Interview

with

SIR ARTHUR BONSALL

and

Staff and students of Lady Hawkins School, Kington

(Nic Dinsdale, Dan Smith, Keiron Herbert,

Anna Yeomans, Kizzy Fitzwilliams and Johnny Waugh)

On

Thursday, 30th September 2010

Q.   Sir Arthur Bonsall is one of the veterans, one of the people who was involved at Bletchley Park and the students are going to be asking a number of questions during the interview.

[1:10 – 2:19 recording level check]

Sir Arthur, you wanted to start by talking generally. That would be excellent. Then the young people will get some ideas for some questions they will ask. When you have reached a natural pause, they will ask the questions and we will record a little bit of dialogue.

A.   That is good.

Q.   So when you are ready.

A.   I thought I would start by saying how it came about that I got involved with Bletchley Park. I will therefore go back to about 1936 when I went up to Cambridge University and did modern languages. I did three actually: I did French, Russian and German. I added the Russian in the second year. Then it was 1939 and, along with many other students, we thought there was going to be a war starting that autumn – big wars usually started in the autumns, and there are various reasons for that – and so I hadn't made any arrangements to look for a job after I had got my degree in 1939. I went on holiday after the end of the term and waited for war to be declared, roughly speaking, that was how it happened.

After the war broke out, I went to Cambridge. They had an army appointments board there and you could go and apply to join up and I made sure I went to this. I was accepted but then turned down by the medical side, which said I had got a heart murmur so they didn't want me in the services. I was therefore at a bit of a loose end, not having thought of anything else.

[4:17]

It so happened that the landlord of the digs I was in in Cambridge was what was known to us then in those days as a "bulldog". The streets of Cambridge were patrolled each evening by a senior

member of the university called a proctor, wearing his full gown and cap and so on, assisted by two able-bodied men (the "bulldogs") who would do any chasing that might be necessary to apprehend students who hadn't got their gown on or were misbehaving or something like that. Of course, when everybody was behaving the proctor and his two would chat about this and that, and my landlord said that his student (meaning me) had just been failed in applying to the army and had a degree in French, Russian and German. A week or two after that I got a letter from, in fact, the proctor concerned, who was a senior fellow of St. John's College Cambridge [saying] would I go to his rooms at such and such a time, which I did. There was another young man there at the time and two people, two men, came in who weren't introduced, never explained anything at all about what their concern was, but they asked whether either of us was interested in war work. They used the words "confidential war work"; I think that was the term they used. They said it would probably be very boring but occasionally there would be excitements. They said no more at all except that both of us would probably be hearing from them. They said "shortly" but it turned out to be several weeks when I got a letter asking me to catch such and such a train from Euston Station to Bletchley Junction Railway Station, which existed in those days, and not to tell anyone, not even my parents, where I was going, or anything else and that I would be met at the station. I followed these instructions. This was 31st December 1939 – New Year's Eve.

[6:52]

I did all this and I was met and walked from the station to Bletchley Park. In those days there was a pathway, which led through a few bushes into the grounds of this Bletchley Park estate. I was asked to sign a copy of the Official Secrets Act, given the address of some digs in Bletchley and asked to report back to Bletchley Park the following morning. I did and I was introduced to the head of the section I was to be in. He explained I would be working on the communications of the German Air Force. That was about it. A few minutes later I was sat down at a wooden trestle table copying out messages that various wireless operators had recorded.

That was my introduction and I got no explanation of what the work was all about and so on

but one knew – one just knew – that the German Air Force would be of interest in the war and war had, after all, started, though not in very grand terms, except for Poland. That is it. That is how I came to be involved.

The head of the section played quite a considerable part in everything, and I will probably be referring to him again, one of the old hands at Bletchley Park, though not, one of the senior people, people who had actually worked in World War I on this same sort of stuff; there were about half a dozen of them there from World War I. Most of them didn't last out the war; and, as a 22-year-old, I hadn't much sympathy for the ancient. That is it, my introduction.

[8.58]

If you ask questions, I will begin to know what aspect of things you might be interested in hearing more about.

Q.   Can I ask a question, if you don't mind, but please do jump in. You have arrived at Bletchley Park. Can you remember your first emotions, your feelings?   Was there excitement? Can you remember how you felt?

A.   What I felt was that this is what war is; you do what you are told or you have an opportunity of doing something that might be part of it – no more than that really. There weren't any stresses about this. The actual office place was a hut and one sat at a trestle table, a folding table with struts on it, on a folding chair and just got on with the job. We didn't really have time for feelings. You felt you had to do what you were told to do; I think that was the main thing – at least I did.

Q.   So were there lots of other people?

A.   At the time there were about 120 people who had moved from the London headquarters where GC&CS were; that was its name in those days. It moved out of London just before war broke out in order to be out of bombing which was expected to be a terrible thing for everybody, and it didn't turn out to be quite as bad as that. That is why we were there. There were about 120 people. Most of them were people who had been in the office for a number of years, and there were these few really old

hands who had been there as far back as World War I. But it was still run along sort of country club lines in that there was a mansion house and a few huts – wooden huts had been built by that time. Inside the hall way of the mansion house there was a table and on it was a barrel of beer and a tray of glasses and a chit book and so on. You know, you helped yourself and left the chit on the table and expected to be billed for it later on. I can't remember I ever did get a bill for those chits, but it was very much sort of a country house, country club living. It didn't last for long because an expansion began in 1940. By the end of that year there would be 200 or 300 people at least, so they had to build an extra place for a canteen and so forth, but to begin with it was all based on this mansion house – rather grand surroundings.

[11:41]

Q.   Could you just say a little bit about the sort of people that you were working with and perhaps any particular friends or colleagues?

A.   I didn't know anybody there for a month or two. I had never known anybody there previously. There arrived at the section I was in the wife of my tutor at Cambridge, so that began to bring things together a bit, but one got to know quite well the people one worked with. That would mean literally in my case the people who worked in half of a hut; we were all one section at the time, the air section – the German air section, that is. We were in that end of the hut because it was the nearest to the teleprinters, which were at the back of the mansion house, and we were getting occasional messages coming in, delivered by a short of chute which operated without any mechanical aid. One chute sloped from the teleprinters to the air section, and another was from the air section back to the teleprinters, all very home made.

So I got to know a few people at lunch in the main building, and also in things like the lunch break one got to know by sight a number of people who worked in other huts but one had no idea what they did, and that was the atmosphere of the place: you knew what you were doing yourself obviously; you didn't enquire about other people's work; there was absolutely no discussion of work

outside the huts with other people. Some people worked in the main building. There was discussion there, of course, but otherwise in the grounds, going home and back to one's digs and that sort of thing, no discussion at all was permitted and I don't think happened. It will have happened occasionally obviously but basically it didn't.

[13:51]

Q.   How much free time did you get?

A.   One worked a six-day week with occasionally having to do Sundays because the place was manned all the time. Some of us worked on three shifts. I didn't do much of that but I did some. Someone had to be at the teleprinter, that kind of thing. One was entitled to a week off every quarter, three/four weeks a year; but, in practice, that was "subject to the exigencies of the service", I am afraid, and they very often were so exigent that you didn't get it. I can only remember one full week's holiday throughout the war, but that was a very enjoyable one.

Q.   So did you ever actually leave Bletchley?

A.   I did in the summer of the first year. I was posted temporarily to the wireless interception station at Cheadle in Staffordshire. What they were doing there was intercepting the communications of German long-range aircraft, bombers and reconnaissance aircraft, mine layers, and aircraft that attacked ships. That work at Cheadle had started a year or two before the war. In fact, it became operational because the Germans began practicing their long-range aircraft out over the North Sea before they admitted even that they had an air force at all. One of the sources of information about that was this station at Cheadle, which had been able to recognize the radio communications of these bomber aircraft.

[16:00]

They were controlled from bases in Germany and they sent these messages on what were then short waves; (we called it high-frequency). It was interceptable at Cheadle. We had a very good set of aerials in a field by the building in which we were. Information had been supplied by Cheadle from

before the war, and once the war had started they were supplying intelligence on a regular immediate basis because they were hearing aircraft that were operating, doing reconnaissance flights over Britain, and the occasional bombing raid; they weren't frequent in those days, the very early days. By direction finding you can tell from which direction a signal is coming. Cheadle had several of these DF stations (some were miles away from Cheadle itself) so that they could triangulate by comparing the directions that the signal appeared to come from . It enabled you to give an approximate idea (and you had some idea where the main bases where in Germany anyhow) so you could locate where the aircraft was coming from, which meant it was possible for Bomber Command to do occasional raids on them. Right from the beginning of the war, that was going on. This was all before the high-grade had even been thought of as a source of intelligence, in fact it was thought not to be breakable at that time. But Cheadle was in business. The messages that were sent to these aircraft used codes, which I can describe, if you want, if you are interested in that sort of detail.   The codes themselves were not solved at first, .

[18:15]

      obviously reducing the amount of intelligence that could be produced, but it didn't prevent Cheadle from producing information which was of value to Fighter Command and Coastal Command right from the beginning of the war. Later on, the codes were broken – and that is a story I can tell – but even before they were, some information (about which aircraft, where they were operating, where they had come from and therefore would go back to) was reported, and also where they were likely to go because they navigated in those days by means of radio beacons in Germany.(There were 50 of them).By triangulating from the aircraft, the pilots could tell where they were over England by taking bearings on which beacons they were hearing. That was a side of things which was in business as soon as the war began and went on right through the war and got better as it went on.

Q.   You talked about the Luftwaffe codes. We always hear a lot about the Enigma codes. Could you tell us a bit about how codes were cracked?

A.   Yes. The Enigma, strictly speaking, wasn't a code; it was a machine cipher and the people who broke

it were called cryptographers, not code breakers, despite all the war-time, or post-war books that call

them "the code breakers", meaning the people who were doing the Enigma. But these other codes,

they were so-called low grade; we tried to find another term for them, which wouldn't disparage them

because "low" is not a good word to be associated with, but it stuck throughout the war. The codes

used by long-range aircraft were two page booklets containing a thousand numbered meanings. To

send a particular meaning the German wireless operator looked up its number, then exchange this

number for a different number taken from a daily changing recyphering table. This was the number he

would transmit.

[20:55]

So if you were at a particular place – and there were 50 groups for common place names – if

you wanted to say you were over Antwerp you would find the code group number for Antwerp,

exchange it for the code group in the recyphering table. You would send that one. Similarly,

instructions from the control stations, they didn't do much controlling but they might say "Abandon

mission," as sometimes happened. Well, the code book would have the word "abandon" in it. Well,

it would probably have "abandon operation" actually as one thing, so that the man in the aeroplane, the

bomber, would receive a certain code group and he would look it up in his recypher table and his code

book and it would say "abandon operation," so he would fly home.

These aircraft, long-range ones, carried radio operators as part of the crew. Their job was to

deal with communications to and from the aircraft, so they had time and opportunity to use this little

code book. The code book had to be simple and usable rapidly – speed was absolutely essential,

obviously, in air operations – it was a simple device. You couldn't have had anything complicated

because it would have interfered with the operation itself, while you were trying to interpret whatever

the code was. The people concerned with security of this accepted that it would only probably give

security for a few hours while the operation was happening, but it was assumed that – and I may come

back to this point later – the information wouldn't be of intelligence value to the enemy, the other side, for longer than the operation was in progress. After that you were getting on with the next operation. The old operation was over and done with.

[23:07]

So they were simple codes; but they changed every day. The frequencies on which these messages were sent also changed every day and each aircraft had a secret call sign which changed every day, and those things were part of the problem one had to deal with just as much as with the codes themselves. That is the general picture.

Q.   Were there therefore days when the codes were not broken?

A.   No. Very fortunately the Germans helped here – they didn't know they did: every day, without fail, from the beginning of the war to the very last day when a message in code was sent , a series of weather aircraft (weather reconnaissance aircraft) operated. There were several of these aircraft; you might get up to five of them flying a day. At first light each day these five aircraft took off from places in France and Holland and flew out over the North Sea and into the Atlantic as far west as they could get. The British had put into code their usual weather messages so the Germans had been deprived of the weather information coming from the west. So they sent these aircraft out to try and collect as much information about the weather which was coming towards them over Britain and would therefore affect bombing targets.   When these aircraft flew out they sent a series of messages once they got out over the sea, and each message consisted of the time, the position at which the aircraft was when the observation was made. For this part of the message they used the main code I have already mentioned followed by the actual weather content itself. They weren't simple things like "It is cloudy today"

[25:22]

. What they sent were synoptic weather reports. These were very much according to a pro-forma and it would have the temperature and wind strength, height of cloud, cloud coverage and so

forth. These weather messages were encoded in a separate code, which also was broken throughout the war. Well, there were two advantages here. One was for the main code system used by the German Air Force, throughout all the stages of the war.. It was broken by the British station at Cheadle from the beginning of each day, at least part of the code, because giving the time and location of the weather observation in this code meant using a whole lot of groups from the code book. Thus the beginning of a break was made each day from first thing and later, during the day, they would be added to as further radio traffic was taken. The second advantage was that the weather information in those messages was also repeated by the ground stations that received it in Germany, or in France, where the aircraft had taken off from; it was repeated all over Germany in other codes and ciphers, including Enigma, acting, therefore, as a crib to enable people to break other codes. These very helpful series of actions by German weather aircraft went on throughout the war, and the very last message we got in code was from one of these aircraft. All these messages started off with the word "Zenit," zenith in English but "Zenit" in German.We were, you know, absolutely "on a fish" with that one.

Q.   Brilliant. Ingenious. Were you ever aware – and I presume you weren't – of the importance of what you were doing and what your work was actually achieving?

[27:38]

A.   We were never told till right at the end of the war, then various messages came in, but during the war, no, that wasn't the sort of thing that went on, but we knew it was of value because the people to whom it was being reported in the various RAF commands were using it, you know; they wanted it, they waited for it and if it was late then they would begin to complain. The whole thing had to be done in as near real time as possible to be of value and this was done. So the idea that one got messages saying "That was useful," that didn't tend to happen. Later in the war we in Bletchley had direct contacts, meetings and so forth, with the people we were sending our results to and it was evident there that they were using this stuff and appreciated it. But we had to wait really till the end of the war to

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get anything in writing about it.

Q. How important was secrecy even to your friends about what you were doing?

A. You would say nothing at all. The only people one talked about one's work with were the people one was working with. I include in that the head of the section; he would be kept informed about all of this. But one just didn't talk to other people, except where it was established that two sets of people working on different things could help each other by exchanging information. But the general idea was you don't pass information to anybody except the people it was intended for.

Q. Linked to that, I have always been fascinated, were you allowed off the site at Bletchley? Could you go to local pubs, could you go off the grounds and socialise as normal?

[29:41]

A. Yes. Our movements weren't controlled; we weren't under that sort of control. Anyone who felt unwell, they just went home, that sort of thing. And certainly the pubs were full of people from Bletchley Park. There weren't many pubs. There was only one cinema and this was one reason why the people in charge at Bletchley, realizing that here were a gradually increasing number of people, hundreds, in fact thousands in the end, away from home not able to talk to anyone about their work, and everybody had an evening, or if they were on shifts the equivalent time when they really had nowhere to go. So they built – it was a very definite thing to do – a small theatre with a large room and so on, in which all kinds of activities were organized. Those things were brilliantly done because a lot of the people there were university people who were able to compose poems, write revues, and these were a regular feature of work there – very important because it was a fairly dead area otherwise, Bletchley.

Most of the people were in digs of one sort or another. Some people bought houses; that tended to be the older people who could afford that sort of thing, but most of us were in digs. Many of the digs had several people in them. On the whole, people in the Bletchley area and surrounding villages where this billeting went on, were very glad to have billetees from Bletchley Park because the

alternative was evacuees from Birmingham, and they didn't take them on if they had a choice.

[31:47]

Q.   This is just a little bit off the subject, but do you have any funny memories of life at Bletchley?

A.   Sorry, I missed the beginning?

Q.   Do you have any funny memories of life at Bletchley Park?

A.   I have lots, although it wasn't necessarily at Bletchley Park, because I got married in my second year there. My wife, in fact, had worked in the organization a couple of years before the war. She was an Italian linguist. With the war in Abyssinia, as it was then called, it meant that the Italian navy and air force and army were a target for the organization and we were producing a lot of useful intelligence . We weren't actually fighting the Italians, of course, in those days, but it was necessary for the Foreign Office to know what was going on. So as well as being busy at the office, I also had a family. Two of my sons were born during the war, and bringing them up in difficult surroundings wasn't something that took no time at all.

Q.   So did your parents actually know that you were at Bletchley?

A.   To begin with they didn't. They didn't have any idea because there was a ban. In fact, if one wrote a letter to anyone outside Bletchley Park, to parents or anybody, you had to post it in a letter box in the mansion at Bletchley Park itself and it was then taken up to London and put into the mail system in London so it got a London postmark. There were various what one calls box numbers in London that were in fact for Bletchley Park. There is a story that at one time a grand piano apparently arrived, addressed to someone at Bletchley Park, at a post box that was intended for Bletchley Park. But as more people began to be employed, it was quite impossible to go on maintaining that level of security, so it became possible to say that one worked at Bletchley Park and so one's parents knew where one was; they still had no idea what you were doing; there was an absolute ban on any information at all.

[34:13]

The people who were married, where you had a husband and wife and one of them was

working at Bletchley Park, they were not allowed to say anything to their spouse until the end of the war – in fact, until the early '70s.

Q. You got married; you had children during the war. Did you have a rented accommodation? Did you have a house? Where were you living?

A. Finding somewhere to live, once one got married you couldn't live in digs, at least you wouldn't want to , would you, so one looked around for houses which were for rent. It wasn't a question of looking them up in the newspaper. What one did was keep one's ears open. If one heard that somebody else was moving from a house, you found out – if you knew them – where it was and you would have a look to see whether it was any good, and the moment they sent their last cheque in for rent payment, you put the next one in, payment due, just pay it like that. You never had any contacts with landlords or lawyer, solicitors or anything like that. It was just a sort of hand-over system, but it seemed to work. Of course, the people who owned these empty houses got their rent paid, got the rent paid as regularly as – and probably more regularly than – before because there was such a demand for such places. It worked quite well as a system. Highly illegal probably!

Q. Were you aware within Bletchley of some of the major things going on in the war? Obviously, what you were doing was helping, particularly in events such as the Battle of Britain. Were you aware of the big events going on?

A. Well, you were aware, if you were supporting one of the Commands, you were aware of what operations they were engaged in and how they had gone, apart from what one got through the newspapers. The government controlled the supply of information about what was happening in the war which the newspapers obligingly, without any quibble, published as news.

[36:36]

So if somewhere was badly attacked, the government would decide how much information about that attack should get into the newspapers, and if it missed altogether they still might indicate some result. And if it hit somewhere badly, they might say that there was no damage at all. I mean,

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misleading information was the normal thing to appear in the papers at the time. That was the standard treatment. So if one was working for people fighting the war in the services, you inevitably got a flow of information back from one's, we called them, customers because what we were interested in was what they had been doing and needed to know that. That was just roughly how it worked.

One was dealing directly with the staffs of a given command, I am thinking of Bomber Command. Towards the end of the war, the main air force operation going on were the bomber attacks which took place every night when the weather permitted flying.. We were in contact on the bombing side of things with Bomber Command for the night flights and the US Eighth Air Force for the day flights. We found the Americans extremely good customers and they used to consult us about their future operations.   The Americans arrived in this country with a lot to learn. Their planners had reckoned that their aircraft, their bomber aircraft flying in tight formation, would be able to defend themselves without any help from escort fighters against attacks by the German Air Force.

[38:56]

Well, they found out the hard way, that the moment they started to go further into Europe unescorted by fighter aircraft, they suffered terrible losses and in the end for quite some months they abandoned flying altogether, or almost altogether, because the losses were so high. I can remember that the last raid that the Americans attempted before they had to stop for a while was against a target where the Germans had two hours' notice of this American formation coming before it had even crossed the British coast, you know, so they were ready for them. But they then were supplied with long-range escort fighters – Mustangs is a name I remember in particular for a long-range escort fighter (there were others). The Mustangs completely changed the war for the Eighth Air Force and they got air superiority. The Germans were on the defensive in the last stages of the war and their aircraft would very often seek places to get out of the way of German raids going over Europe, because these Mustangs had a superiority over the Messerschmitts 400 miles away. It was an absolutely astonishing achievement.

Q.   Your work, do you think it helps ... You were talking about Bomber Command and the US AAFF, do you think your work helped to redirect missions to—

A.   Oh, yes.

Q.   —avoid night fighters, for instance?

A.   Indeed it did. If one takes Bomber Command, in the first part of the war they reckoned that the only sort of operation they could undertake was one where a stream of bombers, not a formation but a stream of, a long stream of bombers, would attempt to fly in a given direction in a straight line towards a target. The Germans set up a defensive system across this side of Germany, so any attack on German targets would have to go through a series of defences where German night fighters used to wait for the raid coming – and they knew it was coming because they had a Sigint service too. The Germans set up this system where German fighters circled round radio beacons. They would, in an area of about 15-mile radius, fly around a radio beacon so that they kept in position. When the British aircraft came into that area the German fighters would start receiving instructions from the German radar about exactly where the RAF bombers came in and the losses were terrible. Whether the RAF at Bomber Command couldn't do anything else at that time, I don't really know; but anyway, there was a delay before they improved their tactics. But after they began getting the intelligence we could give them, we found, they altered their tactics. They didn't fly lots of aircraft in a loose formation; they flew as tightly as they could. They didn't fly in straight lines towards the target; they would sort of do dog-leg sideways, they would use spoof raids as decoys to get the Germans to think a particular area was going to be attacked when it wasn't; the main force would go somewhere else. All that kind of thing was being done.   I am not saying this is all the result of our work because other kinds of things, such as radio countermeasures developed by the British, were a great help to Bomber Command achieving a better loss rate. But at one stage this German defensive system, based on these radio beacons they circled round, was absolutely swamped by the new Bomber Command operations because instead of just one fighter at a time arriving, a whole swarm would arrive at once.

[43:47]

Their system was completely overwhelmed. They then changed their methods so that instead of controlling individual aircraft on to individual RAF bombers, they sent up whole formations of fighters in an attempt to find where the RAF was and control them all, the whole formation at once, trying to find the British. That meant there were a lot of control messages from German ground stations to their night fighters, you know,   "fly this way and this way" and fly at certain heights, and so on, trying to find the British. What happened was that the Y operators in another British system, which I haven't mentioned so far, listened to the communications of the German night fighters which were on radio telephony, not code book and so on, just plain language radio telephony. These RAF operators, including WAAFs, worked at Kingsdown, and were used to give false orders to the Germans and they would say, "Abandon mission" or "Fly north" or whatever, to try and confuse the Germans; they did confuse them. As a means of identifying these false orders, the Germans brought into use a challenge and answer system originally intended for German airfields to be able to identify any aircraft wanting to land that they weren't sure was German or not. The airfield could send a challenge which consisted of three letters and the aircraft wanting to land at that place would reply with the appropriate answer from a code which had been largely solved at Bletchley. If it was the right answer then they were allowed to land.

[46:24]

Well, what happened was the German night fighters, if they got an order which they didn't quite believe, they would challenge it and if they got the right reply, they would know that was a German order and they would follow it. Well, the idea was that if they challenged one of our operators sitting at home in Kingsdown, he might give the right answer because we at Bletchley had been collecting, studying, this code since the beginning of the war. We had worked out some of it and we had got a lot of captured copies of it from German aircraft that had crashed in Britain, and there was a 60% chance of his or her being able to answer the challenge correctly. This was in the second

half of the war, after things were operating properly.

> Well, I don't know what I started on there, but —

Q. That is incredible. I asked a question about your work actually redirecting night fighters and clearly you did; I had no idea.

A. Well, we didn't do the misdirecting, but the stuff we were producing enabled the RAF to do this, yes.

Q. Incredible. You said it wasn't until the end of the war that you found out really what your work had been doing. Obviously, that is one aspect. Your work clearly saved many, many Allied lives.

A. Yes. That is the sort of thing we got in the eventual statements.

Q. Yes, many lives. Were you aware of actually, in breaking Luftwaffe codes and intercepting Luftwaffe messages, that your work was actually influential in sinking ships? Were you ever aware of that?

[48:41]

A. I don't think we were ... I don't think our work resulted in sinking ships. Preventing the sinking of British ships was part of what was being done, but from Cheadle. Cheadle was working against the German aircraft that would attack shipping round the coast and they were very successful with that in warning the RAF that these German attack aircraft were taking off. One of the things that helped them do this – and this is independent of codes or anything like that – was that when a German aircraft was about to go on an operation to attack British shipping, they would begin by tuning radio sets at the base where this German attack aircraft was based. This was to make sure that the radio in the aircraft was tuned up to correspond exactly to the radio on the control ground station, and that happened before it took off. Cheadle was able to identify these tuning signals, where they were and which units were doing it and this was how they could predict that an aircraft, a German aircraft, of the sort that would attack shipping was about to take off from such and such a base. So they were able to give warning to Coastal Command, whose job it was to protect British shipping. That sort of thing was going on.

Q. After the war, did you remain in contact with anyone that you had worked with?

A.   Very little actually. My last contact with people was right at the end of the war. One of the jobs I had

was arranging for members of each bit of the air section in which I had been working to write histories

of the work throughout the war. They had not necessarily been concerned with all the work

themselves, but they could get access to records because we had kept a lot of information all this time.

[51:03]

So I virtually said goodbye to the people then and the job because I went over to the peacetime

organization, which was busy, and, you know, that was the war; that was over. I really didn't maintain

those contacts, except for a few odd individuals. These days, finding someone who was in the same

section is something I have not managed to do at all; I haven't found a single one.

Q.   Did you know anyone who was in the RAF or had gone to fight in Germany?

A.   I got to know people temporarily in the Commands, people who were controlling operations, planning

operations, but I was never actually in contact with the people who were doing the real work, the

flying, the actual RAF pilots, aircrew, and that sort of thing. They were not supposed to have any

contact with anything secret. That was a standard procedure, that no one who could be in contact with

the enemy should know anything that they might be forced to talk about; so they didn't know it.

Q.   You told us how you entered Bletchley, and presumably with a fairly lowly job to begin with.

A.   Oh, yes.

Q.   Could you just tell us a bit about how you rose up the ranks?

A.   Yes. Some people, in describing the work at Bletchley, have called it a chaotic organization. In fact, it

wasn't. It was a form of chaos, if you like, but it was much more a free thing. The head of the section,

had got lots of good ideas, which he made sure we were aware of. One of them was, "Don't assume

that anything is of no interest. Investigate everything persistently until you have found out exactly

what it is, what its connection with anything else is so you gradually build up a picture". He was

instilling that sort of idea, but otherwise he left pretty well each individual, or each subgroup, to get on

with the job. One told him what was going on, so he had a general idea what successes were being

achieved, or lack of success.

[53:37]

Q.   The question was you rose up in importance?

A.   I started working in January 1940 copying out pages of stuff day after day. This went on for several

months, gradually beginning to realize what the stuff was. In fact, we did sort out what it was, but for

a time I was doing the absolutely basic work. With low-grade codes, the sort of stuff we were working

on, this in fact was part of the solving of them, because if you copied things out you noticed things:

something on one day is the same as on another day, and you gradually worked things out. So in fact

quite senior people spent a good bit of time just copying stuff out as part of the process of breaking.

But anyway, I did plenty of that. I then got sent to Cheadle for a couple of months. This was the time

of Dunkirk. The Germans had arrived; the Germans had conquered Europe.   Cheadle was essentially

a place where the experts there were signals people; they understood about radio and all this. But they

weren't linguists, so when it came to breaking the codes, which involved only a minimum amount of

language, nevertheless it was German and you needed to know some German to be able to unravel

what it was all about.

At Cheadle I was in a group of people, young civilians, 20-year-olds, mostly undergraduates,

recruited early in 1940, linguists largely from Cambridge. Why Cambridge keeps coming up in this is

because people there were on the look-out for people for Bletchley, not that there weren't suitable

people at other places.

[56:17]

They had two weeks' training at Bletchley Park in breaking these codes, three-figure codes

and things I was talking about. They were then sent to Cheadle, about half a dozen of them, to break

these codes actually on the day. Instead of the stuff having to be sent down by teleprinter to Bletchley

for the old fogies to break, these young people were doing it currently at Cheadle and they made

a great success of it. Well they had the advantage of the "Zenit," which I mentioned to you, but

nevertheless they were breaking this stuff much quicker and more completely than it had ever been broken before. They were worked off their feet; there were only half a dozen of them. They were supposed to operate round the clock, well that is difficult with six people, anyhow; there weren't enough. So I was sent up as a temporary reinforcement at this effort. So I was at Cheadle working on this air-to-ground stuff, working in the main set room at Cheadle, and so we could hear the wireless sets of the operators buzzing and humming and they could see that the stuff they intercepted went straight to someone who was going to be using it, so their interest in the job was maintained. One of the problems with Sigint as a whole was in most of the stations the operators had no idea what happened to the stuff they intercepted; they just knew they had written it down and it had gone off, you know. Whereas the operators at Cheadle had the advantage of seeing someone using it and in fact had some idea, of course, what intelligence was produced.

I came back to Bletchley in mid-summer roughly, just before the Battle of Britain and I know that during the Battle of Britain a very great help to the RAF intelligence was achieved by this other station, Kingsdown was the place.

[58:21]

What had happened was that the planners had worked out that German fighters, single-seater aircraft would not use codes and wireless telegraphy and all that; they would use voice, radiotelephony, plain language except for a few code words. I mean, you can imagine a pilot sitting there with a few code words strapped to his knee but not much else; he couldn't have anything more complicated than that in a single-seater aircraft. So they reckoned that the Germans would use radio for this, would use radiotelephony. Therefore, the RAF had set up stations down the east coast of Britain and the south coast, small stations – this was done in collaboration with the Admiralty – and each of these little stations, which were called Home Defence Units, was responsible for listening out for radiotelephony being used either by German fighters or small German naval craft, mostly torpedo boats, that sort of thing, and report anything they heard to the nearest air or naval command. They

were run by the central one of them, the largest one, which was set up eventually at Kingsdown in Kent. During the Battle of Britain they were able to supply a terrific amount of support to Fighter Command to help them with countering the German attacks. For example, between them Kingsdown and Cheadle would be able to predict which bomber units were going to take off; well, they heard them talking about getting ready to take off and taking off, they'd intercept that so they could give forewarning to Fighter Command of when bombers were likely to arrive over Britain, which meant that the fighters, the RAF fighters, could take off in time to get the height ascendancy they needed. That was the great thing. You had to get higher than the oncoming enemy.

[1:00:41]

So Cheadle was helping with the forecasting of operations by bomber units. But Kingsdown, and all these Home Defence Units, were doing the same thing for the escort fighters. They could say when they were taking off. They also could hear bombers, German bombers talking to German fighters about protecting them while they were on these raids. One of the reasons why Kingsdown's ability to tell Fighter Command, at 11 Group and the other RAF places, at what height the German fighters were operating was so important, is that the radar system, which everyone is very proud of, couldn't tell heights. It could tell distances, but not heights. Well, heights are as important as distance really when you are running a fighter defence system. Also, our radar in those days couldn't distinguish, when it got a response on its screen, couldn't tell whether it was responding to a group of bombers, or a group of fighters. Well, that was essential knowledge to know in the control rooms. Kingsdown could help with that sort of thing. So that in fact Kingsdown filled gaps in the radar coverage which were terribly important. I mean, of absolutely vital importance to the defence during the Battle of Britain. Kingsdown was doing that. In those days, all this radio telephony (RT) wasn't even being supplied to GC&CS. I didn't even know it existed. But our masters in the Air Ministry had realized that there were a few map grids and code words and so forth used in this radiotelephony which the various Home Defence Units hadn't been able to interpret correctly, so some confused

reporting was done. All this stuff suddenly arrived with us and we were told to provide help to sort these things out.

[1:02:49]

The whole idea was that we were to support Kingsdown. Well, in fact what happened was that in sorting these little problems out, studying the stuff, one of the things we produced was a fair copy of each day's radiotelephony. Because there were various stations intercepting the same thing, so you could have two versions of the same thing. We produced what we thought was the correct version, we'd sorted out the code words, we'd solved the map grids. Whereas Kingsdown and elsewhere had reported what they got instantly – they would hear something on the radio and reported within a minute ,real time, to 11 Group and elsewhere. We had the advantage of working on the next day, sometimes a longer time than that, and we found that we were generating information about what had actually happened, which was additional to what Kingsdown had been able to report while they were doing that in real time. I mean, it is not wonderful; it is just the nature of things. We began doing that and we began sending the copy of the extra information we produced to Kingsdown so that their future reporting could benefit. The Air Ministry, who had control of us in this sort of thing, said we were to stop doing that. We weren't to do this. Their idea was our job was to break codes, that was that; we weren't to do anything else and they regarded what we were suggesting as producing intelligence and that was not in our charter to do. It doesn't seem to have bothered them, that the improvement that might have been achieved in Kingsdown's and the HDU's reporting as a result of our giving them this background would have been a good thing, even in their eyes. Anyway, they just said, "No, stop it." Well, what happened was, we did stop it, of course, we were under their orders, but we went on doing this work, we worked on the stuff, and in the end we were sure that we were generating extra information which we felt in our bones – we had no other reason for it really – would be of value to the RAF.

[1:05:15]

And so we proposed that we would start reporting on the extra information that we gained; we wouldn't do it on the days it all happened, we would do it the next day or perhaps two days later but they turned it down. They resisted that proposal for a whole year. So a supply of intelligence, which in the end proved to be very important to the RAF, was denied to them by the Air Ministry for a year. And even after they had agreed to our reports going to the RAF Commands, they didn't allow us to have direct contact with the staff officers in the Commands. So we were producing what we thought they wanted to know. What we needed to know was exactly what they wanted to know and we needed direct contact. That was months later before we got there. Once that had been achieved, the relationship really developed, and by this time the Americans had come into the war and it developed with them too. In the end, the reports we were producing were regarded as just what they needed.

Well, now, coming back to your question, when I got back from Cheadle, I was put in charge of a small part of the German air section. I think I had two assistants, something like that, and our job was to work on a certain type of low-grade code; they were called small ciphers for some reason, probably because of the word "low" in the term "low grade code". As a natural development of all this work we were doing, we discovered that the information we could produce from the codes of the various sorts should be examined together with the radiotelephony on clear traffic coming in on radio because they both dealt with the same air operations..

[1:07:27]

We were getting, in the small ciphers, things like German radar systems reporting attacks by Allied aircraft over Europe. The radio telephony also showed the German day or night fighters in the same operation, so we combined the two; we put these two sorts of low-grade stuff together and that is why we were able to gradually put together enough information to produce proper intelligence. I remained in charge of the small cipher subsection. I never got changed from that, but I was used by Joshua Cooper as an unofficial co-ordinator of the various parts of the section; although I had no

authority over anybody, I was supposed to know what they were all doing and, you know, help them to work together, that kind of thing – unofficial coordination. Right at the end of the war I actually got made head of the German air section, but by that time the war was almost over. The traffic, the amount of stuff reaching us, had declined, of course, as the war was ending; people wanted to stop working at Bletchley and go off home. We persuaded some of them to stay on just a bit longer to get these histories written of the work... I did that as head of section; I asked people to write histories. So that was what happened to me during the war.

Q. It is a fascinating story and an important story. Do we have any last questions? I think we are pretty much going to wrap up the interview anyway. I did have one last question. With all the people that we have interviewed over the last few years, we have always asked them what their feelings are today about the importance of remembering, remembrance for you, remembering Bletchley Park, but, more generally, remembering what went on during the war, the suffering, the loss. What does it mean to you today?

A. The side I have been waffling about of the air war hasn't been written up properly. I have made some small attempts, but I haven't been going back to the National Archives in Kew and places like that to, you know, get absolute textual quotes for what happened. What I am hoping is that students of the future, studying history, perhaps as post-graduates, will undertake work on this sort of stuff, going back. There is an immense amount of the real factual information, not just memory, about this available in the archives, but it needs research. It hasn't been done yet.

Q. It is certainly a fascinating story. And you say "memory": your memories could well be the basis, this interview could be the basis, of something quite exciting.

A. I have written a little as a signpost for people who are doing the real research, in the future, of the past.

Q. Thank you very much. I am sure we all feel that was fascinating.

A. I am sure there is a lot to be said still about it. Thank you very much.

Q. Thank you. I will stop now.

[The recording ended at 1:11:12]

Sir Arthur Bonsall 30 September 2010