



TRANSCRIPT OF ORAL HISTORY RECORDING

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BEGIN TAPE ONE, SIDE A

This is Edward Stokes recording with Arthur Hoyle, Bomber Command, tape one, side one.

Arthur, could we perhaps just begin with when and where you were born?

I was born in Sydney on 29th October 1922.

Right, and just the background of your family?

Ah, the elder of two boys- my brother was five years younger than me. My father was a clerk with the Sydney City Council and my mother didn't work. We lived in a very middle class suburb of Lane Cove.

During your time at school I think you were saying that you did have dreams of flying, of aircraft?

Oh I was besotted with aircraft when I was in, especially in primary school. You see I am old enough to remember when Sir Allan Cobham made his first flight to Australia, and I can still remember running around the back yard pretending I was Sir Allan Cobham. A bit later at Chatswood Public School when I was a bit bored in the class - and I never had any trouble at school - I used to get a pencil and pretend it was a Zeppelin and I was Lieutenant Robinson - or I'm not sure I knew his name - in an SE5 shooting down this Zeppelin over London. And I could hardly wait for the time when I could fly, but my parents would never ever let me go up in an aircraft. They had no intention of allowing their elder son to end the flaming ball of fire.

Well that's understandable. Yes, I spent most of my schooldays sketching destroyers and corvettes.

(Laughing). Right.

And islands of course - the perfect world. Two other aspects of your boyhood, your youth. The general tradition of the ANZACS and the achievements of Australians and New Zealanders in the first war, were you particularly conscious of that or not?

Oh yes, my very much dearly loved uncle had served from 1916 to 1919 in the 30th Battalion in France and I used to hang on what he had to say about it.

Did he present a picture of war as something that was glamorous or something that was awful?

Something that was pretty awful, but I didn't really believe that, you know. I was taken in by slouch hats and uniforms and glory - whatever that meant. After all, war was a grown up version of cowboys and indians which I used to play.

Sure, and we didn't have the TV images.

That's quite right.

Another thing, the general political developments, military developments too, in Europe and Asia, China and Japan and so on in the mid-'30s. How conscious of that were you, or not at all?

Oh no. I was always keenest on history at school. I was at North Sydney Boys' High School, and that was a highly selective school as you'll be aware, and I became conscious for the first time of political events when the Germans re-occupied the Rhineland in 1936, I think it was. And thereafter I became more and more conscious of the Spanish Civil War, of the war in Abyssinia, as it was then called. And by 1938 - I was at that stage about fifteen - I was very conscious that a war was going to come, and by early 1939 I knew it was only a matter of when.

But it finally brought home to me when the Russo-German treaty of - non-aggression treaty - was signed in August 1939, and our history teacher walked into the room at school - I was in my final year at high school then - and said, `Well, there's gonna be a war', and this is what's happened. Right? And I remember quite then feeling a sort of sinking feeling in my heart, because I'd always been interested, even as a child, in military matters and I knew just how poorly equipped we were. I used to hang on the ships, like you, and the harbour when I used to go across the Harbour Bridge, and I knew exactly how many cruisers we had, how many destroyers.

I remember standing in 1938 at the Sesquicentenary Air Show and watching the Avro Ansons fly overhead, and I knew even then how pathetic they were for news. But when I saw those planes, that's what I really wanted to do, I wanted to fly. It seemed unutterably glamorous to be flying in those mighty twin-engined aircraft overhead. But it seemed to me there was no hope of that at all. When war broke out I was still only sixteen at that time, so I just had to bide my time.

(5.00) And I think you were saying that after school you went on to do a general Arts degree at university. I think it was while you were at university that you enlisted?

Yes, well I joined the University Regiment when I was seventeen - I put up my age a year - and Sydney University Regiment was a very glamorous affair in those days, with very smart uniform with pipings of blue and gold. So I joined that and went into camp at Ingleburn the end of 1940, I think it was. And for the first time discovered that there wasn't too much glamour, certainly in being in the infantry and so on. And that only reinforced my desire that I should be in the air force.

Right, well let's move on a little bit. I know it was, I think, December '41 you joined up.

Yeah, well eventually my father gave me permission to join. I am sure he had no idea how dangerous it really was. But then, of course, I spent the usual period, because there were too many volunteers at that stage, doing these various lessons and so on, and then on the 6th December 1941 I remember going into camp at Bradfield in Sydney. I had been counting the days till I got there, ticking them off day by day.

And was that as good as you hoped?

I was a bit shocked the first day I went in because they loaded us in the bus at Woolloomooloo, took us to Bradfield Park, sat us down and then presented us with a piece of paper and said we were to make our will. Well I never thought of such a thing. It seemed to bring death rather close. As I had nothing whatsoever to leave, that was not any great problem, but it was a psychological step on the way to maturity.

> Hm. That's most interesting. I've never heard that from anybody else before. At Bradfield, what were the basic aspects of your training?

Oh you learnt all the basic skills of mathematics, aeronautics, meteorology and so on, which frankly I found a pushover. I found them interesting and so on, but we were mainly worried about the advance of the Japanese at that stage, because it was getting closer and closer, and we spent a lot of time being taught how to evacuate the camp in a great hurry and rush down the hill into the Lane Cove, down the Lane Cove River, for when the Japanese bombed.

> Let's leave the other aspects of training there, because the later training is obviously more significant, but it was there that you were selected as a navigator. I think you were saying that that wasn't easy.

No. When I first went into camp, like everybody else, I thought I wanted to be a pilot. After a short time there I discovered that that really wasn't what I wanted. I really had no desire to be a bus driver - 'cause that's what I was sure they were. Firstly, I never wanted to be fighter pilot, and I only ever thought of being in bombers at that stage. And I liked the intellectual challenge of navigation, so I spent a lot of time trying to convince them that they should make me a navigator. And it was with great reluctance they did it, and only because I think I was a student at the time.

> Looking back on it, do you think the air force had any policies, whether psychological or otherwise, for making a rational selection of men (a) to fighters versus bombers, and if bombers, whether pilots or navigators?

No, none whatsoever. It was a largely hit and miss affair. After all, most of the selection board had had no experience at all of flying, and the few that had had been in world war one flying fighters, which seemed a long way away from heavy bombers in Europe. So it was largely chance, and they assumed that everybody wanted to be a pilot, and if they looked a bit dumb, or had very poor education, then they could be a gunner.

> Well, you were accepted then to be a navigator, and I think you were saying it was May '42 you went to Cootamundra. The planes there were Avro Ansons. What were the basic aspects of your training here?

In Cootamundra? Well it was mid-winter, but for the first time we actually thought we were in the air force because they let us fly in an aeroplane, and we then spent three months flying - firstly by day, then by night - learning dead reckoning navigation over the plains of western New South Wales. It was there, of course, I had my first flying accident. Do you want to hear about that?

(10.00) Well, I was one of a party of three trainees. One afternoon when the rest of the group there were lined up on parade, we got into our Anson with the staff pilot and he turned to take off - and there were no runways at Cootamundra in those days - it's what's called an all-open

field. And he opened the throttles and one trainee sat alongside him, one sat in the navigation seat and I sat in what was normally the radio operator's seat. And he roared across the field, but the aircraft didn't pick up speed, and any sensible pilot would have stopped, but he didn't. And he kept going and the plane got slowly faster and faster as it approached the ends of the airfield, but it still wasn't at flying speed.

Now fortunately - or unfortunately - there was a large bank of earth about six feet high with a sloping side at the end of the airfield, and the wheels ran straight up this sloping bank and we climbed about a hundred or one hundred and fifty feet in the air, then we turned over gracefully and headed straight for the ground. Now I was quite excited. I thought, `My God, we're going to prang. Isn't this exciting!' I didn't feel frightened at all, which shows how stupid I was.

Is that really what you thought?

Yes. I'd be sitting there looking, I've got my lap-strap on and I'm looking at the ground coming up to us at what seemed an alarming speed, and the pilot yanked back and we got a little bit out of a vertical dive. Then there was a splintering crash as we hit the ground in a large heap.

I was the only casualty - I got flung forward onto the radio - and there I acquired my one and only war wound. I had a cut over my left eye. Most of the casualties were caused by the ground crew who tore across half a mile of ground expecting to pick up the bodies. Instead we all staggered out. Now I was a bit shocked, but they had me flying again in an hour or two and that passed off. It was my first prang. There's others to follow.

Hm. That's most interesting, and getting in the plane afterwards - immediately afterwards - was that easy or difficult?

I was nineteen at the time. I didn't find it particularly difficult. The older I got and the more accidents and near-misses I had the more wary I became. But I was still too young and stupid to worry much about it at that stage. It was just a good adventure.

Right, with a happy ending.

Yes.

Just talking in more detail now about the aspects of your navigational training there. Was it, this was day and night flying but only dead reckoning was it?

Yes, that's right. We used to have a staff pilot and of course all the towns, even at night, the towns were still lit up there, and if you had to go to Hillston you could see Hillston on the horizon, and that wasn't a great problem. It was more of a problem some ways during the day because you had to go and find some remote village way in western New South Wales, and there was nothing to say where it was. It was all brown, it was all dirt. And the aircraft - although it was only doing 120 miles an hour - seemed to go much faster than I could cope, because we only had the barest of equipment.

Sure. Well we might leave until later, when you're actually in the air, talking about the specifics of navigation in the air - wind drift and all the other

aspects. Let's move on to the next phase of your training. I think you went from Cootamundra to Evans Head - August '42 this is - for bombing and gunnery?

Yes, for two months up there. Now, after going from frozen Cootamundra we rather liked going to Evans Head. It was warm, pleasant and so on. The only trouble was the aircraft we were flying in were Fairey Battles. Now Fairey Battles were single-engine day bombers which had been shot out of the air in France during the Battle of France and were now used for training, and they weren't in a particularly good state.

Now, actually learning to bomb was rather fun in a way if your nerves were good, because you had to lie on your belly on a very small square in the belly of this aircraft, and your feet stuck out into the breeze in a hole which had been cut in the back for a belly gun, and you looked straight down through a square in front of you in which there was a bomb sight, and you came up and tried to drop bombs on the target. Now, thankfully I was never a very good bomb aimer. I knew I was going to be a fair navigator, but bomb aimer, thank God, was not my task.

And gunnery was the other thing we did and that's where I had one of my more interesting experiences. To do gunnery training, two trainees went up in the back of this aircraft, which had what was called a glasshouse in it, and you stood up there with a single gas operated gun waiting for a target to turn up, towed by another aircraft, at which you fired. Now, in this particular aircraft you couldn't wear your parachute, so it had to be stowed, and there was what's called a monkey strap, which you were supposed to tie under your parachute harness to stop you falling out - but that was broken.

So one morning I got in with another trainee and we went up to about four thousand feet and the pilot was bored. The target aircraft didn't turn up so he thought he'd have a bit of fun, because of all things, these aircraft were fully aerobatic. So - he didn't tell us of course, there was no real way of telling - he simply put the nose down in a steep dive and we wondered what was going on, but just hung on. Then he pulled the nose up and starts to do a loop. Well that was frightening enough because we were looking straight down, but while he was in the loop, centrifugal force held us in. But then he rolled it at the top and the other trainee was pushed down under under the glasshouse, but I flew out of the aircraft like a cork out of a bottle, so that I found myself with two fingers, or two sets of fingers on the combing, and my right leg from the knee to the foot inside the aircraft and all the rest out in the breeze. When the aircraft finally came round I fell in again.

(15.00) Quite horrific.

Well we were only 4,000 feet up but it seemed a fair way to fall. Now, it should have destroyed my nerves but such is the resilience of youth that it didn't. We landed ...

What about the pilot? Did you destroy him?

No, he was an officer. After all, I was a leading aircraftsman. There wasn't any point in saying .... I said to him what had happened and he looked a bit stunned, because there were a number of other trainees who did fall out of aircraft, and it was not considered a good thing to have on your log book - `Lost one trainee'.

Hm, that's a remarkable story. Quite incredible. I mean, he must have surely realised the possible consequences ...

Oh, I was only hanging outside for two or three seconds, but it seemed a long while.

Yes, it would have seemed an eternity.

(Laughing). That's right.

Well moving on from there, I think you went from Evans Head to Parkes where you did your astro nav.

Back again on old Avro Ansons flying endlessly at night, shocking food, bit bored, not very happy, decided I was not the world's greatest astro navigator. In any case, astro navigation - I'll talk about later - is particularly difficult in an aircraft using a sextant and so on, and by that stage I was getting anxious. I wanted to get away to the war and it seemed a long while, this training.

Hm hm.

But it took a month finally, and then thank God it was all over and one day in October 1942 they lined us all up and I was considered too young and immature - which was quite true - to be an officer, so they made me a sergeant, but I didn't care about that. What I loved was the brevet, the observer's brevet on, and I couldn't, I kept looking down on it and thinking, `God, I've got it, I've got it'.

Lovingly looking at it?

Yes, and when somebody addressed me as sergeant, I wondered who they were talking to.

Well we will talk in more detail later on Arthur about navigation as practised on operations, but just looking back over the whole range of those different training establishments, if you had to assess your training as its quality from fair to good to very good, how would you assess it?

I thought the navigation training was probably as good as you could get anywhere at that stage. I must say I thought the bombing and gunnery were old fashioned and largely useless. It reflected the fact that we really didn't know what was going on in the advanced air war on the other side of the world. And the permanent RAAF which staffed most of the place, was an understaffed, not very efficient force. The thing that we complained about most was not the flying, not even the aircraft, was the very poor logistics. The food was abysmal.

Well I was going to ask about those aspects of living quarters, food and so on ...

And you slept on straw palliasses on the ground. One of the reasons I decided at one stage I should become an officer was when I went to some station and they said, `Officers will have their rooms allocated by the mess secretary. Sergeants will go and draw straw for their palliasses.' (Laughing). Right? Now, sleeping on the floor, having very poor food, flying all sorts of hours of the day and night, is not calculated to make young men happy.

No, that's for sure. What about leave, recreation? Did you get much time during this period to get away?

You'd get signed what they called - I'm sure with unconscious humour - inter-course leave (laughing) between the various courses. I was too young to indulge in much intercourse of that sort so I went home. And I suppose I shot a bit of a line to my parents and young brother as to what was going on. After all, we met various soldiers who were back from the Middle East and who said they didn't get proper air support, but nonetheless I was very proud to wear air force blue, even the drabs in the summer. But I felt I was a member of an élite group. It seemed to me early at that stage, that air crew were the élite.

Well I was going to ask that. How strong was that attitude - that appears it existed - that you were a little apart from the run of the mill of servicemen and women?

Oh for sure.

Was that based on what you were doing or your backgrounds?

(20.00) Oh no. I think it was seen, after all, aviation was the glamour activity of the war. There was more special training required, there was higher selection standards. After all, anybody could put on a khaki uniform and fire a rifle - at least that was our attitude; sailors, we hardly ever thought about, but air crew, up in the air, glamorous, nice uniform, thought highly of. Therefore, you were an élite and you acted as though you were a member of an élite.

What were some of the ways in which you acted as an élite?

You tended to strut more than anybody else, you certainly tended to look down on the others. Even, of course, within the air force there was this hierarchy. Air crew saw themselves as without doubt being, even when we were trainees, we knew we were going to be at the sharp end. And there's a tremendous difference between how people feel who are truly at the sharp end and those who are very necessary and support them, but they are considered inferior.

That's most interesting Arthur. One other thing, during your training, did you have much contact or not with local people? I mean did, for example, the air force try to utilise you in terms of popularising the war?

No, not at all. In fact, mostly you hardly ever met local people. For example, at Cootamundra you used to get some leave of a night, and I used to go to church on Sunday where it was the only time I ever met any civilians at that stage. No.

Right, well let's move on. October '42 you get your wings and so on. Of course, the war with Japan by then had advanced very much. You know, there'd been the conflict, for example, at Port Moresby with 75 Squadron involved. How much did you feel that your place was then the Australasian region as against Europe, or didn't that ...?

That didn't worry me at all. Personally, I was determined I wanted to go to Europe and I was terrified they might post me to New Guinea. Oh, more than one reason for that. I thought the real war - certainly the real air war - was in Europe. It wasn't in New Guinea. Secondly, I had a distinct aversion to wanting to fly through monsoon weather, through clouds stuffed solid with rocks and primitive tropical conditions. The glamour war, the real air war, was in Europe. Besides which, I'd studied history at school and I thought I knew London as well as anybody can know who's never been there very well. I wanted to go to London, I wanted to go to England.

Now by the time I got my wing in 1942, the Japanese thrust had been blunted. It was no longer desperate. Now if the Japanese had been in Queensland I would have probably thought differently. But like everybody else, I wanted to go to Europe. We commiserated with those who were unlucky enough to be sent to Port Moresby.

That's most interesting. Right, well the journey to Europe. You left, I think from Hobart.

Well we firstly went to Melbourne where I remember being accommodated in a showground and the main sign I remember in the pavilion in which we slept on straw was `Populate or Perish'. Now most of the air crew had no worry about that. They were determined to do their part in the war (laughing). Then we went across to Bass Strait in a little ship called the *Nairana*, and most of the boys were petrified when they saw the *Nairana*. They thought they were going to fly all, sail all the way to Europe in the *Nairana*, but they didn't.

We went to Tasmania and finally boarded this great French liner, the *Ile de France* in Hobart and it was filled with German prisoners taken at the first battle of El Alamein in August 1942. We went on board this and that was one of the first times I started to feel a bit strange about it, because as we got our kit bags .... The ship pulled right into the wharf - that's how deep the harbour is - and as we went up the gangway the band that was there played *The Maori's Farewell*, you know, and it's a very haunting tune. I felt [sniffing] a bit sniffly about this. Maybe when you return, maybe we won't return. But I got over that, we got on board and then we sailed down the Derwent ...

Could I just pause? Had it been difficult to say goodbye to your family?

(25.00) Yes. I, my family was wonderful. The day I finally left to go to the war my father, who is a very apparently unemotional man, shook me a bit more firmly by the hand than usual, then went straight off to work without looking. My mother, who was very emotional, walked up to the Pacific Highway with me and a car stopped to give me a ride. She gave me a big hug and then turned and walked away.

When I caught the bus to go down to the station to get to entrain, I looked at my house - which I could see then from the Pacific Highway - and wondered, truly if I would ever see it again. But you're surrounded by a hundred other young men laughing, joking and at age nineteen, shwittt, you're certain you're going to survive the war. It's other people who will get killed. Ahead is adventure and perhaps that terrible word now, perhaps even a little bit of glory.

So the *Ile de France*. Was she still set up as a peacetime ship or had she been converted?

She was a troopship, and the first bunks we were given were lousy. They'd been occupied by Italian troops and that, of course, convinced us that all Italians were lousy. So instead we swung hammocks in the ship and I spent a lot of the voyage to the United States being on the point 4.7-inch gun out on the bow, which was cold, freezing and enlivened only by the old chief petty officer from the Royal Navy who'd been all the ports of the world from Hong Kong, the West Indies and regaled us with what seemed to me utterly incredible stories of the women that he'd known and the adventures he'd had in half the ports of the world. I was both fascinated and horrified by this fellow. He seemed to be quite old to me - he must have been all of forty at this stage.

Hm, no doubt some of it fictitious, but some ...

Yes, but some of them, which I'm not going to tell you, have stayed with me all my life.

During the voyage did you have any training of any sort or was it just a matter of shipboard routine and manning guns and so on?

Shipboard, that's right, manning guns and watching the German prisoners on board. Not that we had to guard them and so on, but that's my first contact with Germans and ...

Well I was going to ask you this question. That contact, did it bring home the point that although Germany was the Allies' enemy, Germans were people very much the same as you?

Yes, very much so, because the ship called at Pearl Harbour, actually, which was quite fascinating a year after Pearl Harbour. There were all these battleships upside down, hundreds of aircraft piled into great heaps and so on, and you know, the sort of funny incidents that occurred. The ship came into Pearl Harbour, went round Ford Island, and then it came to the wharf and there were hula dancers and American band on the wharf to welcome us as we stood there on the deck, and they used two tugs to push the ship in. But the tugs didn't stop in time and this ship - which is something like 52,000 tons - just kept going. And it reached the wharf and still kept going and I remember at the stage thinking how funny it was 'cause as the ship leant over the wharf started to give way. There were great cracking noises and huge bits of wood flew everywhere, and the hula dancers and the band took off for their lives thinking this great ship was going to fall on top of them.

But I ceased to take much interest in Hawaii soon because I was sick, and as the ship pulled out I found - I went down to the doctor - and I found I had that glamorous disease called mumps. Now they put us in the ship's hospital, and that's where I met my first Germans. The hospital I might say - the ship's hospital was alright - but it was staffed by an Australian Air Force doctor who totally neglected his patients. Instead he spent his time pursuing - literally pursuing - two American nurses who'd been sent home from the Solomons for misbehaviour. Now, opposite me was a young German who must have been twenty-one or twenty-two dying of diphtheria. Now that young man ...

END TAPE ONE, SIDE A

BEGIN TAPE ONE, SIDE B.

[Tape one, side B of the interview with Arthur Hoyle].

I regarded those who where trying to kill me as purely professionals doing a job, and this was the start of that attitude. Propaganda making out Germans as monsters never had any real effect as far as I can find on air crews.

Hm, that's interesting that other pilots felt the same as you.

Yes.

Well perhaps we might delve into more details of that voyage, because there are other things ahead. But you reached San Francisco and I think spent a brief time in hospital before training across the States?

Yes, I remember in hospital, the Letterman General Hospital. That's where I first found out the perils of using American slang, because the nurse, one of the nurses had been particularly kind to - there were three of us there and so on. And I said to her one day, `Gee sister' - and that was wrong to start with - `you want to be careful with all this running around after us or you'll get knocked up', you see. Now it was all perfectly legitimate Australian slang, but she looked stunned, horrified and walked out and I didn't even know what I'd said.

What I remember more than that was this hospital had very thin walls, and next to us was an American serviceman dying of tertiary syphilis. Now he moaned and screamed for days on end. Thereafter I never needed to see any films on VD to be aware of what could happen. And I finally got out of there and I went to ...

Could I just ask, interpolate something there. Did you have any public hygiene health training on VD or not?

Yes, all through the war they used to do it because the rate was fairly high. And in fact, in some places you weren't even allowed to go into town because the rate was so high. One of them was Liverpool in New South Wales, another was Doncaster in England. And they used to have parades all the time. Certainly before you were an officer you were always being paraded and checked to see if you had any sign of it. Officers are apparently assumed not to get it (laughing). These were probably what you've heard described as short-arm parades.

Well moving on, let's perhaps skip the train journey, but on the east coast you embarked on a convoy.

Yeah, I had a couple of days in New York by myself and, after all, you know I'd never been overseas in my life and this was a bit of a shock - New York in mid-winter, all by yourself, nobody to talk to, nobody to ask any questions. But finally they put me on a ship whose name utterly escapes me now and we sailed from New York in about the middle of December 1942 - freezing cold, snow everywhere - in this great convoy.

Now I didn't know much about convoys but this one looked big to me. As it turned out, it was a slow convoy, eight knots, eighteen days from there to Scotland, and a voyage which I found pretty horrible. It was a Dutch ship which was chartered by the UK and as I was one of the very few British troops on board, and was a sergeant, I was lucky enough to actually have

a table to sleep on, which was very rare. And we were given actually one mug of water per day to shave - you had to shave - and for every purpose was to have that one mug.

Including drinking?

Yes. One mug of water.

Was there much tension because of the threat of submarines?

Oh yes, but there was more tension .... Most of the passengers on the ship, most of the troops were American and Canadian who'd never seen the sea before. And they were suddenly, they were put in the holds where the bunks were fourteen high, and I remember off Newfoundland we struck a fantastic gale - it was a humdinger of a gale. The convoy was scattered far and wide and I remember being the orderly sergeant and I went down with the orderly officer and we flung open the holds where all these thousands of unfortunate troops were and the smell was unbelievable from thousands being seasick. I remember yelling out, `Orderly officer, orderly officer, any complaints?' and we ran for our lives because it was unbelievable.

(5.00) And then when the weather improved a bit there was this convoy as far as the eye could see with two troopships in it, some tankers, and as you went across this ocean wreckage used to float past you from ships that had been sunk and so on. You had to wear, or to have your life jacket with you the whole time. The food, I might say, was just beyond belief. I was lucky being a sergeant because guarding the cookhouse I actually got some extra food at various times. But we were attacked by submarines and very nearly sunk.

One day - a daylight attack it was - suddenly the people on the stern where a gun was mounted nearly leaped overboard as a torpedo passed under the counter of the ship, and then for the first time I saw the navy in action as a destroyer came up the lines of the convoy. It looked fabulous - doing about forty knots, or thirty-five to forty knots - taking it green as it went into these great rollers, taking green up to the bridge and then depth charges going off everywhere. Whether they sank the submarine I don't know, but they moved us into the middle of the convoy which was great, till the ship broke down, and we were left ....

The convoy passed on and we were left just idly floating in the middle of the Atlantic, and everybody had to be dead silent. The only noise I can ever remember was every so often there'd be a burst of hammering as the engineers tried to repair the engine.

And how long did that last?

Twenty-four hours. It was a long twenty-four hours.

That must have been really nerve-racking. And you then regained the convoy?

Then we got it and one day blissfully, suddenly I woke up in the morning, there was no movement in the ship. I looked out, there were green hills, the Firth of Clyde - one of the most beautiful sights I've ever seen.

Hm, that's a great description of that voyage Arthur. Well you, obviously a great delight at being there. You went from there I think to Bournemouth and that was a rather empty period I gather?

Hm. Yes. Actually, there was, when we got off the ship .... I hadn't had a bath for eighteen days - nobody had had a bath - and one of the interesting things is, of course, when you all haven't had a bath you cease, and after a while you cease to smell. Body doesn't smell, but you don't notice it. But it was heaven to get to London. Even London in a blackout where the traffic lights were reduced to little crosses, there were sandbags everywhere, to get and lie in a long hot bath, I suddenly felt human again.

And was there great pleasure in being in London, the focus of this country ...?

I couldn't believe it. Actually, I was walking down Regent Street and this was the Haymarket and so on. All the things that I remembered from books and childhood, it was very very real. And Bournemouth was pleasant but it was boring. There was, they were trying to fill in time with church parades and lectures and God knows what. And one week they sent me off to a commando course in mid-winter with the King's Royal Regiment which was made up of Liverpool Irish, and they were the toughest lot I've ever seen.

Was there any rationale for the commando course do you think, or was it purely filling time?

Purely filling in time, and to help keep you fit. It gave me a much greater respect for the army than I'd have had otherwise, I might say.

Yes, I was going to say perhaps there's more to being an infantryman than putting on a pair of brown trousers.

That's right (laughing).

You did also, I know, do some navigational training at Worcester, but let's perhaps go on, because I think it's the later training that's more significant. Spring of '43 you went to an advanced flying school at Shropshire?

Yeah, at a place called Bobbington, yes. Bobbington in Shropshire. Back to Avro Ansons with which we were very familiar. It was really to regain the skills that we'd lost through not using them for months. We spent a month there and truly, the highlight of that was not flying. The highlight of that was once a week we used to be given a Mars Bar, which was the only sugar ration you got, and I remember we were always in trouble as to whether eat it straight away or stretch it out over the next few days.

That's most interesting. Let's just talk briefly about navigation here, Arthur, as it relates to Britain. Obviously England's landforms, geography et cetera, are quite different - and climate of course - quite different to Australia's. What were the chief differences that impacted on navigation?

(10.00) Okay. Well when we'd learnt navigation here, apart from at night, if you wanted to know where you were you could really just look over the side of the aircraft. If there was one railway line it was the only railway line, and you could see the towns with silos and things like that. In Britain I was quite stunned by, there were railway lines everywhere, towns, villages, roads. At that stage I realised that I just couldn't navigate by map reading and so on.

There were barrage balloons up which you had to avoid, the weather was often lousy, there was fog and low cloud, the meteorology was quite different. All of a sudden it was a totally new world and, while I didn't really have to begin at the beginning, I knew for a cert, certainly how little I knew. And at that stage I started to get cold feet. How was I going to cope with Bomber Command where I was sure I was going, 'cause they flew at night in this shocking weather? How was I gonna make sure I got there and back?

> And you were also making the point that's interesting I think, that even the stars were somewhat different.

Oh yes, the other northern hemisphere star, although it had one virtue which Australian stars don't have, it had the pole star, and that at least told you where north was straightaway, if you could see and so on. But you had to learn all your astro navigation again, your meteorology again, you had to learn to map read and so on. And the aircraft that we started to train in were much faster, and your problem was trying to keep up.

> Yes, that must be very difficult. I mean, the speed of flying over concentrated features - roads, railway lines et cetera - how did you, well how did you get around that?

Well you ceased to navigate by map reading. In fact, you actually used dead reckoning to know where you were. Mind you, at that stage it was extremely primitive because there was, there were no radio aids of any sort and so on, and so you navigated and hoped a lot of the time. I'll talk to you about later on navigating over Germany in the same circumstances.

> Yes, well let's perhaps move on. We must keep a general eye on the time. Summer '43 you went to your OTU Lichfield. I think initially Wellingtons and it was here that a crew formed, or began to form. Tell us about Wellingtons, tell us about the process of the crew coming together, which I think is very interesting.

Wellingtons were the original heavy bombers in the war, designed by the great man Barnes Wallis. They are geodetic framework - aluminium framework - covered in fabric. Very strong, but they burnt very well. Now, they had two large motors and they went - or it seemed to us - very quickly, at about one hundred and eighty miles an hour and so on.

Now the navigator can no longer look out. He sat inside, had a curtain in front of him, and a curtain behind him. The pilot sat out the front. There he could see - everybody else could see except the navigator - and for the first time you learnt, have to navigate entirely using such equipment as a chart, a protractor, a small computer and so on.

> So that meant you could not use observation to double-check your navigation?

That's right. The others were supposed to tell you if you asked, but most of them didn't have too many clues as it was. And of course, these aircraft stunk very badly, very often of coolant. And it was dark, it was hot, and they smelt very badly. So many people got air sick - I never got air sick.

> I was going to ask you that about air sickness. How common was it?

Quite common in the people at the beginning, and some of them were so air sick they could never go on and they were scrubbed, but I never had any air sickness. But a lot of people with this stench and stink of coolant, oil, petrol and so on. And of course for the first time in Wellingtons we started to use oxygen masks because when you reach 10,000 feet your efficiency falls off so badly that you must go onto oxygen. Now what was the next question you asked?

> Well yes, the other one was a different one. That was very very clear. Yes, the formation of the crew - how much was the formation of the crew based on skills in terms of a particular pilot feeling that a certain navigator was very skillful, say, and other people likewise? How much was it a question of personalities?

It was a lottery. Truly they might just as well have got all the names off various lists and put them together, 'cause what happened, all the pilots'd been trained in one place, all the navigators in another one, the wireless operators in another and the gunners in another. Then they put them together as an operational training unit, let them mix together for two or three days and said, `Form a crew'. Now, how in God's name were you going to know whether somebody was good, bad or indifferent, from meeting them occasionally for two or three days? They milled around and somebody said to me, `Would you like to be my navigator?', and I looked at him and thought, `Oh well, he looks alright. I don't know why I shouldn't be', so I said yes, you see.

(15.00) What would you have said if he didn't look okay, if you could have established that?

Oh I'd a probably said, `Well I haven't made up my mind yet'. I'm not always the diplomat but just at sometimes I am at this stage. And in fact the first pilot I picked up turned out to be no good. It turned out he couldn't land aircraft at night, and so our crew was - just as it got together - was broken up again, and I was the only one that survived the war out of that, so that's fairly lucky for me.

And the way I got my first ever crew was the pilot was a man called Bob Wade. He was a jackaroo, nice young man, but his navigator had nearly killed them by navigating them over France instead of over England and so on, and losing them on several occasions, so they wanted to drop him in a hurry. He asked me and another crew asked me. And I looked to the second one and I saw they drank a lot and I had a strong belief that crews that drank a lot didn't live long. So I said to Bob Wade, `Alright', and they took me on `appro' you might say. When they found that I didn't lose them I was accepted.

> That's interesting though, the point about drinking. There was, one would think from that, not a formalised but a kind of, almost an osmotic process of just being aware of the kind of people other pilots and crew were, and being attracted to men who you thought would be the best for you.

Yes, but you didn't know really. The closest bondings in my life have been with the people I flew with in air crews. Nothing else approaches that for bonding. But ...

> Including your marriage?

Oh it's a different bonding, yeah. After all, when you've shared intense danger with somebody you've got a common background that you don't share even with your wife who you love very much. But you don't know those people and you take them on appro at the beginning, but the whole becomes more than the sum of the parts, and while the pilot is always the captain - at least in the crews I was in - I expected the navigator to have a very large say, because the pilot and navigator were the key of any bomber crew and so on. After all, anybody virtually can press a tit and drop bombs, and the gunners, well that was a highly specific skill which you hoped you didn't have to use.

But otherwise the present air force simply allocates people and I'm sure it's no worse for that, except that the wartime air force had the great virtue when a crew was formed - if it worked, it stuck together. And you lived with one another, you got to know one another. I didn't go on leave with my crew together - they had different interests to me. I wanted to go to the ballet and they thought that was most peculiar (laughing).

But you did other things - I mean around the base - pub life and so on?

No, you see now navigators were a very distinct group. Now there were some that were like pilots who liked to go to the pub and so on and so on, but most of the ones with whom I dealt .... Now, for example, one with whom I'm friendly still who lives in Tasmania was a classics master at the Armidale School for forty-one years - the typical Mr Chipps. Another one was a university graduate and a scout master at Killara in Sydney. They were, most of them - or certainly the ones I was most interested in - had different standards, better education, came often from a higher socio-economic group and they mostly weren't interested in picking up some local whore or getting drunk at the pub. So it was commonplace for navigators to go off on their own, specially on leave, while the rest of the crew would go somewhere to some low dive or a pub or beat up London.

That's most interesting. Well let's go back to the actual formation of this crew. You've got together and soon afterwards I think you went to Yorkshire where you ...?

Oh we flew all round Europe first. Oh sorry, not Europe, God help us. That would only be by mistake! We flew all round England and Scotland and out into the ocean by day and night and that was, for the first time you put into practice the training that you had. That's where you built up confidence in yourself and your crew built up confidence in you as a navigator. After all, what they were interested in was getting home again, and if you couldn't deliver them home again you were no good. Also, it was a very nerve-racking experience and I think you needed to be young to have enough confidence to think, by drawing these few lines on a map, by calculating this drift, that after five or six hours you'll arrive back at one spot in the middle of England.

Well that's the beauty of it, but also the mystery I suppose.

(20.00) Yes. Now navigation was always a mystery to the other members of the crew. They always wondered how it was that you could say, `Fly this course; turn here; do that', and get them back to the right place. 'Cause they knew what you had. You had an outline chart, didn't have any towns or anything drawn, had lines of latitude and longitude on it, had - I always carried about sixteen pencils sharpened at both ends - and in the days before electronic

aids I had a little hand-held computer and with that I used to get them from A to B at the right time and at the right place. It must be a mystery.

> Hm, well it's a remarkable skill too. Let's just actually pause here, if we can Arthur. I was going to develop these questions later, but I think now's quite appropriate, excluding the question of pre-operational briefing which we might talk about later, but that the key aspects of in-flight navigation as you practised it over Europe. Could you detail again, first, the equipment you had at your disposal from the simplest slide-rule ...?

Well it varied slightly as time went by, as the war developed, but the basic one was a chart, a square protractor, sixteen pencils and that was the most basic equipment. You also had a sextant which you used as little as possible if you were sensible. I was *in extremis* if I used the sextant ...

> This is to be used through the bubble?

Yes, because what happened is you had a bubble there and you had to get the star in the bubble, and particularly if you're trying to shoot Polaris - this was a very weak star - and the bubble used to bounce all the time and it was as much by guess as by God if you got anything like the right answer. The one friend I had who did this very well and did it all the time was killed when he lost himself over Holland and was shot down. That convinced me that I shouldn't do it.

Now, apart from that, by the time I was operating on the squadron, firstly they had a piece of equipment called `G' which you may have heard about. Now G was fantastic till you ran out of it over the Netherlands where it was jammed hopelessly, and that was two-time basis on a cathode ray tube, and that could fix your position very quickly. And I used to fix ...

> With two cross-bearings?

Yes, I used to fix my position on the way out on an operation every six minutes. When you ran out of that, Europe underneath you was black, nothing to be seen. Often there was cloud above you even if you wanted to use navigation. We had, after a while, what's called H2S, which was the ground, gave a representation of the ground in theory. It gave a perfect representation of the coast and was fantastic on the coast. Occasionally you could see towns outlined on it, but mostly it didn't help you at all and the big cities they didn't show. What it did successfully do was allow the German fighters to home in on you, which we didn't know, thank God.

But I navigated for a great deal of the war when I was operating, on what I used to call `flak navigation'. Now this meant that once we passed the middle of the Netherlands somewhere and were heading towards Berlin, for example, the pilot or the bomb aimer up in the bow of the aircraft would say, `God, there's a lot of muck going up ahead'. This was flak from some town so I'd pull back my curtain, come out and have a look and say, `Oh yes, that's about thirty miles 215', or something of the sort. I'd come back and draw a line 215, thirty miles, and navigate on that.

> So you were getting back bearings from features that you assumed you could identify?

Well I knew I could identify them. What it needed though was some unfortunate to fly over them to have all the defences firing flak and searchlights and so on on them. Now that is *crude* navigation.

> Could I just clarify something - it's for the transcription. You described this as `flak navigation'. Right, I'd heard it as `flat'. That's flak - F-L-A-K. In other words, finding the heavy flak was ...?

In world war one, anti-aircraft fire was called archie. In world war two it was always called flak, which I think is the current term - German of course.

> Right, sure.

And so, using this extraordinarily crude form of navigation, I could normally expect to get from, say, Lincolnshire to Berlin where we had a four minute gap, on time - a place 700 miles away. Now that's better than most commercial pilots can do today.

> Yes, well I mean obviously it's very complex. I'd assume as you were running this flak navigation you were maintaining a dead reckoning plot?

Oh yes you had your dead reckoning plot all the time. That's what you worked on and so on.

> Well a key aspect in that, of course, was wind drift. You obviously had your pre-flight meteorological ...

(25.00) Which was often very wrong. I remember on one occasion we struck the very first known `jet stream'. Now this was not a good night. We were going to Berlin via Denmark. Okay, now we flew across the North Sea and the wind was supposed to be forty knots near the Danish coast. Now by that stage I was pretty experienced and our radio operator used to send back the winds which I told him were the actual winds which were then re-broadcast for new crews. And as we approached the coast of Jutland, I started to pick it up on the H2S and I could see we were drifting a long way south of where we should be, and I worked out the wind was about seventy, and as we got closer it got ninety. As we got to the coast of Denmark it was 110 - and as the aircraft was only doing about 200, we weren't going very well. There's a town there called Flensburg. I remember clawing our way through Flensburg, then across Sweden, across the Baltic and turning down, and all of a sudden, instead of doing 200 miles an hour, we were doing 360 miles an hour, with this hell of a wind behind us. Now you know what jet streams are?

> Not in detail.

A jet stream is a very narrow band of wind at normally an altitude of twenty to thirty thousand feet, which will have quite light winds on either side of it, which had never been heard of before. But most of the aircraft, most of the bombers flying, didn't pick it up. And so, not only did most of them not find Berlin, but they were scattered all over Europe and dozens and dozens were shot down as a result.

> On this particular night?

Yeah. And we had major problems trying to slow down to get to Berlin on time.

> Well let's just pause in the story there, because I'd like you if you could to just explain in perhaps clearer detail the process of establishing wind drift. How did you do that? I mean, here you've got an extreme example of wind drift, but just what was the basic process for establishing even a moderate wind drift?

Well in theory, what you do is you point the aircraft in a certain direction and after a certain time you find out the difference between where you expect to be and where you actually are. Now that angle gives you the wind drift and your speed enables you to determine the speed. Now ...

> Which assumes that you have to be able to locate ...?

A spot on the ground.

> Hm.

That's the problem at night, and that's what used to worry me. Now, when you were with G you could get the difference between your assumed position and your actual position very accurately, but once you ran out of that, if you had H2S - as in this case - you could see it on the coast, and if you were near Lake Constance or some great lake like that you could sort it out, but the rest of the time it was very very difficult indeed. And the only certain things were cities which were, in fact, being attacked or which were firing their guns and so on. In fact it was by guess and by God a lot of the time. Nothing very accurate about it, it's amazing just that it worked.

> So was the accuracy, the long-term accuracy, of navigation in, in long-term, I mean long-term through flight. Was it a question of operating a system of checks and balances between different, between your dead reckoning, your wind drift, occasional astro-nav and so on, flak nav?

You used every aid that you possibly could, but they were very few and far between. Navigation was comparatively easy over England and the North Sea. The further you got into Eastern Europe the harder it became, unless you were - as I was sometimes - way up the Baltic, and then it was comparatively easy because you had a big coastline. But a city like Berlin was very difficult to find because it didn't show up at all. It's so vast and so amorphous it didn't show, and it was because of the gross values of navigation that they founded the Pathfinder Force, which was somewhat more accurate but wasn't perfect. But you had people like Cheshire who were brave beyond the call of duty.

END TAPE ONE, SIDE 2.

BEGIN TAPE TWO, SIDE A.

> Identification: This is by Ed Stokes recording with Arthur Hoyle, tape two, side one, Bomber Command.
>
> Arthur is just going to read two poems from his own book. Arthur?

Well the first one is actually written by my wife when I did the thing. Now, obviously she's heard me talk at some length over the years but this was done entirely by herself and this is her impression of what it was like for me as a very young man.

You fell from your star-domed cabin.
Hurtling downward
Through measured space,
You fell.

Leaving your curtained world
Of pencilled certainties,
You fell.

As bursting skies destroyed
The living and the loved,
Your cell, within the frail membrane,
Had stayed
To process fear
Into its streaming life.
And you survived
The days.

The rushing fires subsided
And the rent crust cooled.
Your tasks accomplished,
Your lambent feet
Made contact with the earth.

Brushing against the softness
Of enfolding love,
Your feathered soul rested,
Just beyond
The pull of weighted life.

Now that says things in a way which I couldn't say, but something which I appreciated when I first knew it during the war was also written during the war by a young man called Sergeant Brodie of 460 Squadron who, like a thousand others on that squadron, died during the war. And this is a prayer which tugged very powerfully at my heart even when I was during the war. It says:

Almighty and all-present power
Short is the prayer I make to Thee.
I do not ask, in battle hour,
For any shield to cover me.

The vast unalterable way,
From which the stars do not depart,
May not be turned aside to stay
The bullet, flying to my heart.

I ask no help to strike my foe,
I seek no petty victory here,
The enemy I hate, I know
To Thee, is also dear.

But this I pray - be at my side
When death is drawing through the sky,
Almighty God, Who also died,
Teach me the way that I should die.

Now it's the last line that particularly got me. I was always frightened, as I'm sure many other air crew were, that I would not be able to die properly, that I would die badly, I would die in great fear and I would die in shame. And that, even at various times when I felt absolutely terrified, it was the fear of dying badly that kept me going.

We'll perhaps come back to that later, because there are aspects of fear I'd like to talk about Arthur. But just one thing, I think you did mention before, going to church. Were you a Christian? I mean, did that help in this situation?

Yes, I was never a very .... I went, I became a Methodist in my youth because that was the nearest church where we lived in Lane Cove, and I was never very good, and I was always very highly critical of what I thought were narrow-minded old ministers and so on. Overt religion didn't really help me at all during the war. I've always believed in something, and the few occasions in which I thought I was going to die in the next few minutes, I found myself angry. I didn't find myself praying. I don't know whether that answers the question.

That's interesting.

I tried going to church a few times during the war but it didn't do anything for me. And very few air crew ever went to church.

(5.00) Well let's move back to Yorkshire and we must press on, just keeping this quite short, but there your crew had formed and you transferred to Lancasters. The Lancaster was a great plane, most people agreed. How do you remember it?

With much affection. It obviously had certain things wrong with it. For example, everything was sacrificed to bombload. Now one of the first things you found in air crew in Bomber Command was that air crew were expendable, that the aircraft and dropping bombs was far more important. Now that's true, I think, in most wars but it's a bit of a shock to young men to find that they are considered highly expendable. Now we loved the Lancaster. It behaved almost like a fighter, it carried a huge bombload. It was poorly armed but it was a friendly aeroplane - it looked right, felt well and behaved extremely well - and the roar of those four great Merlins was music to our ears.

Just tell us briefly about the navigator space in a Lancaster. Where were you and how well was it set up for what you had to do?

Well, in a Lancaster the bomb aimer was stuck out in the front in a glass house. Behind him were the pilot and flight engineer, and then there was a curtain - black curtain - and behind him was a bench on which I - the navigator - sat with a chart table in front of him, and behind

him again the radio operator sat underneath the astro bubble. But the navigator was completely shut in - saw nothing at all. Everything that happened, if you didn't want to see it you just sat there and listened to it - listened to the fighter attacks, listened to the chatter of the crew if they talked at all. But I couldn't stand that.

How much did the crew talk?

Well, in fact chatter is wrong. Unless it was a training flight or something of the sort, there'd be dead silence most of the time, interrupted only by somebody being cursed for leaving their microphone on which left a hum on the system. Otherwise our crews, as opposed to Canadian crews, who were amongst the world's greatest talkers ...

So there wasn't a lot of back-chat?

Oh, no back-chat at all. The only ...

Any joking?

No. It was too deadly serious. The only conversation normally would be the pilot talking to the engineer about fuel or engine revs, or the navigator talking to the pilot. I'd say, `Fly such and such a course', or I might be sarcastic and say, `Might I have the pleasure of asking what course you think you're flying?'.

You had a panel with a repeater ...?

Yes, I had a repeater ...

... which covers bearings and ...?

Yes, covers air speed indicator altimeter and compass that I could see, and of course it was very difficult to fly an accurate course and speed all the time. But apart from that, the gunners would only talk every twenty minutes or so - the pilot would say, `Are you alright Johnny?', `Are you alright Tommy?' because flying at 24,000 feet with temperatures of minus 45 Celsius, often they died from anoxia when they used to ice up, and they needed to be kept .... Otherwise there was dead silence unless .... Well, if there wasn't, then you would die very likely because in this deathly silence suddenly the rear gunner might break in and say, `ME109 port quarter up. Prepare to dive port. Dive port. Go, go, go.' And there had to be silence then so that the gunner and the pilot between them could communicate, and if you were talking in the meantime you could interrupt that.

Sure. You were saying before about the space being shut off and not being able to see out. I think you were implying that you wanted sometimes to get out.

I used to get out as often as I could.

You wanted to see what was going on?

Yes. Everybody else, 'cause their eyes were accustomed to the dark, spent their time looking for enemy fighters because what you were looking for was a black aircraft against a black sky,

and that's very hard to see. But he who saw first lived. Now I didn't have to do that and I used to love to come out and to see where we were, especially when we were near a great city or the targets, and then I'd look in great wonder at the sight - the terrible beauty of a city burning to death - the streets on fire, the street pattern outlined as the bitumen caught alight, the blue flashes of the photo flashes going to sudden great bursts of the cookies - the 4,000 pound bombs bursting - the cascading stars of the Pathfinder markers. It was beautiful.

What I didn't like looking at was over the target you were looking at aircraft above you and around you and sometimes you'd see one slide slowly over the top of your glass house, probably twenty or thirty feet only above you, and if you were over the target you watched the bomb doors open slowly. Then I would look up and see 14,000 pounds of death located twenty or thirty feet above my head and hope to God they weren't dropped on me.

(10.00) Let's talk about that issue for a moment, because it has always fascinated me. You were coming over in the stream - the closer you stayed to the stream the more likely your chance of not being attacked by fighters. How much were you aware of planes being close to you? That very vivid description, was that an exceptional situation or quite common?

There were two occasions on which you were aware of other aircraft in large numbers. Firstly, when you took off and all the aircraft circled over England to gradually gain height. Then, as they crossed the coast, if you were on the ground, the ground shook underneath you. Everything shook. And as far as the eye could see would be hundreds and hundreds of black bombers droning eastward into Germany, into the gathering night. Now you were aware of it then. On course once it was dark, you saw nobody. The only things you saw were sudden combat and somebody falling in flames, or an aircraft would blow up alongside you, or suddenly the aircraft would rock wildly and one who's outside - the gunners or the pilot - would say, `Jesus Christ, did you see that?' as somebody skidded over the top of you within ten, fifteen feet of you.

And you were getting the reverberations from ...?

From the wash, or they'd passed right ahead of you and you went into the prop wash and the aircraft bucked violently. But when you got near the target, especially if you were one of the later arrivals, it would be lit up so that it was very bright, and then Germans often sent Focke Wulf one night - not one night, its Focke Wulf Condors at about thirty thousand feet which dropped fighter flares on the way you were going, and truly you could read a newspaper it was so bright. And then you could see these hundreds of aircraft around you, over you, under you. You didn't care so much about the ones under you, but you really worried about the ones over the top of you, and we had, we were in fact nearly lost through having a load of bombs dropped through us.

Hm, yes. Well I've heard stories like that before. That's very clear. Just to skip back - this actually is slightly out of context, but they are two things I wanted to pick up on. The qualities of a good crew member - we talked about forming a crew - briefly, what would you list as the key qualities?

Somebody who was not too great an individualist. Now I know fighter pilots are supposed to be great individualists. That's not a quality well thought of in bomber crews. It had to be somebody who was essentially a good team member and, you see, you trusted everybody as

being an expert in the job. If the gunner said, `Dive port', the pilot couldn't argue and say, `I think it should be "Dive starboard"'. And if the navigator said, `Turn course 319', it was 319 - there was no argument. You expected competence and co-operation.

> Right. Moving back to your actual operational flying, Arthur. After the conversion to Lancasters you went - November '43 - to 460 Squadron, part of a Number 1 Group of Bomber Command, I think at a place called Binbrook?

Binbrook, yes.

> Right. You flew on your twenty-nine operations with that squadron going through to May '44. Tell us about your first operation and perhaps about one or two other operations that stand out as highlight operations, that epitomised the difficulties, the dangers of Bomber Command.

Well, the first one was a number one boo boo - failure. All sorts of trouble in which the crew would have liked to have killed me at the end of it. We were scheduled for my first trip to Berlin. Now Berlin was at the end of 1943 much the most heavily defended city in the world, had a thousand searchlights, 2,000 guns around, plus all the fighter aircraft. Now we flew straight across the North Sea, across the Netherlands, across Central Germany past Osnabruck, past Hanover, and then on the last leg I told the pilot - Bob - to fly such and such a course and he said so-and-so, and we apparently flew that course. And I said, `Alright, the target indicators will be going down in a minute or so, so keep your eyes open for them'. They should have been ahead of us.

Well they went down alright but they were far far away to the north. We were seventy or eighty miles from where we should have been. We, in fact, were over Leipzig when the attack was on Berlin. Now being young and silly on our first trip, we immediately turned north and headed towards Berlin and by the time we got there, there's this burning city below us, everybody else had gone home. So we then got the undivided attention of the defences to ourselves.

(15.00) When you left Leipzig did you have any bombs left?

Oh we didn't drop one bomb.

> Oh, alright.

We still had our bombs, so when we saw we were in the wrong place we turned north. If we'd had any sense we'd have probably dropped them on Leipzig, but instead we went away to the north and we achieved the distinction of having every gun and every searchlight in Berlin trying to shoot us down. The only reason we survived was that the night fighters had all run out of fuel and landed to refuel. So we dropped our bombs and flew back home, and we got home alright.

And when we got out of the aircraft the others didn't say a word to me, right? They just looked at me and got into the bus and went in and debriefed, and nobody spoke to me. I had been truly sent to Coventry. Now I felt terrible. I didn't know what had happened and to this day I'm still not sure. I know I made one error not altering the variation on the compass, but I think the pilot also flew a wrong course, and between the two of us we made a thorough hash,

but I was the one that got blamed. And I knew that if I didn't do better the next night I was finished.

Did this come out in the debriefing process?

What we'd done? Oh yes, that's right.

And so did you get a rocket from the ...?

No, 'cause after all it was my first trip and, after all, we had bombed Berlin and we were still alive. So they weren't very pleased but they didn't do anything about it. And the second night, which was to Leipzig, went like a charm, and thereafter I never had any problems - oh not many. One of the interesting things about this was confidence. Now I remember on one occasion we had to fly back through South Germany and I was - as a navigator would say - not lost, but temporarily uncertain of my position.

The pilot and the bomber kept saying, `Can't understand it. There's lights all down there in Germany. What's gone wrong?'. Well by that stage I'd suddenly seen on the H2S Lake Constance appearing and I knew we were over Switzerland, you see. So there was no point at all in telling them that we were over Switzerland so I made up some story about southern Germany being out of the range of bombers and so they were quite happy about it. There were times when you should never tell the truth. Other occasions, well a couple of occasions which came very close to killing me, would they be the sort that you'd be interested in?

Yes, well I'd be interested to hear accounts of a couple of operations where, in particular, if you could relate it to your navigation, where you got into great difficulty and danger, where you were really attacked.

Well one of them we were `attacked' - if that's the word - by another Lancaster which .... We were over Essen which didn't seem - it seemed quite close in these times, because we'd been right up the Baltic and so on - and as we flew over Essen there were aircraft all around us and above us, as I explained to you a moment ago. I was a bit appalled, especially as I was out watching the attack on the city and suddenly the aircraft above us dropped its load of bombs, many of which hit us. Now fortunately the 4,000 pound cookie missed us or I wouldn't be here today talking to you. But a lot of the incendiaries hit the aircraft and we were on the bombing run so our bomb doors were wide open.

Now it knocked out two of the motors and made the third one sick, knocked out the hydraulic system. One of the incendiaries burnt through the main starboard fuel tank and out again without setting the aircraft on fire. We were at 24,000 feet about four hundred miles from home and it didn't look very good, right? Now at this stage there was a slight discussion as to what we should do. Now I'd already, as soon as I knew what happened I worked out a direct course for home right across northern Europe, across the North Sea and we slowly but steadily lost height, because the aircraft couldn't stay up. Now in stories I used to read I've heard about crews throwing out everything they had to throw. Well we had nothing to throw out except our parachutes and we weren't anxious to throw them out.

Well we reached the North Sea coast of Holland at about ten thousand feet and ahead of us stretched the North Sea - 200 miles of the North Sea - and we knew if we fell into that we were almost certainly dead, because you lived about five to ten minutes in the North Sea in

winter. And there was a certain argument - or a certain discussion is better - as to whether we should fly straight across, fly down to the Straits of Dover and go across, or bale out. Now I was not the captain but I made it very certain, in my opinion we should press on. I had great faith that I was not going to die at that stage. And it was very interesting to see who made the decisions - the pilot and I were the ones who made the decisions. The rest fell into their normal associated positions. So we flew over the North Sea getting lower and lower and ...

(20.00) Let me just ask what would have happened in that instance where the pilot, for example, had believed that flying round the coast to the narrower section of the Channel would have been the course to adopt? I assume his authority would have carried ...

Oh yes, I'd have agreed with what he said, but nonetheless I wanted my say, and we were on pretty close professional terms, and he thought we had a chance too. And so we got lower and lower and lower, and the only talk in the aircraft was the pilot would talk to the engineer and say, `How much fuel have we got Harry?', `What's happening to that motor?', or he'd say to me, `How long to the coast?'. And I'd say, `Fifteen minutes', `Thirteen minutes', and the rest just sat and hoped.

Now we crossed the coast of Lincolnshire at fifteen hundred feet. We'd made it, but the airfield was 600 feet up and about ten miles inland. It was wonderful to see the base beacon ahead - ten miles ahead - but when we got there we asked for an emergency landing and they refused to give it to us, because all the other aircraft which were much faster, but they'd gone a longer way round, had just arrived and they didn't want their precious runway blocked by a wrecked aircraft. At that stage the pilot said to the engineer, `Let's use the emergency undercarriage'. So they used it 'cause we had no brake pressure, and one wheel went down - the right wheel went down, but the left one stayed up. Then the right one couldn't be pulled up, then the third motor died. So we were now left with no flaps, bomb doors open, one motor, and pitch black night. It was a rather desperate situation. Now this is where faith and confidence are so crucial. We knew that the situation was desperate. We knew the pilot was going to try and make a landing off the runway.

It's extraordinarily difficult to land a heavy bomber at night, and he was landing it off the runway in the pitch black, yet we had perfect confidence that we would live. Now when he said, `We're getting very low', we went back to our crash positions and just sat there, and I listened while he counted the distance in. Then he said, `Brace for impact'. We touched down on the airfield, ran along on one wheel, then the port wing touched, the aircraft spun madly into the middle of the runway just as another Lancaster was touching down behind us. And we - I - plus the other members of the crew, apart from the pilot, bolted like rabbits from this aircraft, and you couldn't hear a sound with the shattering roar as the other aircraft staggered over the top of us away.

When I stopped to see what happened to the pilot as the din died away - I knew he was alive 'cause I could hear the terrible language coming from the cockpit as he switched off the switches - but the aircraft, the petrol tank had been fractured and there it was with a broken port wing, petrol, oil, glycol lying everywhere, needing just one match and it and we would have gone. Now that's fairly close, fairly close.

There's two other brief ones. In April, Easter Sunday 1944, we were way up the Baltic up near, in the Bay of Danzig mining the German U-boat fleet and the heavy fleet up there. The

pocket battleships were all up there. It was quite exciting. There were very few aircraft on, it was bright moonlight, and they were using their heavy main high angle guns. I've never seen 11-inch shells used as flak before, but we survived that alright.

Coming back over the coast of Jutland I was looking on the H2S and at Ringkobing Fiord, which showed up quite clearly, I could see three little islands at its mouth. And I said to the pilot, `Okay Bob, alter course 215 true, 217 magnetic'. That's the last leg. And he said, `215 true, 217 magnetic', and the aircraft banked. And as it banked there were three almighty bangs underneath the aircraft as we became filled with hot metal and smoke, and you can - the stink of cordite was terrible.

Now the engineer got a piece of shrapnel up his arm. He let out a big yell but it didn't do much damage to him. I was less interested in him at that stage because my parachute pack was on the bench alongside me resting and when I looked down, the half nearest to me had disappeared. So I then spent the next few moments trying to sit on one square inch, which is somewhat difficult. Now it was all over in a few moments and we flew out of range, but a hundred metres behind us in the bright moonlight was another Lancaster. Now there were three more bangs and it was hit and spiralled down and fell into the sea. That was, my cousin was the pilot.

(25.00) Your cousin?

Was the pilot of that aircraft - although I didn't know at the time till afterwards. Now we lived because we were banked and he died because he was straight level. They weren't islands, they were flat ships, right? Now this says something about luck. I've been back there to see the grave - he was the only one whose body was ever found.

Another thing where you trust people, we were flying back over southern Germany one night, about twenty four thousand feet and suddenly there was a cracking noise as the pilot pulled back on the stick. And he did it again, and it sounded as though the main spar was breaking up. Now if that was the case things were pretty bad. And the aircraft was in a nose down position and it gradually built up more and more and more speed, and I was watching my repeat ones. I could see the altimeter unwinding steadily, I could see the air speed indicator going up and up and up till it was hard against the stop. The wings were vibrating madly, the aircraft was going downhill at a fast rate and it looked as though we had no hope of survival. Now I was frightened. In fact, it's the only time in my life my knees have knocked together so hard that they were sore for days afterwards. I had trouble working out just where were so's to tell the others, if we baled out and survived, where we were.

Now while we were going down and down and down, our flight engineer, a little Yorkshire boy of nineteen, totally cool and calm walking up and down the aircraft checking this, checking that. Finally at about six thousand feet, at the last possible moment, he found a bit of the G-set had jammed the controls in a forward position. He pulled it out. We were already going far faster than the designer had ever imagined an aircraft could go. The pilot wound the trim and we pulled out at 4,000 feet. Now, see? Confidence, courage is the survival.

Those are very interesting stories Arthur, very interesting indeed. Could I just ask you a few related questions about fear. Obviously there was fear and in certain instances, confidence, the ability to keep going allowed one to get

beyond it. But as you remember it, was the worst fear before operations, during them or afterwards - after instances such as those?

No, before. The imagination is powerful - at least I have a powerful imagination. I found beforehand the apprehension, and the time I was most terrified, the one which was truly the crisis in my career as an air force navigator was when we were briefed to go to a city called Schweinfurt which is not that far from Nuremberg, where the American Air Force had been done over well and truly. They lost hundreds and hundreds of air crew in two unsuccessful attacks on Schweinfurt.

Now we'd had some very dicey do's, heavy attacks just survived and so on, and in the morning they said whatever the petrol load was, so I knew it wasn't the far ends of Germany, but it's probably about eighteen hundred gallons, so I knew about where that would be. Then at briefing they said, `It's Schweinfurt', and I felt fear in me at the moment, because I thought, `I'm not going to survive this. I've survived, I dunno, fifteen, eighteen operations. There's hardly anybody else left that's lived this long.'

Now I went about my day to day tasks in getting ready but I couldn't eat properly the meal. I couldn't talk to people, because I could see the certainty of death ahead of me. And once again, I didn't think, I was worried about courage, having enough courage, and I didn't think that was the bullets coming to me. It was being able to appear to be normal, right? I would have let myself down, and I would let the squadron down and I'd let my crew down, but above all I would let myself down. And I found it extraordinarily difficult.

When I finally went out to this aircraft in the black night, it was cold, it was dark, and this black aircraft standing in a remote dispersal, to actually move one foot ahead of the other - 'cause I was going to my certain death. Now I mastered that. Once we were in the aircraft I settled down and I became too busy. I forgot it.

Were the others as tense as you were?

I would never know, because nobody ever spoke about their fear. I only knew two air crew who went what they called LMF - lacking moral fibre - and both them went LMF before they went on an operation.

Did men judge that incidentally, or did they just see it as the fact that some ...

END TAPE TWO, SIDE A.

BEGIN TAPE TWO, SIDE B.

Identification: Ed Stokes with Arthur Hoyle, Bomber Commander, tape two, side two.

Yes?

No, men didn't judge it - most of them understood it. The ones who were hardest on those who couldn't stand the strain were those whom that themselves never flew - the medical officers, the air marshals and so on. But LMF was not much of a problem when I was in Bomber Command because very few people survived more than five operations. You see,

you hardly had time to be frightened before you were dead. I saw many who arrived in the morning and were dead that night.

How did you cope with the empty beds, the beds you saw week after week?

By becoming intensely superstitious. All air crew were amongst the most superstitious people in the world. Some beds that I remember - everybody that came into them died - and we used to look at them come in the morning, say, `Hello, how are you', but we didn't say, `Everybody in them's died'. But nothing would make us sleep in them. I had a sheepskin jacket. Now, a sleeveless sheepskin jacket - nothing, repeat nothing would make me fly without that sheepskin jacket. I knew in my own mind how ridiculous it was, but it was the talisman that I needed. It'd been with me all the time. So superstition, not religion. Very few became religious, but truly Ed, you got to know very few people because death came so frequently. You see ...

So there were no - the only deep bonds were with your crew?

That's right. There were one or two other crews that we knew, but we were the first crew to finish a tour of operation for months and months. Nobody else lived.

As the tour came to a close - and for the record there were two tours - just let's get it down now. Arthur's first tour was 460 Squadron, December '43 through to May of '44 - twenty-nine trips; and the second tour was 460 Squadron, December '44 to March '45 - twenty-one ops. As a tour came to an end, did this fear of not making it build up to a crescendo, or did you just get dulled.

Oh, we became increasingly anxious that we wouldn't make it. After all, you would have had to have been incredibly stupid not to realise that the odds built up all the time, and what emphasised it in our mind was that we saw crews who had survived and who were often on their second tour. One lot we were close to were lost on their forty-ninth trip, and if it can happen to Squadron Leader Utz on his forty-ninth trip with a wonderful crew, it can happen to anybody.

Did people think that as tours came to an end the likelihood of death increased because people became tense, they became anxious and therefore perhaps they became inefficient?

No, you became more confident, because you were competent and you knew what to avoid in a lot of the case. Nearly all deaths - not nearly all deaths, but a very high percentage of deaths - occurred early on.

Hm, and partly with people being on the tail of the stream and being more vulnerable or not?

No, they just didn't know what to do a lot of the time, and once again, it was the lucky ones that survived. You see, you've probably heard about what's called *Schrage musik* - the German guns firing upwards?

I haven't actually heard that expression.

Yes. The Germans decided to mount guns pointing vertically upwards in Junkers 88s and similar aircraft, and they used to fly in underneath heavy bomber where there was nobody to see them. Then they used to fire direct into the belly of the aircraft. Now we never even knew about it. The Intelligence refused to believe that such a thing existed, and yet hundreds of heavy bombers were lost. Hardly anybody came back to talk about it you see.

And of course no skill could have avoided that.

That's right.

(5.00) Just one other thing perhaps related to this aspect of death and fear. I'm aware of the time. Seeing a plane shot down, seeing a city burning, death was involved. Did you feel differently looking at cities and looking at planes, and how did you feel looking at one of your own planes going up in flames?

Well, cities - you were very remote, you know. We were not the rude soldiery that had raped and pillaged their way through Germany for centuries, right? We were the clean cut professionals who killed by remote control, who didn't see the women and children burnt to death by the phosphorous, who didn't see the - see, I went to Dresden - who didn't see the effects on the ground of the fantastic fire storm of Dresden. And so I feel ashamed in a way but I tended to admire the beauty of it and feel very remote. I hardly thought of it to ground.

When I saw one of our other aircraft, there'd be an exchange of fire, then you'd see it falling in a, in flames. It took thirty seconds to reach the ground. You felt a little bit sick at that, but you had to believe it wouldn't happen to you. If you saw an aircraft blow up alongside you - as they sometimes did with this *Schrage musik* - you'd be flying along, suddenly there'd be a vast explosion alongside you. It all happened so suddenly - oooh, right. So you'd look harder, right?

Your eyes were on flying ahead, preserving your own life.

That's right.

That's very clear and very effective. Perhaps just one question related to this one of, the question of destruction of cities. Were you aware of, sad at the great loss of heritage of history going up in smoke?

Well I took part in the destruction of Dresden in February 1945. Now at that stage I was twenty-two and old (small laugh) and experienced and a bit cynical. I no longer believed in the area destruction of cities. I thought the Air Chief Marshal, Sir Arthur Harris - dear Butch - was totally wrong in this, and when I went to briefing and they said, `You're going to Dresden tonight', I alone stood up in the briefing and said, `Why are we going to Dresden? There's absolutely nothing there. It's a great and beautiful city.' And I was quite put out by the Intelligence Officer's reply which was, `It is filled with refugees from the east. We are trying to create death and destruction amongst them to bring the war to an end somewhat sooner.' Now I was quite shocked at that. I didn't really believe that that was we had set out to do. Since the war ...

Could I just follow on there? What was the reaction of the other crews present and did ...?

No reaction. I was the only one that spoke.

Could you have taken that further ...

No.

... or would that have become a court-martial?

Oh yes. No, - yours not to reason why, yours but to .... Now I'd never been to Germany then. I've been to Germany many times since the war and I feel depressed when I see it. But then on the other hand, I think they brought it on themselves and, after all, I'd seen a lot of the bombing in England and I've seen it since in other parts of the world and so on. In one way I feel terribly sorry that Frankfurt, Dresden, Leipzig have disappeared. But they've disappeared many times before in history too, right?

During flights - long flights - how much was fatigue a problem, and cold?

Cold was not much of a problem to a navigator and the wireless operator because they controlled the heating system, but it was a major problem to the gunners who had to wear heated suits, cover a little bit of their face out with grease, and who all the time as they breathed out their breath turned to ice, and they spent their time cracking the ice. That's where I found psychology worked for the first time because the pilot and engineer would always complain they were cold out the front, and I used to signal to the wireless operator who was there and say `Shhh'. Then I'd say to them - the pilot and so on - `Alright, alright, it's stinking hot in here. Alright we'll turn it up for you', and instead I signalled to him and we'd turn it down. And after a few minutes I'd say, `I hope you're satisfied now 'cause we're baking', and they invariably said, `That's better, much better'. (Laughing).

(10.00) Could you describe, Arthur, approaching a target area? We've talked generally about certain operations, but could you describe in more detail the actual run in to a target area, how you homed in on it, whether pre or post-Pathfinders, and the whole question of releasing bombs as precisely as possible?

Well, if you were one of the junior crews as we'd started with, you always went in fairly late, and by that time the target was generally well lit up. Now, in both tours I had very good bomb aimers who were keen and conscientious. The second one used to terrify us 'cause he wanted to go round several times to be precise and that was very stupid indeed. But you'd see this great blazing mass ahead of you and you headed for it. I'd come out and have a look at it and observe with professional detachment how well we were doing. Then you'd hear, `Left, left, steady. Right, bomb doors open. Steady, steady, right. Bombs gone.' The aircraft leapt upwards, right? And I went back inside and said, `Fly such and such a course'.

You'd go out afterwards and if it was a good fire you'd look back and on the far horizon behind you perhaps a hundred miles away you'd see this great glow in the sky, and think about it. You'd come back and say, `Good prang wasn't it? Right on the beam', and so on. Now if you were with the Pathfinders to support them, to stop them all getting killed, it's much more dicey 'cause there was nothing ahead of you as you flew in and you prayed to God you were at the right place at the right time - till the target indicators went right down ahead of you and so

on. Then you bombed. If you didn't have a second bomb aimer you got out of it as quickly as you possibly could. But he used to want to go round again and ...

I was going to ask - the question of going round once or perhaps more times. Did the pilot always defer to the bomb aimer's wish or not?

He didn't have to but the ones I had always did, except the second tour crew. The pilot'd say, `No, no, that's enough Tony, we're going home', and then they would drop it no matter what, and so on. But we, towards the end of the war, when we were not doing only cities, we could bomb very accurately indeed. You could take out all the buildings in a block three or four hundred feet wide and not damage anything else.

And you really could bomb as precisely as that?

Oh yes, that's right, and that's what so depressed me with Harris wanting area bombing killing thousands of people for no purpose whatsoever.

Hm hm.

Could destroy the oil refineries without any trouble whatsoever.

Well, related to that, were you ever involved in photography of targets post-attack?

No.

Right, well other people were, I think.

Yes, they had a photographic reconnaissance unit.

How well did that match up with your work and how well could assessments be made of how effective your bombing had been?

Well you could tell. We all were constant visitors to the Intelligence Officer's rooms to see what the picture showed and so on. Now early in the war they showed no damage, but by the time I was operating we were destroying most of the cities most of the time - sometimes we missed altogether. Nuremberg was an extremely difficult town to find and instead we unloaded about twenty thousand tons of bombs on a very small town called Ludwigsburg just to the north [sic] of it which showed up. I often felt sorry for the inhabitants of Ludwigsburg who couldn't have imagined why they were singled out (laughing). But the photo reconnaissance did show damage, but it didn't show the fact that we were not killing many people towards the end and that we were not destroying factories, apart from oil refineries.

Right. If you had to list in descending order of danger the reasons for being lost - flak, air attack, mid-air collision and your own bombs being dropped on you et cetera - how would you rate that?

Ah, eighty-five per cent fighters; five per cent collisions; five per cent flak, and what's that leave me with? Not much does it? The rest would be other assorted reasons - failure of equipment, collisions and so on.

So it was fighter attack way above anything else?

Oh yeah. Some of the German fighter aces shot down well over a hundred heavy bombers you see, and that's why you spent your whole - or the rest of the crew - spent their whole night .... But the other sort of things - we shot down another Lancaster one night, you see. Now that comes under `Other'. He was on fire, flying towards us. Jets were around - this is near the end of the war - and the mid-upper gunner thought it was a jet coming to attack us so he didn't waste any time. He poured hundreds of rounds in and I was out looking and yelled out, `Stop, stop, stop, it's a Lanc, it's a Lanc', but it was too late. And he's turned over and went in. Now we reported it, but it's war.

(15.00) Were there any incidents when you became separated from the stream on the way out or on the way home where fighters really latched onto you and came close to shooting you down?

No. We had a lot of attacks but they were always when we were with the stream. On various occasions we were well separated for various reasons and on those we were never attacked. But just how close it was, I was talking to the pilot on my first tour about one attack from a Messerschmidt which came in and pressed the attack, and as I said, the rear gunner said, `Dive port, port, port, port', and the pilot was diving and he said, `I had the stick back right against my belly, couldn't go any harder, and he's still saying, "Harder, harder, hard, tighter, tighter"', and he said, `I was watching the tracers come just over the canopy of the aircraft' - cannon shells and bullets from the German fighter - and he said, `I thought "I could read a newspaper by this"'. So that's in the stream. It's who saw whom first.

Which were the most dangerous times on a mission?

Take-off, because if anything happened as you were taking off you .... I saw many people die on take-off. Obviously over the target, they were the two main ones because over the targer, not only the fighters and flak but it was collisions and so on. You imagine 800 or a thousand aircraft all passing over a certain spot within ten minutes.

So you obviously have the concentration of causes of destruction in one spot.

That's right and the concentration got tighter and tighter as the war went on.

You were speaking before about fire and I think saying that that was your greatest fear. That's, of course, often spoken about by pilots. Could you elaborate on that? I mean, why fire?

Well I'd seen a lot of aircraft burnt and I had a great fear of having my .... I had a friend who was very badly burnt - had his face burnt off. And I had another friend who'd been a very good pianist and his hands were so burnt they were claws, and so on. Now, without being unduly vain, I had no desire to be without a face or without proper hands. Now I thought, `I can stand a bullet - that's quick, that's sudden; but I don't think I can stand the long drawn out agony of thirty or more seconds while the aircraft is burning and I'm burning'. See it's long drawn out.

People often talk about the difficulty of getting out of planes that are burning. The plane's obviously not necessarily flying in [inaudible] flight ...

Oh the Lancaster was very bad that way. The navigator had, well, almost no chance of getting out. Did that worry me? No, not much (laughing). Occasionally. We thought we were going to be killed one night. We had a big fat pilot in flying second dickey and I was sure that he was going to get stuck in the hatchway and I'd never get out. I wasn't very thrilled at that. Only one person had a good chance of getting out and that was the bomb aimer. He lay on top of the escape hatch.

Yes, and he was ready, just ready to drop. Just perhaps finally, some more technical things. As the war progressed, what were the main technical innovations that assisted both your navigation and your accuracy in bombing?

Well, in the aircraft itself, radar and they're also radar aids or radio aids from the ground. They were able to use what's called `oboe' for the closer in targets; also they adopted different techniques such as the master bomber technique, Pathfinders got better, they used more sophisticated means of marking the targets and so on. So it, after a disastrous start it got better and better. But Air Chief Marshal Sir Arthur Harris, who never flew on an operation, never understood that. You see - in navies admirals get drowned and killed, but no air marshals ever get killed.

People I've spoken to do generally hint at this gulf between flying officers and non-flying. Do you think it would have been a better air force, a better operation, if those senior officers had from time to time, say, flown on an operation?

Yes. The only one who did was Air Marshal Donald Bennett, the head of Pathfinders, and he was the only one who really knew what it was really like. Now we would have had much more sense and much more understanding of the problems if the more senior officers had flown. And if they'd been killed there was always somebody else to take their place.

You were speaking before, or a minute ago, about master bombers. How much did that innovation of having the master bomber over the target affect your accuracy do you think?

(20.00) Oh it didn't affect ours because we were well experienced by that time, but it affected junior or young crews, or those who weren't so keen. We always admired the master bomber tremendously. He had one of the most terrifying tasks, and one occasion I remember hearing the master bomber cut off just in mid-stream - in mid-word - as he was shot down, and then his deputy said, `Redskin one, from Redskin two. Are you still there?', and when he wasn't Redskin two simply took over and it went on as though number one had never been there.

Well, looking back over it all, I always just like to ask these general questions at the end Arthur. Is there anything that you feel you would like to put on record about the war generally or perhaps more specifically about your work with Bomber Command?

Well there's been a lot of revisionism since world war two saying, in fact, that the operations of RAF Bomber Command and the United States 8th Air Force achieved nothing at all. Now

I think that is totally wrong in all ways. Now they did not achieve what was expected of them. They did not drive Germany out of the war. Civilian populations do not succumb normally to intensive bombing, certainly if they were under the control that the Gestapo had in Germany. But what they did do were two things: there were for example in Germany in the last year of the war 900,000 men of the Luftwaffe tied up in anti-aircraft defence. There was a vast amount of gun production tied up in trying to defend the Reich. We destroyed - both the Americans and ourselves - successfully destroyed vast amount of the German Air Force which could have been used much more successfully against the armies.

We did in the last six months of the war bring the war to a quick conclusion by the success of the campaigns on the oil fields and so on. I think it was a terrible price, but it achieved a goal, but it wasn't the goal that was expected.

> Well just finally, I know your second tour ended in March '44. That must have been a time ...

'45.

> I'm sorry, March '45, yes. That must have been, well, you must have been overjoyed.

No, the real joy came .... I was in London when VE Day occurred and I couldn't imagine a better place to be than London. I could not believe that the war was over, no, it wasn't VE Day, I'm wrong. It was VP Day - the War in the Pacific - because I was going to go to Burma. I could not believe that the war was over and I had survived it. I've never felt so happy in my life. Nearly everybody I was with at school, nearly everybody who went away with me, was dead and I was alive. That seemed a wonderful gift.

> Yes, it must have been. Well on behalf of the War Memorial and particularly because I knew you'd been very hard pressed with other things today Arthur, thank you very much.

Oh it's a pleasure to do it for you.

> Good.

It's not talking to somebody who knows nothing about it you see.

END TAPE TWO, SIDE B.

END OF INTERVIEW.