Having checked the NOTAMs, Waddington airspace will be active later in the day as the Red Arrows, who we saw arrive at Prestwick as we departed from Scotland on Friday, are due to return from their trip up North and have activated the Restricted Area R313 for their arrival and they will require an ATC service from Waddington. It's obviously a bit too early though as again there's no answer and we'll have to go over or around the ATZ. I make blind calls and a Diamond DA42 checks in on frequency also, heading for East Midlands Airport (EGNX) and flying about 1000' above us slowly crossing from right to left. We have him visual as he slides above us and is well clear. Waddington is now straight ahead and the original Ermine Street would have more or less gone straight through the threshold of Runway 02 and several of the hangars before exiting the base through the junior ranks mess building !! Built in 1916, it started life as an RFC flight training school but also trained members of the US Army for aviation service in the First World War. After the war, and now under the control of the newly formed RAF, it became a bomber base. In WW2 it became the first station to operate the Avro Manchester and then the first to get the Avro Lancaster in operational service. After WW2 it became a V-Bomber base operating Avro Vulcan jet bombers as part of the UK's Cold War nuclear deterrent. Crews from the base also flew Vulcans in Black Buck bombing missions during the Falklands War. Since the 1990's the base has been the main location for the RAF's Intelligence Surveillance Target Acquisition and Reconnaissance (ISTAR) fleets, including Boeing E3 AWACS (retired), Bombardier Sentinels (retired), Boeing MQ9 Reaper and MQ9B Protector drones, Beech 200 Shadows, and Boeing RC135 Airseekers. It is also home now for the Red Arrows since the closure of their former home at RAF Scampton around 10 miles (16KM) further up Ermine Street. Also on station in a non-flying role is an Avro Vulcan gate guard, the second one we've seen on our trip (so far).

Just past Waddington, at Bracebridge Heath, which incidentally was another former RAF airfield, there is a new scar on the ground due to excavations by Anglian Water to lay new high-capacity pipes in their infrastructure. As with any major development, the builders must involve archaeologists to make sure that any treasures from the past are not lost forever. The team found the remains of Ermine Steet buried under the fields, but also discovered a lost settlement from Roman times. Parts of an altar and a possible tombstone, as well as jewellery and other artifacts were uncovered. If you want to see it, then it's also featured on the BBC's 'Digging for Britain' series 11 episode 4, available on iPlayer. Only a few miles further on from here and we arrive overhead **Lindum Colonia** (Lincoln), a key place in the Roman **Britannia** world.



**ERMINE STREET ENTERING RAF WADDINGTON AND THE ANGLIAN WATER EXCAVATIONS**



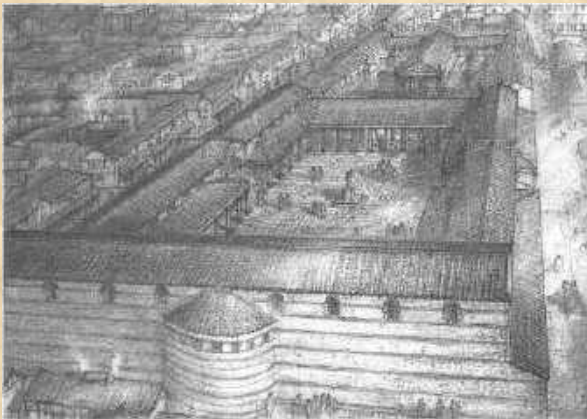
**OUR 2<sup>ND</sup> AVRO VULCAN OF THE TRIP**

**XM607 WHICH TOOK PART IN BLACK BUCK RAIDS**

The Romans invaded this part of **Britannia** in 48AD and took advantage of a hill to build their **Legio** fort at the Northern end of a Roman road called the Fosse Way, which ran from **Isca Dumnoniorum** (Exeter) via **Lindinis** (Ilchester), **Aquae Sulis** (Bath), **Corinium** (Cirencester), and **Ratae Corieltauvorum** (Leicester) to **Lindum Colonia**. Originally a wooden walled expeditionary settlement, it was soon settled by army veterans and gained the **colonia** title in 86AD as a result. Meanwhile the men of **Legio IX Hispana** who had built the fort moved onwards to **Eboracum** (York) in 71AD. **Lindum Colonia** flourished and in the 2<sup>nd</sup> Century AD the fort was extended down the hillside towards the waters of the River Witham. The town boasted a forum, **basilica** (public hall), bath houses, and even an aqueduct. Stone walls with impressive gates were also constructed. Between five thousand and ten thousand people made this their home. Using the Witham and the River Trent, **Lindum Colonia** also became accessible from the sea. This success was enjoyed for several centuries until the Romans left **Britannia** and by the early 5<sup>th</sup> Century AD it was largely deserted. Fortunately, there are still many remains of the Roman buildings and structures to be found within the modern-day city, in part due to their workmanship and in part due to many items being recycled for other uses and still existing today.



***THE EXTENDED COLONIA TOWN AND THE FORUM***



***THE BASILICA AND ONE OF THE GATES IN THE WALL***



***LINDUM COLONIA WITH ERMINE STREET HEADING IN TO THE DISTANCE TO THE NORTH***



***LINDUM COLONIA FORT TODAY***



***LINDUM COLONIA AND THE RIVER WITHAM***



***THE SURVIVING ROMAN NEWPORT ARCH IN LINCOLN***

After a few orbits of *Lindum Colonia*, taking in the sights and trying to spot the remaining Roman walls and gates, we flew over the Newport Arch which was the Northern gate of the old Roman fort and also led the route of Ermine Street out of the city. Now used as the A15 road, it follows a straight-line Northwards, although after around 5 miles there is a kink in it. The reason for this becomes obvious as you get closer, since Ermine Street cuts straight through the boundary and across the now disused runway at the recently closed RAF Scampton airfield. The A15 passes around the airfield perimeter until it rejoins the straight line on Ermine Street once more. Scampton was an air station steeped in history, and similar to some of the other bases we have already flown past, it was originally an RFC station built in 1916 and called Brattleby. It housed various RFC fighter squadrons but closed after WW1. Reopening in the late 1930's as the dark clouds of war approached once more, it was the home to several Bomber Command squadrons in WW2.

Arguably its most famous residents were the Lancasters of 617 Squadron, formed there in 1943 and known initially only as Squadron X. Their top-secret role was to practice and execute the daring Operation Chastise mission. Under the leadership of Sqn Ldr Guy Gibson, nineteen Lancasters departed Scampton at night on the 16<sup>th</sup>/17<sup>th</sup> May 1943, carrying a single revolutionary Upkeep 'bouncing bomb' on each aircraft. Their targets were the dams in the Ruhr Valley of Germany and destroying them would, it was hoped, hinder the industrial war effort of Nazi Germany. Of the four dams attacked, only two were breached, the Mohne and the Eder. The Sorpe and the Schwelm dams remained intact. Only eleven of the Lancasters returned and eight were destroyed, with the loss of fifty three aircrew. The legend of the Dambusters had been born and the squadron still flies today with F35 Lightning II aircraft from RAF Marham in Norfolk. The newly promoted Wg Cmdr Guy Gibson was awarded the Victoria Cross for his part in the raid, the 3<sup>rd</sup> recipient of the award based at RAF Scampton. He would sadly not survive the war, killed in late 1944 over Steenbergen in Holland whilst flying a de Havilland Mosquito on a night Pathfinder mission to illuminate targets for a bombing raid on Rheydt and Moenchen-Gladbach in Germany. On his return towards the UK, for

reasons unknown, the low flying aircraft exploded on contact with the ground. Along with his navigator, Sqn Ldr Jim Warwick, he rests forever in peace in the Steenbergen cemetery.

After WW2, the station continued to host piston engined bombers from both the RAF and the US Air Force until the jet age came along with the English Electric Canberra throughout the 1950's. In the late 1950's, the station was rebuilt to take elements of the new Cold War V Bomber Force, with Avro Vulcans arriving, along with their nuclear bomb arsenal. The runway was realigned and lengthened to 9000' (2740M) as part of the upgrade, which unfortunately meant that Ermine Street would have to be built over and a bypass built for the existing modern road. The howl of the Vulcans could be heard at Scampton until 1982, when they were retired. The station became a training base, including hosting the Red Arrows, and on the non-flying side it was home to the Scampton Control & Reporting Centre (CRC), part of the UK Air Defence Ground Environment (UKADGE), providing air defence radar surveillance and targeting for the UK and NATO. The CRC was housed in the building where Guy Gibson briefed his crews before the Dambuster raid and a plaque was present on the wall commemorating the event and the sacrifices made. The radio callsign of the unit was for many years 'BLACKDOG,' a nod to the black labrador owned by Guy Gibson which was killed in a road traffic accident during the raid whilst his master was flying to Germany and is buried on the airfield. In 2023 the impressive history ended and the station was vacated. Plans soon developed to turn the airfield in to refugee and asylum seeker centre, however these have now been shelved by the incoming Government as financially unviable. Perhaps the great heritage and history of Scampton will be saved after all.



***THE FORMER RAF SCAMPTON BASE WITH ERMINE STREET RUNNING THROUGH IT***

***THE A15 ROAD DIVERTS IN A LOOP AROUND TO THE RIGHT***



***GUY GIBSON WITH HIS DOG AND CREW, LANCASTERS DEPART ON OPERATION CHASTISE 1943***

With the imaginary sound of multiple Rolls Royce Merlin engines in my head, we continue North, with only about 10 minutes to run to our first stop at Sandtoft, home of the Yorkshire Aero Club. The airfield lies about 10NM to the West of Ermine Street so it's not too much of a detour of our route to pop in. Continuing up the Roman road would take us right between the gliding site at Kirton in Lindsay, another former RAF airfield, and the parachuting drop zone at Hibaldstow, which was also a former RAF airfield and the satellite station for Kirton in Lindsay. As there was nothing of particular note on this section of Ermine Street, we'd already planned to come off the route before reaching these potentially busy bits of airspace and coming abeam the disused RAF airfield at Hemswell we turned to the left and headed West. Hemswell is another former Bomber Command station, which is probably not surprising as we're flying over Lincolnshire, known as 'Bomber County.' In operation with aircraft between 1937 and 1957, the base lays claim to one of its aircraft dropping the first bombs on German soil during WW2, when a Hampden bomber of 61 Squadron attacked a seaplane base on the Northern German coast in 1940. Many Polish bomber crews also flew from here during WW2 with three squadrons of Vickers Wellingtons. Afterwards, Cold War operations also continued with various aircraft types until flying ceased and it was designated as a missile base, equipped with three Thor Intermediate Range Ballistic Missile launchers. In 1967 the base finally closed and the runways were dug up. Many readers will also have seen Hemswell on the silver screen, as it was used to shoot the airfield and flying scenes for the 1954 film 'The Dam Busters', starring Richard Todd and Michael Redgrave. From Hemswell we fly a direct track to another airfield with a special resident, before turning Northeast for the final leg to Sandtoft. This next airfield is also currently disused but was previously in service as RAF Finningley before becoming Doncaster Sheffield Airport, also known as Robin Hood Airport. Sadly, it closed down in 2022, with the runway still looking in excellent condition but marked with large 'X's as is customary to show that landings shouldn't be attempted. The special resident, with an uncertain future, is our 3<sup>rd</sup> Vulcan of the trip, XH558 or the 'Spirit of Great Britain'. It was the last flying example and performed to thrilled airshow crowds up and down the country until 2015. It's flying life ended as many airframe items were reaching the end of their fatigue lives, coupled with a dwindling supply of spares and no further spare engines available. Refurbishing or reproducing these parts would be prohibitively expensive and so the sad decision was made to ground her. The airport owners also had a tough time, particularly with Covid, and eventually closed the Airport leaving the Vulcan trapped, even if a single ferry flight to somewhere more suitable had been feasible. She no longer has the use of a hangar and sits forlornly on an old runway, her fate in limbo. Let's hope she is able to survive and remind future generations of the part she played, along with thousands of service men and women, in keeping the World a safer place during the Cold War. With a quick call to Sandtoft, we get the airfield information and join on the downwind leg for Runway 23, fitting in between a couple of aircraft carrying out circuits. Safely down after an unusual final approach descending above an industrial estate road, there's a little surprise for me as I spot the aircraft that I first flew solo in when doing my Private Pilot's Licence at Bournemouth Flying Club back in 1982. It's still going strong, training pilots at Sandtoft now with the Yorkshire Aero Club !! Aviation is such a small World 😊



***THE FORMER RAF STATIONS AT HEMSWELL AND FINNINGLEY***



***OUR 3<sup>RD</sup> VULCAN OF THE TRIP, XH558 SITS SADLY AT DONCASTER-SHEFFIELD***



***INTERESTING RUNWAY 23 FINAL APPROACH AND WEE VANS RESTING AT SANDTOFT***





**MY FIRST POWERED SOLO AIRCRAFT, THEN AND NOW !!**



**'AQUILAE EGRESSUS' – THE EAGLES HAVE LANDED**

**LEG 1 STATISTICS**

	<b>DISTANCE</b>	<b>ELAPSED TIME</b>	<b>AVERAGE GROUND SPEED</b>	<b>FUEL BURN</b>
<b>PLANNED</b>	241NM	1Hr 40Min	140Kts	64L
<b>ACTUAL</b>	256NM	1Hr 47Min	144Kts	63L



ACTUAL ROUTE FLOWN – LEG 1 SOUTHEND TO SANDTOFT

## **LEG 2: SANDTOFT – FISHBURN**

### ***Airborne 1005Z (1105L) – Landed 1053Z (1153L)***

With a quick and friendly refuelling service from Angeliki at the Yorkshire Aero Club, along with suitable crew refreshments at the Happy Cafe, it was time to get ready to continue on our odyssey, or whatever the Roman version of that Greek word is. Our next stop was going to be Carlisle (EGNC) but I had to give them a quick call to check if all would be well for a refuelling stop with them, as you may remember that they had a military exercise taking place with helicopters temporarily based there. UK pilots do like to moan about having to get Prior Permission (PPR) but sometimes it is really useful as Carlisle confirmed that due to limited staff numbers there would be no one to provide us with fuel, although we were welcome to land if we wished. Whilst Wee Vans would have the fuel endurance and range to reach an alternative landing for fuel on this next leg at either Cumbernauld (EGPG), Fife (EGPJ), or Perth (EGPT), it would be a long trip and eating in to both safety and comfort margins. Fortunately, I know of a cracking little airfield which was not too far off our track and as it would be approaching lunchtime by the time we got there, the presence of their excellent airfield restaurant also made it the obvious choice. We would replan this leg to Fishburn. I quickly gave them a call and the friendly folks there confirmed they would be delighted to see us, so that plan was now settled. An unexpected bonus would also arise as Kate's partner Paul and his son would be in the area and would pop down and buy us lunch in The Aviator Café. Result !!

Airborne from Runway 23 at Sandtoft, we followed the right-hand circuit pattern around to leave on a Northeasterly track and pick up our route again on Ermine Street. Looking at a modern-day map, it's not unusual to wonder why the Romans chose this route to **Eboracum** (York). After all, if they left **Lindum Colonia** on a slightly more North-westerly heading, they could have gone straight there, much as the modern road system does. We can only guess but perhaps they had aggressive tribes on the more inland route, perhaps they were able to use the Humber for ships to come in and bring supplies, or perhaps they were just route finding the best they could without the benefit of aerial views and reference maps. Regardless of the reason, the road comes to an abrupt stop at Winteringham, translated as 'the homestead of **Winta's** people,' which lies on the Southern banks of the Humber estuary. **Winta** was a local King, however he came a couple of centuries after the Romans had left **Britannia**, so we don't know for sure if the Romans gave the place a name of their own, although the name **Ad Abum** has been suggested. Winteringham was an important settlement as it provided a ferry crossing point for travellers on Ermine Street heading North. In certain tide conditions there was also a low river ford across the river. The ferry crossed to a fort on the North bank of the Humber called **Petuaria** (Brough) which was built in 70AD and remained in use until around 125AD. Roman occupation still remained however as the **civitas** (civil town) adjacent to the fort, the ferry crossing infrastructure, and a port survived until 370AD. From **Petuaria**, in addition to Ermine Street, there was also a further road called Cade's Road which ran almost 100 miles North to **Pons Aelius** (Newcastle). Boats with a shallow draft would also be able to navigate up the Humber and access much of the land East of the Pennines via eight major rivers. Close to **Petuaria**, the remains of a Roman villa called Brantingham have been discovered and archaeologists found mosaiced floors as well as a great mosaic depicting eight reclining river Goddesses, associated with the navigable rivers which the Romans no doubt explored. The villa has been dated as having been destroyed by fire in the 4<sup>th</sup> Century AD.



### **CROSSING THE HUMBER FROM WINTERINGHAM TO PETUARIA**

Following the path of the Roman road from **Petuaria**, we swing left to the Northwest after a brief time and pass over Market Weighton. A Roman town called **Delgovicia** was mentioned in journals of the **Antonine** itinerary, a record of the roads travelled by campaigns sponsored by Emperor **Antoninus Pius** in the mid-2<sup>nd</sup> Century AD. This town was reported to be to the East of **Eboracum** but has never been found. One scholar has suggested it is indeed here somewhere but just awaiting discovery. I now changed frequency to Pocklington Base gliding site to check on their activity, as Ermine Street passes the end of their runway. There was no answer, however gliding site frequencies are not always staffed and so I passed a couple of miles further South of the airfield just to make sure there was no conflict. A couple of gliders were spotted heading towards the airfield to land but were well clear. It won't surprise you to know that Pocklington is a former RAF Bomber Command base I suppose !! Passing clear, it was another frequency change to give Full Sutton (EGNU) Radio a courtesy call as we would pass a mile or two from their runway. RAF Full Sutton was the last operational Bomber Command station opened in WW2 and went on to serve as a flying training station before becoming a Thor missile site between 1959 and 1963. Part of the airfield remains in use today for light aircraft and pilots may notice that there is a Restricted Area EGR315 around it. Fixed wing pilots need not worry however as it only applies to helicopters. Part of the old RAF airfield is now in use as a prison, hence the nervousness about rotary winged flight. There was no traffic to affect me and we passed over **Derventio** (Stamford Bridge), a Roman fort site which was built in 70AD along with an associated linear civilian settlement and a bridge over the River Derwent. The town is also known for the famous Battle of Stamford Bridge which took place in 1066 when King Harold II repelled an invading Norwegian force.

Only 7 miles (10KM) ahead of us is the important Roman fort and city of **Eboracum** (York). The name means 'place of the yew tree.' After the Roman invasion in 43AD, a tribe called the **Brigantes** lived in the area but made treaties with the Romans and became a Roman client State. This meant there was no need for Roman armies or forts as the locals ran the area for them and ensured that taxes

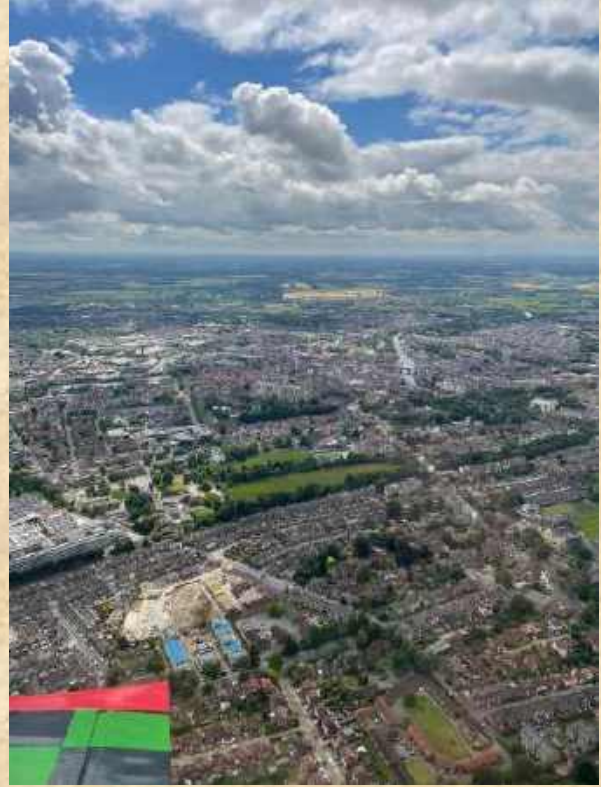
and offerings were paid to the Empire. The leadership of the **Brigantians** changed around 70AD and they became very hostile and ripped up the previous agreements. Roman General **Quintus Petillius Cerialis** led **Legio IX Hispana** Northwards from **Lindum Colonia** across the Humber to take care of matters. In 71AD he founded **Eboracum** as a **castra** (military fortress) on flat ground above the River Ouse near the junction with the River Foss. Thanks to his successful campaign he was appointed the Governor of **Britannia** that same year. The original layout was that of a standard **Legio** fort, with wooden buildings inside a defensive perimeter consisting of turf ramparts. This was completed in 74AD. The new city, with over five thousand troops, brought trading opportunities for the locals and permanent civilian settlements sprung up in the vicinity. Later the fort was revamped using local clay to build defensive mounds covered in turf and with an oak foundation. The evolution of building techniques soon resulted in the construction of limestone walls with towers. In 81AD General **Gnaeus Julius Agricola** replaced all the wooden buildings, replacing them again in 107AD with stone buildings. In 118AD the city was garrisoned by the **Legio VI Victrix**, the Roman 6<sup>th</sup> Legion, with the last recorded presence of the previous garrison, **Legio IX**, being in 108AD. By the 2<sup>nd</sup> Century AD the growth became rapid with a grid system of streets, large public buildings, and private dwellings. The growth continued for around one hundred years and at its peak it was the largest settlement in the North of **Britannia**, serving as a provincial capital which attracted visits by several Emperors, such as **Septimius Severus**, **Constantius I**, and **Publius Aelius Hadrianus** who was known simply as **Hadrian** to his friends, Romans, and countrymen. The city was developed well into the 4<sup>th</sup> Century AD but with the decline of the Roman Empire in the 5<sup>th</sup> Century AD, the dynamic changed and the local population took over when the Romans left. A steady procession of races and rulers took over the city after this, such as the Angles, the Vikings, and the Normans, but those stories can wait for another day, or another Dawn to Dusk challenge perhaps !!



**ROMAN YORK**



**EBORACUM ROMAN REMAINS**



***EBORACUM TODAY***

Leaving the legionary city behind, we strike West initially and then North along a new Roman road for us on this trip, Dere Street. This road runs from **Eboracum** all the way up through Northern England and over the Borders to the large settlement at **Trimontium** (Newsteads) and then passing by Edinburgh to reach the Eastern extremity of the **Vallum Antonini** (Antonine Wall) at **Veluniate** (Carriden, near Falkirk). About 15 miles Northwest of York, we arrive overhead the site of **Isurium Brigantum** (Aldborough), which was a major Romano-British town. The capital city of the **Brigantes** tribe, it was taken over as a base by the **Legio IX Hispana**. Some remnants of the defences, along with two mosaic pavements, can still be seen on the site, cared for by English Heritage. I now call the Leeming Combined MATZ to check for any traffic but it's another unmanned station as it's the weekend. I noticed during my preflight briefing however that Topcliffe (EGXZ) may be active and although we are passing well clear of their ATZ, they transmit on the Leeming Zone frequency to advise that they are operating four aircraft in the area. I keep a good lookout as I pass over the disused RAF airfield at Dishforth (EGXD) but none of the Topcliffe aircraft are seen or heard on the radio. Dishforth is another WW2 vintage station and was the base for RAF and Royal Canadian Air Force (RCAF) bombers. After the war it became a training base until 1992 when it was handed over to the Army Air Corps (AAC) for rotary wing operations who operated until 2016. It remains an Army base but is now only used in a non-flying role by the Royal Logistic Corps. Part of Dere Street was used to construct the Western perimeter taxiway on the airfield. Continuing to fly alongside the modern A1M motorway, which follows the line of Dere Street, we climb a little to 2300' AMSL to ensure that we remain above the Leeming ATZ, since there was no reply from them and we can't get a clearance through. The base is still in use today with a squadron of Hawk T2 aircraft which are used to teach Qatari pilots in a bi-national squadron operation, however they must all be in the hangar as no aircraft were sighted on the ground, apart from the Tornado F3 gate guard.



**RAF LEEMING WITH DERE STREET RUNNING THROUGH THE VILLAGE AT BOTTOM CENTRE**



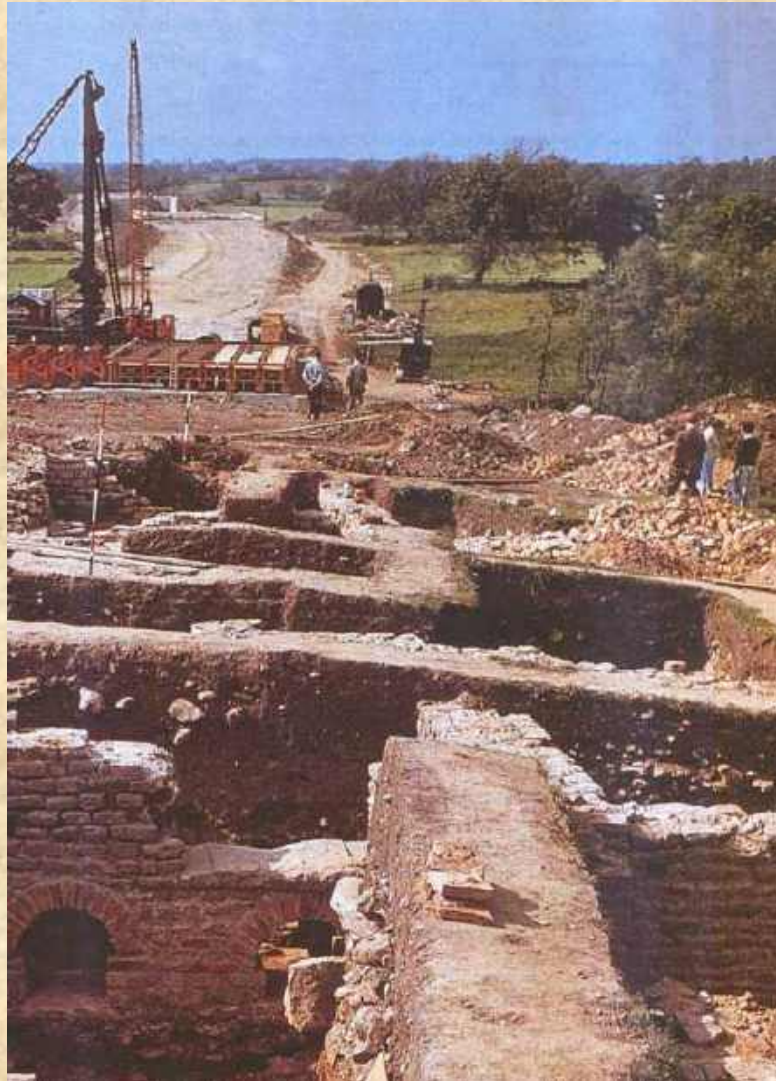
Just North of Leeming, lies the Roman settlement of **Cataractonium** (Catterick). This was a fort which guarded the crossing of the River Swale. The earliest structure was built in 70AD by **Agricola**. North of the river a large bank was built with an associated gate to control access through Dere Street to the river crossing point. A bridge called the **Pons Agricola** was also put in place. Archaeological studies have also discovered Roman era gravel pit workings nearby, which were most probably used to construct the road. The original fort appears to have been abandoned in 12AD but other forts were constructed over the next 300 years. In the late 2<sup>nd</sup> Century AD a **vicus** (ancillary town) was constructed in a linear fashion along Dere Street with shops and houses. Large ovens were also found in the remains associated with open fronted stone and timber stone structures bordering the road so perhaps this was one of the first 'burger vans' in the Britain !! One of the largest buildings was the **mansio** covering 4000 square metres. It had eleven guest rooms and a large bath house. Originally timber built, it was rebuilt in stone in the late 2<sup>nd</sup> Century AD. In the 4<sup>th</sup> Century AD a defensive wall was built, enclosing an area of 15 acres. Part of this wall can be found on Catterick Racecourse. The settlement is known to have specialised in tanning animal hides and these were regularly transported Northwards to the **Legionum** on Hadrian's Wall and beyond. Evidence of granaries, religious altars, and a well have also been discovered. Excavation of the well brought to the surface the earliest known pistachio nut shells in Britain !! Many of the excavations took place in the late 1950's as the new A1 road was being built and foundations laid for it. Sadly, this destroyed many of the Roman remains as they were simply demolished once they had been photographed and logged. So if you've ever driven along the A1M over the River Swale, you've driven right over a Roman settlement.



**CATARACTONIUM ON DERE STREET AND ITS MANSIO (TRAVELER'S INN)**



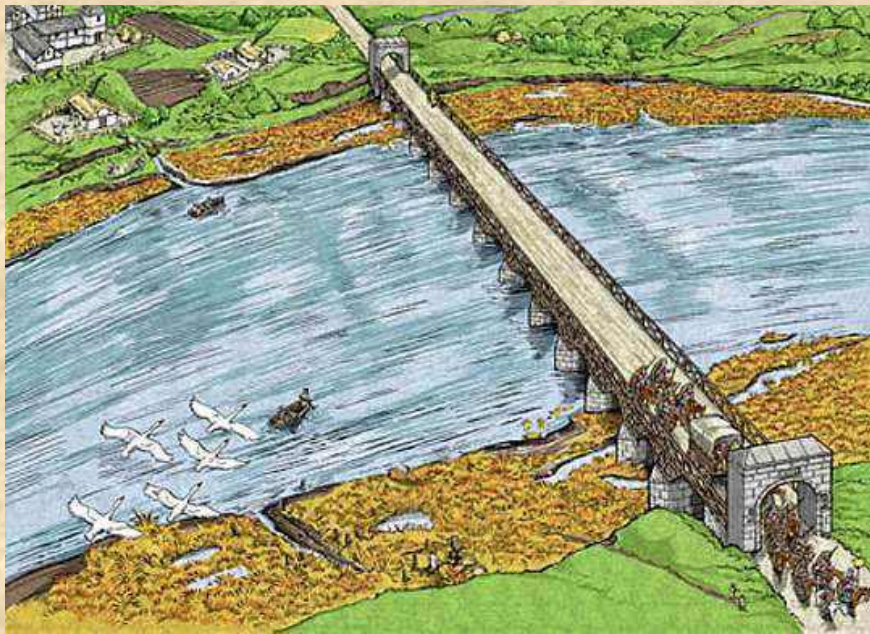
**DERE STREET FOUNDATIONS AND THE CATARACTONIUM BATH HOUSE BEFORE DEMOLITION**



**NOTHING SLOWS PROGRESS – ROMAN SHOPS AND HOUSES DEMOLISHED IN THE 1950'S**

Leaving the Leeming MATZ, we now monitor Teesside (EGNV). They don't have a SSR FMC unfortunately but as we were well clear of their approach path and well below their climb out path, we were happy to just listen out for situational awareness. The A1M now leaves Dere Street and swings right towards Durham but we continue in the customary straight line. We soon came to the site of another fort and settlement defending a river crossing, this time the River Tees at Piercebridge. The bridge was constructed in 70AD and was still in use in the early 5<sup>th</sup> Century AD. As with *Cataractonium*, there was a *vicus* close to the fort, and of course an obligatory bath house for weary travellers. Two bridges were constructed, with the first evidenced by wooden piles which have been found in the river and supported a wooden bridge which was used until the end of the 2<sup>nd</sup> Century AD. Rumour has it that it was washed away in a flash flood. The second bridge was built with stone piers around 590' (180M) downstream from the original bridge and Dere Street was rerouted accordingly. As it lies on the wider river floodplain, the chances of it being swept away were reduced. Pottery found near the site of this bridge points towards it being built at the beginning of the 3<sup>rd</sup> Century AD. Some of the bridge stonework can still be seen today, especially from the position of a lofty Roman *aquila*. Divers have recovered many finds from the river around the bridge area, such as coins, brooches, and other gifts. It's probable that soldiers and other

travellers threw them in to the river from the bridge as offerings to their Gods for safe passage. Most of the brooches date from the 1<sup>st</sup> to 3<sup>rd</sup> Centuries, whilst the coins date from the 2<sup>nd</sup> to 3<sup>rd</sup> Centuries. Although no evidence of the assumed fort from the 1<sup>st</sup> and 2<sup>nd</sup> Centuries has been found, civilian occupation along the track of Dere Street North of the river is in evidence. Further civil occupation from the 3<sup>rd</sup> Century AD is known to have also been along Dere Street on the South bank of the river. A large **Legio** fort is known to have been built around 260AD which also housed **Auxilia** cavalry units and was in use until the end of the Roman occupation. Much of the fort now lies under later buildings, however limited excavations have revealed parts of the ditches and perimeter wall as well as internal roads and buildings. Latrines have also been found, so the Romans definitely gave us sanitation !!



***PIERCEBRIDGE CROSSING THE RIVER TEES***



**PIERCEBRIDGE FORT SITE**



**PIERCEBRIDGE ROMAN BRIDGE FOUNDATIONS CENTRE RIGHT**

With Dere Street now climbing up the incline to the hill above Bishop Auckland, it will soon be time to turn right towards Fishburn and some lunch. Meanwhile we hear a Cessna on frequency inbound to Teesside Airport from the West but reporting at an altitude above ours. The controller advises that there is unknown traffic that will be crossing below him heading North and believed to be an RV8. That's probably us so I give a quick call on the frequency to confirm our intentions and we sight the Cessna as he crosses about 1000' above us. It appears that although Teesside don't have an FMC, they still keep an eye out and can use our Mode S information to get the aircraft registration and pass traffic information accordingly. With Fishburn in sight, I advise leaving the Teesside frequency and call Fishburn Radio who report that Runway 26 was in use. Joining on a long right hand downwind, we spot the grass strip and with no traffic reported we slide on to a short final for the always interesting uphill landing there. Powering up to the parking area, we see Paul and his son there and grab an outside table for an excellent lunch from the staff at the Aviator. Wee Vans can wait a little bit for her fuel I'm sure 😊

\*Unfortunately, on landing and after engine shut down, I discovered that although I'd turned the underwing GoPro camera on, I hadn't pressed the record button so unfortunately had no video to select photos from on this leg. Apologies for the limited selection of aerial images in this section but hopefully it doesn't spoil things too much.

**LEG 2 STATISTICS**

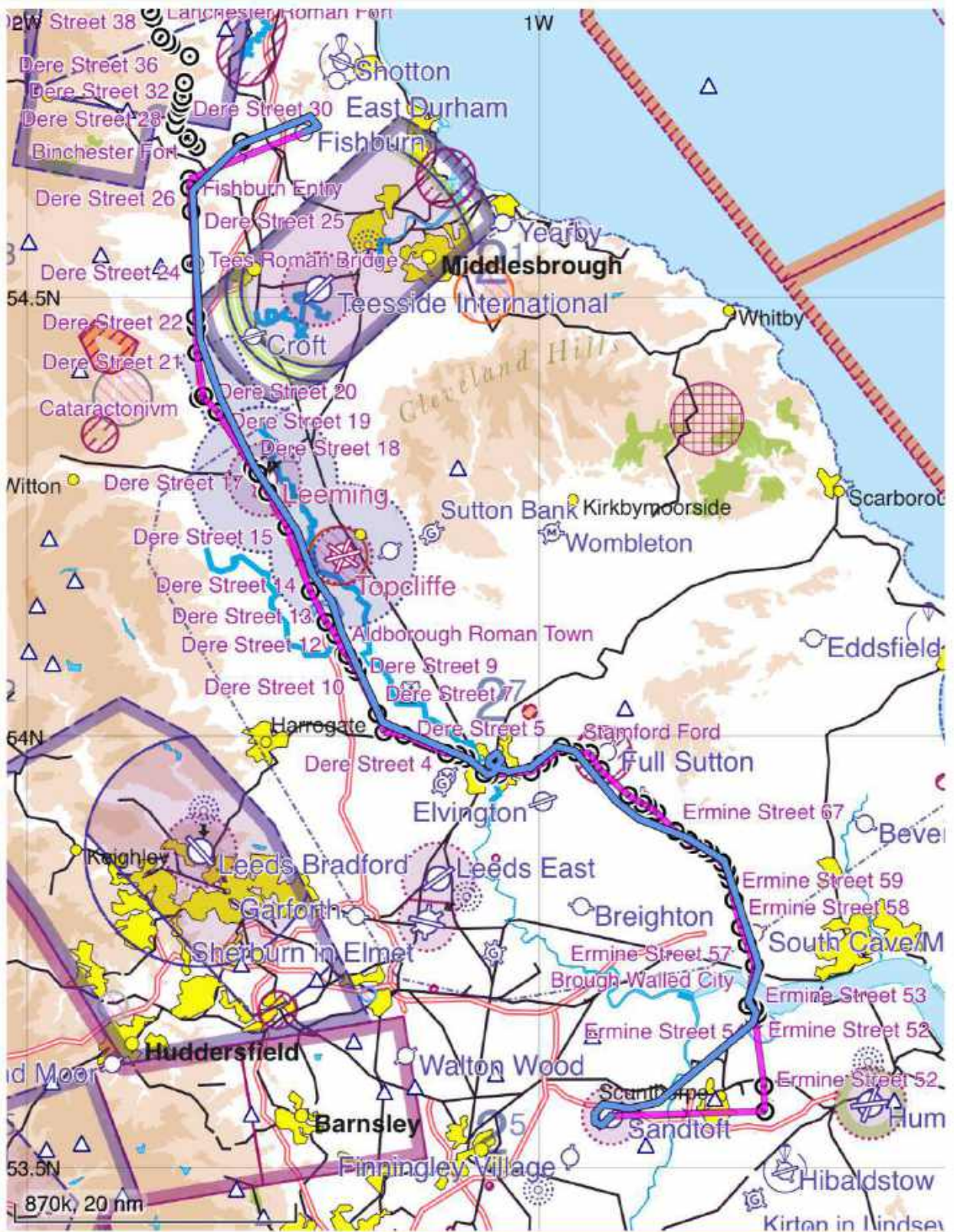
	DISTANCE	ELAPSED TIME	AVERAGE GROUND SPEED	FUEL BURN
<b>PLANNED</b>	112NM	46 Mins	140Kts	32L
<b>ACTUAL</b>	111NM	48 Mins	139Kts	30L



**WEE VANS AND HER NEW FRIEND AT FISHBURN**



**A STOWAWAY FROM SANDTOFT INSIDE THE CANOPY, ALONG WITH LEGIO RV VIII 'WEE VANS'**



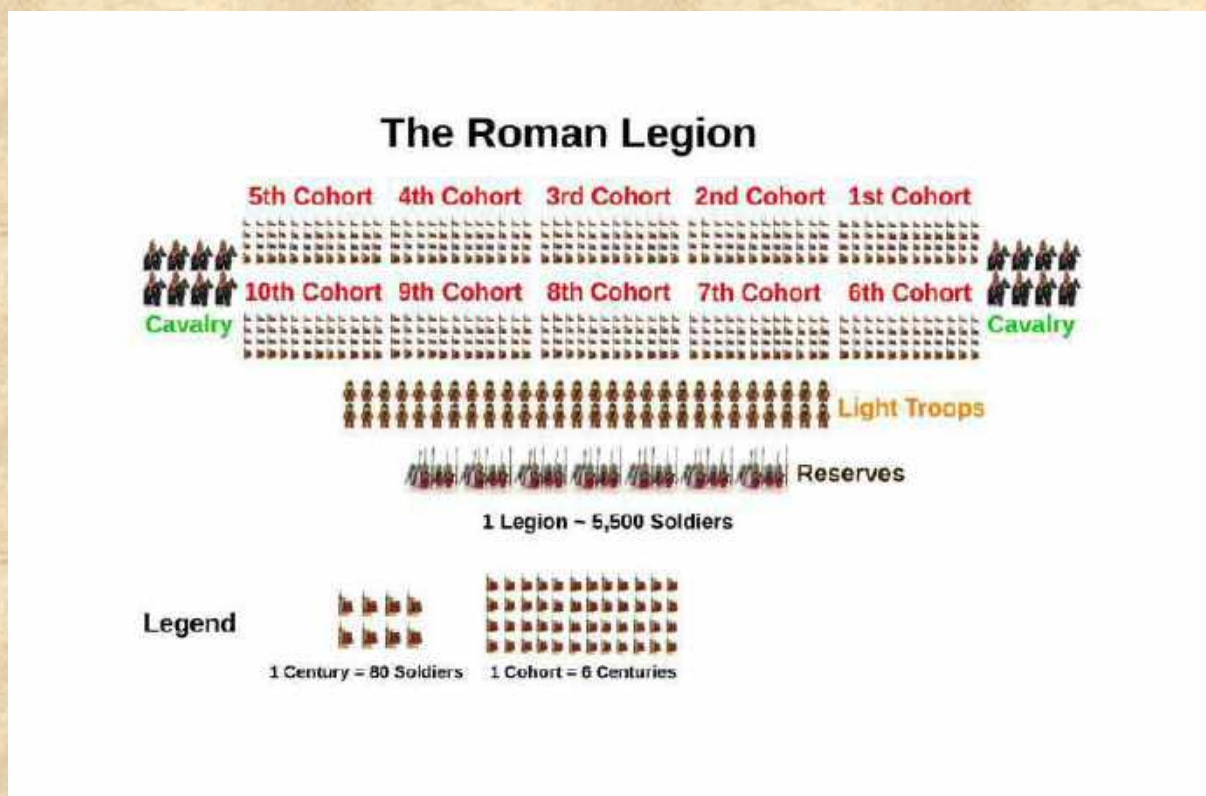
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ACTUAL ROUTE FLOWN

### LEG 3 FISHBURN – FIFE

#### ***Airborne 1215Z (1315L) – Landed 1512Z (1612L)***

After a hearty lunch, it's time to get on the march again. Our next destination is Fife, which is nice and easy as our aircraft is based there in Winter and as a year-round member with the based Edinburgh & Fife Flying Club I don't need PPR and can self-fuel on arrival. Before getting airborne, I contacted Newcastle ATC by telephone to prenote them about our requested track as we will follow the path of Hadrian's Wall from Corbridge to the East as far as Tynemouth and then retrace our steps back Westwards to leave their airspace. As with most ATC units in the UK, Newcastle are very friendly and helpful and appreciate the call, with the proviso that an ATC clearance will be subject to any traffic and controller workload they have at the time. You can't say fairer than that. Heading Southwest after departure from Fishburn, we backtrack to a point on Dere Street and head Northwards again. From here we would get a good view of it as it rises up to the ridge above Bishop Auckland and it might be nice to get it on video this time. The cameras were definitely cross-checked before starting up on this leg !! Shortly after Bishop Auckland, which seems to have had no Roman heritage apart from a signal tower, we come to the fort at **Vinovia** (Binchester). This fort provided protection to a crossing point over the River Wear. Founded around 80AD, it was for a time the largest fort in Northern **Britannia**. With an area of around 17 acres, it is believed to have housed a battle group from the **Legio IX Hispana** as they expanded the extent of the Roman Empire Northwards. Several **Cohortes** (Roman Army Cohorts) of infantry and cavalry would have made this their home. A **Legio** was usually made up of 10 Cohorts of infantry troops, with each individual **Cohors** consisting of 480 men, who were subdivided in to 6 **Centuria**, consisting of 80 men and commanded by a **centurion**. In addition, the **Legio** would also have cavalry elements as well as **Auxilia** and reserve troops providing a total **Legio** complement of around 5500 troops.



Around 160AD, the fort was rebuilt on a smaller scale occupying 10 acres and inscriptions from the remains of this fort indicate that the occupants included a cavalry unit recruited in Central **Hispana** (Spain) and another from **Germania Inferior** (Netherlands). As the last record of the **Legio IX Hispana** was in 120AD when they fought in **Germania Inferior**, it is not known if it was this **Legio** that had returned to **Vinovia** or if it was part of a different battle group. **Vinovia** Fort would continue to be in use until the end of the Roman occupation, with a large **vicus** forming outside its walls and along Dere Street. Apart from some fort remains, a bath house, and altar stones dedicated to the Gods **Matribus Ollototae** (Goddess of all people), **Jupiter Optimus Maximus** (King of the Gods), **Fortuna** (Goddess of fortune and luck), **Salus** (God of safety and wellbeing) and **Aescalpius** (God of medicine) have been found and recovered. Additionally, several burial mausolea have been found North of where the **vicus** would have been and when the level of the river is low part of the stone bridge foundations can still be seen.

With no records extant about the demise of **Legio IX Hispana**, there are various theories about what happened to it. One is that it was massacred in action in **Caledonia** (Scotland to the North of the Forth and Clyde valleys) around 108AD and only a small number of troops remained in existence until their last recorded actions around 12 years later. Nicknamed the Lost Legion by some historians, the theory of their loss in **Caledonia** forms the storyline for the novel 'The Eagle of the Ninth' which was published in 1954, where the **Legio** marched North and were never heard of again. However, with records of the **Legio** found in Nijmegen in the Netherlands dated 120AD, this would not really support the Lost Legion case. There are some further suggestions from evidence found at Nijmegen that the **Legio** actually met its end in later conflicts in the 2<sup>nd</sup> Century AD, although exactly where and when has not yet been discovered. There are some strong hints that it may have taken place during a campaign led by Emperor **Marcus Aurelius** against the **Parthian** Empire in Armenia. All that is known for sure is that by the time of the reign of Emperor **Severus**, which started in 193AD, they were no longer in existence, as evidence by two identical but independent lists found which contained the battle order of the remaining 33 **Legio** of the Roman Empire but with no mention of **Legio IX Hispana**.



**DERE STREET CLIMBING UP THE HILL, THE FORT SITE AT VINOVIA**





**ALTHOUGH THE ROMANS GAVE US SANITATION, THE SEWAGE WORKS AREN'T ROMAN 😊**



**BINCHESTER FORT EXCAVATION AND UNDERFLOOR HEATING STRUCTURE IN THE BATH HOUSE**

Leaving **Vinovia** behind, we continue following the course of Dere Street, passing above the rolling County Durham countryside with our eagle eyes. With the City of Durham in sight a few miles away to the East, our next site is another fort at **Longovicium** (Lanchester) and it's here that I change to Newcastle Approach on the radio, albeit I'm just going to monitor it for the time being as it's a little early to ask for our clearance. **Longovicium** was an **Auxilia** fort lying on high ground between the main forts at **Vinovia** which we have just passed and the next fort up ahead at **Vindomora** (Ebchester). It dates from 117AD and covers 6 acres and was built by **Legio XX Valeria Victrix**. It had the capacity to accommodate one thousand troops, both infantry and cavalry. At some point during the reign of **Hadrian** it was mothballed, as the Roman conquest pushed further North in to **Britannia Inferior** (the North of England lying South of Hadrian's Wall), **Valentia** ( the land between Hadrian's Wall and the Antonine Wall) and **Caledonia** (the Highlands North of the Antonine Wall). It was however reopened when the Romans retreated from **Caledonia** and was finally destroyed in the late 2<sup>nd</sup> Century AD, although there is no known reason why or by whom. The fort was rebuilt in 238AD by the **Cohors Primae Lingonum** (1<sup>st</sup> Cohort of Lingones), a part mounted unit recruited from the **Gallia Lugdunensis** tribe who inhabited the Northern Bourgogne region, near Dijon in France. This

was under instructions from Emperor **Gordian** and is mentioned in several late Roman administrative documents. It was unusual amongst Roman forts as it had rounded corners instead of square ones, with four gates and a surrounding ditch. Aerial and other non-invasive surveys show the fort foundations are in good condition, and there is evidence of a headquarters building, barracks and a bathhouse, but the site has only had limited excavation work carried out and apart from the 6' high perimeter mound, still visible today, much of it lies below ground, safe from deterioration. Remains of a **vicus** and a cemetery have also been found, with the latter providing examples of both stone lined burials and cremation sites. The 12<sup>th</sup> Century local church is built of stone that is believed to have come from the fort site and indeed it contains Roman monolithic columns in the nave and a Roman altar dedicated to the local Goddess **Garmangabis** in its porch. As the fort is sited on agricultural fields which have not been ploughed, the remains are in remarkable condition, although stone robbing over the ages, such as the church mentioned above, has taken its toll. Perhaps one day a full excavation may take place and the secrets of the fort will be unlocked.

**Longovicium** also featured another item from the 'What have the Romans ever done for us?' list, an aqueduct !! In fact it had two, one of which was fed from a 20' (6M) high by 330' (100M) wide stone faced and clay lined dam in the West that harnessed water from twenty-one springs, the other was from a small reservoir built near the fort itself. The water sources were far in excess of those needed for a fort and a small town, but with the nearby availability of coal, plus iron and lead ores, then smelting works using copious amounts of water to produce arms is a distinct possibility. Sadly, all traces of these structures have succumbed to ploughing and use in building modern roads.



**THE SITE OF LONGOVICIUM (CENTRE, BELOW THE LINE OF TREES)**



**ARTIST'S IMPRESSION OF LONGOVICIUM FORT WALLS**

Flying onwards in glorious weather, we pass by the modern town of Consett, a latter-day centre to produce iron and steel, which perhaps owes its roots to the industry that might have been in nearby **Longovicium**. A few miles past Consett, we fly over the site of the next **Auxilia** fort in the Roman advance Northwards, called **Vindomora** (Ebchester). Protected on several flanks by the River Derwent, the fort is about 13 miles (20KM) South of Hadrian's Wall and the name has its origins in Celtic language, **Windo** or **Vindo** meaning 'fair or white' and **Mara** meaning 'great or big' or the great white fort. There is evidence of two forts having been in the area, the first in existence from 69AD until 117AD which consisted of a turf wall and a wooden palisade, and the second stone fort from 150AD until the end of the 4<sup>th</sup> Century AD. There was also the by now customary **vicus** adjoining the fort. Legionary stones, which were carved with inscriptions and erected by **Legio** who either built or were garrisoned at any given location, have been found in the area and indicate it was built by the **Cohors V**, but there are unfortunately no clues as to the date of construction, nor the **Legio** which the **Cohors** came from. The legionary stones also detail the names of the centurions responsible for the construction work or of the auxiliaries who conducted later restoration or repair work. Roman forts were built by highly trained expeditionary legionaries and not by the auxiliary soldiers who would follow behind the advance and garrison the completed fort. The first unit known to garrison **Vindomora** was the **Cohors Quartae Breucorum Antoniniana** (the 4<sup>th</sup> Cohort of the Breuci : Antonine's Own), having been identified from a 3<sup>rd</sup> Century AD altar stone recovered here. The **Cohors** was 500 strong and an **Auxilia** unit, which meant it was recruited from non-Roman sources, usually an occupied territory. In this case the troops had been recruited from the **Breuci** tribe from **Pannonia Inferior**, a valley region in Bosnia-Herzegovina. There is little remaining evidence of the fort today as the town of Ebchester has been built upon it down through the ages. Amongst the more modern buildings of the town can be found a few Roman ramparts, altars, and other small structures. Altar stones and other carvings indicate that the Gods worshipped in **Vindomora** included **Mars** (God of War), **Minerva** (Goddess of Wisdom), **Vitiris** (a Germanic God) and **Genius Loci** (a local spirit). After the Romans left Britain, much of the area was left to become woodland,

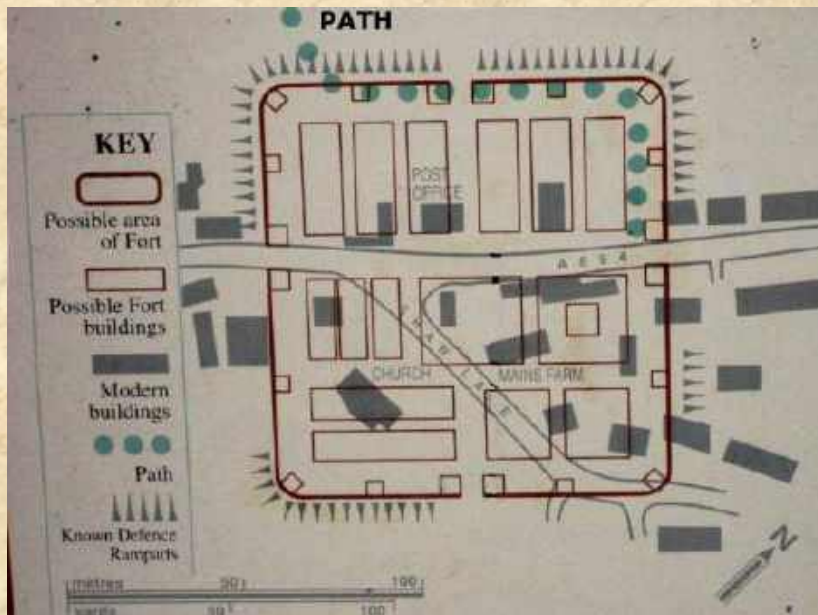
before being cut down and the new settlements of today developed. For reasons unknown, the local community have not embraced their Roman past and heritage and there is reticence to explore what might lie beneath their feet, hence the moniker that this is the most unloved Roman fort in Britain



***VINDOMORA, UNSEEN AMONGST EBCHESTER***



***SITE OF VINDOMORA OVERLAID ON EBCHESTER***



***GROUND PLAN OF VINDOMORA OVERLAID ON EBCHESTER***



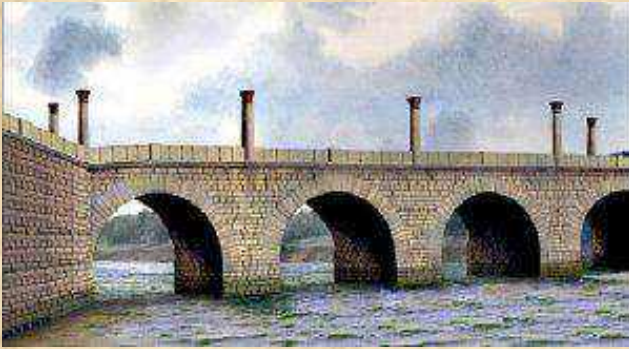
***ALTAR STONE FROM VINDOMORA***

Heading Northwards, initially underneath the Newcastle CTA, we can see the River Tyne ahead and the conurbations of Newcastle out to our right in the distance. It's now a good time to announce our presence to Newcastle ATC and I make a request for a clearance to route from Corbridge to join their airspace by entering the CTA at abeam the former RAF airfield at Ouston, routing to Blaydon VRP, then the Tyne Bridges VRP and finally tracking East to Tynemouth, before reversing course back towards Ouston once more. This will take us along the route of Hadrian's Wall on its Eastern portion. we were passed the local pressure setting (QNH), given a discrete SSR code to squawk and told to

report at Corbridge, with the instruction to remain outside Controlled Airspace for the moment and to expect a clearance at Corbridge. Looking right we can see the gliding site sitting on the hill at Currock a few miles away but no gliders are noted in our vicinity, even with our *Legio's* eagle eyes having a good look out for them. We track alongside the River Tyne for a couple of miles until Dere Street comes to the river where the Romans crossed it at **Corstopitum** (Corbridge), where there are several arches remaining, once part of the largest bridge in Roman **Britannia**. It is believed that the bridge consisted of 11 stone arches, standing 27' (9M) above the Tyne, with a length of 462' (48M) and was wide enough to carry a 20' (6M) wide road. Dere Street approached it at 90 degrees from the East, up a ramp which allowed horse drawn vehicles to climb a gentle gradient. The ramp was built by crafted stonemasons using a Roman building technique called '*Opus Quadratum*' (translated as squared work), which used squared off stone blocks of similar dimensions in parallel courses offset vertically and usually required no mortar between the stones. We can see the same technique being used today by most modern bricklayers, albeit with mortar now applied. After the Roman occupation ended, the bridge was undermined by a heavy river flow and became unusable. Some of the stone from the arches was used to build St Wilfrid's Church in nearby Hexham in 670AD. Later in the 2000's, erosion of the riverbank exposed further stonework which was under threat of permanent loss so the position of the stones was recorded, removed, and reassembled close by on land where they would be safe. These can be visited today, around ¼ of a mile (350M) to the East of the original bridge site.



**THE ROMAN RIVER CROSSING AT CORSTOPITUM. BRIDGE SITE IN THE CENTRE.**



**ARTIST'S IMPRESSION OF CORSTOPITUM ROMAN BRIDGE, AND REASSEMBLED REMAINS TODAY**

Crossing the river, we flew over the Roman fort of **Corstopitum**, also known as **Coria**, which lies 4 miles South of Hadrian's Wall and guarded the river crossing. The fort lay at the confluence of the River Tyne, Dere Street, and the Roman road called the Stanegate which ran parallel and to the South of Hadrian's Wall. The Stanegate followed the natural gap formed by the valleys of the Rivers Tyne and Irthing and became a frontier between the Roman Empire and the rest of unconquered **Britannia**, being constructed several decades before the more heavily fortified Hadrian's Wall came in to being.

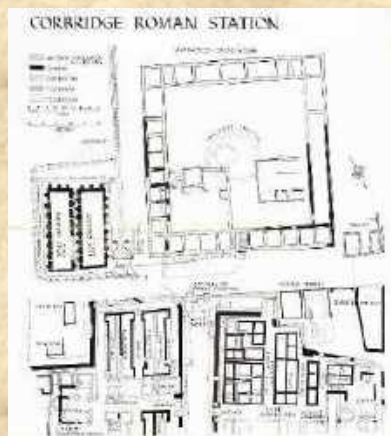
Stanegate simply means 'stone or paved road' and it differed from many Roman roads as it followed the easiest gradients found along its length, which often involved weaving around rather than following a straight path. It was built by **Agricola**, the Governor of **Britannia**, from 77AD to 85AD, during which time Rome saw three Emperors in power, namely **Vespasian**, **Titus**, and **Domitian**. It ran from **Corstopitum** to **Luguvalium** (Carlisle) and was a strategic road. At the time of its construction, the Northern frontier lay much further North, between the Forth and Clyde rivers to the South of **Caledonia**. The road featured forts placed along its length at one day marching intervals, which is every 13 miles (21KM) and we will visit some of these forts later in our journey. In 87AD, the Romans began to retreat from **Caledonia** and the line of the Stanegate gradually became the new frontier. To beef up the defences, further forts were built at half day marching distances, for example at Newbrough, **Magna** (Carvoran), and Brampton. In areas where the line of sight was not particularly good or the terrain made defence difficult, smaller fortlets were also built in between the established day or half day march forts. The Stanegate was 22' (6.7M) wide and had a foundation of 6" (15cm) cobbles and 10" (25cm) of gravel laid on top. Stone gutters allowed the regular deluges of rain to wash away.

**Coria**, which we will use as it's quicker to write down, was built around 84AD with turf ramparts and wooden gates, part of the fortification system for the Stanegate. A headquarters building at the centre of the structure was surrounded by barrack blocks for troops, but also by a Commander's residence, administrative buildings, staff accommodation, plus workshops and granaries. A 500 strong **Auxilia** cavalry unit occupied it called the **Ala Gallorum Petriana** (the Wing of the Gauls : Petrianus). An **Ala** was an elite cavalry unit and the **alares** (mounted troops) were armed with chain mail body armour, an enclosed helmet, an oval or hexagonal shield, and carried variously lances, javelins, and bows and arrows for battle. Additionally, each horseman would carry a **spatha** (sword) and a **pugio** (dagger) for close combat. The men were recruited in **Germania** (Germany) and commanded by a **prefectus**, a Roman placed in charge of foreign troops. The elite **alares** status also attracted a rate of pay which was 20% more than those of the infantry. In 105AD the fort burnt

down, presumably in an accident, but a second fort was soon constructed as a replacement. Hadrian's Wall was constructed in 120AD, just over two miles to the North, and at this time the fort was rebuilt again, to allow the garrisoning of infantry troops who would man the wall. In 142AD, the frontier was pushed further North again with the construction of the Antonine Wall between the Forth and the Clyde, and **Coria** fort was rebuilt again but for the first time in stone, under the Governor of **Britannia, Quintus Lollius Urbicus**. In 163AD, the Romans fell back from the Antonine Wall and retreated to Hadrian's Wall and the army units at **Coria** seem to have largely redeployed elsewhere. **Coria** underwent redevelopment, with the ramparts being levelled and the site rebuilt as a civilian centre containing a series of temples, multiple granaries, workshops, a fountain house, and a large courtyard complex. Northern tribes crossed into the area and burnt **Coria** down at some point in the late 2<sup>nd</sup> Century AD, but presumably they were driven back as in the early 3<sup>rd</sup> Century AD more construction began with two compounds forming a military supply depot being completed. These compounds served the **Legio II Augusta** and **Legio VI Victrix**, most likely as part of the Northern campaigns led by Emperor **Severus**. In the late 3<sup>rd</sup> Century, a large elaborate dwelling was built in **Coria** for use by an Imperial Roman official. **Coria** by now was a big market centre for lead, iron, and coal industries, as well as producing agricultural goods to store in the granaries. Pottery finds on the site also indicate that there was a bustling trade here in that commodity. It is not clear when the Romans left Corbridge and its history lay dormant until excavations began in the 1860's. Amongst the important finds made at Coria over the years have been the tombstone of a Roman Standard Bearer called **Flavinus** and the multiple items in a find known as the Corbridge Hoard.



**CORIA ROMAN FORT REMAINS**



**CORIA CIVILIAN REDEVELOPMENT PLAN 163AD**



The tombstone of **Flavinus** was found in 1881 within the structure of Hexham Abbey, remaining on display there today. It was found in stonework in the South porch of the transept and was amongst other Roman era stones which had evidently been gathered from various local antiquity sites and used to construct the abbey. The elaborately carved stone depicts a Standard Bearer in the Roman cavalry riding down upon a barbarian. The inscription names him as **Flavinus**, and details him as an officer in the **Ala Gallorum Petriana** which was stationed at **Coria**. He was twenty five years old and had completed seven years' service when he died, sometime in the late 1<sup>st</sup> Century AD. It's assumed that the stone was taken from the Roman military cemetery which is known to have lain near the fort at **Coria**.



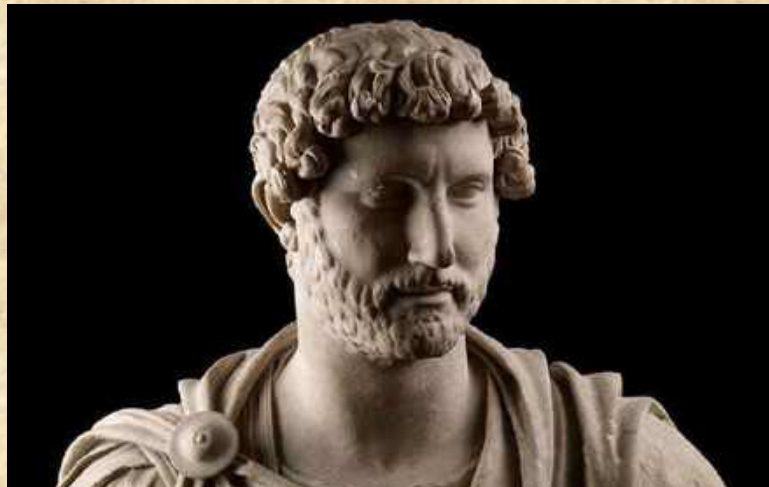
**TOMBSTONE FOR FLAVINUS**

The Corbridge Hoard was found during a 1964 excavation of **Coria** and was a Roman time capsule comprised of the well-preserved objects from a Roman workshop and a soldier's worldly goods, including weapons, armour, tools, and writing materials. The items had been buried sometime between 122AD and 138AD, wrapped in an iron bound leather covered wooden chest. The reason for its burial can only be guessed at, but it was probably buried for safekeeping whilst the owner was away until he came back to retrieve it, which for whatever reason didn't come to pass. The hoard has helped archaeologists and historians understand how Romans constructed armour and weapons and has been a blueprint for excellent reconstructions of these items which are found in museums and used by re-enactment groups who depict Roman events.



**RECONSTRUCTION OF ROMAN ARMOUR BESIDE CORBRIDGE HOARD ARMOUR**

Overhead **Coria**, I report my position to Newcastle ATC, although using the modern town name, and they initially ask me to route towards the Stagshaw Masts VRP, which lies just to the North of Hadrian's Wall where Dere Street passes through the site of the Portgate, a fortified entrance which allowed controlled passage. Nowadays it's the site of a roundabout on the junction between the A68 and B6318 roads with nothing remaining today to show its prominent position and status during the time of the Roman Empire. Emperor **Hadrian** constructed the Wall, which began in 122AD, and would form a defensive fortification running between **Segedunum** (Wallsend) in the East and **Maia** (Bowness on Solway) in the West. The Wall stretches for 73 miles (117KM) and was constructed as a stone wall with a large ditch called a **vallum** both in front and behind it. At the time of its construction it was the boundary between Roman **Britannia** and the unconquered barbarian lands, including **Caledonia**, to the North. The soldiers manning the Wall were garrisoned along its length in large forts lying to the South of it, such as **Coria** that we just flew over. Along the Wall itself, smaller defensive forts called Milecastles were positioned every Roman mile apart, with smaller turrets and signal posts positioned in between the milecastles to either bolster defensive positions or to allow line of sight visual communications to be uninterrupted. Gates were also located at strategic positions to allow the flow of troops and goods to take place, as well as forming locations for customs posts. As we will shortly see, there are a lot of sites on the Wall that can still be seen today, although most of the standing masonry has been removed in relatively modern times to build houses, farm buildings, and roads. The Wall is a significant historical icon and was declared a UNESCO World Heritage Site in 1987.



**EMPEROR HADRIAN – BORN 76AD – DIED OF NATURAL CAUSES 138AD**

Close by the Portgate however are the remains of Milecastle 22 (Portgate), using a numbering system that started at Wallsend and hence this is the milecastle that is 22 Roman miles East of it. Milecastles normally housed between 12 and 20 men, whose job it was to observe the frontier, stop any incursions by hostile foes, and alert reinforcements when required. The troops would rotate their duty regularly with relief provided from other troops in their **Legio** or **Cohors** who were based in a larger garrison fort. We pass over Milecastle 22 and continue Northwards for a mile or two before commencing a left-hand orbit to remain outside Controlled Airspace. As the turn commences, Newcastle ATC come up trumps and clear us to enter Controlled Airspace as requested

with an altitude restriction of Not Above 2000' under Visual Flight Rules (VFR). Perfect !! We continue the left turn and follow the line of the Wall to our next waypoint, **Onnum** Fort.



**MODERN ROUNDABOUT MARKS THE SITE OF THE PORTGATE, MILECASTLE 22 SITE TO IT'S RIGHT**

**Onnum** (Halton Chesters) is a latinised version of the **Brittonic** name **Hunnum**, the latter of which can mean either stream, ash tree, or rock. No one knows which it is as all could apply to this area. The fort was built between 122AD and 126AD and was a rectangular structure measuring 460' (140M) North to South and 410' (120M) East to West. As with all major forts located on the Wall itself, it projected very slightly North of the Wall structure, allowing the rapid egress of cavalry units to charge out and attack any Wall invaders from behind. Standard for a Roman fort, it had four main gates, consisting of double portals with guard chambers. A tower was built on each corner of the fort, along with two towers on each gate. To the South lay the **vallum** defensive ditch, with the **vicus** lying beyond it. The fort was built by **Legio VI Victrix** and manned initially by a **Cohors** of around 500 men, including elements of both infantry and cavalry. Under Emperor **Severus**, the fort was extended between 208 and 211AD on the Southern side and extending out to the West, forming an unusual L-shaped fort. This new Southern part was 570' (170M) long and was built to house the **Ala I Pannoniorum Sabiniana** (1<sup>st</sup> Wing of the Pannonians : Sabinus) cavalry unit who had transferred here from the fort at **Arbeia** (South Shields). This was a fully mounted fighting unit, replacing a part mounted garrison, and so would require a larger area for more barracks and stables to support their operations. The **Ala**, who were formed from inhabitants of **Pannonia** (Hungary) stayed until around 225AD when they were posted to the fringes of the Sahara Desert. That must have been quite some change in weather conditions for them. From 270AD until 370AD, the fort gradually ran down and was then finally abandoned. In 1827 farm ploughing first started in this area and a bath house was uncovered in the original Northern section of the fort. The structure contained both dry and moist rooms, warm and cold rooms, and a dressing room. Bathhouses along Hadrian's Wall itself were exceedingly rare and mostly they would be found in the forts or **vicus** lying to the South of the defences. A small aqueduct for the fort and baths was also traced to the North of the fort and Wall.



**NORTHERN FORT AREA OF ONNUM LIES WITHIN THE YELLOW FIELD, CENTRE RIGHT**

**FAINT OUTLINE OF THE SOUTHERN FORT LEFT OF THE YELLOW FIELD, BISECTED BY 3 TREES.**

Often referred to as the 'Military Way' locally, we follow the track of the B6318, which in turn follows the line of where Hadrian's Wall once lay. Passing Milecastles 21 to 17, there are no remains of them to be found. Approaching Milecastle 17 (Welton), we enter the Newcastle CTR and receive a Radar Control service from ATC. They ask what we are doing out of interest and we let them know briefly about the Dawn to Dusk competition and our transit along Hadrian's Wall as part of our entry. They wish us the best of luck, which is gratefully received. Milecastle 17 can be seen from above, with the shape of the fort relatively clear, albeit only the foundations which have not been 'stone robbed' by the locals. Yet !! Milecastle 16 (Harlow Hill) is no longer in sight but 15 (Whitchester) is just visible whilst 14 (March Burn) is also lost to the ravages of time. We are passing these castles and forts at the rate of literally two or three a minute with our ground speed. I'm sure the Romans would never have believed it if someone told them it would be an everyday occurrence in the future.

Next, we come upon an *Auxilia* fort, **Vindobala** (Rudchester), whose name comes from the Celtic **Windo** and **Bala** meaning the White or Fair Place, is the 4<sup>th</sup> fort on the Wall from the East, lying between the forts of **Onnum** to the West and **Condercum** (Benwell) to the East. A standard rectangular structure, it measures 515' (157M) from North to South and 384' (117M) from East to West, covering around 4.5 acres. **Vindobala** was another cavalry fort, projecting out from the Wall, with four main double portal gates and two smaller single portal gates. The main North, East, and West gates were located North of the Wall, allowing tactical access by the cavalry for defence or attack. The two smaller gates were behind the Wall and located to allow the Military Road to pass through the fort from East to West. The **vallum** was located around 720' (220M) South of the fort and there was also a **vicus** located close by. On the brow of a hill, also to the South was a cistern, used to catch and store rainwater for the fort. Being 12' (3.5M) long, 5' (1.4M) broad and 2' (0.6M) deep, it was known locally as 'The Giants Grave'. The troops garrisoned here were a mixed infantry/cavalry unit from the **Cohors I Frisiavonum** (First Cohort of the Frisiavones), a Germanic

people living on the border area between **Germania** (Germany) and **Gallia Belgica** (Belgium). The fort was destroyed by fire and rebuilt again to the same design in the late 2<sup>nd</sup> Century AD, serving until the end of the 3<sup>rd</sup> Century AD when it became disused. It was brought back into service in 370AD, with timber framed buildings erected on stone foundations and was in use until the end of the Roman occupation. Excavations here have yielded a life size statue of **Hercules**, now in the Great North Museum in Newcastle, as well as the discovery of a granary, gates, and a **hypocaust** (central heating system) within the commandant's house. Five altars have also been discovered, built in a temple situated to the Southeast of the fort, and dedicated to **Mithras**, an ancient Persian deity of the sun, justice, and friendship. It is not uncommon to find non-Roman Gods being worshipped in Roman settlements, especially as large parts of the armies came from outwith Rome itself. The temple, or **Mithraeum**, was most likely built in the 3<sup>rd</sup> Century AD but was deliberately destroyed in the 4<sup>th</sup> Century AD, presumably as the God had fallen out of favour. The remains that have been found measure 43' (13M) long by 22' (6.7M) wide, with a vestibule attached at the entrance.



**SQUARE MILECASTLE 17 FOUNDATIONS LIE ACROSS THE ROAD FROM THE VILLAGE ON THE LEFT**



**MILECASTLE 15 HANGING IN THERE (JUST !!) ON THE RIGHT OF THE MILITARY ROAD**



**THE GREEN AND YELLOW RECTANGULAR FIELDS LEFT OF THE BUILDINGS  
ARE THE SITE OF VINDOBALA FORT, BISECTED BY THE MILITARY ROAD.  
THE MITHRAEUM TEMPLE REMAINS LIE BY THE HEDGEROW BOTTOM LEFT, RIGHT OF THE ROAD**

Now South of the centreline of Runway 25 at Newcastle, a passenger jet gets airborne and climbs to the North of us, as we continue to follow the road, which has now become the main A69 in towards the city itself. Milecastles 13 down to 7 are all either buried under the fields or under the increasing suburban sprawl of modern housing and businesses and we see no remains from our lofty perch. Our next extant remains are those of a turret, Turret 7B, which was located close to Milecastle 7 (Benwell Bank) and now in the conurbation of Denton. Known as the Denton Hall Turret, six courses of sandstone piled on each other still remain and it lies recessed 5' (1.5M) into a surviving section of Hadrian's Wall that is 213' (65M) long. The turret itself is 13' (4M) long North to South and 14' (4.3M) from East to West. Turrets only had entrances on the South side of the Wall and it is 4' (1.2M) wide. This part of the Wall is the furthest East of any known surviving sections. Upon being excavated, a heap of pottery was found, perhaps indicating the site of a rubbish tip below a window. Three separate flooring surfaces were also found, dated between 122AD and 196AD, then 205AD to 295AD, and finally 300-367AD. The earliest floor consisted of clay and also contained a hearth and stone box, as well as the discovery of a spear head and the binding from an army shield. The turrets functioned as watch towers and mostly spaced  $1/3^{\text{rd}}$  of a Roman mile apart, or 1623' (495M), meaning there were two turrets between each milecastle. Between four to six soldiers would provide the 24-hour watch keeping at a time, rotated out from troops stationed in the milecastles. In most turrets, rudimentary cooking utensils have been found, as well as gaming boards and counters which were no doubt used to while away the long dark *Britannia* nights.



***TURRET 7B AND SECTION OF THE WALL, ABOVE ROUNDABOUT ON GRASS STRIP RIGHT OF ROAD***



***ARTIST'S IMPRESSION OF A TURRET***



***RECONSTRUCTED TURRET AT VINDOLANDA***

With no more milecastle or turret sites to see, we press on towards **Pons Aelius** (the Bridge of Hadrian), otherwise known today as Newcastle. Passing by the modern suburb of Benwell, we fly over the site of **Condercum**, although it has been totally built upon by housing estate to the South of the road and an underground reservoir to the North. The remains of a small temple nearby are dedicated to **Antenociticus**, a local deity, as well as a Roman causeway and gate foundations over the **vallum** ditch, however neither are really discernible from overhead. **Condercum** fort was constructed between 122AD and 124AD by the **Legio II Augusta**. Two granaries contained in the fort were built by a detachment from the **Classis Britannica** (Roman British Navy) fleet based at **Arbeia** (South Shields), most likely when the **Legio** were conducting other activities at the time and were away from the fort. In 130AD the **vallum** ditch was constructed to protect the wall from attack from the South and a causeway and a gate were constructed to allow crossings to be controlled. In the late 2<sup>nd</sup> Century AD repair work was conducted by the **Legio XX Valeria Victrix**. The fort was similar in size to previously mentioned wall forts being around 5 acres and containing the same features and layouts. A **vicus** as well as a thermal bathhouse were also found near the fort. South of the **vallum** causeway the remains of a large building, believed to be a **mansio**, have been found. One known regiment to garrison the fort in the 2<sup>nd</sup> Century AD was the **Cohors I Vangoionum Milliaris Equitata** (the 1<sup>st</sup> Cohort of the Vangiones, Mixed 1000), an **Auxilia** troop from Northern **Germania** (Germany) consisting of 1000 men equally split between infantry and cavalry. From 205AD until 367AD, it was garrisoned by the **Ala 1 Hispanorum Asturum** (the 1<sup>st</sup> Wing of the Spanish Astures), a five hundred strong purely cavalry unit from Northern Spain. It is not known when the fort was abandoned but most likely at the end of the Roman occupation.



**SITE OF CONDERCUM, SPLIT BY THE ROAD AND COVERED BY AN UNDERGROUND RESERVOIR AND BUILDINGS. A SHORT SECTION OF THE VALLUM LIES ABOVE BOTTOM RIGHT**





**TEMPLE OF ANTENOCITICUS AND VALLUM CAUSEWAY WITH GATE FOUNDATIONS**

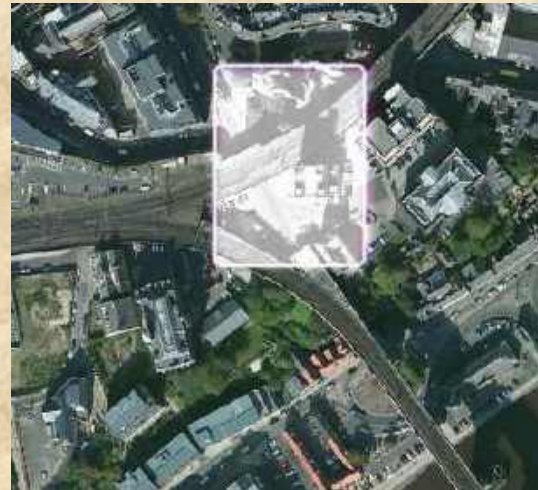
Flying overhead **Pons Aelius**, now the home of the famous Tyne Bridges and a Newcastle ATC VRP, we also cross the site of the Roman fort built to protect the crossing point of the River Tyne, known as Hadrian's Bridge. The original Roman planners had intended for the Wall to start/finish here, as ships could sail up the Tyne from the sea and dock close to the bridge and settlement. Before the Wall was completed in other areas to the West it was extended further Eastward to its final Eastern terminus at **Segedunum** (Wallsend). The bridge crossing carried Cade's Road which came Northwards from **Petuaria** (Brough) via **Eboracum** (York) and the fort at **Concangis** (Chester-le-Street). The bridge was built of timber with stone piers and possibly predated the fort itself. Neither the construction date of the original fort nor the bridge is known, although their existence is mentioned in 213AD. What is known is that it was thriving trading centre with a large **vicus** and evidence of civilian communities on both sides of the river. The fort itself was quite small for a Roman fort of the time and it was eventually covered by a medieval castle and surrounding modern developments, so there is no visual evidence of where it was today. Another unusual aspect of the fort is that it is hardly ever mentioned in Roman records so was probably not thought to be significant in military or political terms. Indeed, there is evidence that civil markets were held inside the fort from 270AD until 360AD, which would hardly be the case for a fort with high military status and value. That's not to say that important Roman relics haven't been found in the area of course. Roman altar stones have been discovered, dedicated to Gods including **Jupiter** (king of the Gods), **Silvanus** (God of wild nature), **Neptune** (God of the Sea), and **Oceanus** (God of Freshwater bodies). The latter two altar stones were dredged from the River Tyne, close to the location of the bridge, and most likely cast into the river as offerings to the Gods they symbolised. The fort was eventually abandoned around 400AD.



**ARTIST'S IMPRESSION OF PONS AELIUS BRIDGE AND FORT, WITH HADRIAN'S WALL BEHIND**



**ARTIST'S IMPRESSION OF PONS AELIUS FORT AND ENTRY GATE**



**EAGLE'S EYE VIEW OF SITE OF PONS AELIUS BRIDGE AND FORT, FORT LOCATION OVERLAID RIGHT**

Making a position report over the Tyne Bridges VRP to Newcastle ATC as requested, we continue on our journey following the known route of the Wall and passing by the confirmed sites of Milecastle 3 (Ouseburn) , Turret 2A, Milecastle 2 (Walker) and Milecastle 1 (Stott's Pow), but being in such a large and heavily developed modern city, there's again no tangible visible evidence from the air unfortunately. We quickly reach **Segedunum** (Wallsend), which is believed to mean 'the strong fort,' and is the site of last fort at the Eastern extremity of the Wall. Built around 127AD when the Wall was extended East from **Pons Aelius**, it lasted for almost 300 years before being abandoned around 400AD. The extended section of the Wall was much smaller than the constructions to the West, being only 7'6" (2,29M) wide and on foundations only 8' (2.4M) high. There was also no **vallum** ditch needed as the closeness of the River Tyne to the South provided similar defensive protections. In a similar fashion to the other forts we have seen so far on the Wall, it had three gates outside the Wall and one inside to the South and, surrounded by a wide ditch and an earthen embankment on all sides, it also had a supplementary wall running down from the Southeastern corner of the fort to the riverbank as far as the low water mark. The standard **vicus** is also present. Whilst the original garrison is not known, there is evidence from the 2<sup>nd</sup> Century AD that **Cohors II Nerviorum** (2<sup>nd</sup>

Cohort of Nervii) were stationed there. The **Nervii** were a **Belgic** tribe from Northern **Gaul** (Northeastern France and Belgium). In the 3<sup>rd</sup> and 4<sup>th</sup> Centuries, it was garrisoned by the **Cohors IV Lingonum** (4<sup>th</sup> Cohort of Lingones) who came from the Dijon area of France. Both these units consisted of around 600 men, including 480 infantry and 120 cavalry troops. When an estate of terraced houses was demolished in the 1970's the fort was heavily excavated and in 1997 a project was started to conduct further excavations, then restore and preserve the site, along with housing a museum detailing the history of the fort and the Roman bathhouse found there. Visitors today can see items which were found on the site, a portion of original Wall, as well as reconstruction of how the whole Wall may have looked, a reconstructed bathhouse, and views of the entire site either from ground level or from a large observation tower.



**SEGEDUNUM – THEN AND TODAY, WITH THE RIVER CLOSER TO THE FORT IN ROMAN TIMES**

Although not part of the Wall, it's not much further to the mouth of the River Tyne and the site of a Roman fort called **Arbeia** (South Shields). A request to Newcastle ATC for clearance to continue for a few more miles and then make a couple of orbits is granted, and we are asked to report when ready to return West again. Crossing the Tyne at North Shields, we spot the site of the large fort consisting of partial ruins and partial reconstructions of the site. **Arbeia** is believed to mean the 'fort of Arab troops' as it was once the garrison of a squadron of boatmen from the Tigris River in Mesopotamia, which now forms parts of modern-day Turkey, Syria, and Iraq. An alternative meaning put forward is 'the fort by a stream with wild turnips.' I think the first version sounds more fitting though !! The fort was built to house a **Cohors**. Completed later than most of the Hadrian era forts, it was built in 129AD and guarded the flank and main sea supply routes to the Wall. The first garrison was the **Ala Prima Pannoniorum Sabiniana**, who we met earlier in the fort at **Onnum**. Some years later the size of the garrison was reduced as troops were sent forwards to **Caledonia** as part of the campaign by Emperor **Antoninus** to push further North and expand the Empire. It regained a full garrison during the reign of Emperor **Marcus Aurelius** in around 165AD with the **Ala I Hispanorum Asturum**, another regiment we've already met, this time at **Condercum** fort. It was then rebuilt in 198AD and changed to a dual role fort, with the Northern half handling and storing supplies from incoming cargo ships and the Southern half housing the army garrison. These changes were a necessary part of the support for the **Severan** invasion of **Caledonia** between 208 and 211AD, and the fort may even have served as his campaign headquarters. A new headquarters and barracks were constructed between 220AD and 235AD and used to house the latest garrison from **Cohors V Gallorum** (5<sup>th</sup> Cohort of Gauls), which was an infantry unit of 1000 men raised in **Galli Lugdunensis** (Lyonnaise area of France). Meanwhile the original smaller **principia** (regimental headquarters building) was turned in

to a granary, and a further nine granaries were built in the Southern part of the fort, bringing the total number to twenty four. **Arbeia** soon became the main supply base for all seventeen forts on Hadrian's Wall, removing any dependence on local produce obtained by purchase, requisition, or taxation. A fire took place in about 300AD, which seems to be quite a common theme in Roman forts, and eight granaries were rebuilt as barracks, the headquarters were further enlarged, and a new commanders house was built. The last known garrison of troops was the **Numerus Barcariorum Tigrisensium**, the barge men from the River Tigris. Then, in around 400AD, the fort went the way of every other one in this part of the world and was abandoned for good as the Romans upped sticks and left **Britannia**. In the late 1960's, modern buildings on the site were cleared and a project of reconstructions took place to give the public an idea of what a Roman fort may have looked like. Over the next twenty years, in addition to the construction of a museum building, a Roman gatehouse, barrack building and Commanding Officer's house were all totally reconstructed using their original foundations. Some of the noteworthy museum exhibits include the tombstones of **Regina** and **Victor**. **Regina** was a **Briton** from the **Catuvellauni** tribe who was captured as a slave but then became a freedwoman and the wife of a man called **Barates** who was a merchant from Palmyra in modern-day Syria. She died at the age of thirty in the second half of the 2<sup>nd</sup> Century AD. Her husband **Barates** is buried at **Coria** fort close to Hadrian's Wall. **Victor**, a Moor from North Africa and also a former slave, was freed by **Numerianus**, a trooper in the Spanish **Ala I Hispania Asturum** cavalry regiment. He died at the age of twenty and his tombstone was also paid for by his liberator, **Numerianus**.



**ROMAN FORT ARBEIA VIEWED FROM THE ROMAN 'EAGLE'**

With a couple of orbits completed over **Arbeia**, we advised Newcastle ATC that we were ready to set course back West again and a routing to return to leave the CTR and CTA on a reciprocal track was agreed with an initial clearance limit of the Tyne Bridges VRP as there might be some airliner traffic to affect us. Before we had reached the VRP, the friendly and ever helpful controller gave us an onward clearance towards the Stagshaw Masts and we followed the path of Hadrian's Wall once again. As we came abeam Ouston, the controller passed traffic information on a couple of non transponding targets passing over Hexham and heading North, but obviously had no height information on them. Even in bright sunshine they were not sighted but had appeared to pass well in front of us according to the controller. On leaving Controlled Airspace, a Basic Service was given by ATC and they asked me to report leaving the frequency. We soon rejoined our route along Hadrian's Wall, passing by the invisible sites of Milecastles 23, 24, 25, and 26.

As we were still on the frequency, Newcastle called and asked if we would possibly be able to do them a favour. They had been so helpful to us; how could I say no ? They had received a request from the London Information sector based at NATS Swanwick regarding any information on a Europa aircraft that they had lost contact with and were becoming concerned about. Newcastle had not been in contact with the Europa but had of course seen a couple of targets passing by earlier heading North, the ones he had pointed out to us a few minutes before. The favour was whether we would be able to try and get a visual sighting of them to see if one of them was our lost aircraft. With plenty fuel, time, and daylight left, we'd be delighted to change from our Dawn to Dusk reconnaissance role to one of interceptor of course, albeit temporarily. The controller passed an approximate bearing and range so we swung around in a left hand turn on to Northeasterly heading. With the speed increased to enable a quick intercept, we obtained updates on the aircraft position and range, although we didn't seem to close as quickly as I thought we might. After about 5 minutes flying time, I sighted two aircraft in a loose trail ahead at around 3000' AMSL around 200' above my level, so I dropped down a couple of hundred feet more below them and closed up into their six o'clock position. Neither of them looked like a Europa and indeed they looked like a pair of Vans RV aircraft to me, which would explain why it was quite a slow catch up, since their speed would be similar to mine. We visually identified the registration of the aircraft in trail and the type of the lead, both of which looked like a RV6 or RV7 to me, and confirmed to Newcastle that 'these were not the droids he was looking for'. Perhaps if the pilots had been using Mode S transponders, or indeed any transponders, then the wild goose chase might not have been needed. Newcastle thanked us anyway and we turned back towards our real target, Milecastle 27 (Low Brunton) which lay 5 minutes to the Southwest. Later Newcastle advised us that the Europa had been found safe and well, so that was good news to receive.



***POOR GUN CAMERA SHOT OF THE 2 x VANS RV BANDITS AT 12 O'CLOCK HIGH***

With Northern Quick Reaction Alert (QRA or 'Q') now formally stood down and nothing further that Newcastle ATC could offer us, I chose to leave the frequency and freecall the wonderful Flight Information Service guys and girls at Scottish Information. We pass our details and it sounds quite busy with various pilots checking in all over Scotland and Northern England. Back on track and Milecastle 27 (Low Brunton) turned out to be another dud, but just across the River North Tyne lay the site of the fort at **Cilurnum** (Walwick Chesters). Noted as the best preserved Roman cavalry fort to be found along the Wall, it was constructed a few years after the Wall itself which dates from 122AD. Originally a cavalry fort, it had the standard three gates located on the North side of the Wall. The fort was built on the site of Turret 27A and its section of the Wall which required both to be demolished first. The ditch on the Northern side of the original Wall structure also had to be filled in to allow the cavalry to exit the gates rapidly on the Northern side of the Wall. The Southern main gate was linked to the Stanegate road and the by now traditional two small gates on the East and West sides allowed the Military Way supply road to access the fort. The ramparts of the fort were 15' (5M) high, matching the height of the Wall in this section. The gates and towers were over 30' (9M) tall, providing a commanding view of the surrounding area, as well as to the next milecastle or Turret in either direction. The identified garrison troops have been noted as the **Ala II Hispana Asturum** in the late 2<sup>nd</sup> Century AD, the **Cohors Primae Delmaturum** (1<sup>st</sup> Cohort of Delmatae) from 138AD to 161AD which originated in **Dalmatia** on the Adriatic coast in Croatia, and the **Cohors Primae Vangionum Milliaris Equitata** thereafter. The fort had several bathhouses on the banks of the river, close to the bridge. They are some of the finest examples in the whole of the Roman Empire. In the 3<sup>rd</sup> Century AD, a large and elaborate **vicus** sprung up with a wide range of civilian buildings present. The fort's main purpose of course was to guard the river crossing for the Military Way, which lay directly to the East of the fort.

At least two bridges have been built in this spot, the first probably constructed at the same time as the Wall, between 122AD to 124AD. Consisting of eight hexagonal stone piers placed around 13' (4M) apart, the bridge spanned 200' (61M) and was 10' (3M) wide. The remains of one of the piers has been incorporated into the abutment which formed the foundations of the second bridge. Archaeological study of this pier support shows traces of dovetail clamps of iron set in lead, which would have held the stones tightly together. The second bridge was far larger and loftier than the one it replaced, with massive stone supports which were lifted into place using Lewis Holes cut in to the tops of the blocks. The stone blocks were then held together with iron ties. With a solid abutment built on either side of the river, four arches were placed in the river, each with a span of 34' (10.4M) and an overall length of 189' (57.6M). This bridge dates from the 3<sup>rd</sup> Century AD. Part of the abutment remains to this day, and is substantial on the Eastern side, mainly because the river has moved away from it Westwards by around 66' (20M) and so it is no longer troubled by occasionally violent river flows. The Westward abutment remains have mostly been either swept away or completely submerged by the river. In the early 19<sup>th</sup> Century, the owner of the Chesters House estate, Nathaniel Clayton, undertook landscaping which included moving hundreds of tons of earth to create a smooth flowing landscape from his country house down to the river. This entirely covered up the Roman fort, however he did collect up various Roman relics from the site before it disappeared. Fortunately when the estate passed to his son, a noted antiquarian named John Clayton, in 1832, the work was undone and John exposed the fort, excavated the ruins, and established a small museum for the finds he made on the site. He also purchased other fort sites on the Wall and made similar excavations. English Heritage now run the Clayton Museum.



**ARTIST'S IMPRESSION OF CILURNUM FORT AND BRIDGE**



**CILURNUM BRIDGE AND FORT REMAINS WITHIN CHESTERS HOUSE ESTATE TODAY**



**SELECTION OF CLAYTON ROMAN TRUST ANTIQUITIES RECOVERED AT CILURNUM**

Turning back towards the West and the remaining 51 miles (82KM) of the Wall, it slowly begins to climb uphill and on to rough moorland, rolling hills and whinstone ridges which begin to unfold before us. Taking around 6 years to complete between 122AD and 128AD, it must have been a gargantuan task and is believed to have involved three entire **Legionum**, each with five thousand troops. In addition to combat tasks, the men of a **Legio** also possessed building skills, allowing them to not only fight their way into fresh territory but also to build defensive structures to consolidate their power over conquered foes. Initially the plan was for the Wall to be a 15' (4.4M) high and 10' (3M) wide stone wall from the River Tyne as far as the River Irthing, a distance of 44 miles (72KM), with the remaining 27 miles (45KM) from the Irthing to the River Solway being a turf rampart which was 20' (6M) wide. The builders made effective use of natural features, especially ridges such as the 12 mile (20KM) long Whin Sill Ridge in the centre of the country which allowed the Wall to run along crags facing North. Facing enemy territory to the North of the Wall a further defensive structure was also constructed where needed, providing a 20' (6M) wide berm with a 30' (9M) wide ditch which could also contain sharpened tree trunks and branches as an added layer of defence. The original plan would also see milecastles put in place, along with 2 Turrets between each. Before the Wall was fully completed, there was a change in the plan however and it was decided that Forts would now also be placed in the Wall at 6.8 mile (11KM) intervals, meaning that some already completed sections of the Wall along with Turrets and the occasional milecastle had to be demolished and the work commenced anew in those locations. Shortly afterwards, a further change to the defensive plan was made and a **vallum** was constructed to the South of the Wall, within Roman territory. The **vallum** consisted of a large ditch measuring 20' (6M) deep and flanked on either side by a mound, providing protection against an enemy attacking the Wall from inside friendly territory. The introduction of the **vallum** also introduced controlled crossing points, reducing the number of places where you could cross the frontier from around 80 to just 16, coincident with the locations of the heavily armed and defended Wall Forts. Once the Wall had been constructed, the **Legionum** vacated the Forts and their place was taken by the **Auxilia**, troops who were recruited from States who were allied to Rome or had been conquered. The garrison, as we have seen in some of the Forts already visited on this trip, would number between five hundred and a thousand. Around each Fort, communities of merchants, traders, and camp followers soon sprung up with a mixture of local and incoming people, the latter including retired soldiers, dependents of serving troops, and tradesmen who supported the Fort and the Roman war machine, such as blacksmiths, metalworkers, builders, food vendors, and prostitutes. Civilians were not permitted to live in the Fort or inside the **vallum** but would live within a **vicus** settlement outside the defensive structures close to the Fort. Once the Romans left **Britannia**, the Forts seem to have been occupied well into the 6<sup>th</sup> Century AD, providing localised security and trading opportunities.

The Wall continued to survive in reasonable condition for many centuries, and indeed in the Elizabethan period of the 16<sup>th</sup> Century there were proposals in certain English quarters that it should be refurbished and manned to prevent raids and skirmishes from the lawless Scottish Border Reivers. It never came to fruition and from this time onwards the stone and other resources found on the Wall and the Forts started to be plundered by locals and others for building houses, farms, and churches, as well as road constructions. In the 1800's there started to be interest in our history and moves were made to stop the constant destruction of the Wall. This grew in momentum with the advent of Victorian archaeology and historians in the mid 1800's when preservation became a serious consideration, leading to the discoveries of rare and valuable artifacts which increased the understanding we have of the Romans today.



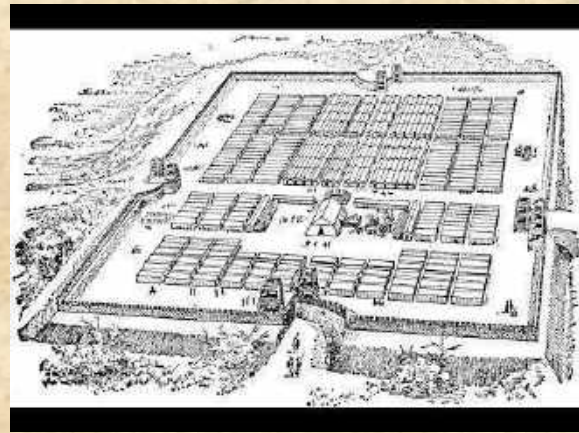
Our next site is Milecastle 28 (Walwick), but with nothing left of it we continue on to Walwick Fell Marching Camp which lies to the South of the equally difficult to spot Milecastle 29 (Tower Tye). These marching camps, called *castra aestiva*, were built as temporary structures all over *Britannia* to provide accommodation for the *Legionum* involved in either campaigns or construction activities. With rudimentary defences, they provided a relatively safe place to rest overnight. Generally a scouting party consisting of a *tribune* (a *Legio* officer who was 2<sup>nd</sup> in command), a *centurion* (a commander of a *Legio Cohors*, usually 80-100 men) and a 10 man detachment would march ahead of the *Legio* and identify a suitable area, usually a maximum of one days Roman march away of around 20 miles (32KM) or 8 hours, marking out the dimensions of the camp using a standard measurement based on the number of troops it was expected to accommodate. This allowed a speedy delineation of each camp, marking out the *praetorium* (officers' quarters) first and then the troop encampment area. They would mark the areas using different coloured flags for the different areas of the camp. With the arrival of the remainder of the *Legio* at the site, defensive positions would be taken up, and they would sometimes await the arrival of a further *Legio* who would commence the construction. The *Legio* would bring all the necessary equipment from their previous camp to allow a quick start to the task. Initially work would commence on marking the perimeter with a *fossa* (ditch), using the spoil to form a small *agger* (rampart) on the inner edge. The rampart would then be fortified with turf and a wooden palisade. Generally 5' (1.5M) wide and 3' (0.9M) deep, they could be further embellished with sharpened stakes pointing out towards potential enemies. A camp was usually square or rectangular and would have an entrance gate on each side with the Commanders tent in the centre. The tents used by the Romans were mostly made by constructing wooden frames and stretching leather skins over them, however some used sewn canvas sheets also. The tents were mostly carried by mules from place to place. An *intervallum* (holding area) between the palisades and the troops tents, measuring around 196' (60M) wide would be used to store livestock, booty, and prisoners of war. Streets would be laid out in a grid, and there would be assigned streets and assembly areas for the various disciplines and *Cohors* within the *Legio*. During construction work the majority of the *Legio* troops present would carry out this task if the site was in an area that had a low risk of attack, but if in an area where conflict was likely then around half of the troops would be involved in construction and the remainder would be armed and formed up ready to guard the camp and the workers. A standard camp could be built in between three to six hours !! Once the camp was erected, sentries were placed around the perimeter at 32' (10M) intervals and every 3 hours a trumpet blast would announce that it was time for the sentries to change guard. The Romans measured the time using a sundial during daylight hours and a *vigiliae* (hourglass water clock) at night. A patrol of four horsemen also roamed the perimeter at night, not only on the lookout for enemies but for Roman soldiers who had fallen asleep. Punishment was severe and persistent offenders could even be executed. Once it was time to move on it was either burned or dismantled after being vacated, unless the camp was going to be used by a following *Legio*.



**A LEGIO SETTING UP A MARCHING CAMP**



**SETTING UP CAMP - HORSE DRAWN GOODS CART WHEEL, LEATHER TENT REMAINS, TENT PEGS**



**TYPICAL ROMAN MARCHING CAMP LAYOUTS**



**WALWICK FELL ROMAN MARCHING CAMP SITE, BOTTOM CENTRE, HADRIAN'S WALL ON FAR RIGHT**

A mile further on and we come upon another marching camp at Limestone Corner, close to the vacant site of Milecastle 30 (Limestone Corner), on the most Northerly part of the Wall. The earthworks marking the perimeter can still clearly be seen from above and excavations have revealed that this camp has foundations of several more permanent buildings present within it. It is also remarkably close to the previous marching camp at Walwick Fell. This could indicate it was used regularly during different campaigns or it may in fact be a *castra hibernia* (winter camp) which would use buildings instead of tents to provide warmth and shelter from the wild and winter weather that was no doubt experienced in this part of *Britannia*. Given our climate, it was probably used for exactly the same purpose in summer too !!



**LIMESTONE CORNER CAMP, BOTTOM CENTRE, WITH THE VALLUM AND WALL RIGHT OF THE WOOD**

With the route of the Wall clear and visible stretching out to the horizon ahead of us, we are able to concentrate a little less on navigation and take in the wonderful scenery surrounding us. Whilst no golden eagles, Roman or otherwise, were spotted, there were a few buzzards floating around and taking advantage of the thermal activity and current rising from the ridges and nearby hills. On a sunny day like this I'm sure even the Roman soldiers would be appreciative, but I can only imagine the hardships they suffered in inclement weather perched on top of a windswept ridge. Our next waypoint sneaks up very quickly on us and we approach the fort site at *Brocolitia* (Carrawbrough). Its name is based on the Celtic name for the location and is believed to mean 'place of the badger setts.' Adjacent to the road, this *Auxilia* fort was built in 130AD and was in use as a garrison right up until the Romans left *Britannia*. The nearest adjacent forts in the Wall are the one we passed at *Cilurnum*, 3.5 miles (5.6KM) away and the next fort ahead at Housesteads which lies 5.2 miles (8.4KM) distant. As *Brocolitia* was built several years later than these two forts, it is surmised that the original gap between the two was deemed too great and this fort was built to reduce the gap in between. Inscriptions from recovered altar stones tell us that the garrison was manned by the

***Cohors Primae Tungrorum*** (1<sup>st</sup> Cohort of the Tungri) between 122AD and 138AD, a regiment of tribesmen from the Tungri tribe of Eastern ***Belgica*** (Belgium). Other cohorts included ***Cohors Primae Aquitanorum*** (1<sup>st</sup> Cohort of Aquitani) from ***Aquitane Gaul*** (Southwest France) who were present in 133AD, ***Cohors Cugernorum*** (Cohort of the Curgens) whose roots are unknown but were present from the end of the 2<sup>nd</sup> Century AD, ***Cohors Primae Batavorum*** (1<sup>st</sup> Cohort of Batavia) who came from the ***Batavi*** tribe located in the Waal and Rhine region of Germany and were present from 213AD to 222AD, returning in 237AD until 400AD, and the ***Cohors Primae Frisiavonum*** (1<sup>st</sup> Cohort of the Frisavones) who garrisoned here on an unknown date. To the West of the fort lay the ***vicus***, accommodating the civilian population in an area of approximately 10 acres. The fort's earthworks can clearly be seen as we fly overhead, however the ramparts and this section of the Wall were demolished in the early 18<sup>th</sup> Century by General Wade during construction of his version of the Military Way (now the B6318 minor road). The fort was excavated by John Clayton in the late 19<sup>th</sup> Century and a bathhouse was revealed just outside the Western fort wall. Also visible just to the Southwest of the fort are the remains of three sanctuaries or temples. One is a 3<sup>rd</sup> Century AD ***Mithraeum***, celebrating the cult of ***Mithras***, the Roman God of the sun. A ***Mithraeum*** was built to resemble a cave and this one was no different. The temple was around originally only 18' (5.5M) long but was extended in stages to final size of 36' (11M) in length. It contained elaborate furnishings and woodwork; however it was looted in 296AD although the building and stone monuments survived. Items found during excavations indicate the temple may have fallen into disuse around 308AD and at some point it was desecrated by vandalising a ***Tauroctony*** (bull killing) scene, with only a small remaining piece being found. Although the roof had collapsed allowing the elements in over the intervening centuries, the temple was found almost exactly as the Romans had left it. The second shrine was a ***Nymphaeum*** (shrine to the nymphs) and was completed in 213AD. This was subsequently used to build a second ***Mithraeum***, although the altar dedicated to the nymphs was reused. It also seems to have fallen out of use around the same time as the first ***Mithraeum***. The final temple was Coventina's Well, dedicated to the Roman-British Goddess ***Coventina***, the Goddess of wells and springs. Sitting over a natural spring, more than 13,000 Roman coins, several sculptural reliefs, and a handful of altars were found on the site. The temple was used during the late 2<sup>nd</sup> and early 3<sup>rd</sup> Centuries AD, primarily when the ***Batavians*** were stationed at the fort.



***BROCOLITIA ALONGSIDE THE MILITARY WAY ROAD. TEMPLES BY TOP LEFT CORNER OF THE FORT***



***THE TEMPLE OF MITHRAS AND THE SURVIVING ALTAR STONES***

Next 'stops' are the Milecastle 32 (Carraw) and a marching camp nearby, however both are covered by grass with no discernible shapes to give away their location. Less than a mile further on however, we can see the shape of Brown Dikes, a small camp by Roman standards. It's not known what the purpose of this camp was as it's a little far away from the communication roads that served the building and manning of the Wall so unlikely to have been used in the ***Hadrianic*** era. Perhaps the scouting party got it wrong and it was put up in error ? I guess we'll never know.



***BROWN DIKES CAMP WITH VALLUM AND HADRIAN'S WALL AT FAR RIGHT***

As we get further along the wall, the terrain below gets rougher and hillier, which might explain why the Roman remains start to become more frequent and visible. Even farmers don't like carrying stuff up and down hills, especially back in the days before the internal combustion engine was around to assist. Milecastle 33 (Shield on the Wall) is clearly visible on the Wall to our right, a small rectangular set of foundations. I'm not sure if the name is reference to a battle or an event associated with the Romans on the Wall, or even if it refers to the small reservoir nearby which is shaped like a shield, but it's soon behind us and we approach Turret 33B, Milecastle 34 (Grindon), and Turret 34A, as well as the two marching camps at Coesike, named rather logically East and West. With nothing of interest at the turret and milecastle sites, we spot the vague earthworks shape of Coesike East but a much better defined site is just a few hundred yards further on at Coesike West. Coesike West has evidence of two camps having been there, although it's the smaller and earlier one which is most visible today. The later camp was bigger but has suffered inadvertent destruction due to farmland drainage system works cutting it up. If only those foundations and earthworks could talk, I wonder what they've witnessed over the last 1900 years ?



***COESIKE WEST 2 CAMP BESIDE THE MILITARY WAY. HADRIAN'S WALL ON THE RIGHT***

From here the Military Way refurbished by Wade, which has closely followed the Wall, splits off to the left and contours round the crags and ridge ahead, whilst the Romans were made of sterner stuff and the Wall continues to the top of the ridge unabated. Visible on our right perched on the crags are the exposed masonry remains of Milecastle 35 (Sewingshields) sitting on the Wall. This milecastle measured 60' (18.3M) by 50' (15.2M) internally, with walls up to 10' (3.2M) thick. The remains of a Roman road lead down to the Military Way. Excavations of the milecastle have detected that it has seen various phases of building in its lifecycle. The original building was 24' (7.45M) by 14' (4.25M) and had stone flooring. This was most likely built at the time of the original Wall construction. New buildings were added to the site in the late 2<sup>nd</sup> or early 3<sup>rd</sup> Century AD, after which the building fell into disrepair. Crude remedial work followed, including new stone flooring, which was the last Roman work on the building. It was then used in the 4<sup>th</sup> Century AD as a metalworking workshop. In the 13<sup>th</sup> to 16<sup>th</sup> Centuries it was occupied once more and two substantial long buildings were built on the site. These medieval remains were removed during the excavations in the 20<sup>th</sup> Century.



**GENERAL WADE TAKES THE LOW ROAD, THE ROMANS TAKE THE HIGH ROAD, NEAR MILECASTLE 35**



**HADRIAN'S WALL CLIMBS UP ON TO THE RIDGE ABOVE BROOMLEE LOUGH**

Crossing the Knag Burn, we reach the fort at **Vercovicium** (Housesteads), set high on the Eastern end of the dramatic Whin Sill escarpment. Perhaps one of the best preserved forts on the Wall, if not indeed Britain, and known by the Romans as the 'Grandest Station,' it was built in 124AD and occupied for almost three hundred years, located 5.3 miles West of **Brocolitia** Fort and 6 miles East



of **Aesica** Fort. Sitting nearby only 2 miles distant on the Stanegate can also be found the fort at **Vindolanda**, built in 85AD and predating **Hadrian's Wall**. **Vercovicium** was part of the 3<sup>rd</sup> phase of the Wall development and required the demolishing of Turret 36B which originally occupied the site. Over its life it was rebuilt or repaired many times, with one particular rebuild in the late 3<sup>rd</sup> or early 4<sup>th</sup> Century AD including the addition of additional towers on the Fort walls, a huge **horreum** (warehouse) and a new barracks. To the South of the fort lay the **vicus**, still having some stone foundations visible. One building gained the nickname 'The Murder House' when two skeletons were unearthed beneath the floor during an excavation. The **vicus** was abandoned around 270AD just before the fort had its major rebuild. Sitting on top of a hill there was no ready supply of water available to the fort, a very unusual situation for a Roman settlement in **Britannia**. Instead, the inhabitants were reliant upon rainwater and collected this in a large number of stone lined cisterns which were placed around the perimeter. Even with those difficulties, sanitation remained important and the fort has some of the best preserved latrines in Roman Britain. The garrisons who used the fort included, in the 2<sup>nd</sup> Century AD, a double sized **Auxilia** infantry **Cohors** of unknown origin along with a detachment of legionaries from **Legio II Augustus**. Between 205 and 208AD, the **Cohors Primae Tungrorum** arrived with 1000 men and were augmented by numerous **Hnaudifridi**, a unit of mercenaries named after their leader, as well as the **Cuneus Frisionum** (Frisian Wedge Formation) cavalry from Northwestern Germany and Northern Holland. The Tungrian troops were still there in the 4th Century AD. The fort was finally abandoned in 409AD as the Romans withdrew from the area. Just beyond the fort and up on a higher part of the ridge we also fly over Milecastle 37 (Housesteads). This milecastle has been reconstructed and consolidated in recent times and the walls are 7' (2.2M) high. Inside the structure are the remains of a barrack block and nearby excavations recovered altar stones dedicated to the Gods **Jupiter** and **Cocidius**, the latter being a Roman-British deity equating to **Mars**, the Roman God of War.



**ILLUSTRATION OF MILECASTLE 37 LAYOUT**



***HADRIAN'S WALL PERCHED ON TOP OF THE WHIN SILL AND JOINING UP WITH VERCOVICIUM FORT***



***VERCOVICIUM FORT TO THE LEFT, FORMING PART OF THE HADRIAN'S WALL FRONTIER***



***MILECASTLE 37 (HOUSESTEADS) ON THE WHIN SILL RIDGE***



***HADRIAN'S WALL HUGS THE CRAGS***

Continuing to soar like a Roman *aquila* along the crest of the Whin Sill ridge, we spy the large Fort at *Vindolanda*, a mile or two to the South. It's not on our route today but well worth a visit if you're ever in the area and like Roman history. It has a very informative museum and lots of surviving building foundations from an early expeditionary fort, including some interesting reconstructions of

towers and walls. Back to the task in hand and we swoop down over Crag Lough and pass over a natural gap in the Whin Sill cliffs created by glacial melt water. Up until very recently we'd have been able to bring you an iconic photo from there, as it's better known as the Sycamore Gap. Aficionados of the movie 'Robin Hood :Prince of Thieves' will of course know it better as the Robin Hood Tree. It is, or rather was, one of the most photographed trees in the country, until some sick individuals decided it would be fun to chop it down. The tree was a 150-year-old non-native Sycamore and was planted by our favourite excavator of all things Roman, John Clayton, as a landscaping feature. Then in September 2023, it met its fate at the end of a chainsaw. There was a national outcry and soon four people were arrested in connection with the vandalism. Two have been released and two will go to a criminal trial in December 2024. Meanwhile the trunk has shown signs of life and will be coppiced, although it will of course take another 150 years before it ever gets back to how it used to look. Seeds were also taken from it and will be propagated into new saplings for planting in the local area and further afield. Meanwhile we can only look on in sadness from our eyrie and then marvel at the adjacent Milecastle 39 (Castle Nick), sitting above the gap on the edge of the cliff. Excavated by John Clayton over 100 years ago, it has been consolidated in the last 35 years and now stands 5.5' (1.75M) high with a length of 62' (19M) and a width of 50' (15.5M). The building contains a stone oven for meal preparation as presumably it was a bit far to nip down to **Vindolanda** for a takeaway pizza !!



***VINDOLANDA FORT IN THE DISTANCE, BEYOND HADRIAN'S WALL AND THE MILITARY ROAD***



***THE ONCE ICONIC SYCAMORE GAP IN HADRIAN'S WALL***



***SYCAMORE GAP AND MILECASTLE 39***

Scottish Information seem to be having a lot of fun today on the busy frequency with many missed calls or pilots transmitting over each other. Hopefully it makes their day go a bit faster than just sitting there in a typical British summers day in the pouring rain with no one on frequency 😊 Back in the cockpit of Wee Vans, we are clocking up the milecastles at a good rate and have now reached the half way point of the Wall with numbers 40 and 41 sliding beneath our wings. Sadly, there is nothing really to see at either and we continue to Milecastle 42 (Cawfields) which is a bit more substantial. It sits on a steep South facing slope near Cawfield Craggs and looks West over the Hole Gap. It's 58' (17.8M) long, 47' (14.4M wide) and 4.5' (1.4M) high. The walls are 9' (2.8M) thick. During excavations in the 1840's a carved dedication slab was found and tells us that it was built by troops from the **Legio II Augustus**.



**VALLUM DITCHES CENTRE, WITH MILECASTLE 42 (CAWFIELD) CENTRE RIGHT**



**MILECASTLE 42 (CAWFIELDS) MAKES A USEFUL TURNING POINT**

Abeam Potters Pool and the Caw Burn, the remains of four Roman marching camps are seen, close to a small fort or fortlet at Haltwhistle Burn. Haltwhistle Burn Camp 1 is a rectangular camp that lies only 164' (50M) from the fortlet and is close to the Stanegate road. The Eastern side of the camp is bisected by a modern road. Camp 2 is a square camp that lies only 96' (30M) from Camp 1. It has the remains of four entrances but has suffered from natural erosion through the years. Camp 3 uses only around half of Camp 2 with a new boundary placed within the original Camp 2 structure to utilise the Northern half of the older camp. Camp 4 is the smallest of the camps, rectangular in shape and lying 328' (100M) away from Camp 1. It is believed to have been built after Hadrian's Wall was completed. The small fort at Haltwhistle Burn was built in around 105AD during the reign of Emperor **Trajan** and was one of the first examples found in **Britannia**. These small forts were designed to only hold a partial fighting unit. The Haltwhistle Burn structure had a small **principia** within it and is therefore classed as a small fort rather than a fortlet as there was no provision for headquarters or administrative buildings within the latter. This fort was protected by a stone-faced rampart backed by an earthen bank and fronted with two V-shaped ditches, which can still be seen today and occupies an area of 0.8 acres. The Stanegate road comes in from the East then turns South to skirt past the Southeast corner of the fort where it crosses the Haltwhistle Burn with the small fort there to provide the defences for this crossing.



**HALTWHISTLE BURN SMALL FORT AND CAMP 1 IN THE CENTRE, CAMPS 2 AND 3 LOWER CENTRE, CAMP 4 IS RIGHT OF CENTRE**

Only a few hundred yards on from the Haltwhistle Burn military conglomeration, we pass by the Fort at **Aesica** (Great Chesters). It is the 9<sup>th</sup> fort on the Wall and is almost equidistant between the forts at **Vercovicium** 6 miles (9.6KM) to the East and **Banna** 6.5 miles (10.4KM ) to the West. The main purpose of the fort was to guard the Caw Gap where the Haltwhistle Burn crosses the Wall. The fort had an incredible 6 mile (9.7KM) long aqueduct system that drew water from the Caw Burn and the

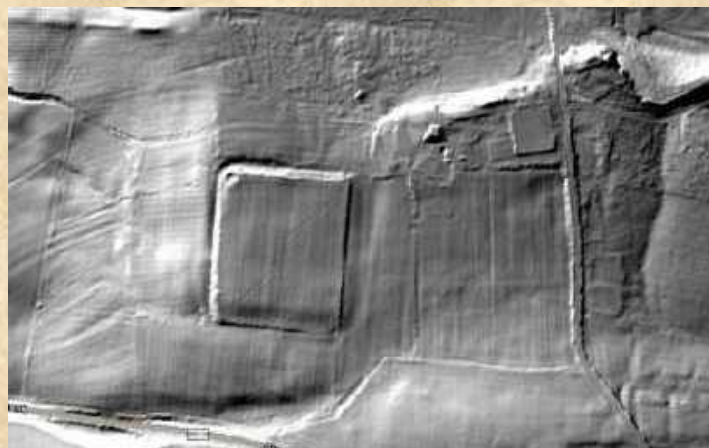
Haltwhistle Burn which meant that there was always a water supply directly within the fort. The fort was built in 128AD, another one that came along in the last phase of the Wall plan, requiring the demolition of Milecastle 43 (Great Chesters). A rectangular fort, it had towers in each corner and was 355' (108M) from north to South and 419' (128M) from East to West, covering an area of 3 acres. Unusually the fort only had 3 gates, in the East, West, and South, each with a double portal and towers. At some point the West gate was sealed, leaving it with only two entrances. Defensively there were four ditches on the Western side but only one each on the Southern and Eastern sides, indicating that the flat approaches from the West were considered a weakness. Built after the Wall in this area, the existing *vallum* on the Southern side also interfered with the Southern ditch. The Roman Military Way entered via the East and West gates, whilst a branch from the Stanegate entered via the South gate. To the South and East of the fort lay the *vicus* where several tombstones have also been found. The garrison was manned by *Cohors VI Nerviorum* (6<sup>th</sup> Cohort of the Nervii) in the 2<sup>nd</sup> Century AD. The *Nervii* were one of the most powerful Belgic tribes which came from Southwestern Belgium and Northeastern France. They were replaced later in the century by the *Cohors VI Raetorum* (6<sup>th</sup> Cohort of the Raetians) who came from Switzerland, Tyrol, and Germany. In the 3<sup>rd</sup> Century AD, the garrison was manned by the *Cohors II Asturorum* (2<sup>nd</sup> Cohort of the Asturians) who came from Northern Spain. They were supplemented by a detachment of *Raetians*. Excavations of the fort and its surroundings have found the usual buildings such as the *principia*, including a vaulted underground strongroom, barracks, bathhouses, and latrines. A hoard of multi cultured jewellery was also found under one of the towers, perhaps the ill-gotten gains of a soldier's lifetime in Roman expeditionary campaigns.



**PARTIALLY COVERED BY A FARM, AESICA FORT STILL HAS A CLEAR OUTLINE**



From **Aesica**, we traverse along another short ridge, with rudimentary evidence of a pair of Turrets, most likely 43A (Cockmount Hill) and 43B (Allolee East). Although the segments of wall are starting to thin out a little now, there are some places where it is incredibly easy to see the Wall, the **vallum**, and other defensive structures, at least from the bird's eye view we have up here in the sparkling sunshine. We are almost at the end of the Whin Sill section of the Wall, which is certainly the most spectacular part along its entire length, but we're not finished yet. Our next flying visit is to the Fort of **Magna** (Carvoran). **Magna** means 'the fort on the rock.' There was a fort here before the Wall was built, serving the Stanegate frontier between 85AD and 122AD. The position of the fort is exposed but this has the benefit of giving great views to the North, South, and West, giving advance warning of restless natives or the endless storms rolling off the Atlantic, so as a strategic defence position it made perfect sense. Originally a wooden fort, it was rebuilt in stone in 136AD with further improvements made in 161AD. The fort guards a road junction between two major Roman roads, the Stanegate and the Maiden Way. Both routes were well used, so no doubt the townspeople of the **vicus** were able to seize the opportunity to make money from selling food and accommodation to travellers. The fort itself has not yet been properly excavated, however it has yielded more stone inscriptions than any other. Building inscriptions and altar stones have recorded that garrisons from the following troop regiments have been here. The **Legio II Augusta** and **Legio XX Valeria Victrix** were here, but most likely participated in construction of the Wall rather than as battle troops. **Auxilia** units have manned the fort from the **Cohors Primae Hamiorum Sagittariorum** (1<sup>st</sup> Cohort of Hammian Archers) who came from Syria, the **Cohors II Delmatarum** (2<sup>nd</sup> Cohort of Dalmatians) from Croatia, and the **Cohors Primae Batavorum** (1<sup>st</sup> Cohort from Batavia) who came from Germany. The site of the fort is now mainly a collection of bumpy fields covering ramparts, walls, and towers. Much of the fort suffered a huge amount of archaeological damage from farmers and road builders trying to improve the land or scavenge building materials. Some artifacts from these times were saved but many have no doubt been destroyed and lost forever. It is hoped that future sensitive excavation will start to unlock some of the treasures and secrets that have been hidden for so long in due course. Whilst there are no fort remains as such to view on a visit, it's still worth popping in if you're nearby as the site hosts the 'Roman Army Museum' with a fantastic collection of artifacts, replicas, and reconstructions telling the story of life as a soldier on the Northern frontier of Britannica whilst serving in the one of the greatest armies ever to have existed. You can also pop across the fields and look in on an archaeological dig and chat to the people taking part about their recent finds.



**GROUND MAPPING LASER (LIDAR) PICTURE OF THE FORT AND VICUS BENEATH THE FIELDS**



**SITUATED ABOVE THE VALLUM LIES THE SITE OF MAGNA. NOTE EXCAVATION PITS ON RIGHT SIDE**



**ANYONE LOOKING FOR A CAREER CHANGE ?**



**EXCAVATIONS UNDERWAY AT MAGNA FORT – 2024**



**THEY WANT YOU AS A NEW RECRUIT !!**

Escaping the clutches of the Roman Army recruiter in Wee Vans, we fly past Greenhead and the Roman marching camps at Chapel Rigg and Crooks before flying alongside the sites of Turrets 48A (Willowford East) and 48B (Willowford West), and Milecastle 49 (Harrow's Scar) until we reach the Fort at **Banna** (Birdoswald). Attached to the longest surviving stretch of the Wall, the original fort was built in 122AD using turf and wood, before being rebuilt in stone with three gates facing East, South, and West. It is located 6.5 miles (10.4KM) West of **Aesica** and 7.5 miles (12KM) East of **Camboglanna** forts. The fort was occupied by **Auxilia** between 126AD and 400AD, including a garrison from **Cohors Prima Aelia Dacorum** (1<sup>st</sup> Aelian Cohort of Dacians) who came from Transylvania and other regions in Romania, Hungary, and Serbia. Excavations at the site have uncovered two large **horrea** (granaries) within the fort which were occupied for the entire period of the Roman occupation, possibly until as late as 500AD. Uncommon for a fort along the Wall, a **basilica exercitatoria** (exercise building or Roman gym) was also discovered. Perhaps they needed to stay fit for the fighting with the screaming hordes who lived North of the Wall? The bathhouse was located close to the River Irthing and various **vicus** foundations and a cemetery have also been located. The remains of a bridge at nearby Willowford, which carried Hadrian's Wall across it have also been located, but only the Eastern abutment remains. There are also signs of a road leading from **Banna** Northwards 7 miles (11KM) to the outpost fort at Bewcastle. Signals could be relayed between these forts using signalling towers. Further archaeological work has uncovered that the fort was quickly occupied when the Romans vacated it, possibly by local warriors who had worked in the fort or alongside the Romans.



**ROMAN MARCHING CAMPS AT CHAPEL RIGG AND CROOKS**



**BANNA FORT**



***ON THE FRONTIER, LOOKING EAST FROM BANNA FORT***



***BANNA FORT FOUNDATIONS***



***ANOTHER BRICK IN THE WALL ?***

Free as a bird we leave Birdoswald and fly past numerous sites of milecastles and turrets, even spotting a few along the way, although as we are now coming into easier terrain and countryside the centuries of stone robbers have left nothing much for us to look at, at least not from 1000' above the ground. For the record however, we passed the sites of Turret 49B (Birdoswald), Milecastle 50 (High House), Milecastle 51 (Wall Bowers), Turret 51A (Piper Syke), Turret 51B (Leahill), Milecastle 52 (Bankshead), Turret 52A (Banks East), Milecastle 53 (Banks Burn), Milecastle 54 (Randylands), Turret 54B (Howgill), Milecastle 55 (Low Wall) and Milecastle 56 (Walton).



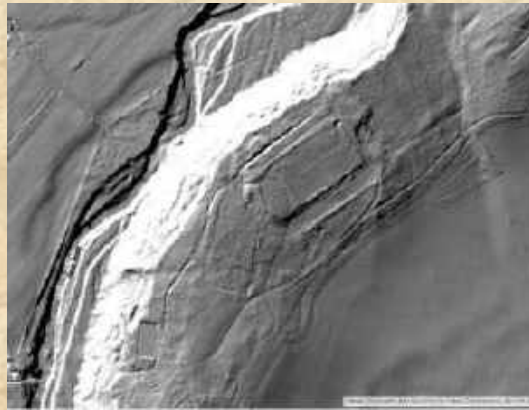
**TURRET 51A (LEAHILL) AND SURVIVING WALL – NO, WE WEREN'T FLYING THAT LOW !!**



**TURRET 52A (BANKS EAST) AND SURVIVING WALL SECTION**

Our next fort is the 12<sup>th</sup> on the Wall and lies 7 miles (11KM) West of **Banna** Fort and 9 miles (14.5KM) East of **Uxelodunum** Fort. It's a relatively easy site to spot as it lies in the middle of a wooded area and so we come overhead to where **Camboglanna** (Castlesteads) Fort stood. The name means 'Crook Bank' or 'Bent Valley' as it overlooks a bend in the River Irthing. It also stands on a high bluff commanding the Cambeck Valley and guarded the approach to the Wall in this area, as well as maintaining a watch for raiders coming from the Bewcastle area to the North. Built around 124AD by the **Legio VI Victrix**, the location of the fort as part of Hadrian's Wall infrastructure is unusual as it lies within the protection of the **vallum** but doesn't abut the Wall itself. This is most likely because

the Wall was already in position at the most convenient point to cross the River Cambeck so the strongest strategic position nearby was chosen instead. The fort is a square shape measuring 400' (120M) by 400' (120M) covering 3.75 acres and overlooks the gorge of the Cambeck. Some of the troops garrisoned here include those from the **Cohors IV Gallorum Equitata** (4<sup>th</sup> Mounted Cohort of the Gauls) from France who were present in the 2<sup>nd</sup> Century AD, and the **Cohors II Tungrorum** (2<sup>nd</sup> Cohort of the Tungri) from Belgium and Holland who arrived in the 3<sup>rd</sup> Century. Much of the structure has been lost, partly due to the erosion of the gorge and collapse, and partly due to it being overlaid with the formal gardens of Castlesteads House in 1791. Excavations in the early 20<sup>th</sup> Century uncovered most of the walls and a tower, as well as a surrounding defensive ditch. Altar stones were also found and recovered for preservation, dedicated to the Gods **Jupiter**, **Mithras**, **Minerva**, and **Mars**. The location of the associated **vicus** now lies under woodland but radar ground mapping shows that it lay to the South of the fort, along with an East-West road. The buildings were generally stone built and four large buildings have been mapped along with a street grid.



**GROUND MAPPING LASER (LIDAR) PICTURE OF CAMBOGLANNA AND THE VICUS**



**CAMBOGLANNA HIDDEN IN THE TREES**



Prior to reaching **Camboglanna** I gave Carlisle (EGNC) Radio a call as we would soon be passing close to the Northern boundary of their airfield. As it is an unlicensed airfield there is no ATZ and so no 'clearance' required, however good airmanship dictates that they would like to know about us and we'd like to know about any traffic they may have. Having phoned them before departure and discovering there was no refuelling available, I was not really surprised to hear no reply on the radio, either from the ground operator or other aircraft. The Dutch military helicopter exercise detachment might be up flying but if they were then they did not appear to be in the vicinity of the airfield. Meanwhile we passed by the sites of Milecastle 57 (Cambeckhill), Turret 57A (Beck), and Milecastle 58 (Newton), before following the line of the Wall on the Northern boundary of the former RAF station Crosby on Eden, now known as Carlisle Lake District Airport. Opened during WW2 in 1941, it was initially a RAF Fighter Command training base with Hawker Hurricanes operated by 59 Operational Training Unit (OTU). In 1942 it passed to RAF Coastal Command training with 9 OTU operating Bristol Beaufort and Beaufighter aircraft. In 1944 it passed to RAF Transport Command, once again for training, with 109 OTU and 1383 Transport Conversion Unit operating Douglas C47 Dakotas. In 1947 the airfield was closed by the military and returned to Council ownership. After many years under their stewardship, it was sold to a private operator in the 2000's. As we fly abeam the airport, we can see the excellent collection held by the Solway Aviation Museum, which includes Avro Vulcan B2 XJ823, our 4<sup>th</sup> Vulcan sighting of the trip !! Also spied on the ground are the Chinook, Apache, and Cougar helicopters of the Dutch, so I guess they are not flying today after all. Milecastle 59 (Old Wall) was sited just North of the airfield boundary but was not visible to us as we passed over. Perhaps the stones are to be found somewhere in the runway foundations ?



***CARLISLE LAKE DISTRICT AIRPORT WITH THE WALL ROUTE FOLLOWING TREE LINE TO ITS RIGHT***



***VULCAN #4 XJ823 AT SOLWAY AVIATION MUSEUM. DUTCH HELICOPTERS ON APRON TOP RIGHT***

Bidding the silent frequency at Carlisle farewell with a blind call, I return to pay attention to Scottish Information. It's also a suitable time to do a progress check on fuel and elapsed time. The fuel burn is in line with the time we've airborne and we're around 10 minutes behind schedule, but that was due to our earlier tasking as an interceptor of course 😊 On frequency now we can hear the Red Arrows calling up, carrying out a low-level transit somewhere and looking for an eventual hand over to the military radar unit at RAF Swanwick Area Control Centre for their return at high level to RAF Waddington, which we passed many hours ago. Helpful as ever, Scottish Information advise the Reds formation Lead that they'll organise it for him and his 8 friends. Meanwhile we pass by the site of Milecastle 60 (High Strand) so we're about  $\frac{3}{4}$  of the way along the Wall now, with the estuary of the Solway Firth clearly in sight up ahead. Although the service provided by Scottish Information is a non-surveillance one, they do have equipment to monitor the position of aircraft for situational awareness purposes and they advise us that we might want to get our cameras ready in a couple of minutes as we might see some Red jets heading South below us. I advise that I'll put on some smoke to help with visual conspicuity and the steely eyed Red Arrows lead calls that he has us in sight. Unfortunately, they passed just behind us rather than ahead or directly below so there's no video footage, however we did catch sight of the two in trail formations passing from our 4 o'clock and then behind at low level and 1500' below us. If we were paranoid, we'd think they are stalking us this weekend !!



**APPROACHING THE M6 AND CARLISLE. 'TRAFFIC APPROACHING FROM 3 O'CLOCK RANGE 5 MILES'**

There are no visible remains of the Wall or even clear indications of the route as we get closer to **Lugavallio** (Carlisle) and the milecastles that surrounded it. These were Milecastle 61 (Wallhead), Milecastle 62 (Walby East), Milecastle 63 (Walby West), Milecastle 64 (Drawdykes), Milecastle 65 (Tarraby), Milecastle 66 (Stanwick Bank), Milecastle 67 (Stainton) and Milecastle 68 (Boombly Gill). In the city of Carlisle itself, there are some sparse Roman remnants to be found, firstly the Wall fort at **Petriania** (Stanwix), which is largely buried under a hotel car park and St Michael's Church. It's a shame there's only a few cursory stones in view because it was the largest fort to be found on the Wall when it was in existence and guarded the River Eden crossing point. There was also a fort in the current city centre, a stronghold on the Stanegate road. It too is now buried and lies under the medieval castle. With that in mind, we decide to try and make up a few minutes time and cut the corner after passing over the site of Milecastle 64 to intercept our route on the other side of the city, in the vicinity of Milecastle 69 (Sourmilk Bridge) and Milecastle 70 (Braeless), although there are no signs of either and their exact locations remain unknown, even to historians. We follow the nominal course of the Wall towards the Solway Firth, passing the unseen Milecastle 71 (Wormanby) and the site of a Wall fort at **Aballava** (Burgh-by-Sands). The name comes from the Celtic language and means 'Apple Orchard.' This fort was built to guard the Southern end of two fords which allowed the Solway to be crossed, the Peat Wath and the Sandwath. The original wooden fort predated the Wall and was possibly connected with the Stanegate. The more modern fort was built in the 3<sup>rd</sup> phase of the Hadrianic Wall development and required the demolition of Turret 71B. The fort straddled the Wall and covered an area of about 5 acres. There is much uncertainty about the location of the fort as only the East wall has been discovered. . A later church on the probable fort site is made from Roman stones and is believed to have been built on top of the **principia**. It was garrisoned in the 2<sup>nd</sup> Century AD by the **Ala Primaе Tungrorum** (1<sup>st</sup> Wing of the Tungri) from Belgium, along with the **Cohors Primaе Nerviorum** (1<sup>st</sup> Cohort of the Nervii) from modern Belgium and France. In the 3<sup>rd</sup> Century AD, the garrison was the **Cuneus Frisionum** (Frisian Wedge Formation) cavalry from Northwestern Germany and Northern Holland, supplemented by a detachment of **Aurelian** Moors. It is thought that the fort was abandoned in the 3<sup>rd</sup> Century AD. Several other forts and camps are also known to have been located in the vicinity.



**THE SITE OF ABALLAVA CLOSE TO THE SOLWAY FIRTH**

Still following the route of the Wall, we fly over the site of Milecastle 72 (Fauld Farm), Milecastle 73 (Dykesfield), and Milecastle 74 (Burgh Marsh), all with no visible remains. The marshes where the River Eden meets the Solway look formidable to cross as we hug the estuary coastline towards the end of this journey from the East Coast to the West Coast of Britain. Milecastle 75 (Easton Burgh Marsh) and Milecastle 76 (Drumburgh), although unsighted, take us to the site of the fort at **Concavata** (Drumburgh). **Concavata** was built on a hill which commanded views over the shores of the Solway and guarded the Stonewath and Sandwath ford crossings. Built after the Wall, it was an oblong fort and occupied an area of 2 acres. The Wall formed its Northern side and included a gate giving access to the Solway shoreline. The fort was relatively small and would only accommodate detachments of troops rather than an entire **Cohors**. Both the Wall and the fort were originally constructed from earth and turf but were upgraded to stone structures in 160AD. The current day Drumburgh Castle is built from stones taken from both the Wall and **Concavata**. Passing Milecastle 77 (Raven Bank), Milecastle 78 (Kirkland), and Milecastle 79 (Solway House), we finally arrive overhead the site of the Fort of **Maia** (Bowness on Solway). **Maia** means 'the larger' and is a reference to the fort being the second largest on Hadrian's Wall. It stood on a 50' (15M) sea cliff and commanded views over the lower ground in all directions. Another late addition to the infrastructure of the Wall, Milecastle 80 was demolished to make way for it. Using a turf and clay rampart with a wooden palisade, it was similar in construction to the Wall in this area at that time. Later when the Wall was upgraded to a stone structure, the fort followed suite. The fort covered an area of 7 acres and it is thought that the Wall to the West of the fort ran down to the low water mark. Little is known about the garrison but it was thought to be 1000 men strong. Over time, and long after the Romans left, cliff collapses destroyed the entire North wall which fell on to the beach. Apart from under surface remains, the rest of the fort has been stone robbed or built upon. Not quite the fitting end that it perhaps deserved given its location as the start or end point of the remarkable Wall that ran from coast to coast nearly 2000 years ago.



**CONCAVATA ON THE SOLWAY FIRTH**



### ***MAIA – THE END OF THE WALL***

Advising Scottish Information that we were complete on the Solway, we began a gentle turn to the right to head back towards an intercept point on Dere Street, 40NM to the East of us. Just beyond Bowness on Solway you can see what look like two piers, one jutting out from England on the South bank and one from Scotland on the North bank. You might think these are connected with maritime activities in some way but they are actually the remains of the Solway Railway Viaduct. Opened in 1869 by the independent Solway Junction Railway Company, it was just over 1 mile (1.8KM) long with 193 spans. The design was to shorten the railway route between ironstone mines in Cumberland (Cumbria) and the industrial scale ironworks in Lanarkshire and Ayrshire in Scotland. Sadly, the viaduct was susceptible to damage by obstructions in the river, such as floating ice sheets in winter and trees and logs all year round. With increasing repair and maintenance costs, coupled with a decline in traffic volumes due to a falloff in production at the Cumberland mines and a reduced revenue, the viaduct became uncompetitive and was finally closed to rail traffic in 1921. Before it was demolished in 1931, it became an illegal but often used footbridge for the public, particularly on Sundays when the pubs were permitted to open in Bowness on the English side but those in Annan on the Scottish side were not !!



### ***THE SOLWAY JUNCTION RAILWAY VIADUCT***



### ***THE SOLWAY FIRTH AND THE RAILWAY VIADUCT PIER HEADS***

Looping around over the border into Scotland, we come around on to an Easterly heading and start the trip back across the Borders countryside. On the North bank of the Solway lies the large industrial looking complex of Eastriggs, officially designated HM Factory Gretna, and which was the largest munitions factory on Earth during WW1. Here over 30,000 workers, including 12,000 women, mixed the 'Devil's Porridge', otherwise known as the explosive cordite. The name 'Devils Porridge' was coined by the writer Sir Arthur Conan Doyle during a visit as a war correspondent in 1916. The factory was spread over a nine mile long site. To counter problems with potentially catastrophic and fatal accidents caused by excess alcohol consumption, the Government nationalised all the breweries and public houses in the local area and controlled the supply of alcohol. Whoever said that politicians couldn't organise a piss up in a brewery? Commencing ammunition production in 1916, the plant produced one thousand four hundred tonnes of cordite per week for the war effort. Many of the workers lived in the nearby town of Gretna Green, giving the women workforce who worked in the factory the affectionate nickname 'The Gretna Girls.' Gretna Green was also famous for being a town where arranging marriage vows were less restrictive than in other parts of the country, with many couples eloping here to tie the knot at the Village Blacksmith's workshop where the ceremonies were conducted. Perhaps a few of the factory workers married their partners here. After the end of WW1, the plant closed down in 1919 and all the equipment was sold off. Part of the site was retained by the Government and is still in operation today as the Longtown Central Armaments Depot (CAD). Nearby is also the former RAF Longtown airfield, built during WW2 as a training base for both Fighter Command and Coastal Command.



***PART OF THE EASTRIGGS ARMAMENT FACTORY, STRETCHING FOR 9 MILES ALONG THE COAST***



***GRETNA GREEN***





***ORIGINALLY PART OF THE MUNITIONS FACTORY, LONGTOWN NOW STORES MODERN MUNITIONS***



***FORMER RAF LONGTOWN BASE***

Heading back across the Cumbrian landscape, we relax a little and take in the views. To the North of us lies the Spadeadam Electronic Warfare Range, but on a Sunday it's closed and there are no NOTAMs with any extra activity. This gives us a chance to go and find another 'airfield' that I've flown over regularly. It's also an airfield that I'll never land at since it's actually just a dummy one with ploughed strips for runways and populated with Cold War fighter jets as targets for military

pilots to practice attacking, albeit without live weapons being dropped. We take a little detour and turn North to set up for an attack on RAF 'Colinski.' Dropping down to a minimum of 500' above ground level, we 'drop' our non-existent bombs mentally and wheel around for another attack. Once more above the parked fighter aircraft, with a pull up over a hiding helicopter (it's a non-serviceable target I hasten to add) we set course back on to the real challenge of the day, our Dawn to Dusk 2024 mission. It was a little bit of diversionary fun though.



***ON OUR IP (INITIAL POINT) FOR OUR FIRST ATTACK RUN AT COLINSKI AIR BASE***



***BOMBS AWAY !!***



**FORMER WARSAW PACT HELICOPTER HIDING IN THE BUSHES**

Another role completed – Reconnaissance✓ Interceptor✓ Bomber✓ so we head back East to rejoin Dere Street. It seems like a lifetime since we were in this part of the world but in reality it's only been 1 hour 10 minutes, so it's a good time for another fuel and elapsed time check. All looks good, but if it hadn't been then there were options to land ahead at Cumbernauld (EGPG), or Perth (EGPT) to pick up some fuel. We rejoined the Roman road, nowadays the main A68 route, around 8 miles (12.8KM) North of **Coria** (Corbridge) and headed Northwards away from the early 2<sup>nd</sup> Century frontier of Hadrian's Wall. This is the route that Emperor **Antoninus** took after the death of **Hadrian** in 138AD to once more reconquer the Southern part of **Valentia**. Whether he undertook this to improve his relatively low military experience or to subjugate troubles and skirmishes with the local tribes which had started to arise towards the end of the reign of **Hadrian** remains conjecture. What is not in dispute is that his campaign pushed well Northwards and by 142AD had established a new frontier, the Antonine Wall, between the Roman Empire and the troublesome inhabitants of **Caledonia**. It is also true that Roman armies had pushed even further North along the flat lands to the East of the Grampian Mountains in Scotland in earlier times, but their forays there were short lived and unconsolidated. To get to the Antonine Wall there was still some very rough and hostile

terrain to be crossed, and that's the path we now take, albeit at around 1000' AGL and at many times the speed of a marching Roman army. A very faint outline of a camp appears at Swine Hill. Dating from the 1<sup>st</sup> Century AD and one of at least two camps constructed near this location, it was most likely used to accommodate advancing troops setting out from Hadrian's Wall and as a base for those conducting construction or maintenance on Roman facilities in the vicinity.

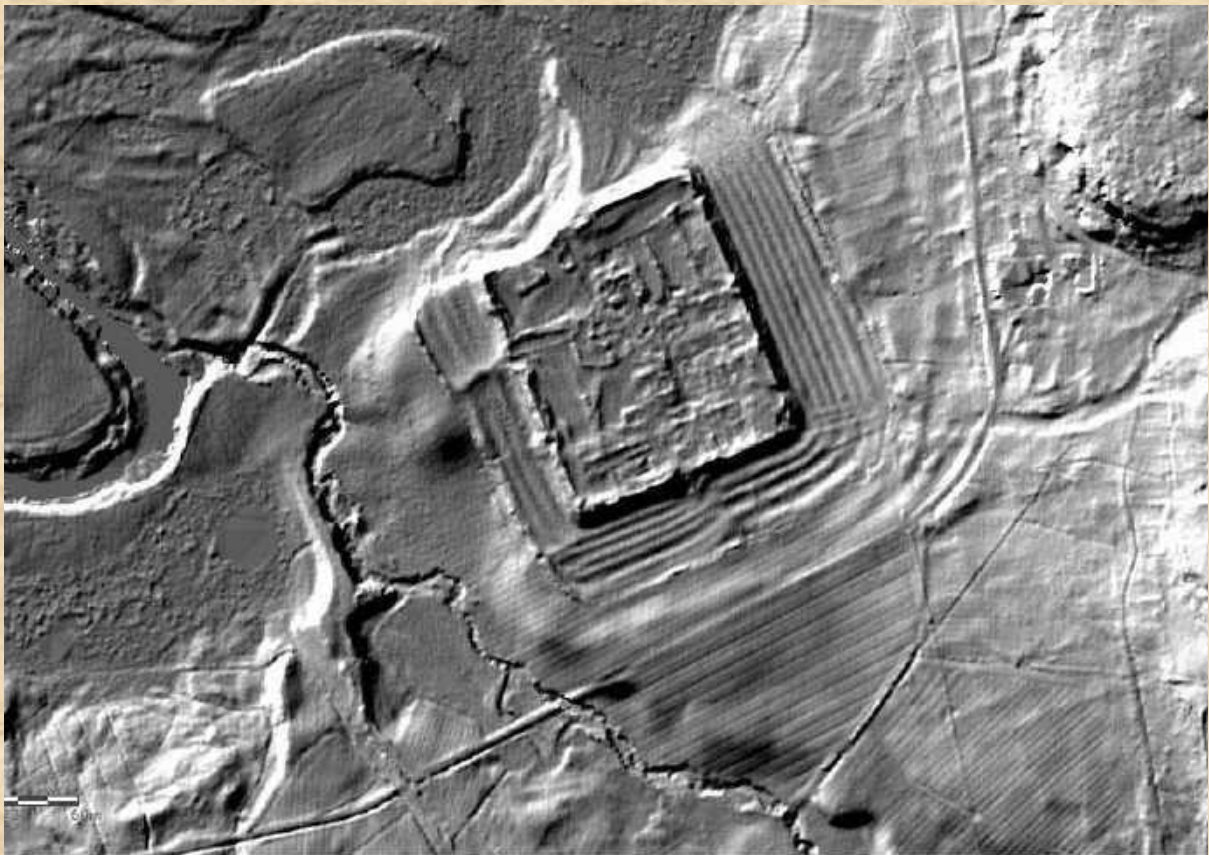


***FAINT SQUARE OUTLINE OF SWINE HILL CAMP BESIDE DERE STREET, BOTTOM RIGHT***

Just beyond this camp, a fort is found at ***Habitancum*** (Risingham). An ***auxilia castrum*** (auxiliary regiment fort) from the ***Antonine*** campaign, it was built in 138AD and was inhabited until around 161AD. The name derives from an inscription on a recovered altar stone set up by ***Marcus Gavius Secundinus***, a consular in the area. The fort is 13 miles (21KM) North of ***Coria*** and 8 miles (12.8KM) South of the fort at ***Bremenium***. Built in a rectangular shape, it measured 450' (140M) North to South and 400' (120M) from North to South, with a footprint of around 4 acres. Defensively it had surrounding ditches and two gates, on the South and West walls. A substantial ***vicus*** also existed nearby. The fort was garrisoned in the 2<sup>nd</sup> Century AD by ***Cohors IV Gallorum Equitata*** (4<sup>th</sup> Mixed Cohort of the Gauls) from France. It was destroyed around 197AD but rebuilt by ***Severus*** between 205 and 208AD using troops from ***Cohors Primae Vangionum Milliaria Equitata*** (1<sup>st</sup> Mixed Cohort of the Vangiones) formed in ***Germania*** (Northern Germany). In the 3<sup>rd</sup> Century AD it was manned by the ***Cohors Primae Vangiones*** (1<sup>st</sup> Cohort of the Vangiones) also from ***Germania***, augmented by troops from the ***Numerus Exploratorum*** (Scout Unit) and the pikemen of the ***Raet Gaesati*** who came from Switzerland, Austria, Southeastern Germany, Liechtenstein, and Northeastern Italy. It was then destroyed again in the 3<sup>rd</sup> Century AD but once more rebuilt, this time by Emperor ***Constantius*** in 306AD. It was finally destroyed in 368AD.



**HABITANCUM FORT SITE**



**GROUND MAPPING LASER (LIDAR) PICTURE OF HABITANCUM FORT**

We are now approaching the Western fringes of Cheviot Hills, a formidable barrier to any invading army, regardless of the direction taken. Bearing in mind the march up and over the hills to places of safety, it must have been a real hardship for the troops sent up to support the main force. As we will shortly be approaching the confines of the modern-day Otterburn Army Firing Range at Otterburn (D512 complex), we advise Scottish Information that we have permission to enter as we had confirmed there was no live firing taking place, both on the Ministry of Defence website and by telephone confirmation with the Range Officer on Friday. Scottish confirm there are no last minute NOTAMs changing that status and we continue to advance onwards and upwards, passing by Dargues marching camp ahead which was built to house the construction workers as they erected nearby Blakehope Fort in 98AD. The fort itself was actually built within the perimeter of a larger and older marching camp constructed during the reign of **Trajan** and overseen by Governor **Agricola** around 79AD. It lies on a low plateau guarding the Dere Street crossing of the River Rede. The dimensions of the fort, covering 3.25 acres, indicate that it was used to house infantry forces. Most likely there was initially a small transport track that passed through the gates of the fort from North to South which was then abandoned with the advent of the adjacent stone and gravel highway of Dere Street. The fort remained important until around 100AD when the large fort and town at **Trimontium** (Newstead) lying much further to the North was overwhelmed and abandoned by the Romans. With the fall of **Trimontium** the need for Dere Street waned and Blakehope was abandoned in 140AD when it was replaced by the fort at **Habitancum**.



**BLAKEHOPE CAMP AND FORT SITE**



### **GROUND MAPPING LASER (LIDAR) AND AERIAL IMAGES OF BLAKEHOPE**

As we follow the Rede valley, the marching camp at Bagraw is next on our list, lying off our starboard wing. It is situated immediately adjacent to Dere Street and midway between the forts at Blakehope and **Bremenium**. Bagraw is one of the largest camps found in the whole of **Britannia**. Evidence points to it being established after Dere Street was built and was most likely a marshalling and rest area for multiple **Legionum** before they set off over the hills into **Caledonia**. As with most Roman sites where there is no written evidence to prove things, such as stone carvings, this can only be conjecture. At some point later in the Roman period, there is earthwork evidence that the camp was split in two, with the Southern half being disused thereafter. Remains of ramparts and ditches show that it followed the classic defensive setup of other marching camps.

Less than a minute further flying time for our eagle and we pass the fort site at **Bremenium** (High Rochester). Translated as 'the place on the roaring stream,' this was one of the most important forts North of Hadrian's Wall as it could give advance warning of attacks originating from the tribes in the North. The fort was built alongside a marching track, used by the Roman armies to march in to **Caledonia**, and was the main overland route on the Eastern side of **Britannia** in the North. It dates from the time of the **Agricola** campaign in 79AD when he pushed up through Southern, Central and Northern Scotland including control of the glens which gave access to the Highlands of Scotland. In 84AD, with the return of **Agricola** to Rome, the military fell back to a more defensive line along Southern **Caledonia**. Evidence of multiple marching camps several miles ahead signify that it was strategically important for these invasion campaigns including occupation of land held by the local **Brigantes** and **Selgovae** tribes, as well as the consolidation of control in **Valentia**. The original fort was built of turf with a wooden palisade and was demolished when the Romans first abandoned Scotland around 100AD. The site was used again in 140AD when a new fort was built by Governor **Quintus Lollius Urbicus** as part of the campaign by **Antoninus** to retake **Caledonia** and the Roman Army advanced North of the frontier at Hadrian's Wall once more. This campaign took the Romans to the isthmus between the Rivers Forth and Clyde in Northern **Valentia** where the Antonine Wall was constructed as the new frontier of the Roman Empire. This new fort guarded the logistical route from the major town at **Coria** which supplied the campaign and the push to the new frontier. The fort was built from rubble and clay. In 164AD the Romans pulled back their territory again to Hadrian's Wall and Bremenium became a strongly defended outpost in the hostile border territory. The fort saw another rebuild during the reign of **Severus** coincident with refurbishments to Hadrian's Wall in the early 3<sup>rd</sup> Century AD. This provided the fort with new stone walls, ramparts, and buildings. Increased defensive ditches were also dug around the perimeter, with up to thirteen on the North side and between four and six on the others. The 3<sup>rd</sup> Century fort was also unique in

having **onagri** weapons positioned 32' (8M) back from the walls on stone platforms. These catapult-like machines hurled missiles at attacking enemies and were a smaller version of the more well-known ballista. The power to launch the missiles was derived from tensioning a hair rope which was then released. The weapons were aligned to fire along the approach of Dere Street from the North. The fort was garrisoned in the 2<sup>nd</sup> Century AD by 500 mixed troops of the **Cohors Primae Lingonum** (1<sup>st</sup> Cohort of the Lingones) from mid-Eastern France, who were replaced in time by the **Cohors Primae Delmaturum** (1<sup>st</sup> Cohort of Delmatae) from Dalmatia in Croatia. In the 3<sup>rd</sup> Century AD, the garrison was the 1000 strong mixed troop from the **Cohors Primae Vardulli** (1<sup>st</sup> Cohort of Vardullians) who came from the Basque Country in Northern Spain and Southern France. The fort remained occupied until 270AD when it was abandoned.



**THE SITE OF BAGRAW CAMP BELOW THE FOREST AT CENTRE RIGHT**



**THE SITE OF BREMENIUM FORT, CENTRE**





**GROUND MAPPING LASER (LIDAR) AND AERIAL IMAGES OF BREMENIUM FORT**

Within one mile of **Bremenium** there are no less than 5 marching camps to be found. These are at Birdhope, Bellshiel, Sills Burn South and North, and Silloans. Birdhope is the site of three camps, which have been superimposed on top of each other, and lies 1500' (450M) West Northwest of **Bremenium**. Camp 1 was built post Dere Street with a large rectangular layout and defensive structures around the perimeter. The two subsequent camps are smaller, both lying within the larger original camp, Camp 2 occupying the Northeastern corner of Camp 1 and the last camp built, Camp 3, using a smaller space inside Camp 2. From **Bremenium**, Bellshiel lies (2KM) Northwest, Sills Burn South is 0.6 miles (1KM) North Northwest, Sills Burn North is 1.2 miles (2KM) North Northwest, and Silloans is 1.2 miles (2KM) North. Sills Burn South and Silloans were built after Dere Street and Bellshiel and Sills Burn North were built before it. The considerable number of closely located camps are on the lower lying area of the Cheviot foothills and would provide more shelter and respite from the changeable and inclement weather associated with hill topography at a higher level. From here it would be a long steady climb to the plateau of the hills 5.5 miles (9KM) away before dropping down the steeper terrain at the Northern end. No doubt this is where the troops rested and prepared, perhaps with some trepidation, for the slog ahead.



**3 IN 1 – THE SITE OF THE BIRDHOPE MARCHING CAMPS**



**SITE OF BELLSHIEL MARCHING CAMP**



***SITE OF SILLS BURN SOUTH MARCHING CAMP***



***SITE OF SILLS BURN NORTH MARCHING CAMP***



***SITE OF SILLOANS MARCHING CAMP***

We rise up the hillside following Dere Street and spot the various firing points used by the Army on both sides of us. Otterburn is the largest live firing range within the UK and is used almost every day of the year but, fortunately for us, not today !! Weapons fired here include the AS-90 Armoured Self Propelled Artillery, with an effective firing range of 15.3 miles (24.7KM) and the M270 Multiple Launch Rocket Systems (MLRS) which has a maximum firing range of 165 miles (300KM), although more normal ranges for the MLRS are from 20 to 57 miles (32KM to 92KM). Otterburn is the only place in the UK where the MLRS can be fired and uses an 11 mile (17.7KM) by 2 mile (3.2KM) wide firing corridor. There is no live bombing by aircraft within the range although aircraft and helicopters may be permitted to fire guns against ground targets by special arrangement, usually during large force combined exercises. For good reasons, the public is excluded from the range except on the published 'no fire' periods. Entry conditions and precautions are published in a wide range of places, both online and on signage around the perimeter of the range. If you see a red flag flying, then please keep out !! Of course if you're getting airborne then read your NOTAMs before the flight, receive a Danger Area Activity Information Service (DAAIS) from Scottish Information or Newcastle ATC when in the air, and if in doubt, remain well clear !!



**VICKERS AS90 FIRING A 155MM HOWITZER**



**LTV M270 FIRING A SALVO OF 277MM ROCKETS**

Gaining altitude as we follow the contour of the hill, we pass the marching camp at Ridleeshope at the start of the broad plateau area on the Northwestern edge of the Cheviots. A further camp has been discovered just to the West of it on the opposite side of Dere Street but we saw no sign of it. Dere Street now begins to change from an almost straight line to a meandering route, taking advantage of contours in the land to give the easiest path through hill and sike, the latter being the local name for the small streams in the valleys and gulleys which carve their paths off the top of the plateau and feed larger rivers below. Almost at the very top of the plateau and a short distance from the slopes which lead down into Scotland, stands the site of the wonderful remains of the fort and camps at **Ad Fines** (Chew Green). Meaning 'the limits,' the encampment lies on the banks of the River Coquet and between its tributaries, Chew Sike and March Sike. Adjacent to Dere Street at a height of 1450' (441M) it is the highest Roman settlement in England and at various times during its history it has contained a fort, three fortlets, and two marching camps. The largest camp, known as Camp 1, was a square structure that covered 17 acres and dates back to **Agricola's** invasion in 79AD. It had enough space to host an entire **Legio** of around 5000 soldiers. This camp had a surrounding defensive ditch and rampart. Camp 2 lies to the North of Camp 1 and covered 14 acres, but its precise date of construction and occupation is not known, although the best bet seems to be from the time of the Antonine invasion around 140AD. Fort 3 was built inside Camp 1 and covered 6.5 acres, probably constructed as a semi-permanent addition to the camp to bolster the defences and to function as a depot and labour camp. Fortlet 4 was built around 160AD and was Southeast of Camp 1. It covered 1 acre and was heavily fortified with an external annex attached to it. The annex would be used to store supply wagons and horses during their transit. It was most likely abandoned in 190AD when **Trimontium** was vacated by the Romans. Fortlet 5 was built within Camp 1 and was believed to have been the longest standing structure on the entire site of Chew Green. It defended Dere Street and controlled access to and from the hillside road between the South and **Trimontium** to the North. Fortlet 6 has been discovered underneath Fortlet 5, but with a slightly different alignment. It was most likely built shortly after Camp 1 came into service. The various structures provide evidence of a permanent settlement here, although with no **vicus** attached, it was most likely only for military use.



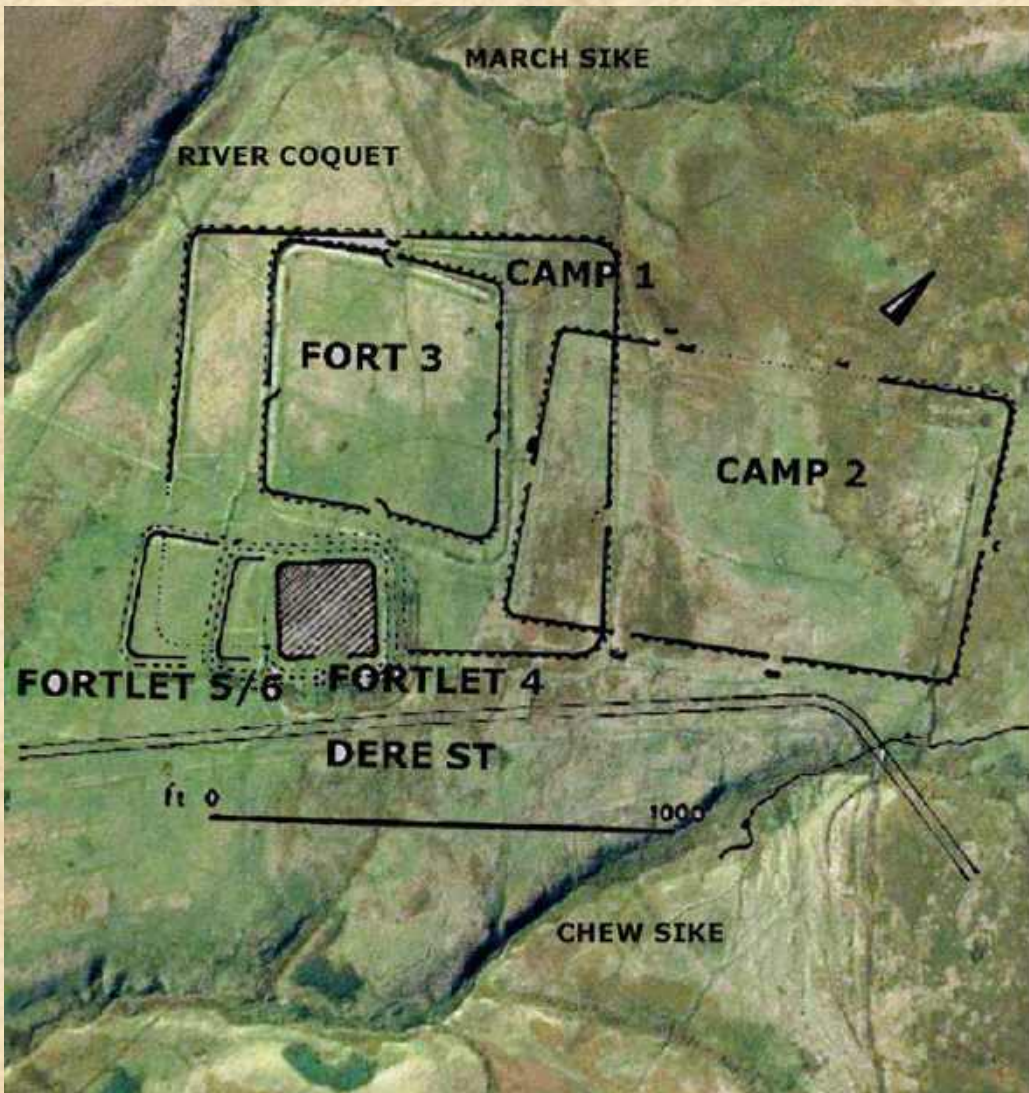
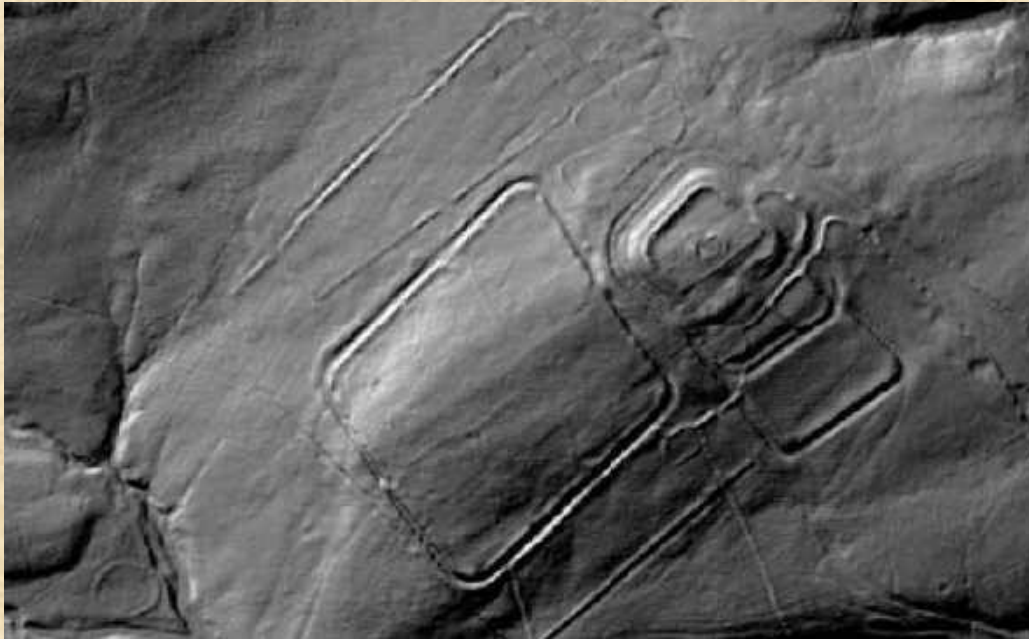
**THE PLATEAU OF THE WESTERN CHEVIOTS, VALENTIA AND BARBARIANS AHEAD !!**



***SITE OF RIDLEESHOPE CAMP AND GROUND MAPPING LASER (LIDAR) IMAGE***



***THE SITE OF CHEW GREEN, PHOTOBOMBED BY A CUMULUS CLOUD***



**GROUND MAPPING LASER (LIDAR) AND AERIAL IMAGE OF CHEW GREEN**

Turning right to follow the edge of the plateau, we pass the site of a signal station at Brownheart Law on the edge of the Northern slopes. Signal stations were used in various places throughout **Britannia**, especially where the terrain masked clear sight lines between neighbouring forts or encampments. This station would pass signals between Chew Green and the signal station at Rubers Law, a prominent conical hill located 13 miles (20.9KM) to the West Northwest near Hawick. Around 3 miles (4.8KM) from Chew Green, Dere Street begins to wind its way down from the summit plateau towards the low-lying ground to the North of the Cheviots and the route passes between the summits of Watch Knowe and Woden Law as it descends in a valley. Woden Law housed an Iron Age hillfort of the **Votadini** tribe, which included a settlement surrounded by a single oval stone dyke to which was then added a double rampart with a ditch in between. Once the Romans occupied the area, the fort was abandoned by the **Votadini** and it found a new lease of life. Just as the Army of today use Otterburn for weapons training, so too did the Romans with Woden Law. It was used as a siege training camp and the Romans constructed trenches and earthen banks around 36' (12M) to 99' (30M) from the fort's defences, just outside the killing range for hand thrown missiles that were available to the hostile tribes of **Britannia**. Flattened platforms just outside the furthest bank provided the sites for siege weapons such as **ballistae** to be deployed and used during siege training against the hill fort target ahead of them. I wonder if they put up Red Flags to keep the locals out ?



**EAGLE'S EYE VIEW AND GROUND MAPPING LASER (LIDAR) IMAGE OF WODEN LAW**



Safely through the weapons ranges, both ancient and modern, with no visible holes in the aircraft, we reach the bottom of the Cheviots and can see Dere Street meandering through gentle slopes before the ground flattens out and it resumes its straight path towards **Trimontium**, Edinburgh, and eventually the Antonine Wall. We have now left **Britannia Inferior** transiting **Valentia**. Others still refer to it sometimes as **Caledonia**, however strictly speaking the Romans used this name for the lands of the Scottish Highlands which are a good deal further North. Not far from Woden Law, we fly over the marching camps at Pennymuir, sometimes referred to as the Towford camps. Four camps are known to have been constructed here, lying on the fringes of the Cheviots and close to the Roman ford at Tow where they crossed the Kale Water, hence the name Towford. The camps are 4.3 miles (7KM) from Chew Green, a reasonable day's march if you are heading back Southwards and climbing up the hill to get there. Aside from a resting place and marshalling area, at least some of the camps may have been used to house construction and maintenance troops. They are also only a short distance from Woden Law, so it's likely that they also accommodated soldiers on detachment who were conducting siege practice exercises. Camps A and B are said to be some of the best ones preserved in Scotland, although they didn't seem too obvious from our flyby. Camp A is the largest in the group and is on the West side of Dere Street. It covers almost 44 acres and has ramparts and ditches as defences. Only 10 acres in area, Camp B lies within the Southeastern portion of Camp A and uses some of Camps A's defences. Camp C is the most Northeasterly of the four camps and sits on the Eastern side of Dere Street. It has suffered badly from drainage work on the farmland as well as having a plantation growing on it and has been measured at 12 acres. Only around 165' (50M) of the raised perimeter can still be seen. Camp D has been seen in aerial surveys but so far the majority of the perimeter remains to still be found somewhere below the ground. It is thought to be around 6 acres in area but cultivation and drainage digging are believed to have destroyed much of the structure.



**THE SITE OF THE PENNYMUIR CAMPS**

We would be getting close to the airspace around Edinburgh (EGPH) in around 15 minutes time so I ask Scottish Information if they wouldn't mind passing on our details to Edinburgh ATC if convenient. As always, it's no problem and they call back quickly and just ask for confirmation of the way we'd like to transit the Edinburgh CTA and CTR so that Edinburgh can work out a plan for us when the time comes. That's good service. On our right, we slide past another Iron Age fort of the **Votadini**, at Cunzierterton. Sadly, it's also covered by a cloud shadow which means we don't get a great view of it on the video camera. Here Dere Street resumes a straight line and we pass over lush and beautiful countryside in the Scottish Borders region, an area which has unfortunately seen its fair share of violence, bloodshed, and mayhem over the centuries. These days though at least it's only on the rugby pitch as the famous Borders clubs such as Gala, Hawick, and Jedburgh battle it out !! Our next waypoint is at Cappuck which once boasted a marching camp and a fort. Sadly, there is nothing to see at the camp, as it was identified in a photo survey in the 1950's but nothing has been excavated there as yet. The fort is similarly invisible from the surface and indications of its size mean it was only used to guard the river crossing it once sat beside. Inscriptions have been found on stones in the area, one of which tells us that it was built by **Legio XX Valeria Victrix**. Altar stones also show us that the garrison worshipped the God **Jupiter** as well as giving us evidence that it was at some time manned by a detachment of **Raetian** spearmen and the **Cohors Prima Vardulli** (1<sup>st</sup> Cohort of Vardullians) from the Basque Country. Pottery shards recovered at both sites confirm that it was occupied during the 2<sup>nd</sup> and 3<sup>rd</sup> Centuries AD from the periods of **Trajan**, **Agricola**, and **Antoninus**. Two further camps lie just to the Northwest of the fort site, along Dere Street. Ulston Moor was a large camp and Millside Wood consisted of two camps, with a larger old one and a newer one built inside it. There is nothing to see for us at either site unfortunately.



**DERE STREET RUNNING STRAIGHT TO TRIMONTIUM**



**THE SITES OF CAPPUCK CAMP AND FORT – NOTHING TO SEE !!**

Passing over the River Teviot, we follow the road that the Romans would have used, with the much more modern A68 running parallel but a mile or so to the West. There are no Roman remains of their bridge here and we continue onwards, following the line of Dere Street ahead to our next point, Maxton Camp on the banks of the famous River Tweed. This is another location discovered during an aerial survey and some cursory excavations have found a number of coins along with two brooches and other Roman artifacts. Mertoun Bridge camp is only a short distance further on and is another aerial survey discovery. It consisted of two camps, with the smaller one lying inside the original larger one. It is a little disappointing to see nothing again with these two, however we were probably a little spoiled by the substantial number of remains seen along Hadrian's Wall and in the Otterburn area. When you also consider the extensive farming which takes place in the flat and fertile land we are traveling over now, then it's not really a great surprise that everything has been reused or obliterated by years and years of cultivation and development. Up ahead the dark shape of the three peaks of the Eildon Hills beckons us onwards. On the other side of them we will find the site of the Roman town and fort of **Trimontium**, which literally translates as 'The Three Hills.' The 1385' (422M) high range has a large hill fort on the North summit area. It is surrounded by over 3 miles (5KM) of ramparts, enclosing an area of 40 acres in which at least 300 level platforms have been cut in to the rock to provide bases for turf or timber walled houses and buildings. Around two thousand people are thought to have inhabited it when it was at its peak, although it was likely to have been much less when it was first inhabited around 1000BC. Quite a feat for an ancient people with only basic tools. The fort was the capital of the **Selgovae** tribe but they abandoned it after the Roman invasion and the construction of **Trimontium**. The Romans soon took advantage of the lofty peak and built a signal station on the summit to allow communication with other stations on nearby hills. It was first built as a wooden structure in the **Flavian** period and subsequently rebuilt in stone under **Antoninus**. Pottery and coins have also been found in the summit area indicating that some of the dwellings may have been inhabited again between the 2<sup>nd</sup> and 4<sup>th</sup> Centuries. Eildon is also known as the 'hollow hill' and is mentioned in accounts about the Scottish Borders prophet called Thomas the Rhymer who lived in the 13<sup>th</sup> Century. The famous Scottish novelist Sir Walter Scott tells the tale of a horse dealer who is led into the centre of the mountain at night by an elderly man in old clothes. A hall of armed knights lies there sleeping at their horses' feet and their sleeping leader is King Arthur. Shown a sword and a horn, the horse dealer perhaps unwisely blows it and the slumbering warriors awake. A loud voice declares him to be a coward for not seizing the sword first, a whirlwind then erupts and deposits him outside the mountain beside a group of startled shepherds. He tells them his tale and then drops dead of exhaustion. An alternative version tells that he was taken into the heart of the mountain by a fairy queen and never seen again. Take your pick !!



**THE THREE PEAKS OF TRIMONTIUM, ALSO KNOWN AS THE EILDON'S**

We do a lazy orbit over the Eildon's, dipping in a wing in respect to the Fairy Queen and the snoring Arthurian denizens locked in its cold hard interior, before overflying the site of **Trimontium** (Newstead). **Trimontium** was first constructed in 79AD during the **Agricola** campaign but was only intermittently occupied during its existence. Up to five camps were constructed up until 87AD and controlled a crossing of the River Tweed. The largest camp, called the 'Great Camp,' was 49 acres in size, able to accommodate a **Legio** of 5000 men. In 80AD a smaller camp was built by **Agricola** to the West of the Great Camp. The construction workers came from **Legio XX Valeria** Victrix. When the Romans moved backwards and forwards into and out of the occupations of Scotland then the people of this outpost moved with them so the camps were abandoned for a short while. In 90AD the Romans returned and built more heavily defended structures. The construction of **vicus** also took place on the edges of the fortified central inhabited by camp followers and civilians. In 105AD the tribes of **Picts** boldly came from **Caledonia** to the North of the Forth and Clyde valleys and rampaged through several Roman settlements and forts, destroying them with fire and fighting bloody battles. Evidence on human remains and armour found at **Trimontium** indicates that violent clashes took place here. Shortly afterwards it was abandoned and the Romans headed back to the safety of the South. After the construction of Hadrian's Wall in AD122, the Romans moved into **Valentia** once more and it became the biggest 'outpost' fort outside the Wall. Indeed, it was over three times the size of the largest fort found on the Wall itself, over 60 miles (96KM) away. In 136AD it changed from an outpost to a supply and logistics base for **Antoninus** as he led his armies to build the Antonine Wall. The fort and the **vicus** were now a manufacturing centre with over two thousand civilians living there. There was even an amphitheatre and a horse training ring on the site. Communications links were good, with the Leader and Tweed rivers providing routes to move goods and people, as well as having Dere Street for Northwards and Southwards road travel. In 160AD the role changed again and it once more became front line fort as the retreat from the Antonine Wall commenced. By 164AD when the Romans had retreated back to Hadrian's' Wall, it again became an outpost in hostile lands. By 180AD it was the most Northerly settlement in the entire Roman Empire, although the inhabitants were primarily military forces. It didn't last much longer however as it was soon deserted once more and the Romans would never return.

**Trimontium** has delivered an enormous number of archaeological finds, including horse skeletons, tack, and harnesses as well as outstanding cavalry helmets and face masks. This makes it highly likely that it was a major cavalry base during its time. Pits full of artifacts were discovered when a cutting was made for a railway in 1846 and in the early 1900's serious archaeological digs took place and uncovered a wide range of precious relics. There is now a small museum in the town with some of the finds displayed within it, however most of the high quality and important finds are to be found in the National Museum of Scotland in Edinburgh.



***TRIMONTIUM OCCUPIED THE AREA RIGHT OF THE GOLDEN CORN FIELDS DOWN TO THE RIVER***



***ARTIST'S IMPRESSION OF TRIMONTIUM***



***REPLICA MILESTONE AT THE SITE OF TRIMONTIUM***



***VIEW TO THE EILDON'S FROM TRIMONTIUM SITE***



**TRIMONTIUM MEMORIAL**



**HISTORICAL INFORMATION BOARD AT TRIMONTIUM**



***SITE OF THE TRIMONTIUM AMPHITHEATRE BESIDE THE RIVER TWEED***



***AERIAL SURVEY OF TRIMONTIUM IN THE 1950'S***





**NATIONAL MUSEUM OF SCOTLAND TRIMONTIUM TREASURES**



***NATIONAL MUSEUM OF SCOTLAND TRIMONTIUM TREASURES***



***NATIONAL MUSEUM OF SCOTLAND TRIMONTIUM TREASURES***

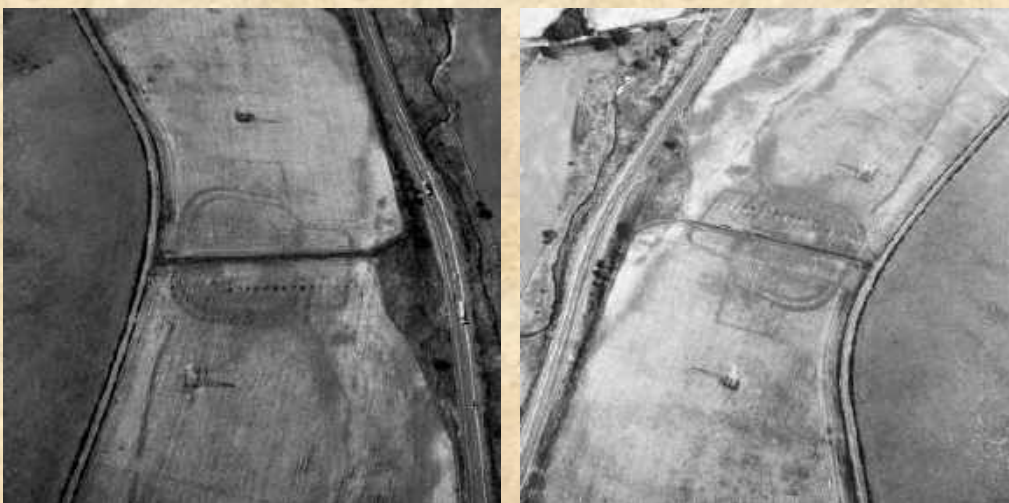


***NATIONAL MUSEUM OF SCOTLAND TRIMONTIUM TREASURES***

We cross the River Tweed, soaring high above the Leader river valley on our trip Northwards. We have been airborne for 2 hours and a quick check of fuel remaining confirms we are burning it within acceptable limits and have just over an hour to our next planned stop, which means we have plenty to spare in the tank. We pass by the sites of camps at regular intervals along Dere Street, located at Drygrange, Kedslie, Blainslie, and St Leonard's Hill. All just appear to be fields today, but St Leonard's Hill is worth a mention as it's reportedly the largest Roman camp ever found measuring at over 170 acres !! The A68 road which marks the route of Dere Street in these parts hugs us on the right like a lovesick puppy. Passing by pretty Border towns and villages like Lauder and Oxton, we overfly the site of Oxton Fortlet and the adjacent Channelkirk marching camp. A small building, it was only around 1.5 acres in size although it did have four annexes which is quite unusual. Agricultural work on the site has hidden most of the remains but Ground Mapping Laser (LIDAR) images show significant features under the surface. As Channelkirk lies in the same section of field, it too is lost from sight.



**WITH THE A68 MARKING DERE STREET ON THE RIGHT, OXTON FORT LIES BOTTOM CENTRE**



**AERIAL SURVEY PHOTOS FROM THE 1950'S SHOW IT MUCH BETTER**

We are now about 10 minutes flying time from the Edinburgh CTR boundary and Scottish Information transfer us to Edinburgh Approach. We have checked the Automatic Terminal Information System (ATIS) so have 'all the numbers' and know the runway in use. With arrivals approaching from the East over the River Forth, we have a couple of transit options we can request. One is to follow the precise route of Dere Street all the way around the Southern boundary of Edinburgh Airport itself, and then its track up to Bo'ness where the Antonine Wall started. We know already that there is nothing visible on any of that route and so a much more scenic route over the city towards Cramond, where a Roman fort and harbour were located, then past the bridges over the Forth and along the West Lothian coast to the Antonine Wall seems a much more pleasant option. Edinburgh welcome us on to the frequency and ask us our requested routing. I ask to enter the CTR at Dalkeith VRP to route via Arthurs Seat VRP and then over the EDN Non-Directional Beacon (NDB), which just happens to be in Cramond, before routing to the Bridges VRP and then to follow the coastline Westwards before leaving the CTR at Polmont VRP. There are a couple of airliners on frequency, but it looks like ATC have a plan as I'm immediately given the clearance as requested. I do advise that we're happy to take an orbiting hold or an alternative routing if things get too difficult, but the controller seems calm and doesn't think there will be a problem. Meanwhile we fly past some more unseen marching camps at Fala Mill Pathhead and abeam Lugton and Eskbank camp sites plus Elginhaugh Fort. Eskbank had some fine camp remains, but the emphasis is on 'had.' In the 1970's the site was partially excavated prior to the construction of a housing estate and associated roads. Whilst various foundations were discovered, nothing was found to give any information on dates of building or occupation nor of the inhabitants. Elginhaugh Fort on the other hand, although discovered by an aerial survey in 1979, was only completely excavated ahead of a new development for a banking data centre in 1986. This was the most completely excavated timber-built fort in the Roman Empire. The fort was built during the **Agricola** campaign around 79AD and was to guard the ford crossing the River North Esk, near Edinburgh. It soon became a **castellum**, or garrison fort. A hoard of coins from this period was recovered from the foundations of the **principia**. Evidence from other buildings found during the excavation show that there were several stable blocks which could accommodate cavalry units. The buildings continued in use for some time afterwards and seems to have been used a centre for animal husbandry. It is not known when it was abandoned, but I think that having seen the excavation photos I'd rather have seen it as a tourist attraction than buried under a new building which could literally have been sited anywhere, but that's the price of progress.



**ELGINHAUGH AERIAL SURVEY RESULTS 1979**



***ELGINHAUGH EXCAVATIONS 1986-1987***



***SOMEWHERE DOWN THERE ARE BURIED ROMAN FORTS AND CAMPS***

We report passing Dalkeith VRP as requested and the controller advises we are now under Radar Control. I hear the next IFR arrival checking in approaching the TARTN holding fix, so he's around 10 minutes from landing and we should be well out of the way by then. We look down with our eagle's eyes on Arthur's Seat, an 823' (250M) high plug of an extinct volcano. It last blew its top around 340 million years ago so I expect we'll be safe today !! Soon we are over the city, with the old medieval 'designed' town running down from Edinburgh Castle high on its rocky plinth to the Palace of Holyrood at the foot of Arthur's Seat. Meanwhile the Georgian designed New Town basks in the summer sunshine. Even although it's the city of my birth and childhood, I still think it's a special place because of how it looks. Despite its status today as Scotland's capital city, the Romans didn't pay it quite much as attention when they were here. **Aluana**, the 'rocky place' as they called it, was mostly based around the natural small harbour at Cramond where the River Almond flows into the sea within the Firth of Forth. Possibly called **Rumabo** by the Romans, the harbour allowed Roman vessels to drop supplies and manpower into this part of the World with ease. In 140AD a fort was built to protect the harbour, which was being used in part to support the building of the Antonine Wall around 10 miles (16KM) Westwards along the coastline. It remained in use until 170AD when the Romans retreated back to Hadrian's Wall. When **Severus** began the last Roman invasion of Scotland from 205AD until 214AD the fort was reoccupied and enlarged. A small **vicus** was also established and civilian habitation seems to have continued into the 5<sup>th</sup> Century AD. The site has yielded many interesting finds including carved altar stones and a silver sword pendant. Perhaps the most significant find though was made in the nearby River Almond in 1977. It was discovered by the local ferryman, Robert Graham, who would row tourists and locals across the river for a small fee. One day he noticed a carved head protruding from the mud bank at low tide. A major recovery operation was undertaken by archaeologists and they raised the Cramond Lioness from her wet and muddy home for the previous 1,850 years. The sculpture is carved from a single block of white sandstone and is 5' (1.52M) long, 1.5' (0.46M) wide and 2' (0.55M) high. It depicts a bound male prisoner being devoured by a lioness, showing the head and torso of the prisoner underneath the lioness who is sinking her teeth into his skull. A plinth found nearby was found carved with two snakes. It is believed that the sculpture was part of the tomb of a Roman military commander or dignitary connected to the **Rumabo** fort.



**THE CRAMOND LIONESSE**





***THE ANCIENT VOLCANO OF ARTHUR'S SEAT***



***CHAOTIC OLD TOWN TO THE LEFT, ORDERED NEW TOWN TO THE RIGHT***



***THE PORT AND FORT OF RUMABO***



***PASSING THE EXTENDED CENTRELINE OF RUNWAY 24 AT EDINBURGH – THANKS GUYS !!***

Hugging the coastline on our port wing, we swing out over the River Forth and pass the iconic three bridges which cross the River Forth from South Queensferry to North Queensferry. The oldest bridge is the dark red oxide coloured railway bridge, an iconic cantilever design which was built in 1890 and simply called the Forth Bridge. It was the first major structure in the UK to be made from steel and is a UNESCO World Heritage site. The bridge used to be famed for continuously being painted from one end to the other, at which point the process would start again. This was because it needed constant protection from the sea salt, rain, wind, and fog. Old paint technology meant it didn't last very long, hence the constant repainting. In the 1990's the bridge was given a major renovation and new paint technology was applied using an epoxy-based glass flake paint which is expected to have a life of 25 years. The saying referring to something taking a long time to complete being 'like painting the Forth Bridge' is however still around. I have used it myself when asked about how I have been getting on writing this report !! Hopefully you're still with me though and enjoying the trip and the rich history we have explored together. The middle bridge is a road suspension bridge built in 1964 and called the Forth Road Bridge. The heavy traffic loads we see today meant that the bridge was operating under loads that were never envisaged when it was designed in the 1950's, leading to cracks and tears in the suspension wires. To resolve this a new suspension bridge called the Queensferry Crossing was opened in 2017, whilst the Forth Road Bridge was repaired and is now used for only buses and other approved traffic, drastically cutting down the loading it receives. It's a wonderful view from up here !!

Another quick fuel check is completed as we track Westwards, should we need it then Cumbernauld Airport (EGPG) is only about 10 minutes ahead on our path anyway. The figures all look good though so we anticipate flying all the way around the route to our planned stop at Fife Airport (EGPJ). We pass Blackness Castle jutting out from the shore like a warship. Built in the 1440's, it protected the port of Blackness which served the Scottish Monarchy of the time and their residence at Linlithgow Palace. It was upgraded in the mid-16<sup>th</sup> Century with some of the most advanced fortifications of the time, however this didn't prevent Oliver Cromwell taking it in 1650. It was used in various military roles up until the end of WW1, including ammunition storage. It's now a scheduled ancient monument and open to visitors. Because of its long narrow shape it's often called 'the ship that never sailed.' The North and South towers are called the 'stem' and 'stern' whilst the central tower is known as the 'mast.'



**FROM TOP TO BOTTOM – QUEENSFERRY CROSSING, FORTH ROAD BRIDGE, AND FORTH BRIDGE**



***'THE BRIDGE'S VRP***



***BLACKNESS CASTLE AND HARBOUR***

We now pick up the Roman trail again a few miles further on as we arrive at the fort called ***Veluniate*** (Carriden). This is the fort at Eastern end of the ***Vallum Antonini*** (the Antonine Wall). Surprisingly, this is the only location on the Antonine whose Roman name is known coming from a Roman altar stone inscription dedicated to ***Jupiter*** which was found here. Other Roman names are of course

associated with the Antonine Wall but no one knows exactly where they refer to. The fort was large enough for 500 troops and had an annexe as well as a bathhouse. Although the fort has been seen in aerial photographs from the past, recent surveys and our own flight confirm that nothing is currently visible. Nearby was the site of Muirhouse or Bridgeness marching camp, also with nothing to be seen. The start of the Antonine Wall is also located in Bridgeness and was marked by a 9' (3M) long square piece of sandstone which served as a distance marker, known as the Bridgeness Slab. The original is now in the National Museum of Scotland in Edinburgh but a replica has been placed at the confirmed starting point for the Antonine Wall.

The Antonine Wall was constructed between 142AD and 154AD by the armies of Emperor **Antoninus** under the supervision of **Quintus Lollius Urbicus** and ran for 39 miles (63KM) through Central Scotland from the banks of the Forth to the banks of the Clyde. It is now a UNESCO World Heritage site and was the most Northerly frontier in Roman **Britannia**. The fort was constructed from turf ramparts and earthworks and stood 10' (3M) high and 16' (5M) wide. Defences also included a deep ditch on the Northerly side and a wooden palisade on the turf ramparts. Unlike Hadrian's Wall, there was no subsidiary **vallum** constructed behind it. Because of the construction materials used, the ruins are less evident compared to those of the more sturdily constructed Hadrian's Wall. Turf and wood were of course not designed to last nearly 1900 years. Unlike his predecessor **Hadrian**, **Antoninus** never visited **Britannia** so didn't build it because of what he'd seen but rather he likely commenced the wall in response to reported aggression and threats to the Empire's interests from the **Caledonii** tribes. The Antonine Wall was protected by 19 forts along it, with 9 smaller fortlets positioned in between them. In a similar fashion to Hadrian's Wall, there was a road called the Military Way which ran alongside it to enable supplies and troops to be moved with ease. The troops who built the wall and fought the **Caledonii** commemorated their experiences with decoratively carved slabs, around 20 of which are known to still survive to this day. Although the Romans pushed even further North and built marching camps and forts beyond the Antonine Wall to protect their interests there, they were never able to defeat the **Caledonii** and the Antonine Wall was subjected to regular and heavy attacks. Only 8 years after completion, the Antonine Wall was abandoned in 162AD and the Romans retreated once more, with the surplus garrisons reinforcing Hadrian's Wall. After a series of attacks on the frontier of Hadrian's Wall in 197AD and beyond, **Severus** arrived in **Britannia** in 208AD and fought both the **Caledonii** and the **Maetae** tribes, whilst bolstering the defences on Hadrian's Wall. There is however no evidence that he took any action to reclaim or repair the Antonine Wall.



**THE SITE OF VELUNIATE FORT AND MUIRHOUSE MARCHING CAMP**



***ALTAR STONE FROM VELUNIAE DEDICATED TO THE GOD JUPITER***



***THE START OF THE ANTONINE WALL – THE LARGE X MARKS THE SPOT***



***THE BRIDGENESS SLAB***

As we fly over Bridgeness, Edinburgh ATC warn us of opposite direction traffic approaching our location to join their CTR. Looking out ahead I pick out a Piper Cherokee aircraft about 500' below us on a reciprocal heading and give him a wing waggle as he passes underneath. Traffic in sight !!



We've already mentioned the contrasts between the two Roman defensive walls and tracking the Antonine Wall there's going to be no clear path to follow, instead we will have to fly from the known site to known site of each fort, fortlet, or camp. More often than not there will be nothing to see, but at least we are following the route that the Romans took all those years ago and are experiencing where the frontier lay. Our next waypoint is the fortlet at Kinneil, built in 140AD, and there are some foundations showing here. The fortlet was small, covering less than 2/10<sup>th</sup> of an acre, and adjoined the Antonine Wall on its Northern side, occupied by around 12 soldiers. The remaining walls were defended by a 10' (3M) wide turf rampart and two small ditches. There was a gate opening out to the North of the Antonine Wall to allow access for troops or welcome friendly visitors and a causeway from the South to cross the ditches. Various coins and a cache of well-preserved shoes have been found here. Nearby we fly over the site of the Inveravon marching camp which contained a large original camp and a later second camp which occupied only part of the original one. The site has been cultivated and is partially covered in forestry. Two further marching camps are slightly further on at Polmonthill and Polmont Woods, now located under a golf course. The largest known fort on the Antonine Wall comes up a couple of miles further on at the fort believed to have been called **Volitanio** (Mumrills). It covered an area of 7.5 acres, with the Antonine Wall forming its Northern defensive wall. The Southern defences had a single ditch with a crossing causeway and the Eastern and Western sides contained four ditches. This fort had clay and stone foundations backed up with turf and rammed earth. It is believed that this fort was originally built during the campaign of **Agricola** in 81AD and rebuilt when the Antonine Wall was constructed. Several inscribed altar stones have been found nearby, dedicated to the God **Hercules** and erected by the **Ala Prima Tungrorum** (1<sup>st</sup> Wing of the Tungri) from Belgium. The remains of animals have also been found in the fort midden, or rubbish tip, including oxen, sheep, pig, red deer, and wolf. Large quantities of oyster and whelk shells were also found, indication a varied diet, as well as some hunting activity. **Volitanio** now rests under a farmer's field.



**KINNEIL FORTLET LYING BETWEEN THE TWO SMALL LAKES**





***THE SITES OF MARCHING CAMPS AT INVERAVON, POLMONTHILL AND POLMONT WOODS***



***THE SITE OF VOLITANIO FORT IN THE LARGE FIELD RIGHT OF CENTRE***

Our trip continues towards the modern-day town of Falkirk, the site of an Antonine Wall fort of 3 acres. A short distance before the town centre and along our track is Callendar Park, covering over 170 acres with a 14th Century mansion house. It also contains one of the most complete sections of the Antonine Wall itself. What appears at first glance to be a 460' (140M) long flat track bounded by

tree lined raised ground on either side is in fact the defensive **vallum** ditch that was found on the North side of the Antonine Wall. Falkirk itself is now totally built up with modern construction but occasional traces have been found during repair or development work near the town centre, including timber and ditches from Roman times. A bathhouse was also discovered although it is some distance from the fort site, which has puzzled archaeologists and historians alike. An inscribed stone was also unearthed at the fort but as the only word that could be clearly deciphered read 'built by' it's been of little help !! Woven material has also been recovered, including material made from strands of different shaded wool. Perhaps this was the first **Caledonian** tartan ? Following alongside the Forth & Clyde Canal, a 35 miles (56KM) long waterway transport route opened in 1790 which allowed seagoing vessels of the day to cut across Scotland quickly, we pass the sites of the marching camp at Tamfourhill and the fortlet on the Antonine Wall at Watling Lodge. Tamfourhill was discovered in aerial photographs and lies around 990' (300M) to the South of the Antonine Wall and Watling Lodge. There is no ground evidence to be found and it remains unexcavated in a farm field beside the canal. Watling Lodge has perhaps the best preserved section of the wall and demonstrates the massive and formidable barrier which it would have represented, along with some idea of the scale of construction that would have been required. Watling Lodge was one of the few places where the Antonine Wall could be crossed and was controlled by a guardhouse fortlet with a double gate system. North of the Antonine Wall the road from here led to the fort at Camelon around 1 mile (1.6KM) away. This latter fort was not associated with the Antonine Wall, having been constructed as part of the Gask Ridge fort system constructed between 70AD and 80AD during earlier campaigns, but remained in use as an outpost. From Camelon the Roman road headed to the Northeast and deep into the hostile territories which existed outside the frontier.



**CALENDAR PARK AND THE TREE LINED AVENUE OF THE ANTONINE WALL, CENTRE RIGHT**



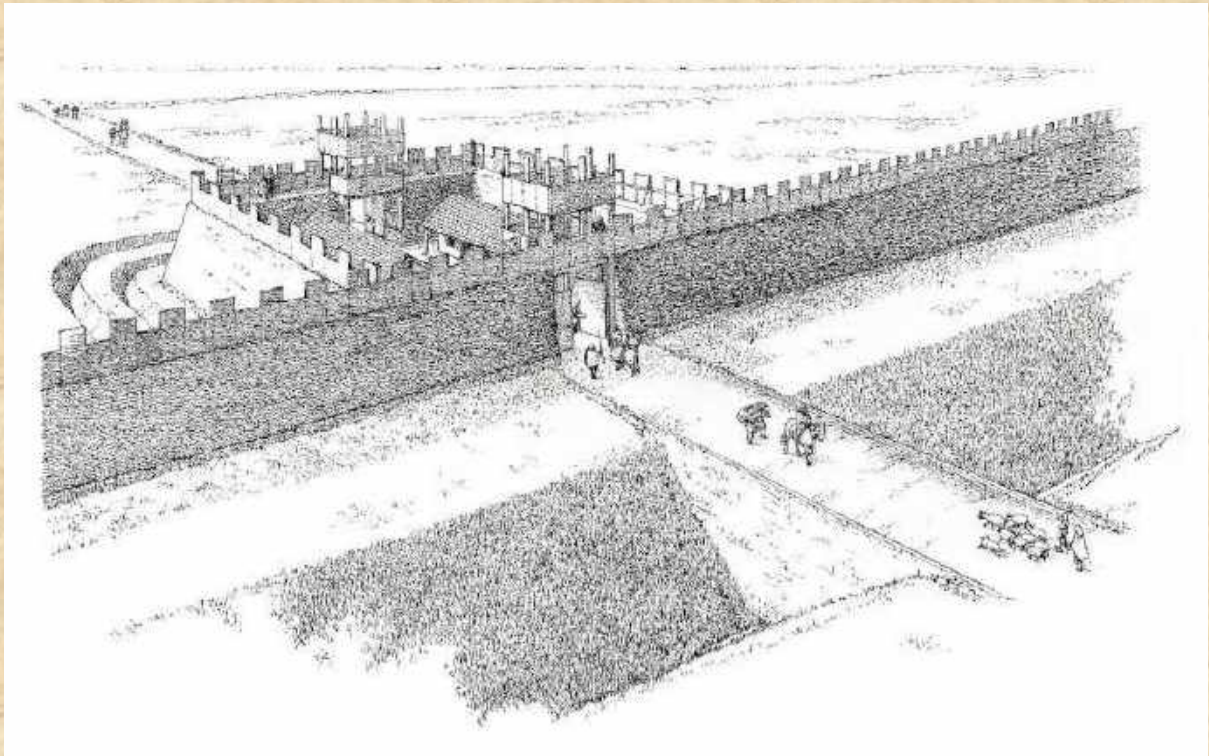
***ANTONINE WALL IN CALLENDAR PARK***



***FALKIRK TOWN CENTRE AND SITE OF A ROMAN FORT***



***THE SITE OF TAMFOURHILL CAMP, CENTRE, AND WATLING LODGE, CENTRE RIGHT***



***ARTIST'S IMPRESSION OF WATLING LODGE***



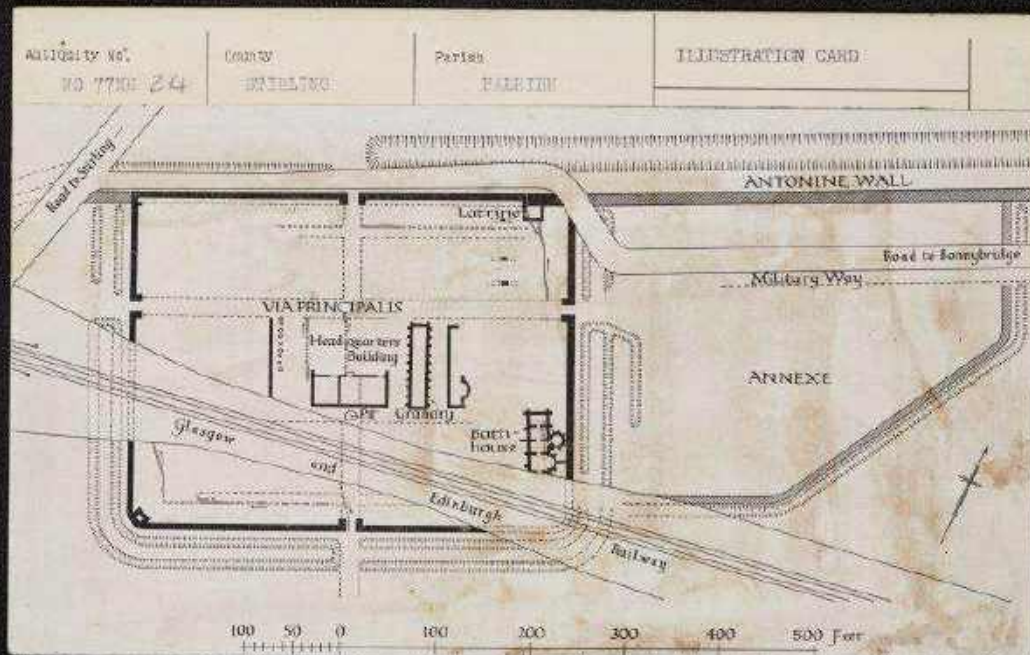
### **THE ANTONINE WALL AT WATLING LODGE**

Now well clear of the Edinburgh CTR and underneath their CTA, Edinburgh have no further information for me and suggest I change to Glasgow (EGPF) ATC. I thank them for the excellent service but elect to call Cumbernauld (EGPG) Radio instead as we will initially be looking to transit their ATZ where the Antonine Wall passes along the Northern airfield boundary. Cumbernauld advise that there is one aircraft about to depart and another in the circuit but as we still have 5 miles to run, I don't anticipate any significant issues. We fly over the site of Milnquarter marching camp, a few hundred feet South of the route of the Antonine Wall, and which now has a railway line cutting through it and with no visible remains. Seabegs fortlet and Dalnair camp close by are similarly elusive to the naked eagle eyes on board and we enter the ATZ, reporting our position to Cumbernauld. The departing aircraft is well underway now and he switches frequency to Glasgow ATC as he heads Westwards. The circuit traffic is also on the ground so we have a clear run over the Roman sites and the Antonine Wall remains within the ATZ. The site of Castle Cary fort slides below us, almost on a perfect final approach for Runway 26 at Cumbernauld had we been landing there. The first Roman settlement here was constructed by **Agricola** around 81AD and was constructed by the **Cohors Primae Tungrorum** (1<sup>st</sup> Cohort of the Tungrian) from Belgium and Netherlands. Within the ramparts, there is evidence of flat raised platforms for use by the catapult artillery weapons **ballistae** and **onagri**. The site covers 3.5 acres and the excavated remains from the early 1900's show that the ramparts of the latest fort to be built here were constructed from stone, whereas the adjoining Antonine Wall was made of earth and turf. Dated excavations also reveal that the fort was devastated in the middle of the 2<sup>nd</sup> Century AD and had probably been abandoned in 160AD. The garrison is known to have been manned by the **Legio II Augusta** and the **Legio VI Victrix Pia Fidelis** at various times during its existence. Altar stones found were dedicated to the Gods **Mercury** and

**Neptune**, as well as to several unknown Gods or Goddesses. In addition to numerous coins and pottery remains, fragments of a straight bronze military trumpet, known as a **tuba**, have also been unearthed. Today the fort is bisected by a mainline railway and you'd never know there was a fort beneath the soil. Garnhall marching camp passes by as we cross the M80 motorway, but it's now underneath local housing so there's nothing to report. We overfly the airfield with the path of the Antonine Wall clearly seen on the Northern edge. At the far Western end of the airfield is the site of Westerwood Fort which covered a 2 acre site. Built after the completion of the Antonine Wall, the Northern wall was coincident with the rampart and ditch of the Antonine Wall, the remaining fort walls having a stone foundation with turf and earth ramparts and a wooden palisade. The fort had an entrance on the Northern side to allow access through the frontier and contained several buildings and annexes, including a bathhouse. The fort was garrisoned at one time by the **Legio VI Victrix**. Sadly, the fort remains have been disturbed over the ages by the presence of a golf course, as well as the laying of national utilities pipes and cables.



**THE SITE OF CASTLE CARY FORT, LEFT OF THE MOTORWAY AND BISECTED BY A RAILWAY LINE**



**DIAGRAM OF CASTLE CARY FORT SITE MAP**



**PHOTOGRAPHS FROM THE 1902 CASTLE CARY ARCHAEOLOGICAL EXCAVATIONS**



***LINED UP PERFECTLY FOR RUNWAY 26 AT CUMBERNAULD, GARNHALL CAMP BELOW THE HOUSES***



***THE DITCH OF THE ANTONINE WALL FOLLOWS THE LEFT-HAND SIDE OF THE TREE LINE***





**WESTERWOOD FORT SITE UNDERNEATH A GOLF COURSE AND BUILDINGS**

As we pass the Western boundary of the airfield, the Air-Ground operator asks if there's any chance of a Wee Vans flypast. As a firm believer in 'one good turn' deserves another, we wheel around in a left-hand circuit to line up for a low approach and go around, and of course put on some smoke to make it a bit more impressive. We climb away overhead the airfield in an orbit as we need to get an ATC clearance from Glasgow (EGPF) ATC for the next portion of our flight and their CTR lies only 5NM to the West. I advise Cumbernauld that we'll orbit overhead at 2000' AMSL and monitor their frequency in case there's any inbound or outbound traffic that calls up and might be a factor. The Glasgow CTA also sits above us at 3000' AMSL so a 1000' buffer seems like a good plan until we can get permission from them to enter their airspace. The young lady at Glasgow ATC is contacted and asks us to Standby, with the radio frequency sounding very busy. I can pick up that the Cherokee that departed Cumbernauld ahead of us is inbound to Glasgow and there's another VFR flight coming in from the direction of Loch Lomond. There are also at least 3 IFR aircraft that I can hear being given vectoring instructions for a landing at Glasgow. We continue round overhead Cumbernauld, once, twice, three times, and commence our fourth orbit. Several more IFR aircraft have now checked in and the last one is given a clearance to a holding fix and told to expect a 10 minute delay before being vectored to final approach. As any VFR entry in to Controlled Airspace is 'subject to traffic' at the time of the request and with my situational awareness of how busy it is and how likely we are to get a clearance any time soon, I make a quick decision. We will abandon the rest of the Antonine Wall waypoints, which would take us overhead the busy approach path for Runway 23 and out to the Western extremity of the Glasgow CTR. Instead, I'll remain under the Glasgow CTA and cut up to the North of the CTR, rejoining our planned route in the vicinity of the Lake of Menteith. It's not ideal to have to cut out a part of the route, but in reality airmanship and common sense will always trump ticking the box of flying over every waypoint. I let Cumbernauld know our new plan and they thank us for our 'visit.' I manage to find a quick gap on the Glasgow frequency and let the controller there know that we no longer require a clearance and instead will monitor the frequency and select a SSR FMC squawk. Breathless, she says thanks and returns to the machine gun pace of radio calls to keep

her traffic on the move. We cross over the Campsie Fell hills and fly over the man-made Carron Valley Reservoir before reaching the flat plain near Buchlyvie. With the Lake of Menteith in sight ahead, we're back in the game !!



***NEGATIVE ON THE FLYBY GHOST RIDER, THE PATTERN IS FULL !!***



***KEEPING OUTSIDE THE GLASGOW CTR AND CTA, WE PASS OVER THE CARRON VALLEY RESERVOIR***

We switch back again on the radio to Scottish Information as we leave the horizontal confines of the Glasgow CTA and they welcome us back. We are now of course well outside the most Northerly fixed frontier that the Romans had in **Britannia** and will be continuing up along the sites of the marching camps and forts that were established in various campaigns throughout the period of the Romans in this land that they called **Caledonia**. The countryside is now noticeably wilder with mountains and rough terrain up ahead. Given the limitations in supply routes and logistical technology of their time, coupled with an aggressive and fierce guerilla warfare based group of tribes fighting against them, it's no great surprise that the Romans were never able to conquer this part of the country nor consolidate any gains. Approaching the Lake of Menteith, or Loch Inchmahome to give it its Scottish name, there were three Roman installations here. **Lindon** (called Malling today) was one of the sites used by the Romans to form the semi defensive line called the Glen Forts. There were two marching camps and a fort known to have been at this location. The Western camp can occasionally be seen in crop marks but was not visible on this flight and the fort lies only a few hundred yards to the East of it. The normal tactic for a Roman invasion was to secure an area and then advance onwards, leaving behind a small garrison of **Auxilia** in semi-permanent structures to police the natives and provide a fallback position if retreat was necessary. In some locations the structures were larger permanent forts, able to accommodate a **Legio**. Signal stations were also built at strategic locations so that messages could be passed up and down the campaign front. This fort was built in 84AD under **Agricola**, who planned to complete his subjugation of **Caledonia** using these tactics, building large forts near the entrances to the large glens (valleys) on the fringes of the mountain ranges, known as 'glen blockers' or the Glen Forts, which he could then use as a springboard to launch his invasion forces in to the Scottish Highlands. **Agricola** knew that these valley openings were used by the **Caledonii** for transport and travel and that his strategic forts could stifle and control their freedom of movement. He would eventually lead the Roman army to the very North of Scotland, as we will see during our progress. He was recalled to Rome in 85AD without conquering his objective however, passing away in 93AD with rumours of an assassination by poison by Emperor **Domitian** which was never proven. His replacement, Governor **Sallustius Lucullus**, reinforced the structure during his attempts to consolidate where **Agricola** left off. Troop shortages eventually forced him to withdraw from the Northern areas of Scotland but he still held on to Central and Southern Scotland. Unfortunately for **Lucullus**, in 89AD he fell out of favour with Rome for the heinous crime of calling a new type of army lance after himself and was recalled to Rome. His punishment was execution. The large fort at **Lindon** seems to have only been a semi-permanent facility and had a relatively brief period of occupation and can only be seen occasionally from the air when crop and land conditions are favourable. Nearby was the site of the second marching camp, also invisible.

Heading out across the Lake of Menteith, the only one officially known as a lake in Scotland as all the rest are called lochs, we skirt around the foothills of the Southern Scottish Highlands rising majestically and spreading Northwards for nearly 150 miles (240KM). We are now truly in the lair of the **Aquillae**. The site of Bochartle marching camp and fort near the picturesque town of Callendar is another Roman 'glen blocker' fort. Occupying 4.75 acres, it guarded or blocked the entrance to the Pass of Leny. The fort was surrounded on three sides by water and only accessible by land from the West. Built by **Lucullus** in 85AD over the site of the marching camp, it was abandoned by 90AD when all the encampments North of the Forth and Clyde valleys were vacated. Much of the site was subsequently destroyed for modern generations by the building of an embankment for the Caledonian Railway. The railway itself has also proved to be temporary, being dismantled under the infamous Beeching Cuts in the 1960's. We now swing to the Southeast and head to Doune. A Roman **Auxilia** fort was built here in the late 1<sup>st</sup> Century AD. It wasn't discovered until an aerial survey revealed it in 1983, hitherto there being no historical record of it to be found anywhere. It was

located between the River Teith and the Ardoch Burn, waterways which provided access inland through difficult terrain. The site was strategically important and guarded a crossing of the River Teith. Although only occupied for a brief time, the fort and surrounding area became a garrison town and would have had a network of roads, *vicus*, and other civilian infrastructure. The fort was excavated and was defended by a triple ditch, covering an area of 4.5 acres. The foundations of a hospital, a metal working workshop, and five bread ovens were also uncovered. As an oven would generally supply bread for one hundred men, it is thought that garrison would number around five hundred. The most important find was a finely engraved bronze mount for a horse harness, perhaps indicating that there was also cavalry based here. It was also discovered that the fort was burnt, most likely as a deliberate method of demolition when the Romans vacated it around 90AD. After excavation, the site was covered up once again for protection and now forms school playing fields. Doune, which in Gaelic means funnily enough 'fort,' is also home to a medieval castle, dating from the 13<sup>th</sup> Century. The castle has appeared in several films and TV series, such as Outlander and Game of Thrones. It also links nicely into the Monty Python's Roman connections in the film 'Life of Brian' as it featured in their medieval comedy 'Monty Python and the Holy Grail' variously as the Castle of Guy de Lombard, Camelot, Swamp Castle, and Castle Anthrax.



***THE LARGE FIELD ON THE SHORES OF LAKE MENTEITH HOUSED MALLING FORT AND CAMPS***



***THE SITE OF BOCHASTLE FORT AND CAMP***



***THE PLAYING FIELDS HIDING DOUNE ROMAN FORT, CENTRE, WITH THE MEDIEVAL CASTLE ABOVE***



**ARTIST'S IMPRESSION OF DOUNE ROMAN FORT**

Proceeding Southeast along the River Teith there is the site of another camp at Ochertyre, a probable crossing point for the Romans on their march Northwards. On the opposite bank is the site of a '63 acre' marching camp at Craigarnhall. This size of camp was a Roman standard measurement for camps used during campaigns and is one of the most common types found in the British Isles. Neither is distinguishable from our flight. Turning Northeast, it is the turn of Dunblane next. There were three camps here with the latest camp reusing a smaller area of the original camp. Both were discovered by aerial survey but now lie under a housing development. Following the Northern flank of the Ochills range to the South and the meandering Allan Water to the North, 4 miles (6KM) further on is the site of a fortlet at Glenbank. A small structure of only 0.25 acres, it had a single entrance facing the Northeast and had double ditch defences which were each 10' (3M) wide. Parts of the turf rampart were found within the inner ditch and historians believe this was due to an orderly dismantling of the fortlet when it was abandoned. A mile further along the Strath is the site of Greenloaning Signal Tower. Also known as Woodlea this tower provided the Romans with a line of sight between the fortlet at Glenbank and the major fort at **Alauna Veniconum** up ahead. In flat areas this was important as defensive settlements could relay information through the tower to the next fort about hostile incursions and request or send reinforcements when needed. The towers were usually made of four wooden posts rising from a stone base which was around 100' (30M) in circumference and 6' (2M) high. The tower would have a single point of entry and usually faced the communications road which ran past it.



***THE SITES OF CRAIGARNHALL AND OCHTERTYRE, CENTRE, LIE ON EITHER SIDE OF THE RIVER TEITH***



***THE HOUSING ESTATE IN DUNBLANE, CENTRE LEFT, NOW COVERS UP THE ROMAN FORT***



***THE PLOUGHED FIELD, CENTRE, WAS THE SITE OF THE GLENBANK FORTLET***



***THE SITE OF THE ROMAN SIGNAL TOWER AT GREENLOANING***

Less than a mile North of Greenloaning is the impressive structure of the fort at ***Alauna Veniconum*** (known today as Ardoch or Braco). The name ***Alauna*** is a common one in Roman Britain and means 'near a river.' To distinguish from other settlements, an additional name referring to the people or Gods from the area was usually added. In this case ***Veniconum*** is a reference to the Celtic ***Venicones***



tribe who inhabited the area. There are believed to have been three forts at this location. The first fort was built during the reign of Emperor **Flavia** between 79AD and 83AD by **Agricola** during his **Caledonian** campaign. It was then abandoned by **Lucullus** during the 90AD retreat back to the Lowlands of Scotland. In the middle of the 2<sup>nd</sup> Century AD it was reoccupied again by **Antoninus**, serving as an outpost North of the Antonine Wall and forming part of the Gask Frontier Zone. This second fort was smaller than the original fort but used many of its defences. This fort was abandoned when the Romans retreated back from the Antonine Wall to Hadrian's Wall. The third fort is only conjectured but it's possible that Emperor **Severus** made use of it in the early 3<sup>rd</sup> Century AD when he led his troops Northwards to deal with the troublesome **Caledonii** as it's known that his army was active in this area. The entire fort area is 5.5 acres in size, surrounded by five ditches of impressive size. The multiple ditches, from at least two entrenchments, remind us of the multiple ditch structures found in significant prehistoric and Iron Age hill forts. The **principia** is easily recognisable in the centre of the fort area but no other internal buildings have yet been identified. Fragments of roof tiling and lead flashing have been found in this area. Unusually the builders of the 2<sup>nd</sup> fort didn't destroy the previous ditch structure but rather placed a smaller fort inside it and then added their own subsequent ditches to make it impregnable. The site of a signal tower structure was also found at the Southeastern part of the fort, which would be used to communicate with the station at Greenloaning and the next fort in the chain to the Northeast. The fort would have hosted a **Legio** during the initial building and rebuilding periods but then would house an **Auxilia** garrison as the **Legio** advanced. The garrison was held for some time by the **Cohors Primae Hispana** (1<sup>st</sup> Cohort of the Spaniards), an element of the **Legio IX Hispana**. They are believed to have first been deployed to **Britannia** in 122AD and were last recorded in 222AD, so it's entirely possible that they were residents during either the **Antonine** or **Severan** campaigns, or even both.



**THE HIGHLY VISIBLE DITCH STRUCTURES OF ALAUNA VENICONUM**

We now enter the area of the main Gask Ridge, lying North of the Ochil hill range and South of the Central Highlands. This ridge commands a strategic position overlooking both the Highland glens to the North and the flat land, or Strath, which is between Dunblane and the city of Perth to the Northeast. On the ridge the Romans built a series of forts, fortlets, watch towers, and signal stations along a 10 mile (16KM) stretch. Constructed by **Agricola** and his replacement **Lucullus**, in some ways the concept was a predecessor of both the Antonine and Hadrian Walls, although there was no actual wall constructed. Acting as a go between in the 3 miles (5KM) distance between the forts at **Alauna Veniconum** and Kaims, Blackhill Woods signal station was a timber structure defended by two ditches encircling it along with a turf revetted gravel rampart. A marching camp from the subsequent **Severan** campaign was also adjacent to it. A further watch tower and signalling station was located at Shielhill, 1 mile (2KM) further on, before reaching Kaims. Apart from annotations on Ordnance Survey maps and references in historical records, there is no sign of these towers. Kaims fortlet covered 0.25 acres and was close to the Roman military road which ran the length of the Gask ridge. It was defended by a 3' (1M) deep ditch and an 8' (2.5M) high rampart, which would have been topped with a wooden palisade. The interior of the fortlet was paved with flagstones. There is a single entrance with a paved causeway which led to the Roman military road. The remains of a circular 100' (30M) circumference ditch a mile past Kaims at Westerton indicate that this was the site of another signal station. There are no known Roman remains between here and the marching camp at Dornock, 3 miles (4KM) to the North, but given the distances between other parts of the Gask Ridge structures, it is highly likely there are further sites which just haven't been discovered yet somewhere in between. Dornock lies on the banks of the River Earn and was most likely a crossing point of the river. Some of the site has been lost to erosion in the riverbanks but aerial surveys and other exploratory work found some defensive ditches and an approximate camp shape. During our flying visit the field had been cropped with wheat and nothing could be seen.



**THE ROMAN MILITARY ROAD ON THE GASK RIDGE**



***ON THE FAR RIGHT OF THE PLANTATION CAN BE SEEN THE SQUARE KAIMS FORTLET FOUNDATIONS***



***NESTLED IN THE LOOP OF THE RIVER EARN LIES THE SITE OF DORNOCK MARCHING CAMP***

We turn back to the East, initially following the River Earn and ask Scottish Information if they have any activity status for the parachuting operation at Strathallan airfield which will be in the vicinity of the next 5 Roman waypoints. They are confirmed as being active and taking advantage of the great weather conditions so we elect to give them a wide berth to the North and skip these waypoints. There are no discernible structures to see at any of them in any case so good airmanship wins the day again, as it always should. We rejoin our route at the site of Ardunie signal station, now covered by forestry. Uniformly spaced along this section of the ridge, the standard designed Roundlaw signal station would have been next in view had it been visible in this modern age. Continuing along the path of the Roman military road, we do at last see the remains of a tower as several circular ditches are seen in a forest clearing, the site of Kirkhill signal station. Although not particularly clear in the photograph taken, the circular ditch and platform shapes could be clearly seen with the eyes of an **Aquila**. Half a mile further on along the road and Muir O'Fauld signal station is in a similar condition, a forest clearing with concentric rings visible. Gask House signal station, Gask House marching camp, and Witch Knowe signal station are all invisible but Moss Side signal station is marked by a circular discoloration in a farmer's field adjacent to the military road. Thorny Hill signal station reverts to type, buried under agriculture, and the Midgate fortlet close by is hidden from view by forestry. At Westmuir signal station, we reach the end of this part of the Gask Ridge frontier and turn South to the two marching camps located at Forteviot, lying between the River Earn and the Garvock Burn. The larger original camp is probably from the times of **Agricola** but the second smaller camp nearby has been dated to the time of **Antoninus**. With no visible evidence here either, we continue heading South and aim for our refuelling stop at Fife Airport (EGPJ).



**IN A FORESTRY GAP WE FIND THE KIRKHILL SIGNAL STATION REMAINS**



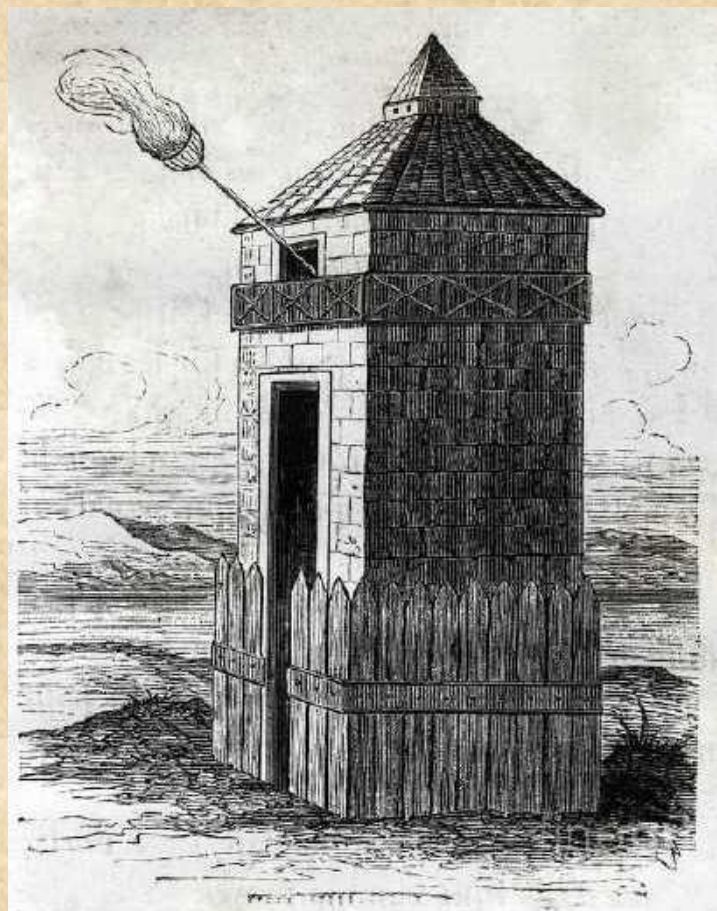
***MUIR O'FAULD SIGNAL STATION IN A FORESTRY GAP***



***CIRCULAR DISCOLOURATION IN BOTTOM FIELD BY ROAD SHOWS US MOSS HILL SIGNAL STATION***



***THORNY GATE SIGNAL STATION, MIDGATE FORTLET, AND WESTMUIR SIGNAL STATION ALL LIE HERE***



***ARTIST'S IMPRESSION OF A ROMAN SIGNAL STATION***

We approach the town of Kinross and the sparkling waters of Loch Leven with its group of islands in the centre. This takes us between the busy microlight airstrip at Balado to starboard and the gliding site at Portmoak on the Eastern side of Loch Leven off to our port. Both are very busy airfields so we keep a good lookout for both powered aircraft and gliders. A few gliders can be seen in the distance taking advantage of the ridge soaring opportunities on the Lomond Hills which rise above the Loch. On one of the Loch Leven islands can be found Lochleven Castle, built around the 14th century. Its main claim to fame is being used as a prison when Mary, Queen of Scots, was incarcerated there for a year in 1567 following an uprising against her. Forced to abdicate in favour of her son, James VI of Scotland, whilst imprisoned she escaped with the help of her gaoler's family. After an unsuccessful attempt to regain her throne, she fled South to seek protection from her 1<sup>st</sup> cousin once removed, Queen Elizabeth 1 of England. Although civil towards her, Elizabeth saw Mary as a threat to her own throne and had her confined in various houses and castles in England over the next 18 years. Finally Mary was found guilty of plotting to assassinate Elizabeth in 1586 and was beheaded at Fotheringhay Castle, catapulting her into the romanticised version of the history books forever. Bidding Scottish Information a good day for now, we contact Fife (EGPJ) Radio for the airfield information and their parachute jumping status, as it has a busy 'meat bombing' operation at weekends. The Air-Ground operator confirms the site is currently active with a parachute aircraft climbing overhead to 10,000' AMSL. As a regular operator here I know the drill and position to the South of the parachute zone and orbit in a lazy racetrack along the Fife coast between Dunfermline and Leven, taking care not to enter the Edinburgh CTA just to the South. After one racetrack is completed the Air-Ground operator reports that the airfield is reopening and I position to join on a wide left base for Runway 24 at Fife. The parachute aircraft is on a non-standard right base so I carry out a couple of weaving turns, or maybe they were G-WEEV'ing runs, to let him land first. A curved approach close in to the airfield to avoid the built-up area of the neighbouring town of Glenrothes is a published noise abatement procedure so I of course oblige and land safely. A short taxi to the fuel pumps to refuel, a quick leg stretch and comfort stop, and it will soon be time to get underway on our last leg.



***LOCH LEVEN AND KINROSS***



***ON A LAZY RACETRACK OVER THE FIFE COAST AS WE AWAIT THE PARACHUTISTS TO LAND***



***CURVED APPROACH TO RUNWAY 24 AT FIFE OVER THE GOLF COURSE. FORE !!***





**ANOTHER LEG OF D2D 2024 COMPLETED BY WEE VANS**



**MISSION PATCH ?**

**LEG 3 STATISTICS**

	<b>DISTANCE</b>	<b>ELAPSED TIME</b>	<b>AVERAGE GROUND SPEED</b>	<b>FUEL BURN</b>
<b>PLANNED</b>	386NM	2Hrs 45Min	140Kts	96L
<b>ACTUAL</b>	428NM*	2Hrs 57Min	145Kts	109L

\* Includes our 'interception mission, orbiting over Colinski, and the racetracks over Fife.



Generated by SkyDemon on 2024/09/09 22:52 Z.

ACTUAL ROUTE FLOWN

#### LEG 4: FIFE – PRESTWICK

##### ***Airborne 1606Z (1706L) – Landed 1842Z (1942L)***

Just under an hour after landing it was time for wheels up again as we departed from Runway 24 at one of my favourite airfields, managed by the enthusiastic and friendly Jim Watt. Turning right to pass well clear of the gliding activity at Portmoak off to the West we climb up in the late afternoon sunshine over the Lomond Hills and set course towards the shiny River Tay to the North.

Approaching the point where the River Earn flows in to the River Tay, we pass by the marching camp site at Abernethy, long obliterated by farming activity with a railway laid over the top of it for good measure. To the West of the city of Perth, aerial photography discovered a small rectangular camp at Lamberkin, possibly used as a site to train soldiers how to build camps as it is exceedingly small and realistically not capable of housing any tangible body of troops. The site had the main A9 road running through it but since the survey first detected it the road has been widened and expanded in to a major trunk road with a cutting which has destroyed most of it. We enter the Gask Frontier zone again, passing by the site of Peel signal station in a heavily ploughed field. Turning back to progress along the Roman invasion routes we pass over another field with no sign of remains, although Easter Powside marching camp once stood here, almost the furthest extremity of the Gask frontier. It's another small camp and excavations have revealed that the defensive ditch had a V shaped groove at the bottom of it known as an 'ankle breaker,' as that was the intention to inflict on any foe trying to cross it. It's believed that the camp housed workers who built the main military road from the Gask Ridge to the fort at **Tamia**. We select the frequency for Perth (EGPT), perhaps the busiest GA airfield in Scotland, and monitor their frequency in case there's anything around to affect us. The airfield Air-Ground operation closes at 1600UTC so it would be blind calls only from anyone in the vicinity. I report my position and intentions but it's all quiet for now. As we near the banks of the River Tay I can see the attraction of placing a fort here. **Tamia**, which was also called **Bertha** by early historians, was built around 83AD as a supply fort using the highest navigable point on the river at that time, and its role would be to support Roman expeditions into the Northeast of **Caledonia** by **Agricola**. It was also used in the later Antonine and Severan campaigns. The site covered 9 acres and has suffered some loss over the years due to river erosion. Excavations have revealed an 11' (3.4M) wide defensive ditch which is 5.5' (1.7M) deep with a berm over 30' (9.1M) wide located behind the ditch backed with a 21' (6.4M) turf rampart system. Across the river are the marching camps of Scone Park and Grassy Walls. Scone Park is one of the '63 acre' camps, whilst Grassy Walls lay on the main Roman road leading to the Northeast. Both camps were very close to the Roman fording point on the River Tay.



***THE RIVER EARN AND TAY NEAR ABERNETHY MARCHING CAMP***



***THE CITY OF PERTH AND THE RIVER TAY***



***THE SITE OF TAMIA (BERTHA) FORT IN THE GREEN FIELD ON THE BOTTOM RIVER BANK, CENTRE***



***THE SITES OF GRASSY WALLS AND SCONE PARK LIE ACROSS THE RIVER TAY***

Skirting round the Perth ATZ which now had a microlight active in the circuit, we point towards ***Pinata Castra*** (Inchtuthill) which lies further up on the River Tay whilst leaving the Perth frequency and returning to the comfort of Scottish Information once more. We are welcomed back and they comment that it seems we are having a long day. I heartily agree. ***Pinata Castra*** was the site of a Legionary fort and was built in 84AD as a headquarters for the forces of ***Agricola*** in his fight against

the **Caledonii**. It covered 53 acres and is believed to have taken just under a year to construct. At least two temporary construction camps were built to house the **Legio** whilst they undertook the building of the main fort. An additional two nearby marching camps were most likely used to accommodate the quarrymen who would dig the stone for the fort and to provide them with a protective camp manned by soldiers. The fort had a turf rampart 13' (4M) wide, with a stone wall at the front of it. Ahead of that lay 16' (4.9M) wide berm and then a 20' (6M) wide ditch which was 6.5' (2M) deep. The outside of the ditch had a counterscarp which was 22' (6.7M) wide and 3.5' (1.1M) high. **Cervuli** (sharpened pointed tree branches) were stuck fast in to the ground of the ditch to impede enemy soldiers, if they made it that far. The name **cervuli** comes from the Latin for a deer's pointed antlers. Internal buildings included the **principia**, officer's houses, 64 barracks, 6 granaries, storage sheds, military hospital, drill hall, and construction workshop. The fort was constructed by the **Legio XX Valerio** and was abandoned by them when **Legio II Augusta** left **Britannia** in 86AD, requiring the Roman troops to withdraw from **Caledonia** and bolster defences further to the South. The fort had not been fully completed and was systematically demolished when it was vacated. Assorted items recovered from the site, such as nails and other sundry items, are found in the National Museum of Scotland, Edinburgh.



***THE SITE OF THE EXTENSIVE FORT AT PINATA CASTRA (INCHTUTHILL), CENTRE***



***AERIAL SURVEY PHOTO OF PINATA CASTRA***



***RECONSTRUCTION OF PINATA CASTRA***



#### **BEAKERS AND GLASSWARE FROM PINATA CASTRA**

Heading Southeast, we fly over the meeting point of the River Isla and the River Earn at Cargill. A fort and a fortlet have been identified here with the fort originally constructed around the time of **Agricola** to guard the crossing at the River Isla. The fort had the standard ditch and rampart defences and occupied 5 acres. Internal timber buildings included a granary which had a loading platform to enable the loading and offloading of goods from carts. It is also believed that it was built on the site of a native settlement which predated the Romans and the Roman site was abandoned in 85AD. The fortlet nearby was most probably erected when **Pinata Castra** was constructed so that a smaller detachment could oversee the river crossings which no longer required a large fort with reinforcements readily available from its larger neighbour. Flying over Lintrose camp next there is nothing to be seen. It was discovered in 1754 but disappeared in 1925 when a bungalows and gardens were constructed on the site. We continue North-eastwards for 8 miles (12KM) along the flat river plain of Strathisla to our next site and it's easy to see why this was the route chosen for a military road. Arguments exist as to whether Cardean fort that occupied the site here was built by **Agricola** or by **Lucullus** and debate still also rumbles on as to whether there is another fort awaiting discovery between it and Strathcaro where the next fort site lies at a distance of 14 miles (23KM) which is at the extreme distance for a Roman marching day. The clever money points to the fort being from the latter period and being abandoned when **Pinata Castra** was also demolished and vacated in 90AD. The ramparts and ditch enclosed an area of 8 acres and contained wooden buildings. Five barrack blocks have been identified and a 100' (30M) by 30' (9M) granary was also located. 'Treasures' excavated included coins, iron spearheads, iron javelin heads, a silvered bronze horse ornament and bronze bust of the Goddess **Minerva**. The horse ornament may signify that



cavalry were based here but it should be remembered that horses were found in most forts, serving as officer's mounts or pack animals. Also in the vicinity of Cardean was an exceptionally large marching camp, which was subsequently used at a later date to house a smaller one, built within the confines of the larger one, as seems to be a Roman habit.



***THE MEETING OF THE ISLA AND THE EARN, SITE OF THE CARGILL FORT AND FORTLET***



***A COMPLEX OF BUNGALOWS AND GARDENS NOW HIDE THE SITE OF LINTROSE CAMP***



#### ***SITE OF CARDEAN FORT AND MARCHING CAMP***

Several miles as the eagle flies brings us to the site of Eassie marching camp, another of the '63 acre' sites which was built by Emperor **Severus**. Located 8 miles to the East Northeast is another '63 acre' marching camp at Lunanhead. Turning North here there is a large camp at Battledykes, also known as Oatlaw, and a few miles North of the town of Forfar. Tales are told of bloody battles being fought in this area over the various times of the Roman campaigns, and whilst the better equipped Romans prevailed in the end, they never fully conquered the **Caledonii**, and indeed never stayed long here. The camp is believed to be from the time of the final campaign led by **Severus** and would have held between 50,000 and 60,000 men. Heading Northwards once more towards the mountains, the fort and marching camp at Inverquharity were used to guard the entrances to Glen Prosen and Glen Clova, both of which provided routes into the Highlands and the lairs of the **Caledonii**. The fort, a 'glen blocker,' was built by **Agricola** along with a nearby marching camp. It was one of the smallest forts to be constructed as part of this campaign. Neither had a long life and the camp was demolished by backfilling the defensive trenches. A nice slow left turn through 180 degrees and we point back to the East, coming up to our next marching camp at Finavon after 5NM distance. Finavon was a camp covering 37 acres and is bisected by the modern-day A90 trunk road. Nothing is known about its date of construction nor the part it played in Roman conquests. Only a few hundred yards further on is the site of Marcus marching camp, which is another in the '63 acre' series. There is a small annexe attached to its Southern boundary, a feature found in many of this type of camp. Another common feature is that each of the longer sides of the camp have two gates whilst the shorter sides only have one each. The gates are guarded by **titulum**, detached segments of rampart which serve as a fortification and makes it difficult for enemies to rush the gates.



***EASSIE CAMP IN THE THIN YELLOW FIELD AT CENTRE***



***LUNANHEAD CAMP AT THE FRINGES OF FORFAR***



***THE HUGE CAMP AT BATTLEDYKES WHICH COULD HOLD OVER 50,000 TROOPS***



***INVERQUHARITY FORT ON THE RIVER PROSEN***



***THE SITE OF FINAVON CAMP UNDERNEATH THE A90***



***MARCUS CAMP, SOMEWHERE UNDERNEATH THE LIGHT COLOURED FIELD AT CENTRE***

You have to hand it to the Romans; they certainly knew how to pick a good site for their camps and forts. Stracathro is no exception, with commanding views over not only the plain of Strathmore around it but also up in to the valley of the River Esk and the Northward route via the Cairn o' Mount which leads into the Highland hinterland. It was a large fort covering 6.5 acres, and the main frontage faced to the Northeast along Strathmore. The fort was capable of housing a couple of **Auxilia** units or a pair of **Legio Cohortes**. It was almost certainly built by **Lucullus** around 85AD. Mint condition coins dating from 86AD and Samian pottery from the same era have been uncovered in the fort site. The fort was for a short while the most Northernmost permanent outpost not just in Roman Britain but in the whole of the Roman Empire. This was short lived however as it was abandoned when the Romans retreated from the area. Flying along to our next waypoint, we pass the disused airfield at the former RAF Edzell to our port side. Built initially during WW1, it was closed in 1919 but was taken over for civilian flying activities. In 1940 it was requisitioned again by the RAF and put in to service as both a Coastal Command reconnaissance unit operating Avro Anson, Armstrong Whitworth Whitley, and Vickers Wellington types, as well as hosting an aircraft maintenance facility. Over 800 aircraft were held on the airfield in reserve when the war ended. After around 10 years as a Royal Auxiliary Air Force base operating Supermarine Spitfire and then de Havilland Vampire jet fighters, the RAF closed the station in 1957. It passed back in to civilian usage and was used as a motor racing circuit, with the future World Grand Prix champion Jim Clark winning one of the last races on the circuit before it closed in 1959. The RAF reopened the base in 1960; however they were not the occupants as it was manned by the US Navy who operated a High Frequency Direction Finding (HFDF) station as part of a worldwide network to locate various targets. This facility was joined in 1966 by an additional unit from the US Air Force (USAF) who operated a radar sensor as part of the US Spacetrack system which helped to track missile launches from China and Southeastern Russia until the system was deactivated in 1976. In 1982 the USAF unit was reformed and provided low altitude space surveillance until it was again deactivated in 1976. Its final reincarnation was in 1993 and it operated sensors for a new Low Altitude Space Surveillance System (LASSA) until it was finally deactivated and RAF Edzell closed for good in 1977. At its height three thousand personnel worked at the base. The remains of the distinctive Circular Disposed Antenna Array (CDAA) equipment are still visible at Edzell from the air. A few minutes later and we pass another disused RAF station on our starboard side, RAF Fordoun. Built in 1942 it was used as a satellite for the training base at RAF Montrose, mainly seeing operations by Airspeed Oxford twin engined training aircraft. In 1944 several Douglas Boston aircraft were sent to the airfield as decoys to try and deceive German military intelligence about invasion plans. Thereafter it became a maintenance unit and also stored ammunition until it closed in 1950. Civil aviation activities then took place at the base, such as parachuting and light aircraft flying, but by the early 1990's these had waned and the airfield was sold to a company for the storage of North Sea oil pipes, which continues till this day.



***STRACATHRO FORT SITE IN THE GREEN FIELD LEFT OF CENTRE***



***THE FORMER RAF STATION AT EDZELL, WITH THE CIRCULAR DISPOSED ANTENNA ARRAY COMPLEX***



**FORMER RAF STATION AT FORDOUN, NOW STORING OIL PIPES**

One day's **Legio** march further Northeast from Stracathro is the next marching camp at Raedykes. As we will be looking for an entry in to the Controlled Airspace around Aberdeen (EGPD), I ask Scottish Information if they can pass my requested routing for the transit as we should be there in around 10 minutes flying time. That's just a little quicker than the Romans of course !! Scottish advise that the clearance will be subject to traffic and that I can change frequency to Aberdeen Approach. I check in and request a clearance at 2500' and I'm given a discrete squawk and told to expect a clearance in a few minutes. The frequency doesn't sound too busy but a great proportion of the traffic they control are helicopters going to and from North Sea oil rigs which will be on a different ATC frequency. As we are looking to track up the Western side of their airspace, we should be out of their way hopefully. I soon get the desired clearance to route within their CTA and CTR not above 3000' AMSL under VFR via Stonehaven VRP, Inverurie, and Inch VRP. Perfect !! We overfly Raedykes marching camp and are given a Radar Control service as we are now inside Controlled Airspace. The camp was initially built during the **Agricola** campaign but is also thought to have been used by **Antoninus** and **Severus**. The rampart of the camp encloses the summit and Eastern slopes of Garrison Hill and overlooks the Cowie Water, which flows into the North Sea at Stonehaven. It covered 93 acres and would be able to accommodate a full **Legio** of around 6,000 troops. The camp had six gateways, all protected by **titulus** outworks. In the summer of 84AD, **Agricola** defeated a massive force of **Caledonii** led by a chieftain called **Calgacus** at the famous Battle of **Mons Grapius**. The name **Calgacus** is believed to come from the Gaelic word for prickly or fierce. The battle is mentioned in writings by the Roman **Tacitus** but his account does not give a precise location, merely a description of the terrain it took place on, which included a plain and a hill. Numerous different sites have been offered as the true location, including the area around Raedykes, but there has been no battle site ever uncovered in any location. We will visit a more likely location later in the flight so I'll leave the battle details until then. A few hours march of Raedykes, the Romans built another camp at Normandyke. This camp overlooks the ancient ford across the River Dee and covers 106 acres. It dates from either the **Antonine** or **Severus** campaigns. Today the fields around the site are all cultivated and no remains are seen. Passing Aberdeen Airport a few miles to the East we arrive overhead Kintore where two



marching camps were centred. Similar in size to Raedykes, Camp 1 is defended by U-shaped ditches. Half a mile away was Camp 2 but was limited by the terrain to around 30 acres and was defended by V-shaped ditches. The camps were extensively excavated and are held up as a model of how they should be conducted. Previously camp excavations conducted globally had revealed little of the interior of any camps, but the more methodical approach taken here revealed 180 field ovens, 60 rubbish pits and other non-Roman features. The ovens were particularly enlightening as they indicated a considerable variation in design, size, and fuel use. The variances perhaps came about due to the different regimental units and the nationalities and cultures of the soldiers using the camp. The ovens also exhibited evidence of multiple firings which challenged a previous misconception that troops only stayed one night in a camp before moving on.



***THE SITE OF RAEDYKES CAMP***



***THE SITE OF NORMANDYKE CAMP***



***ABERDEEN AIRPORT, ONE OF THE BUSIEST HELICOPTER OPERATIONS IN THE WORLD***



***SITE OF THE TWO MARCHING CAMPS AT KINTORE***

Turning left at Kintore towards the VRP at Inch, we head for a distinctive isolated 1732' (528M) mountain called Bennachie, with the most distinctive peak on it being the 'Mither Tap'. The 'Mither Tap,' or Mother Top, has an Iron Age fort on its summit but unusually the rocks forming this fort have not been vitrified unlike the widespread practice found in the majority of hill forts. The Bennachie range is believed to have been the most likely location for the Battle of ***Mons Grapius*** which took place in 83AD or 84AD. The Roman writer ***Tacitus*** wrote the historical account of the battle, but some of the details should perhaps be taken with a pinch of salt as his father-in-law, ***Agricola***, was the Roman General in charge. The General sent ahead a fleet of ships to panic the ***Caledonii***, and the Roman ***Legio*** infantry troops along with ***Auxilia*** marched to the site of the battle, which they found occupied by the enemy. Usually the ***Caledonii*** would not fight in open combat, even with a vast numerical advantage, preferring instead to conduct guerilla and ambush attacks, a strategy which to be fair gave them some limited success. By marching on the granaries of the ***Caledonii***, the Roman ***Legionum*** had forced them to face a stark choice, fight or starve over the winter. They chose to fight. According to ***Tacitus***, 8000 ***Auxilia*** infantry formed the centre of the Roman formation with 3000 ***Ala*** cavalry on the flanks. In reserve were an undetermined number of Legionnaires. It is estimated however that up to 17,000 Roman troops were available. The number of ***Caledonii*** was put at 30,000 by ***Tacitus***. The native front ranks were assembled on the flat land below the high terrain with their remaining ranks rising up the hillside in a horseshoe formation. ***Caledonii*** chariots were operating in the no man's land between the two opposing armies. After a brief exchange of missiles, the Roman ***Auxilia*** launched a frontal attack, using four ***Cohortes*** of ***Batavian*** troops and two ***Cohortes*** of ***Tungri*** swordsmen. The ***Caledonii*** front ranks were cut down and trampled as the Romans worked their way forward. The top ranks of the ***Caledonii*** attempted a flanking manoeuvre but were in turn outflanked by the Roman ***Ala*** cavalry. With the battle turning in to a rout, the ***Caledonii*** fled to the nearby woodland to seek shelter and a defensive position but were ruthlessly pursued by fast moving Roman units. The Roman Legionnaires had not been required to fight but no doubt wanted to take part to ease the boredom of serving in ***Britannia***. ***Tacitus*** reported that 10,000 ***Caledonii*** were killed for the loss of only 360 Auxiliary troops. Over 20,000 ***Caledonii*** retreated in to

the woods but most managed to evade the pursuing forces. The following morning the Roman scouts could find no sign of the escaping *Caledonii* who had simply faded away during the night into the glens and mountains, to live to fight another day. Although it was claimed in some quarters that the Romans had now totally conquered the whole of *Britannia*, the truth was somewhat different.



***THE MOUNTAIN BENNACHIE, SITE OF THE MONS GRAPIUS BATTLE PERHAPS ?***



***IRON AGE FORT ON THE 'MITHER TAP' OF BENNACHIE***

Leaving the arguments about the battle behind, we turn Northwards and leave Controlled Airspace just to the East of the Inch VRP, with Aberdeen changing us to a Basic Service and asking us to advise leaving their frequency. We pass by the marching camp sites of Durno and the two camps at Ythan Wells. None are visible nor extraordinary from any of the others that we have seen on this leg of the journey. Having said that, Durno is reported to have occupied an area of 144 acres and could easily accommodate two *Legionum* and several *Auxilia* units, meaning that it might have been the assembly point for the *Mons Grapius* battle and would reinforce the claim that it was fought at Bennachie, which lies only a short distance away. Perhaps we will find the evidence someday but I wouldn't hold my breath. We pass a microlight crossing underneath us over the Highland landscape, which also displayed on SkyDemon via the link with my SkyEcho ADSB equipment. Once clear of him I thank Aberdeen warmly for their assistance and change back to Scottish Information once again. They are starting to feel like a comfortable old pair of slippers !! We continue up towards the Banffshire coast near Boyndie, which has a possible marching camp or fort there. There's nothing to see of course and there's really no compelling evidence one way or another if it was actually Roman or not, but as good aviation friends live nearby then it's a reasonable supplementary visit so we can wave hello as we fly by their house, which they run as an excellent bed and breakfast in case you're ever in the area. A stone's throw away is Boyndie Drome, formerly known as RAF Banff. Built in 1942, it was turned down by RAF Bomber Command and initially used for flying training duties. When the training squadron was disbanded in 1944, the airfield passed to RAF Coastal Command. Six multinational squadrons, including a Royal Norwegian Air Force squadron, were formed as the Banff Strike Wing under the command of the Hon Max Aitken, a Canadian born Group Captain and the son of the press magnate and WW2 Minister of Aircraft Production, Lord Beaverbrook. The squadrons operated Mosquito and Beaufighter aircraft on anti-shipping and anti-lighthouse attacks up and down the coast of Norway using rockets and cannons inflicting heavy casualties on German shipping and naval forces, including the loss of many thousands of tonnes of iron ore bound for the German war effort. Operating from RAF Banff and the satellite airfield at nearby RAF Dallachy the crews experienced high losses, with over 80 aircrew losing their lives during the 9 months that the Wing operated for. My friend, who has just recently retired as an Ambulance aircraft pilot in Scotland, now operates a 500M grass strip on the former RAF station.



**FORMERLY RAF BANFF, IT'S NOW HOME TO A WIND FARM, AND A 500M GRASS AIRSTRIP**



***STILL SURVIVING, IF ONLY JUST. THE RAF BANFF CONTROL TOWER***



***THAT'S NOT A BEAUFIGHTER !!***

**BANFF STRIKE WING - THEN AND NOW COLLECTION**



**A LOW FLYING MOSQUITO COLLIDED WITH A GERMAN SHIP MAST, BRINGING IT HOME TO BANFF !**



**STRIKE WING ON THE TAXIWAY – AND THE SAME VIEW TODAY**



**ROCKET ARMED MOSQUITOS FROM THE TOWER – AND TODAY**

**RAF BANFF STRIKE WING OPERATIONS**



**80 AIRCREW LOST THEIR LIVES – LEST WE FORGET**



With a poignant dip of the wing in salute to the heroes of the Banff Strike Wing, we set course again for the Romans, heading Southwest to the sites at Muiryford and Auchenhove camps. Muiryford marching camp covered 120 acres and was able to control the valleys of the River Isla and the River Deveron. Auchenhove was smaller and dated from the time of **Agricola**. Nothing remains to be seen of either site today. On our way to the next camp at Bellie we overfly the former RAF airfield at Dallachy, the satellite for Banff and used by two squadrons of the Banff Strike Wing at any one time. Opened in 1943, it too was originally in use as a training base with Airspeed Oxford aircraft. It became an operational base in late 1943 hosting Coastal Command squadrons before joining the Banff Strike Wing operation in 1944 with a Royal Canadian Air Force squadron and Royal New Zealand Air Force squadron, both flying Beaufighter aircraft in the shipping strike raids. Later, radar equipped Vickers Wellington would operate in maritime reconnaissance and bombing roles. After the war, the airfield was occasionally used by light aircraft until the 1980's. Today the runways are either dug up or house industrial units and assorted machinery associated with the North Sea oil industry. We pass close to Bellie marching camp after another wing drop salute carried out at Dallachy. Built near the banks of the River Spey, the course of the river has changed somewhat in the last 1800 years and the West side of the camp has been lost to river erosion. The camp was approximately 30 acres in size and was built most likely by **Agricola**. Comprising of standard ditches and rampart construction, from excavations of the defences evidence of silting up by natural forces would indicate the place was simply abandoned to nature and not destroyed when the Romans vacated it. Bellie holds the honour of being the most Northerly Roman camp ever found.



**THE SITES OF THE MARCHING CAMPS AT MUIRYFORD AND AUCHENHOVE**



***FORMER RAF DALLACHY AIRFIELD***



***BELLIE CAMP NEAR THE RIVER SPEY***



**CROP MARKS ON BELLIE CAMP FROM AN AERIAL SURVEY**

Crossing the River Spey near Fochabers, home of the famous Baxter's soup company, we have no time to think of our stomachs yet as we're so close to finishing the challenging task we've set ourselves. Adjacent to the Glen Lossie whisky distillery lies the site of Thomshill camp. The camp was estimated to have been 4 acres in size but centuries of ploughing have destroyed most of the remains so archaeologists have little hard evidence to base their facts on. It may even have been a fort as it is quite a small area for a camp. Based on what has been found, it is believed that it dates from the time of **Agricola** and was one of the Moray forts used to push Roman exploration up in to the North of **Caledonia**. Based on other known locations with similar features, the possibility of being an **auxilia quingenary** fort accommodating a **Cohors** of 500 men is a reasonable assumption. The site is also close to an Iron Age settlement at Birnie, a pattern which was common for other Roman forts built in **Caledonia**. It was also likely used as a **castra hibernia** (winter accommodation), as these facilities were mentioned as being used by **Agricola** in this area after the Battle of **Mons Grapius**. Close by Thomshill, near Birnie, a large hoard of Roman **denarii** coins from the **Severan** era were found by a metal detectorist. The 250-300 coins were found in the remains of a large Iron Age pot. A further undamaged jar was found in a later excavation less than 25' (8M) from the original find and this was found to contain several hundred coins from the late 2<sup>nd</sup> or early 3<sup>rd</sup> Centuries AD. The site contained the remains of many round houses but their age isn't confirmed and the reason why so many Roman coins came to be found here is still a mystery. Whilst approaching Birnie I contact Lossiemouth (EGQS) Approach in case there's any traffic around. I won't be entering their ATZ in any case, only the MATZ, but you never know here if there's a pair of 'Q' Typhoons just about to get airborne on an air policing mission at a vast rate of knots. There's no answer so I make a blind call about my intentions anyhow. After a few minutes, a slightly grumpy sounding controller asks the aircraft on the frequency, i.e. me, to contact them on Lossie Departures frequency. I do so and they give me a mild admonishment as that's the frequency you're apparently supposed to call on for MATZ penetration. It doesn't make any logical sense to me as Approach is surely for 'inbound' aircraft and Departures for those leaving the airfield, but no point in losing any sleep over it and I

consider myself to have been 'educated.' We head for the promontory of Burghead, jutting out in the glassy Moray Firth. There is no known Roman settlement here but an impressive Pictish fort on the headland was once wrongly believed to be of Roman origin. The Burghead Bulls, six elaborately carved slabs depicting bulls came from here and one is in the British Museum. Over thirty bull slabs were actually discovered in the fort area when the town was being redeveloped in the 19<sup>th</sup> Century, however the majority of them were simply thrown in to the sea and used to make the harbour quayside. During WW2, two Norwegian crewed fishing boats operated from here as a branch of the 'Shetland Bus', a clandestine operation which ferried agents to and from Norway, along with arms and ammunition. Codenamed 'Ballina,' the Burghead base was beset by disaster and only carried out 5 missions before it was closed in 1943 after just over a year of operations. One of the boats, the Feioy, set out in clear weather in early 1943 and was never seen again, with the loss of all 7 crew. Not long afterwards the Royal Navy Commandant of the base and three off duty Norwegian crew members were drowned in a sailing accident in Burghead Bay. The base was closed shortly afterwards, although the main operation from Shetland continued its dangerous and important work. Turning steeply over Burghead we do an orbit over the Kinloss Barracks, once a RAF station and home of Nimrod, the Mighty Hunter. A single example of the maritime patrol aircraft, aptly named 'The Duke of Edinburgh' to link in with the Dawn to Dusk Competition, is cared for by the volunteers of the Morayvia Aviation Museum on one of the aprons where the RAF Nimrods, affectionately known as the 'Kipper Fleet,' operated from. The aircraft can have its electrics powered up to show visitors that it is still alive. The main Morayvia Museum nearby has an interesting range of aircraft and helicopters and is accommodated in a former school that was used for the RAF station families. An excellent little collection with a lot of local connections and history.



***THE SITE OF A POSSIBLE ROMAN FORT AT THOMSHILL***



***THERE'S GOLD IN THEM THERE HILLS – WELL, THERE'S CERTAINLY PLENTY ROMAN SILVER AT BIRNIE***



***PART OF THE BIRNIE HOARD***



**BURGHEAD AND THE MORAY FIRTH**



**BURGHEAD, THE PICTISH FORT IS UNDER THE GRASSY MOUND BY THE HARBOUR**



***NOW A PLAYGROUND FOR THE ARMY, THIS WAS ONCE RAF KINLOSS, HOME OF THE KIPPER FLEET***



***A LONELY NIMROD SITS LOOKING OUT ON THE BAY***



### **FINDHORN BAY**

Passing over Forres, we fly overhead the site of a camp at Balnageath on the edge of the town and situated on a long disused RAF WW2 airfield. This was believed to have been a more permanent structure than a normal marching camp which were usually occupied for a brief time and then abandoned as troops advanced in line with their objectives. The front of the rampart was revetted with timber suggesting this permanence. The site was about 5.9 acres in size and featured defensive ditches and *titulum* at the gates. Leaving the River Findhorn behind, our eagle spots Brodie Castle, built in the 16<sup>th</sup> Century. A nearby area of crop marks spotted during an aerial survey are believed to mark the site of a Roman fort, one of the line set up in the time of **Agricola** along the Moray Firth. There's almost no information to be found on it though in any of the reference documents I used, so it can only remain as a 'possible' Roman site. I leave the Lossie ATC controller to their quiet Sunday afternoon and contact Inverness (EGPE) as we'll be close to their ATZ as we get to Cawdor. They are equipped with radar so I'm given a discrete SSR code for monitoring purposes but only receiving a Basic Service, which I'm fine with. We continue along the edge of the Grampian Mountain foothills to the South passing Cawdor Castle, originally a 15<sup>th</sup> Century tower house. It's perhaps best known for the Shakespeare play 'Macbeth,' although some artistic licence was taken as the castle itself is not actually mentioned, and in any case, it was built well after the life and times of King Macbeth who lived in the 11<sup>th</sup> Century. I suppose its infamy sells admission tickets in the tourist season though, so fair play to the marketing men and women. On reaching the site of the Roman fort at Cawdor, a little way past the more modern castle, I was intending to do a lazy left hand orbit back around to pass to the East of the Inverness ATZ, but as they don't sound too busy I ask for a transit of their ATZ on a Northeasterly track after Cawdor which is readily approved. Many of the standard features of a Roman fort have been found on the site, but there remains a school of thought amongst some academics that the siting of a fort here doesn't sit happily in their model of the Roman world in this part of the country. Radio carbon dating of material recovered from the site does however point to activity within the period of **Agricola** so perhaps it really was the last fort at the end of the line, on the furthest extremity of the Roman Empire.





***IN THE TOP RIGHT HAND CORNER OF FORRES, NESTLES THE CAMP AT BALNAGEATH***



***BRODIE CASTLE BUT WE'RE NOT SURE IF THERE'S A ROMAN FORT THERE TOO***



***IT'S NOT ROMAN BUT CAWDOR CASTLE NESTLED IN THE TREES IS STILL PRETTY FAMOUS***



***IT'S ANOTHER UNCONFIRMED SIGHTING AT CAWDOR FORT***

Our right turn takes us just to the East of Inverness Airport, formerly RAF Dalcross. Built in 1940, it was used for basic flying training, air gunnery training and as a flying instructor school. Several operational fighter and light bomber squadrons also operated on detachment from time to time. It became a civilian airport after WW2 and remains in use today, operated by the Scottish Government Quango, Highlands & Islands Airports Ltd (HIAL). They recently caused uproar by massively increasing the charges to General Aviation aircraft for all the airports under their control. They do seem to have listened though as they have reduced somewhat from the original draconian proposals. Time will tell. Crossing the Southern bank of the Moray Firth there is a massive industrial dock facility noted at Ardersier, which looks desolate and abandoned. Built by the US oil support company McDermott in 1972, it was used as a construction yard for the fabrication and assembly of oil rigs destined for use in the North Sea oil and gas fields. At the height of its operation it employed 4500 people was the largest single employer in the Scottish Highlands. Over £26M was spent in 1986 automating the yard but in 2002 it closed as the demand in the UK oil industry declined. The 450 acre site is currently being redeveloped as a base for serving the offshore wind energy industry and is slated to be completed in 2025, with an operational life of at least 20 years. Cutting across the turquoise water and sandy beach we could almost imagine ourselves as being in the Caribbean, although it's probably about 15-20 degree Celsius too cold to sunbathe here !! We coast in abeam the excellent airfield at Easter and a fuel check, ETA calculation, and daylight remaining check determine that we can make it all the way back to Prestwick from here with no undue difficulty and won't need to visit them on this trip. Up ahead the Tarbat Peninsula points out to sea, with the Moray Firth on one side and the Pentland Firth on the other, both flowing in to the North Sea. At the far end of the peninsula is our final goal, the supposed site of a Roman signal station or fortlet and believed to be the most Northerly Roman site in Britain. Whilst it's true that the ***Classis Britannica*** fleet sailed even further North than Tarbat and around the ***Orcades*** (Orkney Islands) and then back down the West Coast to reach the island of ***Hibernia*** (Ireland) after the battle of ***Mons Grapius*** in the early 80's AD, there is no evidence that they ever landed and established military installations or settlements anywhere else during that voyage. Tarbat Ness was most probably used to signal messages to the Roman fleet from the land commanders in the area. The exact location is unclear, but many sources say that the present day lighthouse used the Roman site as its foundation. The red and white lighthouse is the tallest on the Scottish mainland and stands 174' (53M) high. It was built by Robert Stevenson in 1830 in response to a violent storm in 1826 which claimed 16 vessels in the Moray Firth. For us it signals the end of our Roman journey, traveling the length of our home, ***Britannia***, as though we were a majestic eagle.



***INVERNESS AIRPORT***



***THE FORMER ARDERSIER OIL RIG CONSTRUCTION YARD***



***THE CARIBBEAN ? RIGHT UP UNTIL YOU STICK A TOE IN THE FREEZING WATER***



***THE END IS NIGH, ON FINAL APPROACH TO THE TARBAT NESS LIGHTHOUSE***



**TARBAT NESS LIGHTHOUSE, AND ROMAN SITE ?**



***'MISSIO FACTA EST PER ALTUM VOLANTEM AQUILIS LEGIONEM'***

***(MISSION ACCOMPLISHED BY THE HIGH FLYING EAGLES LEGION)***

We've seen much of the legacy of the Romans as we flew over our nation, soaring above diverse natural terrain and environments along the way that the Romans would have had to deal with, as well as views of the many differing man-made landscapes, settlements, and developments built during the intervening centuries between **Julius Caesar** first landing on the South Coast and our modern world today. It's been fascinating. Now all we need to do is fly home to Prestwick on a glorious evening, taking in the wonderful views as we wind down and reflect on what we have just achieved. I think you'll agree that telling our story has been comprehensive and interesting, so it's definitely time for a rest for both myself as author and for you as a reader so I'll end my descriptions here and just leave you photographs of our transit back to base to enjoy.

***HOMeward BOUND***



***THE CROMARTY FIRTH AND NIGG BAY***



***ONE OF THE BEST HOTELS IN SCOTLAND, NEWHALL MAINS WITH IT'S PRISTINE AIRSTRIP***





***INVERNESS AND THE KESSOCK BRIDGE***



***THE CALEDONIAN CANAL***



***THE CALEDONIAN CANAL FLOWING IN TO LOCH NESS***



***LOCH NESS, WHERE'S THE MONSTER ?***



***THE GREY CORRIES MOUNTAIN RANGE***



***CARN MOR DEARG AND BEN NEVIS***



***GLORIOUS CALEDONIA***



***THE MAMORES MOUNTAIN RANGE***



***THE AONACH EAGACH MOUNTAINS***



***GLENCOE***



***GLEN ETIVE***



***VAPOUR TRAILS***



***OUR TRUSTY EFIS***



***IT DOESN'T GET ANY BETTER THAN THIS***



***LOCH FYNE, COOK ME UP A KIPPER !!***



***THE CRINAN CANAL***





***DUNOON AND THE FIRTH OF CLYDE, NEARLY HOME !!***



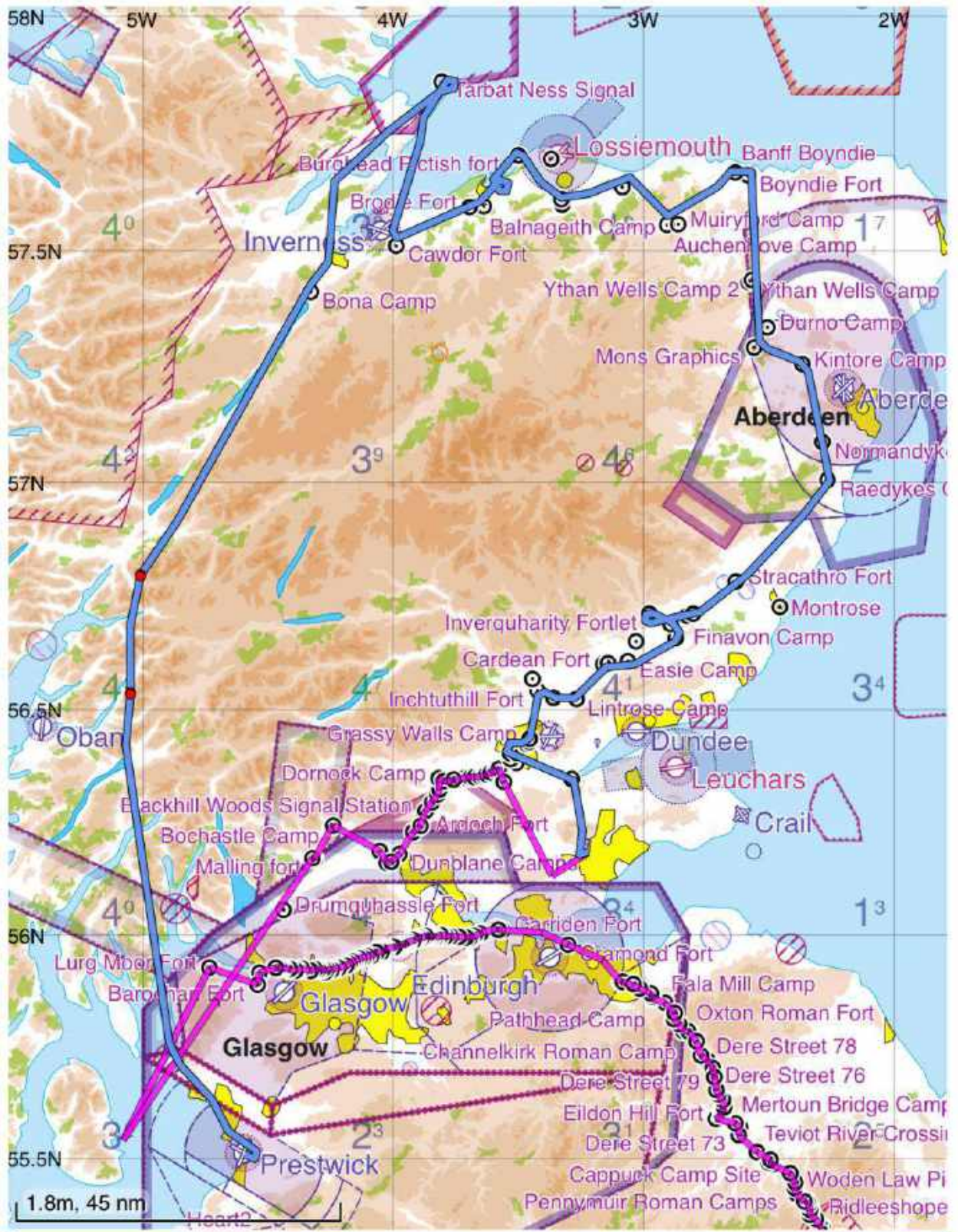
***THE CUMBRAES AND THE ISLE OF ARRAN***



*CLEARED TO LAND, WELCOME HOME !!*



*REFLECTING ON A WONDERFUL DAY*



Generated by SkyDemon on 2024/09/09 22:53 Z.

ACTUAL ROUTE FLOWN

### LEG 4 STATISTICS

	DISTANCE	ELAPSED TIME	AVERAGE GROUND SPEED	FUEL BURN
PLANNED	380NM	2Hrs 42Min	140Kts	94L
ACTUAL	387NM	2Hrs 36Min	148Kts	103L

### TOTAL FINAL FLIGHT STATISTICS (ALL 8 FLIGHT LEGS COMBINED)

	DISTANCE	ELAPSED TIME	AVERAGE GROUND SPEED	FUEL BURN
PLANNED	1119NM	7 Hrs 53Min	142Kts	286L
ACTUAL	1182NM	8 Hrs 08 Min	143Kts	305L

## AIRCRAFT & CREW



### YOUR 'WEE VANS' DAWN TO DUSK COMPETITION ROMAN CREW 2024

For those of you who read our Log for the 2023 Dawn to Dusk Competition, you will find this passage looks remarkably familiar. The aircraft is the same one we flew last year and the crew is the same so the majority of the details also remain the same, with a few minor changes. Feel free to skip this section if it looks familiar to you !!

The Dawn to Dusk 2024 competition was once again flown in a homebuilt Vans RV8 aircraft, carrying the registration G-WEEV and named 'The Spirit of Wee V'. Constructed between 2007 and 2012 by former RAF, airline, and corporate pilot Bob Ellis, the aircraft, which was originally registered G-JBTR, has won several accolades, including the RAA (Canada) Trophy for Best Kit Aircraft and the Nowicki Trophy for the Best RV Aircraft at the LAA Rally at Sywell in 2012. She then went on to win the Royal Aero Club British Air Racing Championship in 2015, flown of course by Bob, as well as taking part in several other international racing and aerobatic competitions. As a fast and manoeuvrable aircraft, she has also flown in formation as photo ship aircraft for airborne photography details alongside the

iconic Vulcan XH558, the celebrated NHS Spitfire PL983, and a fantastic formation of 2 Spitfires, SM520 and RR232, from Spitfires.com based at Goodwood.

Affectionately known as 'Wee Vans,' she is powered by a 180HP Lycoming IO360 engine, giving an economical cruising speed between 140 and 160 Kts, burning between 28 and 35L of fuel per hour, dependent on atmospheric conditions, cruising altitude, and pilot handling. Equipped with a 3-axis autopilot, the workload on the pilot can be dramatically decreased on long flight legs, allowing more time to look out the large bubble canopy to enjoy the view and scan the skies for other traffic. With an ability to land and take off on relatively short strips at maximum all up weight, and with my own personal limit being a minimum of 400M, the aircraft can make use of a variety of airfields which larger or heavier types might struggle with, making it ideal for touring, or indeed Dawn to Dusk Competitions.

The crew for this flight is once again Derek Pake and Kate Turner.

Flying as pilot would be myself, Derek Pake, with responsibility also for planning, navigation, and communication tasks. Passing my Private Pilot's Licence in 1982, I have flown various Single Engine Piston (SEP) aircraft over the years and have been a shareholder in several types since the mid 1980's. With a couple of sabbaticals along the way, due to children demanding feeding more than an aircraft, I now have just over 800 hours total time, with around 400 hours in the RV8. Professionally I was an Air Traffic Controller with NATS for 41 years, operating airspace at the Prestwick Area Control Centre. Now retired, finding time to fly seems to be a bit less of a problem these days so I'm making the most of it while I can. Most of my flying is taking people up to enjoy the freedom of flight and demonstrating the pleasures it brings, especially to youngsters. You just never know what seed you may be planting and where they might end up if you can encourage them in to aviation. This year I have flown approximately 40 different passengers, including 20 of them who have never flown in a light aircraft before. I've also given talks on the Dawn to Dusk Competition to an Air Cadet Squadron, the Rolls Royce Heritage Trust, the Flyer Magazine Livestream broadcast, a photography society, and anyone else who will listen !! With last year's 1<sup>st</sup> prize monetary award, I also set up a one off scholarship in conjunction with Squadron Prints to encourage someone to get in to flying for fun. The scholarship winner is now taking lessons to get her PPL with Aerobility, which gives me huge satisfaction.

Kate Turner was my co-crew member and performed additional photographer duties to supplement the wing mounted GoPro camera equipment, as well as providing moral support and other assistance with logistics and the safe conduct of the flight. I'm really glad that Kate was flying with me again this year as she skilfully managed to capture several shots that the GoPro cameras missed, either due to aircraft positioning, or due to me forgetting to turn the camera on for one of our flight legs. Once again, our teamwork shone through and led to a successful mission. Kate has been an Air Traffic Services Assistant for many years, working at both Prestwick Airport and now for NATS at Prestwick Centre. Her passion for aviation is as big as mine !!

# THREAT & ERROR MANAGEMENT

On every single flight it is essential to identify and mitigate any potential threats which could affect the safety of the aircraft, its occupants, or those on the ground. Additionally, the identification of areas where human error likely exists, which may in turn erode safety margins, must also be conducted. The list below details some of the factors we identified, assessed, and provided mitigation for in order to reduce the chances of the safety of our flight being compromised.

## 1. **WATER CROSSINGS**

When operating a SEP aircraft, there is always the possibility of an engine failure, or a reduced amount of power being available, both of which can lead to an unplanned water landing if unable to glide to land. Although our flights had minimal water crossings, with a maximum of 15 miles on track legs, we were still conscious of this risk and applied the following mitigations.

- All flight legs flown maximised the time spent within gliding distance of land by using the shortest distance possible or by flying at a suitable cruising altitude. On both our overwater legs, crossing the Thames Estuary and the Moray Firth, we were never more than 3.5NM from land at any time, even although the track miles between coasting out and coasting in across the water were in the order of 15NM.
- Although we flew within gliding distance of land at all times, shipping was also identified and its position monitored as a potential ditching position should gliding to land not be an option.
- To assist in Search & Rescue, communication was established and maintained with an appropriate ATC agency for overwater operations, Southend ATC for the Thames crossing and Inverness ATC for the Moray Firth.
- The standby frequency 121.5Mhz was selected and monitored in case there was no communication with ATC and an emergency situation needed to be communicated.
- As a dinghy is not practicable for carriage in a RV8 unless flying solo, we continuously wore life jackets, had briefed their use, and familiarised ourselves with ditching drills and escape routes from the aircraft for the overwater legs we undertook.
- A Personal Locator Beacon, with a valid in-service date, was carried and available for immediate use in the event of an emergency.
- Prior to any water crossing, the engine management instruments were checked to ensure that all parameters were within limits and that the fuel load available was sufficient for the crossing, including any turnback or diversion from any position on the crossing.
- A serviceable aircraft Mode S transponder and ADSB-Out was operated at all times during the flight, with the ability to squawk a special SSR code readily available to give ATC units an indication that we were in distress in the event of a loss of radio communications.

## **WEATHER CONDITIONS**

Weather is of course the biggest factor where we have no control but can pose an extremely considerable risk of causing an accident. Focused assessments of the forecast weather, monitoring actual conditions and updated forecasts whilst in flight using the online tools in SkyDemon, and dealing with any unexpected conditions were all essential methods of mitigating any danger as far as reasonably practicable. The following provided mitigation and ensured that weather was not able to compromise the safe operation of any flight

- Long range forecasts were obtained from a variety of recognised weather sources around 7 days before the planned day of the flight and assessed for the degree of risk that might be experienced.
- As the day of the flight approached, more granular forecasts became available, again helping to shape a GO/NO GO decision making process .
- The evening before the flight, a final look was taken at the TAF data for airfields along or close to the entire route, as well as using other recognised sources, to build a layered picture of the likely weather situation the flight would experience. If unsuitable the flight would be postponed to a weather back up day. Any postponement date would go through exactly the same procedure.
- On the day of the flight, a final cross check of METARs, TAFs, weather radar and satellite pictures, plus Area Met Forecasts were used to confirm the previous night's GO decision. On the actual day of our flight in this report, the data obtained confirmed the predicted good conditions for the whole route over a wide time window.
- Once airborne, regular visual checks were made of the surrounding area in order to confirm that there had been no deterioration of the expected conditions, as well as periodic checks of METAR and TAF data for upcoming airfields ahead or close by using both ATIS and online met reports.
- As the flight progressed, situational awareness of escape routes was maintained to allow a strategy to fly out of danger if caught by unexpected and sudden changes which might compromise continued flight in VMC. These included turn back options, diversions around isolated conditions, or landing at a suitable airfield if conditions would likely become too extreme.
- Knowledge and experience of weather conditions associated with UK maritime and mountainous areas was applied to ensure that the aircraft was not operated in a situation where the weather conditions would outmatch the aircraft performance.

## **2. AIRSPACE & NAVIGATION**

Knowledge of the airspace, special procedures for VFR flight, and communications and equipment requirements was essential to allow the most efficient flight profile to be flown. Awareness of the airspace we would be flying through and the ATC agencies responsible for them would also help to prevent any inadvertent infringement of Controlled Airspace on our route. To help prevent any occurrences, the following were conducted.

- Annotating a paper chart and 'walking' through the route, noting the airspace boundaries, bases levels, ICAO classifications, and frequencies. Supplementary information was also obtained by referring to the online AIP for the UK.
- Insertion of the route in to SkyDemon was carried out using the automatically generated forecast winds, along with carriage of a print out of the Pilot Log for each leg, which would give a paper plan to use along with paper charts in the event of any technical failure of electronic navigation aids.
- Whilst in flight, running three independently fed moving map GPS navigation systems, including the aircraft EFIS and the fixed aircraft GPS receiver, SkyDemon on an iPad using the GPS data from the portable SkyEcho ADSB equipment, and SkyDemon on an iPhone using GPS and GLONASS from a BadElf Pro standalone GPS receiver. Each system provided real time data

regarding the aircraft's position and the position of airspace boundaries, whilst SkyDemon also provided instant access to airspace and communications information.

- Setting up the SkyDemon airspace warning tools with adequate warning buffers and monitoring any airspace alerts both visually and aurally through a Bluetooth headset.
- Anticipating in good time where the flight profile would either have to be changed to remain below Controlled Airspace or where an ATC clearance should be requested, using an appropriate waypoint as an aide memoir.
- Continuous operation of Mode S transponder, which includes ADSB-OUT, to provide ATC agencies and other airspace users with situational awareness of our position.
- Where the aircraft was operated above 1000' AMSL with a Controlled Airspace base above, the flight was undertaken with the Autopilot Altitude Hold engaged, with a sufficient buffer margin to ensure that any inadvertent Autopilot disconnect could be safely managed before a vertical infringement occurred. This reduced workload and allowed monitoring of airspace avoidance as well as enhancing lookout for other traffic.
- Below 1000' AMSL, the autopilot was not engaged as there is a procedural limitation imposed to prevent the aircraft descending towards terrain with insufficient recovery time should there be an unexpected Autopilot disconnect.
- Requests for ATC clearance included both a route and maximum altitude request. Cognisance was taken of anticipated IFR operations when making each request.
- Monitoring the RT transmissions and using the SkyDemon traffic display fed by the SkyEcho ADSB equipment helped maintain situational awareness of the traffic within Controlled Airspace, as well as allowing visual acquisition of relevant traffic which might be a factor if we had to deviate from our clearance in an emergency.
- Requesting any changes to our flight profile in Controlled Airspace from ATC and obtaining a revised clearance prior to flying them.
- Advising ATC of any change to another frequency when outside Controlled Airspace and a more suitable agency was available.
- Assessments were made of the proximity of Danger Areas, Restricted Areas. And Prohibited Areas for all legs on the route. The availability of Danger Area Crossing Services (DACs) and Danger Area Activity Information Service (DAAIS) for each Danger Area was noted. Additionally, days of the week and dates where specific Danger Areas or Restricted Areas were notified as closed, either by entries in the AIP, by NOTAM, or through personal contact with the Range Officer were taken in to consideration, with the aim of reducing the need to encounter active Danger Areas on our route. The status of areas was checked during the preflight planning process before getting airborne, as well as airborne confidence checks through stations such as Scottish Information who provide a DAAIS for certain areas.
- Gliding and parachuting sites close to or on our route were identified in advance, along with their contact frequencies if available. A strategy to avoid direct overflight of these airfields was employed, with flight close to the airfields only being conducted after either receiving status information through the radio operator or by assessing the runway in use and remaining clear of the areas where parachutists and gliders would be operating, for example flying well upwind of a gliding cable launch site to ensure the cable would not reach our flight profile. In the event that a safe transit could not be assured, the airfield was avoided and the track readjusted to remain well clear.
- Military airfields were identified and the dimensions of the MATZ and ATZ including the vertical dimensions were noted, along with the controlling ATC frequency. Different strategies were put in place for weekday and weekend operations, as there is usually no ATC provided at



a weekend and the MATZ is effectively closed. In all cases however the ATZ would be avoided either horizontally or vertically if ATC clearance could not be obtained since Government aerodrome ATZs are notified as active H24. Position and intentions were broadcast as blind calls for all MATZs which were penetrated where there was no ATC present.

- Several civil ATZs were within or close to our route. During the relevant airfields hours of operation, the appropriate frequency was contacted and airfield information obtained to allow a safe profile to be flown through the ATZ, taking in to account local traffic using the ATZ. Outwith airfield operating calls, blind calls of position and intention were transmitted as a broadcast.
- Prenoting of flight profiles was conducted in advance with the appropriate ATC unit for all flights where ATC clearance would be required for transit of the airfield CTR and/or CTA. This ensured that there was no lengthy discussion on the radio regarding the requested profile and allowed ATC to have all flight details to hand when our transit request was made. As always, these profiles would be under the caveat that they were subject to traffic. ATC were also made aware that short holding periods or reasonable reroutes of track were also acceptable to us.

### 3. **MANAGEMENT OF HUMAN FACTORS**

As well as managing the operation of the aircraft, equipment, navigation, and communication, it was also important to ensure that we managed ourselves in order to ensure our own wellbeing, to recognise and cope with fatigue management, and also be aware of our own human limitations which may lead to errors being made.

- The 'IMSAFE' preflight pilot check recommended by the CAA and GASCO was carried out.
- Plan adequate stops along the route, including the ability to rest, eat, rehydrate, and use the 'facilities.'
- We carried accessible on board fluid supplies and snacks to ensure hydration was maintained and a 'sugar rush' could quickly be obtained if required for alertness. Regular rest stops with a maximum of 3 hours flight time were applied to allow comfort breaks and snacks or meals to be consumed.
- Adequate onboard 'emergency' toilet items were carried in case calls of nature were required before a landing was possible.
- Regular engagement and conversation were carried out so that each crew member could monitor the other for signs of fatigue or possible incapacitation. It's also interesting anyway to generate conversation as the landmarks are being pointed out, traffic sighted is being called, and general flight discussions were taking place. We all know that pilots love to talk all the time in the cockpit !!
- Writing down of ATC clearances and information and then cross checking them as the readback is made to ensure that all information is correct.
- Strong encouragement was given to challenge anything that either crew member is unsure or unhappy about, helping to foster a good working relationship and culture.
- Discuss any decision making to arrive at a sense checked consensus before acting on a change to a plan.
- Look out the window, enjoy the views, spot Roman forts and relics, and above all, have fun !!

## **VIDEO LINK**

We hope you enjoy our written submission of our Dawn to Dusk Competition entry. They say a picture paints a thousand words so you are invited to watch some of the inflight scenes from the day. The video charts our journey from start to finish with selected landmarks flown over during the flight. It can be accessed online through Vimeo using the link below.

**'MEET THE ROMANS'**

<https://vimeo.com/976247172>

**WE HOPE YOU ENJOYED YOUR FLIGHT WITH THE  
'ROMAN EAGLE LEGION'**

**BEST WISHES FROM  
KATE TURNER & DEREK PAKE**

**PRESTWICK – SEPTEMBER 2024**



**GRATISSIMUM DOMUM AD PRESTWICK**