

MYSTERY OF THE MISSING SPITFIRE

By Brian Cushing

CONTENTS

PART		PAGE
1	IS THIS WHAT HAPPENED? A FICTIONAL ACCOUNT	2
2	THE FACTS AS KNOWN	6
3	RECORDS OF THE CRASHED SPITFIRE N3168	15
4	RECOVERY OF CRASHED AIRCRAFT	18

APPENDIX 1	VICKERS SUPERMARINE SPITFIRE MK 1
APPENDIX 2	SPITFIRE MK 1 FUEL TANKS
APPENDIX 3	MESSERSCHMITT BF109E
APPENDIX 4	PILOTS OF 266 SQUADRON, AUGUST 1940
APPENDIX 5	COMBAT REPORT OF P/O FRANK CALE – 2 JUNE 1940
APPENDIX 6	EXPERIENCES OF PILOTS WHOSE AIRCRAFT BURNED
APPENDIX 7	SUMMARY OF SOURCES

PART 1

IS THIS WHAT HAPPENED? A FICTIONAL ACCOUNT

Pilot Officer F.W. Cale was an Australian serving with No 266 Squadron, one of the first RAF squadrons to receive Mk 1 Vickers Supermarine Spitfires. The squadron, based temporarily at RAF Manston, was scrambled during the afternoon of 15 August 1940, and engaged enemy Messerschmidt Bf109E fighters providing high cover for bombers raiding southeast England. At about 1850 hrs, Cale was shot down in his Spitfire (Serial No. N3168) by a 109 near Maidstone, Kent. He baled out. His Spitfire crashed in flames by the River Medway near Teston. All that could be found of Cale on the ground later was his parachute with burnt harness straps; but his body was recovered from the Medway the next day. He was 25 years old, and had been married for just one month.¹

To date, no trace of Cale's Spitfire has been found, and despite thorough searches by several parties, no record has as yet emerged.

The tale that follows in Part I is a product of the author's imagination, intended to convey what might have happened on 15 August 1940, and to give a sense of what these brave young men went through in combat in the skies over Kent.

**Brian Cushing
9 October 2021**

6:00 pm, 15 August, 1940, RAF Manston. The dispersal room telephone rang stridently, jerking Frank Cale out of a doze; he had been on standby since before first light. The orderly grabbed the phone and listened. He called to Sqdn Ldr Wilkinson: "A-Flight scramble sir! Two hundred-plus approaching Manston, angels one-five." Two hundred or more enemy aircraft approaching Manston airfield at 15,000 feet.

There was a concerted rush for the door, chairs upturned and dogeared magazines thrown aside. Cale sprinted for his Spitfire, now wide-awake and focussed on the job in hand. He covered the fifty yards in fifteen seconds, encumbered even as he was with uniform, mae west lifejacket and flying boots. As he ran he pulled on his gloves and flying helmet. He arrived at the plane where his rigger held his parachute ready and helped him on with it. Placing his right foot on the wing root, he hoisted himself up and forward into the cockpit. He plonked himself down and his rigger secured the straps of the Sutton harness, passing the pin through and tightening the adjustment pieces. Cale was a big man, and there was very little spare room in the cramped cockpit.

He started his cockpit checks, first fitting his oxygen mask and plugging in the tube and the radiotelephone lead. He checked the fuel gauges and oxygen feed, trimmed the elevator one degree nose heavy, rudder full bias, pitch full fine and verified the controls fully free. After double-checking everything, he opened the radiator shutter, switched the fuel on and was ready for starting. The engine had been warmed through thirty minutes before by his fitters. He opened the throttle, checked the coolant temperature and primed the engine six times on the Ki-Gas. He leaned out, checked that all was clear with his fitters, called "Contact!", switched on and hit the starter button and booster coils together. The starter engaged, the airscrew turned and the Merlin fired, hesitated and roared into life with grey-blue smoke

¹ Australia's Few. Kristen Alexander's Battle of Britain Blog: Vale Francis Walter Cale, 15 August 1940

streaming from the exhaust stubs. His fitters pulled the accumulator trolley plug from its socket and ran the trolley clear. He ran the engine up, throttled back and waved to his men, who pulled the chocks clear. The grass was flattened as he moved out of the dispersal pen, a groundcrew man at each wingtip. They released their hold when he waved, and he taxied out behind his Yellow Section leader, Flt Lt David Armitage. Today, he was flying Yellow Two, his chum Rob Roach at Yellow Three, in the Vic formation which the RAF was generally still flying at this stage. (Later, they would adopt the looser and more flexible 'finger-four' formation.)

He followed Armitage, weaving in order to see past the plane's long nose which blocked the forward view. Throttle open, full flaps and he accelerated off and was airborne together with the others. He slid his cockpit hood closed. His height meant that his head very nearly brushed the perspex. The North Weald controller, Wing Cdr John Cherry, called: "Yorker leader, Lumba calling – two hundred plus bandits approaching Charlie Three, angels one-five, vector zero niner zero." Two hundred enemy planes approaching Manston, fifteen thousand feet, course to intercept ninety degrees – due east.

The flight was climbing steeply at over two thousand feet per minute. At twelve thousand feet, Cale spotted the enemy, small dots in the top half of his bullet-proof windscreen. Dornier 215 bombers escorted by Me110 twin-engined fighter-bombers and, in a layer above, Me109E's. The flight's job was to take on the 109s, leaving the bombers and 110s to Hurricanes which should be now climbing to join the intercept.

At sixteen thousand feet, he heard Armitage call "Echelon starboard – go!" and he banked and took up position astern of and beneath his leader. Glancing back he saw Roach slide in slightly to the right and astern of him. "Tallyho!" Armitage called, and they picked individual targets.

Cale saw three 109s break right and commence climbing to attack his section. He did a slip turn and fired a short burst at about three hundred yards' range at the machine in the centre, which weaved and broke away. The plane astern of that flew into a head-on course and its pilot and Cale both turned hard and broke away to starboard, nearly colliding. Cale rolled to the right and dived hard. Dust and muck flew up from the cockpit floor and he cracked his head on the hood with the sudden negative g-force. A 109 got onto his tail and fired a 3-second burst. Cale did a steep turn to the left immediately followed with a steep turn to the right, and got straight onto its tail. He fired a 5-second deflection burst and the Messerschmidt rolled onto its back and dived to seaward.

His earphones crackled with shouts, curses and warnings - Roach shouted "Frankie! Bandit on your arse! Break break break!" Instinctively Cale threw the stick over, shoved the boost control cutout forward and broke to starboard, diving steeply and rolling. He glanced in his rearview mirror and caught a glimpse of the yellow nose of an Me109. As the Spitfire dived and inverted, the Merlin engine missed a beat and threw black smoke from the exhausts.

Righting the aircraft, Cale twisted his head about, searching ahead and behind, seeing nothing. Nothing in the mirror either, but he missed the 109 climbing from below and lining up for a quarter attack. When he did spot it a second later, it was to see its two wing cannons flash. A cannon shell smacked through the cockpit door on his port side and exploded, while another shell punched into the fuel tank ahead of the cockpit, igniting the high-octane petrol. Flames roared past the cockpit hood and blanked out the windscreen.

He shouted with horror and rising panic, but then his training kicked in. He tore out his oxygen and r/t connections, half-rolled to starboard again and slid the hood open, yanked the pin release of his Sutton harness and fell out through the flames, buffeted by the 300 mph slipstream. The tailplane caught his right foot and spun him around as he fell.

The Spitfire, freed of his control, partially righted itself and then the nose dipped as it fell into an incipient spin, streaming flames and pungent black smoke. He had no idea of how far he fell before he groped for his parachute ripcord and pulled hard. The chute deployed at once and he felt the sudden tug of the harness between his legs. He was still spinning around but the motion eased and slowed as he floated down. His vision was blocked; he tore his sooted goggles and mask off and could with difficulty see again. There was no sign of the German, nor indeed of any other aircraft except his own Spitfire, his erstwhile sanctuary but very nearly his coffin. He was aware that the fight had carried the combatants well west of Manston, to over the West Malling area.

He looked down and saw that his left trouser leg was shredded. He was losing blood significantly; it welled through the material and scattered in streams and drops past his flying boot. His uniform tunic was smouldering and he beat at it feebly with his gloved hands. He felt no pain in his leg, but his forehead and throat were agonising where the flames had hit the exposed flesh. He floated in and out of consciousness, but during lucid moments saw that he was descending into a valley with a meandering river passing through a pretty stone bridge. He could make out one or two figures staring up. At some point his Spitfire hit the ground in a field upstream from the bridge and disintegrated, the residual burning fuel spraying widely around and igniting the surrounding grass.

It seemed to Cale as he drifted lower that he was in danger of landing in the river, but he had difficulty in focussing and making sense. He was, of course, traumatised and in severe shock from his injuries and burns, and the loss of blood. He looked down again and saw that his thigh was still bleeding profusely. Everything was turning misty, but he recognised the peril of being dragged underwater by his parachute; so at about fifteen feet up he struck the release and fell out of the harness. But when his body hit the water downstream of the bridge seconds later, Frank Cale was dying. His parachute and harness floated along a few feet up and landed in an orchard close to the river bank.

The attention of the few witnesses had been focussed on the falling Spitfire and its violent end, but people did not dare approach it – the flames were dying down only slowly, and ammunition was exploding with loud cracks. No one observed the final moments of Cale's descent; his body floated slowly downstream and was only discovered the next day, caught in reeds by the riverbank. County police officers conducting a search of the immediate area by Teston Bridge initially found only his parachute and its burnt harness.

The 266 Squadron ORB (Operations Record Book) entry was brief: "Spitfire N3168 piloted by P/O F.W. Cale reported burnt out at Teston near Maidstone and on the following day the body of P/O F.W. Cale was taken from the river at Teston."

The burnt-out remains of Cale's Spitfire comprised very little that could usefully be salvaged and re-used. The Rolls-Royce Merlin engine had buried itself more than 5 meters deep in the rising ground close to the river, about 200 yards upstream from Teston Lock, and the lighter elements such as wings, tailplane and fuselage were fragmented, with frames and spars burnt, twisted and buckled almost beyond recognition. Nevertheless, souvenir hunters were at work until the area was cleared and secured by a section of the local Home Guard.

The condition of the remains meant that it was not at the top of the RAF recovery units' list. Preference had to be given to aircraft which could be cannibalised and redeployed to squadrons. A week later a civilian contractor to the RAF, one Charles Morgan based in Maidstone, arrived with an old Morris truck on which was mounted a small crane, and a farm trailer. A gang of labourers collected the fragmented parts as best they could, hoisting the bigger sections on to the trailer and stacking them there. The engine was not visible within the crater that it had created, so they filled the hole in with rubble and some topsoil.

Morgan transported the recovered material, which was essentially scrap, to West Malling airfield where he parted with it to the RAF against a receipt, and was paid for his work. The metal would be re-used; mixed with other salvaged parts, melted down and forged into new aircraft sections. It was a good war for him; in common with others who contracted to the armed forces, he grew prosperous through his recovery work. But in the postwar years the work dried up and he fell on hard times. He sold his business for a song, and burned all his receipts and other documentation, which he had kept on a spike in his office. Paperwork was never Charlie's strong suit.

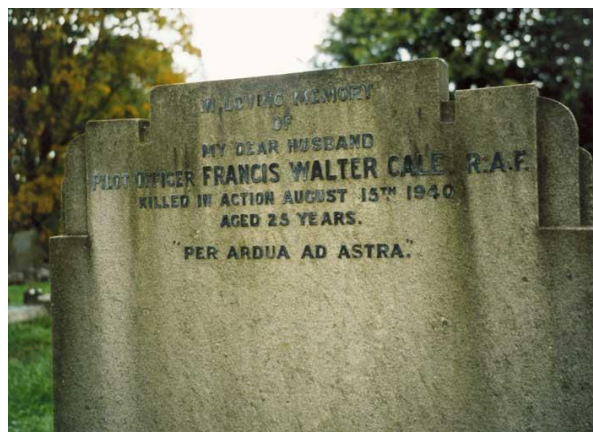
Ground engineers at RAF West Malling identified the remains which they had received from Morgan by means of its number – N3168 – stamped on a couple of the more recognisable parts, and contemporary reports from the locality in which it had crashed. They established that 266 Squadron was temporarily based at Manston and duly informed the staff there of the fate of the remains. 266 was aware of the circumstances of the crash on 15 August, and had written off the machine from the squadron's inventory. This was all noted in the appropriate documentation at the squadron, and by way of returns to 12 Group, Fighter Command.

On 17 August 266 Squadron was rotated back to Hornchurch. Its fighters flew there, and its small establishment of ground crew, support staff and records were loaded onto an AEC truck and transported to the Essex airfield. This was one of many movements undertaken during the summer and early autumn of 1940, in accordance with the requirements of 11 & 12 Groups. In the frenetic activity to rotate and rest exhausted fighter squadrons, it was inevitable that some documentation would go missing and the paperwork pertaining to Cale's Spitfire was just part of that.

Frank Cale's body was located in the river by county police officers, recovered on 16 August and identified by his identity discs. Villagers had gathered to watch the progress of the search, and when the body was laid out on the bank and turned onto its back, there was a collective gasp. Some of the women's hands flew to their mouths and some of the men averted their gaze. Shortly afterwards, the body was taken to Coxheath hospital by the Maidstone Borough casualty clearing officer and his staff.

It fell to the 266 Squadron's adjutant to visit Cale's wife of just one month, Muriel Joan (née Perry), and impart the devastating news – a task which for him never got easier with repetition.

In accordance with his wife's wishes, Cale was transported to Westminster City Cemetery, Ealing, close to where they had briefly lived, and buried on 21 August with full military honours.



² <http://www.bbm.org.uk/airmen/Cale.htm>

PART 2

THE FACTS AS KNOWN

Francis (Frank) Walter Cale was born in Milford Junction, Perth, Western Australia on 24 February 1915. His father, Walter, and his mother, Constance Simm, both came from New South Wales.³

He attended Guildford Grammar School, Perth, from 1928 to 1931. He had been awarded the academic Blennerhassett Scholarship, but he was also a sportsman and a member of the school athletic team.⁴



Frank Cale, Pilot Officer, RAF

³ Australia's Few. Kristen Alexander's Battle of Britain Blog: Vale Francis Walter Cale, 15 August 1940

⁴ Ibid



Undergoing training on a Tiger Moth⁵



Horsing around on a WW1 Vickers Vimy bomber during training⁶

⁵ Kent Battle of Britain Collection

⁶ Ibid



On leave in London. Frank Cale on the right⁷



Enjoying a spot of leave⁸

⁷ Kent Battle of Britain Collection

⁸ Ibid



Frank Cale standing by his Spitfire N3168⁹



Frank Cale in the cockpit¹⁰

⁹ Kent Battle of Britain Collection

¹⁰ Ibid



Frank Cale with his wife Muriel Joan. They had been married for just one month when he was killed¹¹

While at Guildford, he joined the school cadet corps. After leaving school he joined the Vacuum Oil Company as a clerk, and completed the intermediate examination of the Federal Institute of Accountants and three law subjects.¹²

He served a year as an artilleryman with the Citizen Military Forces. On 4 September 1937 he enrolled as a Sergeant Pilot with the Royal Australian Air Force Reserve. In February 1939 he took up a short service commission with the Royal Air Force and sailed for England on ss *Ormonde*, on 31 January 1939. After completing his elementary flying training with the RAF he was granted his commission in May 1939. Following further flight training, he was posted to 266 Squadron as a Pilot Officer in November 1939.¹³



¹¹ Kent Battle of Britain Collection

¹² Australia's Few. Kristen Alexander's Battle of Britain Blog: Vale Francis Walter Cale, 15 August 1940

¹³ Ibid

266 Squadron was formed at Mudros, Greece, on 27 September 1918 to carry out anti-submarine patrols, flying Short 184's and 320's (seaplanes) along with Felixstowe F3's (flying boats). In February 1919 it was transferred to the Caucasus as part of the British Caspian Flotilla. It was disbanded on 1 September 1919 at Novorossisk.¹⁴

The squadron was reformed at Sutton Bridge on 30 October 1939 as the Rhodesia Squadron. At that time it was equipped with Fairey Battles, but in January 1940 began to be supplied with Mk 1 Spitfires, the second RAF squadron after No. 19 to do so. 266 was based at Wittering up until 8 August; it then moved to Tangmere on 9th. It moved to Eastchurch on 12th. Eastchurch was bombed and severely damaged on 13th, six aircraft being destroyed on the ground. On 14th the squadron transferred to Hornchurch for a week before returning to Wittering.¹⁵ The squadron also flew sorties from Manston, in Thanet. Manston was the forward operational airfield of RAF 11 Group under the command of AVM Keith Park, and very much on the front line due to its close proximity to the occupied French coast.



Spitfire MK1 – type flown by P/O Cale, Serial No. N3168, Construction No. 410

266 Squadron carried out only a handful of patrols and raid investigations during June and July and the first half of August 1940, with Cale flying most of them. The squadron went into action for the first time over Dunkirk on 2 June 1940, patrolling at 20,000 ft over the beach area from 7.45 hours to 8.30 hours. Eight of the pilots engaged the enemy. The Operations Record Book notes that "The definite results of these were difficult to obtain owing to the height at which the engagements took place and the large number of aircraft engaged in dogfights."¹⁶

The weather on Thursday 15 August 1940 was fine and warm, with high pressure (anticyclonic) dominating. On this day, the German Luftwaffe launched a day-long series of attacks designed to saturate RAF defences. Almost all of Britain was within range of enemy bombers.

¹⁴ No 266 Spitfire Squadron

¹⁵ Australia's Few. Kristen Alexander's Battle of Britain Blog: Vale Francis Walter Cale, 15 August 1940

¹⁶ Ibid



By day, German Air Fleets based in France, Belgium and Holland were in action against RAF airfields, radar stations, and factories, including a heavy attack by seventy two Heinkel He111's of KG 26 and twenty one Messerschmidt Bf 110's of ZG 76 (Luftflotte 5) on the Newcastle area. In the South, the Rochester factories of Short Brothers were severely damaged. Hawkinge and Lympne airfields were badly damaged, and other targets included the airfields at Manston, Martlesham Heath, Middle Wallop and West Malling. Croydon was bombed in the first attack on London. Raids spread into Kent, Surrey, Hampshire, Wiltshire, and the Isle of Wight, engaging 11 Group Fighter Command Squadrons. 15 August 1940 saw the most widespread activity of the Battle of Britain, as it later became known.¹⁷

By night there was widespread night raiding across entire central England from Swansea to the Wash.

There were 1,786 German sorties in 24 hours. Fighter Command flew 974 sorties.

266 Squadron was ordered up at midday and at 1600 hours, to intercept enemy aircraft off Dover. It is not certain if Cale flew in the first encounter, but he was scrambled in the afternoon. The fact as recorded that he was shot down at 1850 hrs suggests that he was scrambled at around 1800 hrs, as the flying time of the Mk 1 Spitfire did not generally exceed an hour in combat conditions.

His burning Spitfire crashed by the Medway at Teston, about 200 yards upstream from the lock. Later that evening, the county police reported that they had found his parachute, with the harness straps burnt; but no sign of Cale. His body was found the next day in the river. He had been married to Muriel Joan Perry, a fellow Western Australian whom he had met in London, for just one month.¹⁸

This day was a turning point. German losses convinced the Luftwaffe that air superiority was essential before all-out bombing could be successful.¹⁹

¹⁷ <http://www.the-battle-of-britain.co.uk/Diary/Aug/15August.htm> Thursday the 15th of August 1940

¹⁸ Australia's Few. Kristen Alexander's Battle of Britain Blog: Vale Francis Walter Cale, 15 August 1940

¹⁹ <http://www.the-battle-of-britain.co.uk/Diary/Aug/15August.htm> Thursday the 15th of August 1940

Frank Cale was the sixth Australian entitled to the Battle of Britain clasp to be killed in Battle. He was buried in Westminster City Cemetery. His headstone was engraved 'In loving memory of my dear husband'.²⁰

Geoff Cox

Geoff was 12 years old and standing by the lychgate of Teston Church at 7 pm on 15 August 1940. Years later he painted the dramatic picture (see below) to crystallise his recollection: a Spitfire in flames passing behind the church and crashing into the Medway Valley below. It was the height of the Battle of Britain, which was being fought in the skies above Kent.²¹



Painting by Geoff Cox of the Spitfire descending before crashing

In 2017, when he was 89 years old, Geoff gave a talk to the Teston History Society, during which he recalled the incident:

"Our first real encounter was on the 15th August, a small formation went over with a fighter escort – right above our heads. The fighters were ahead with guns firing in both directions – it was rather strange – smoke from the guns in opposite directions.

One of the planes started to spin – looked up – right above us as if on a string, came down slowly and came very low – we were pulled back into the shelter by my mother. The plane landed on the river bank at Teston – the pilot was killed straight away.

The painting I did of it uses some artistic licence – someone who saw it crash said it was ablaze before it came down – but that wouldn't have looked good in the painting – the pilot [baled out] but landed in the river – he wasn't found until the next day."²²

²⁰ Australia's Few. Kristen Alexander's Battle of Britain Blog: Vale Francis Walter Cale, 15 August 1940

²¹ Lifeline, June 2021

²² Geoff Cox notes, Teston History Society, 2017



Plaque by Geoff Cox attached to the Teston War Memorial

W. Ross Jones

In a letter written by fellow pilot P/O W. Ross Jones it is stated:-

“I was with him [Frank Cale] when he was shot down (I was flying [Spitfire number] N3127). Cale was flying N3168 and I hazard to guess that Frankie Cale might have been mortally wounded before “baling out” but I’ve a feeling that he may well have been “shot” whilst floating down, since in the same encounter, our Flight Commander F/Lt Bazlay was shot down, and baled out and whilst floating down he was being “shot at” by a ME109 and I chased the b*****d and gave him 2 x 5 second bursts. The last I saw of him, was at low level over the coast by Margate – whether he managed to survive I do know or even cared [*sic*]. I claimed one ME109 damaged, not that anybody cared – but thankfully Bazlay landed safely in Kent only to survive a few more months.”²³

266 Squadron Operations Record Book

The recorded details in the ORB do not quite accord with those set out by W. Ross Jones above. Ross Jones flew one sortie on 15 August, at 1600 hrs when six aircraft were ordered off to an enemy aircraft (an HE115 floatplane) off Deal. Frank Cale did not fly on this occasion.²⁴

Cale flew off at 1820 hrs on 15 August, on the sortie which cost him his life. Ross Jones did not fly on this sortie. The flight, comprising eight aircraft, was ordered to patrol the advanced base (Manston) at 20,000 ft and encountered the enemy, consisting of about two hundred aircraft at 15,000 ft, southeast of Dover. Three enemy aircraft were destroyed and one damaged. Cale’s Spitfire was reported burnt out at Teston, and his body was recovered from the Medway the next day.²⁵

It was the following day, 16 August 1940, that Ross Jones next flew, on the sortie patrolling Manston again that he reports above. In this engagement, in which about twenty enemy aircraft were sighted and attacked at 20,000 ft, several 266 pilots were lost: Squadron Leader Wilkinson, Pilot Officer Bowen, and Sub Lieutenant Greenshield (Fleet Air Arm). Flight Lieutenant Bazley baled out and survived, and Pilot Officer Soden was injured and crash landed.²⁶

²³ Lifeline, July 2021

²⁴ The National Archives, AIR/27/1558/10

²⁵ Ibid

²⁶ Ibid

PART 3

RECORDS OF THE CRASHED SPITFIRE N3168

It appears that despite diligent searching by interested parties, no record has yet been found of Frank Cale's crashed Spitfire, which is curious.

In his book "Fighter – The true story of the Battle of Britain", Len Deighton discusses the accuracy of the actual losses suffered by both sides as against the victories claimed, the discrepancies being significant. He suggests (p.266): "It would have been simple for the British government to get more accurate figures. Most of the air fighting took place over land, and aircraft crashed in an overcrowded island, networked with constantly manned Observer Corps posts. The fully alerted civil police, and the ambulance services, were promptly on hand to arrest German air crew and succour the wounded. The RAF recorded each crash too, immediately providing round-the-clock armed sentries to prevent souvenir hunters removing vital parts from wrecks both British and German."²⁷

Cale's squadron, 266, despite being frequently moved during the Battle in accordance with 11 Group's requirements, would have kept detailed records of their inventory of aircraft, equipment and spares. The loss of one or more aircraft (not to mention the crew) would have been the subject of detailed investigation and the staff would certainly have required to know what aircraft, if any, had crashed over land and if so, where exactly.

The record shows that the county police found Frank Cale's parachute, and later his body, so it is certain that this would have been logged at the local police station (or that from which the attending police came). Despite the fact that 15 August 1940 turned out to feature the most ferocious fighting of the Battle, featuring many casualties, the RAF would almost certainly have located the crash site and secured it to prevent souvenir hunting. Obviously, the RAF recovery teams (Maintenance Units – see **PART 4** below) would have had their work cut out, but at some point they or their appointed subcontractors would have attended and recovered what was left of the aircraft – which action would certainly have been officially logged.

It is recorded that the local ARP (Air Raid Precaution) observer post in the tower at the nurses' home in Hermitage Lane saw the burning Spitfire descending in the direction of Teston – this too would have been logged.²⁸

The other question is what took place upon the discovery of Cale's body in the river the next day. It seems clear that several pilots and other aircrew were killed on this and other days, their cause of death being consequent on enemy action and undisputed. The case of Frank Cale is, however, slightly different as his body was subsequently found in the river Medway. He may have been mortally wounded, and died during or after his parachute descent; he may even have drowned in the river. His body was transported to Coxheath Hospital by the casualty clearing officer for Maidstone.²⁹ It seems possible that an autopsy would have been performed to establish the actual cause of death; in which case a coroner's report should have been prepared.

²⁷ "Fighter – The true story of the Battle of Britain" Len Deighton, Jonathan Cape 1977

²⁸ Kent Battle of Britain Museum

²⁹ Ibid

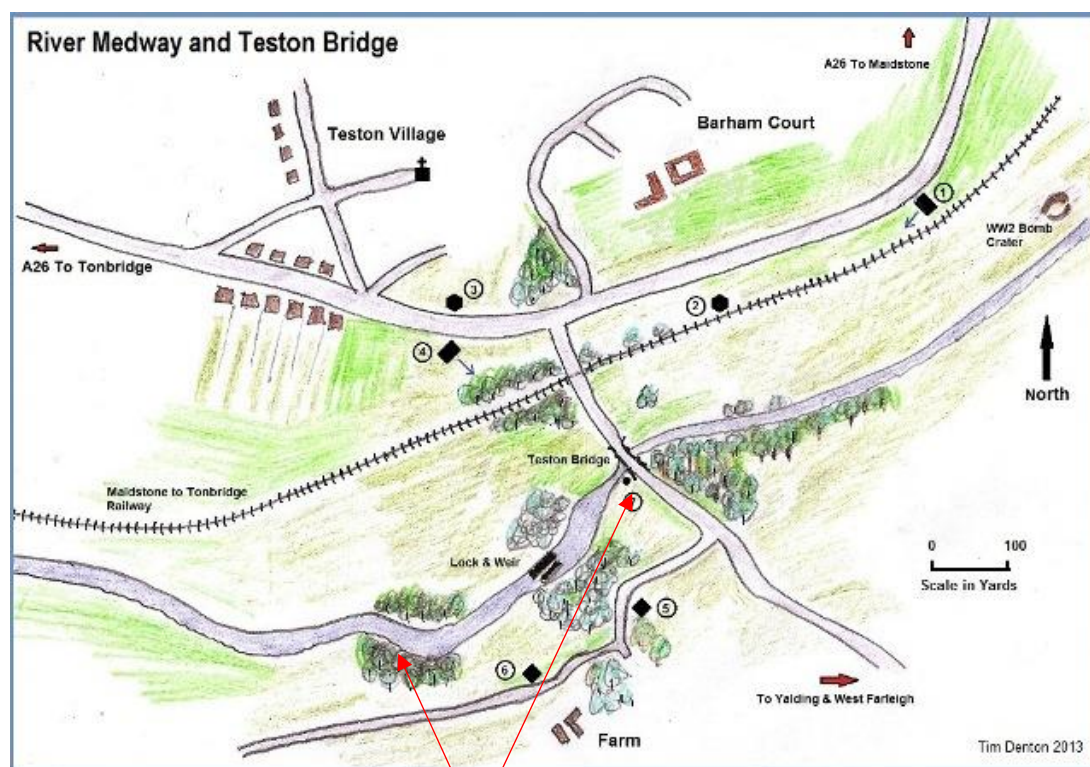
In 1940 a section of the Army GHQ line defences ran through Teston. Today six pillboxes, an anti-tank cylinder and a bomb crater on the river bank still survive.³⁰

As the map below shows, Teston and the Medway close by featured several strategically placed pillboxes which would have been manned by disciplined and trained soldiers. It is inconceivable that they would have missed the descent and crash of a burning aircraft, and not logged its position. It is possible that a section of men would have been despatched immediately to guard the crash site.

The crash site is recorded³¹ as being about 200 yards upriver of Teston Locks, which places it immediately to the northwest of pillbox 6 in the sketch map below. The source of this record is not known to the author.

Other possibilities include the site of the south bank landing of the temporary Bailey Bridge which was installed upriver and alongside Teston Bridge in 1976 to carry a bypass to the bridge while it underwent extensive repairs and maintenance. It has been reported that buried metal has been found on this site, which however appears possibly to be residual material from the Bailey Bridge itself.³² Metal detector searches have been conducted upriver of the locks, with negative results.³³

David Ottway's original sketch map of the area



Possible crash sites?

³⁰ Pillbox Study Group, author David Ottway 2009

³¹ Kent Battle of Britain Museum

³² Ibid

³³ Ibid

Therefore, there would without doubt have been multiple sources within which this crash was recorded. The abiding mystery is why no trace of the Spitfire has yet been discovered. The search continues!

PART 4

RECOVERY OF CRASHED AIRCRAFT

Aircraft were lost on virtually every day of WWII, attributable to mechanical failure, human error, fatigue and inexperience as well as combat action.³⁴

Rarely, a pilot could force-land hence saving the crew and perhaps the aircraft for future deployment. More often the crew took to their parachutes, leaving their aircraft to crash on its own. More commonly, the crew was unable to escape and were in the aircraft on impact. Sites were visited soon after the crash by RAF recovery teams, to remove human and aircraft remains, ammunition and perhaps bombs, and to examine enemy aircraft for intelligence purposes.³⁵

The amount of material that it was possible to recover depended on the aircraft type, its speed and angle of impact, the type of ground surface, and the location.³⁶

World War II aircraft made extensive use of lightweight but strong alloys. Such an aircraft hitting the ground at a steep angle and high speed could bury itself many metres deep, leaving components such as the wings on the surface and creating a crater at the bottom of which might be the engine(s). Sometimes the crew would be found in or around the wreckage.³⁷



Example of crash site showing crater and furrow dug by a crashing aircraft³⁸

Salvage crews would remove surface wreckage, and strenuous efforts were made to recover crew remains, a task made difficult by the depth of the crater and the presence of aviation fuel leading to the risk of fire.³⁹

Once the crash site was clear and made secure, the crater would be back-filled. Consequently, modern excavation of WWII crash sites may yield very little of the aircraft, although heavy clay soils seal debris in pockets of oil or aviation fuel, thus slowing deterioration. Airframes and engines often contain a large amount of aluminium alloy.⁴⁰

The work of the RAF salvage teams (Maintenance Units)

³⁴ <https://historicengland.org.uk/images-books/publications/military-aircraft-crash-sites/milaircsites/>

³⁵ Ibid

³⁶ Ibid

³⁷ Ibid

³⁸ Rare photos of Nazi plane wreckages littering UK fields during the Battle of Britain | Daily Mail Online

³⁹ <https://historicengland.org.uk/images-books/publications/military-aircraft-crash-sites/milaircsites/>

⁴⁰ Ibid

Salvaging, repairing and transporting crashed aircraft was the responsibility of several RAF Maintenance Units during WWII. No. 71 MU, formed in July 1940 at Slough, eventually took over all responsibility worldwide as well as carrying out routine aircraft transportation.⁴¹



AEC truck of the type used by 71 MU in 1940



‘Queen Mary’ transporters in action loaded with damaged aircraft

Civilian Repair Units (CRU's)

In 1939 the No.1 Civilian Repair Unit (CRU) was established at Morris Motors, Cowley, and staffed with civilians managed by the Air Ministry under the auspices of the Civilian Repair Organisation which was directed by William Morris (Lord Nuffield), his role being to control the CRO and participating civilian firms.⁴²

In May 1940, supervision of the CRO was transferred from the Air Ministry to the new Ministry of Aircraft Production, under the direction of Lord Beaverbrook, the newspaper magnate. The No.1 CRU was augmented by No.1 Metal and Produce Recovery Depot (MPRD), sited by the existing

⁴¹ Joint Aircraft Recovery and Transportation Squadron - Wikipedia

⁴² Civilian Repair Units - Wikipedia

Cowley works. At Cowley, a support unit was established in the form of No.50 Maintenance Unit (MU), to transport damaged aircraft and parts to the CRU and to firms participating in the CRO, and also to collect non-repairable parts and scrap for materials reclamation at MPRD.⁴³

The civilian firms under contract to the CRO were mostly existing companies engaged in the production, maintenance, repair and operation of aircraft, plus additional companies in the engineering and woodworking sectors. Repairs to whole or part aircraft were often carried out in dispersed industrial factories, then transported to airfields for re-assembly and test flying, before re-delivery to RAF units.⁴⁴

⁴³ Civilian Repair Units - Wikipedia

⁴⁴ Ibid

APPENDIX 1

VICKERS SUPERMARINE SPITFIRE



Designer : R.J.Mitchell
Type: Single Seat Fighter
Description : Low Wing Monoplane
Wingspan : 36 feet 10 inches (11.23m)
Length : 29 feet 11 inches (9.12m)
Height (max): 11 feet 5 inches (3.48m)
Wing Area : 242 sq feet (22.48m²)
Weight empty : 4332 lb (1965 kg)
Weight loaded : 5750 (2609 kg)
Power Plant : Rolls Royce Merlin II V12 liquid cooled piston engine
B.H.P. :1030 hp
Armament : 8 fixed wing mounted 0.303 Browning Machine guns
Performance
Maximum speed : 362 mph
Initial Climb rate : 2,300 ft per min (700 m per min)
Ceiling : 31,900 ft
Range : 395 miles
First Flight : 5 March 1936
Service Entry : 4th of August 1938⁴⁵

⁴⁵ https://en.wikipedia.org/wiki/Supermarine_Spitfire

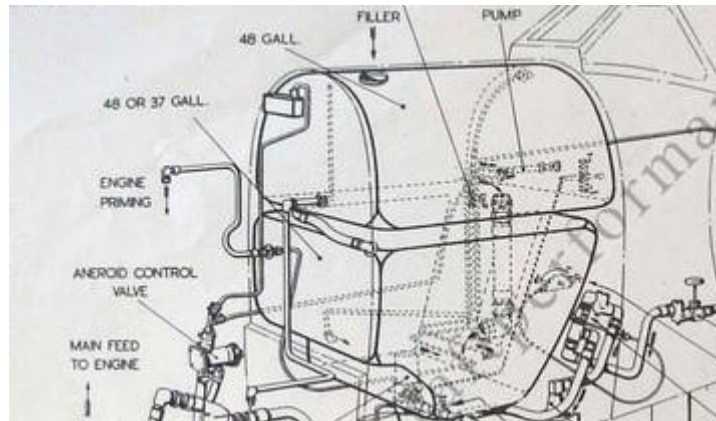
SQUADRONS THAT WERE ALLOCATED THE SPITFIRE

19 Squadron	41 Squadron
54 Squadron	64 Squadron
65 Squadron	66 Squadron
72 Squadron	74 Squadron
92 Squadron	152 Squadron
234 Squadron	266 Squadron
602 Squadron	603 Squadron
609 Squadron	610 Squadron
611 Squadron	616 Squadron

The Spitfire's original engine, the 1175 hp Rolls Royce Merlin II, lacking fuel injection, would get flooded with fuel as the plane inverted in barrel rolls. Enemy pilots caught on to this particular flaw as black smoke would emit from the Spitfire whenever it inverted. In March 1941, a metal disc with a hole, known as "Miss Shilling's orifice", was fitted in the fuel line, restricting fuel flow to the maximum the engine could consume. Beatrice Shilling was a British aeronautical engineer and amateur racing driver. During WWII she designed the device to restrict fuel flow to the carburettor of the Rolls-Royce Merlin engines in Hurricane and Spitfire engines.

APPENDIX 2

SPITFIRE MK 1 FUEL TANKS



The Spitfire was originally built with just two fuel tanks, one on top of the other, just in front of the pilot. Total fuel capacity was 85 imperial gallons (386 litres). This gave the Spitfire an endurance of 1:15 to 1:30 hours, depending on how much throttle was used. The lower tank was later made self sealing.⁴⁶

The fuel tanks of a Mk 1 Spitfire were located in the forward fuselage, protected from the rear and above by armoured plate and by the bulk of the engine from the front. Also, a sealed firewall separated the tank from the cockpit. In statistical terms, the Spitfire's construction translated into much lower rate of burn injuries on Spitfires than on Hurricanes.

⁴⁶ <https://theairtacticalassaultgroup.com>

APPENDIX 3

MESSERSCHMITT BF109E



Type: Single Seat Fighter
Description : Low Wing Monoplane
Designer: W. Messerschmitt
Wingspan : 32 feet 4.5 inches (9.87 m)
Length : 28 feet 4.25 inches (8.66 m)
Height (max): 8 feet 2.5 inches (2.5 m)
Wing Area : 242 sq feet (22.48m²)
Weight empty : 4,856 lb (2010 kg)
Weight loaded : 5,532 (2506 kg)
Power Plant : Daimler Benz DB601A 12 cylinder liquid cooled engine
B.H.P. :1050 bhp
Armament : Machine guns & cannon
Performance
Maximum speed : 387 mph (623 kph) at 18,000ft (5610 m)
Initial Climb rate : 2,300 ft per min (700 m per min)
Ceiling : 36,000 ft (10,950 m)
Range : 575 miles (925 km)
First Flight : 5 March 1936 (Prototype)
Service Entry : 4 August 1938⁴⁷

⁴⁷ https://en.wikipedia.org/wiki/Messerschmitt_Bf_109

APPENDIX 4

PILOTS OF 266 SQUADRON, AUGUST 1940

J.W.Allen	<u>D.L.Armitage</u>	<u>D.G.Ashton</u>
R.G.V.Barraclough	<u>S.H.Batley</u>	<u>S.H.Bazley</u>
M.A.Beatty	E.R.Bitmead	<u>N.G.Bowen</u>
<u>F.W.Cale</u>	<u>H.H.Chalder</u>	T.A.Cooper
T.D.H.Davy	A.W.Eade	<u>H.L.Greenshields</u>
<u>R.H.Gretton</u>	S.A.Goodwin	R.C.Goslinc
F.B.Hawley	<u>H.M.T.Heron</u>	M.R.Hill
A.H.Humphrey	<u>P.G.Jameson</u>	<u>W.R.Jones</u>
<u>D.E.Kingaby</u>	C.Logan	M.W.Mermagen
Middleton	P.H.G.Mitchell	J.G.Pattison
H.A.R.Prowse	<u>R.J.B.Roach</u>	<u>J.F.Soden</u>
<u>D.G.H.Spencer</u>	E.H.Thomas	<u>R.M.Trousdale</u>
B.E.Tucker	E.P.Wells	<u>R.L.Wilkinson</u>
<u>W.S.Williams</u> ⁴⁸		

⁴⁸ <http://www.the-battle-of-britain.co.uk/squadrons/266sqn.htm>

APPENDIX 5

COMBAT REPORT OF P/O FRANK CALE - 2 JUNE 1940

copy to HQFC 8/10/35 37

SECRET.

COMBAT REPORT.

Sector Serial No. (A) KS

Serial No. of Order detailing Flight or Squadron to Patrol (B) Direct to Patrol Squadron

Date (C) 2.6.40

Flight, Squadron (D) Flight A Sqdn. 266

Number of Enemy Aircraft (E) 3 Me 109

Type of Enemy Aircraft (F) Me 109

Time Attack was delivered (G) 08.15

Place Attack was delivered (H) D. in West (20 miles W)

Height of Enemy (J) 19000

Enemy Casualties (K) 1 Probable

Our Casualties (L) Aircraft NIL

Personnel (M) NIL

GENERAL REPORT SEARCHLIGHTS (N) NIL

DID A.A. FIRE HELP OUR AIRCRAFT (NA) NO

RANGE AT WHICH FIRE WAS OPENED AND LENGTH OF BURST (P) 2000 yds

GENERAL REPORT (R) See 3 Me 109 flying alone when they dived for attack. One a ship tank & 2 more which burst. I was in trouble away the 2nd. I saw him head on. He was too fast but I missed him - nearly colliding with him. He both look away to right. I continued to chase away for some time. Just as I was on my tail he turned & see burst at me. I then steep turn to left & immediately followed with steep turn to R & 9000 ft. Rolled on to his back. Then to face & down to sea. (109) they apparently always turn to left.

Signature Frank Cale

O.C. P.O. Cale

Section Flight A Squadron 266

Squadron No. 266

R.A.F. Form 1151.

(See next page for typed version)

SECRET

COMBAT REPORT

FORM F

Sector serial No:	K5	
Serial No. of Order detailing flight or squadron to patrol	Ordered to patrol Dunkirk attack fighters only	
Date	2.6.40	
Flight, squadron	266	
Number of enemy aircraft	3 Me 109	
Type of enemy aircraft	Me 109	
Time attack was delivered	0815	
Place attack was delivered	Dunkirk (20 miles in)	
Height of enemy	19,000	
Enemy casualties	1 probable	
Our casualties	Aircraft Nil Personnel Nil	
General report searchlights	Nil	
Did AA fire help our aircraft	No	
Range at which fire was opened and length of burst	250 yds	4 secs 2 secs 5 secs

GENERAL REPORT

Saw 3 Me 109 – I was flying above when they climbed to attack me. Did a slip turn and fired a short burst. – it weaved and broke away. The 2nd flew into head-on we both turned hard. I ??? him – nearly colliding with him – we both broke away to right. I rolled away to right. I continued to dive away for home when I noticed a 109 on my tail – he fired 5 second burst at me. I did steep turn to left & 30° immediately followed with steep turn to R & got straight onto his tail. 5 secs burst and then deflection shot as he was rolling victory. Rolled onto back & then ½ roll & dived to sea.
(109's) They apparently always turn to left.

Section	
Flight	A
Squadron	266
Signed	A.W.Cale P/O

APPENDIX 6

EXPERIENCES OF PILOTS WHOSE AIRCRAFT BURNED

Many pilots throughout the Battle of Britain suffered burns as their Hurricane or Spitfire burst into flames after being hit by gunfire.

P/O Ken Carver who was with 229 Squadron based at Northolt on September 11th 1940 when he was shot down by a Bf109 while in combat against He111 bombers and Bf109 escort over Maidstone Kent. His Hurricane burst into flames and Ken managed to bale out, but not before he received serious burns to his face and hands. P/O Richard Hillary was another who was shot down off the Kent coast and after managing to escape from his burning Spitfire, he spent a long time in the waters of the Channel off Margate. The salt water stung the raw flesh, and Richard said later that floating helplessly in the Channel and in such pain, you start to think, 'this is the end, and while in the water you think of nothing else except the past.' S/L Tom Gleave, another who succumbed to the burning inferno of his aircraft on August 31st 1940. He mentions how the flames licked his face and body like a blowtorch that will not go out.

P/O Geoffrey Page 56 Squadron August 12th 1940. As a thunderclap explosion tore at his eardrums, Page's first reaction was: I can't have been hit. It could happen to other people, but not me. Then all at once fear surged again as an ugly ragged hole gaped in his starboard wing. And then the petrol tank behind the engine, sited on a level with his chest, blew up like a bomb; flames seared through the cockpit like a prairie fire, clawing greedily towards the draught from the open hood. A voice Page barely recognized was screaming in mortal terror: 'Dear God, save me — save me, dear God.'

Desperately he grappled with the Sutton harness, head reared back from the licking flames, seeing with horror the bare skin of his hands on the control column shrivelling like burnt parchment in the blast furnace of heat. Struggling, he screamed and screamed again. Somehow — he would never know how — he extricated himself from the cockpit, and began falling like a stone, powerless to stop.⁵⁰

⁵⁰ Richard Collier *Eagle Day - The Battle of Britain* Hodder & Stoughton 1966 p45-47

APPENDIX 7

SUMMARY OF SOURCES

Lifeline, various editions, 2021

Australia's Few. Kristen Alexander's Battle of Britain Blog: Vale Francis Walter Cale, 15 August 1940

Ca-pilots

R.A.F. Losses for Thursday the 15th of August 1940

Thursday the 15th of August 1940

Cale-portrait1-opt.jpg (172×300)

No 266 Spitfire Squadron

Spitfire I (N3168), Teston 15 August 1940

Battle of Britain London Monument - P/O F W Cale

Flying Legend Tucano-R at Rylstone: Frank Walter Cale Pilot Officer

<https://historicengland.org.uk/images-books/publications/military-aircraft-crash-sites/milaircsites/>

Pilot Officer F W Cale: report of death; Spitfire N3168 crashed near Maidstone, 15... | The National Archives

AIR81 File Listings - Page 2

Joint Aircraft Recovery and Transportation Squadron - Wikipedia

Rare photos of Nazi plane wreckages littering UK fields during the Battle of Britain | Daily Mail Online

Name: Sowden Rank: Pilot Officer Squadron: 266 Other Dates of Combat: ... | The National Archives

Richard Collier *Eagle Day - The Battle of Britain* Hodder & Stoughton 1966 p45-47

<https://discovery.nationalarchives.gov.uk/details/r/C14503026>

https://en.wikipedia.org/wiki/Messerschmitt_Bf_109

<http://www.the-battle-of-britain.co.uk/squadrons/266sqn.htm>

<http://theairtacticalassaultgroup.com>

https://en.wikipedia.org/wiki/Messerschmitt_Bf_109

Civilian Repair Units – Wikipedia

“Fighter – The true story of the Battle of Britain” Len Deighton, Jonathan Cape 1977

“First Light” Geoffrey Wellum, Penguin 2003

Pillbox Study Group, author David Ottway 2009

Kent Battle of Britain Collection

Kent Battle of Britain Museum

<http://www.bbm.org.uk/airmen/Cale.htm>