

DAVID LIMBERT

Edited transcript of a recording of David Limbert conducted by Chris Eldon Lee at his home in Cambridge on 1st/2nd March 2004. Transcribed by Andy Smith, 10th June 2010.

Disc 1, Track 1 [0:00:00] Chris Eldon Lee: *This is David Limbert, interviewed by Chris Eldon Lee on the 1st and 2nd of March 2004 at his home in Cambridge. David Limbert, Part One.*

Disc 1, Track 1 [0:00:12] David Limbert: I am David Limbert. I have two middle names: William Sharper. William Sharper happens to be my uncle, so they were put inside and I still use David W.S. in my signature. I was born on the 5th of December 1927. It was a day of black ice, according to my father, because he slipped over and hurt himself. And I was born in Finchley, much to my annoyance because my parents were from Yorkshire. And because I was born in Finchley, I could never play cricket for Yorkshire, and this blighted my life for years [laughs]. It was a great pity because my son, my brother and my sister, both have been born in Yorkshire. So, that's how I came into being. I'm a born Londoner but my heart is in Yorkshire. Like my brother, I am a left-hander. Now if you think about it, a left-handed cricketer is also a forehand at tennis, a backhand with tennis. It is a natural stroke. In fact I know another man who is a left-hander and he says it is more natural to be a left-hander than a right-hander. He is probably right. But I enjoyed it, and as far as cricket was concerned, I really became a medium-pace swing bowler. That was good fun.

Disc 1, Track 1 [0:01:47] Chris Eldon Lee: *Did you ever play cricket in the Antarctic?*

Disc 1, Track 1 [0:01:49] David Limbert: Never played cricket. We did play golf – with black balls.

Disc 1, Track 1 [0:01:58] Chris Eldon Lee: *You had better explain.*

Disc 1, Track 1 [0:01:59] David Limbert: What we had was effectively just a snow surface. There was nothing else but snow, and if the snow was hard, you could hit a golf ball quite a distance. But generally in the summer it was a bit soft, and there wasn't much point in having holes because things would just plop into the ground. But you could tee off with a club – an ordinary Two Iron or something like that, and have a sort of little game with a black ball, so you could find it.

Disc 1, Track 1 [0:02:38] Chris Eldon Lee: *Did you paint the balls black yourself?*

Disc 1, Track 1 [0:02:39] David Limbert: Yes. That wasn't me, that was Doug Prior, one of our carpenters. He was a keen golfer, and that was his idea.

Disc 1, Track 1 [0:02:50] Chris Eldon Lee: *So would you set out a proper course, or just as ...?*

Disc 1, Track 1 [0:02:52] David Limbert: No it was just ad-hoc. Like must of these things, you say 'Oh. Let's just play this game.' It was done probably a couple of times, and that was it.

Disc 1, Track 1 [0:03:02] Chris Eldon Lee: *Which base was this at?*

Disc 1, Track 1 [0:03:03] David Limbert: This would be Halley. I was part of the team that built the first station at Halley Bay. It was Halley Bay in those days. We arrived there; we found the site on the 6th of January 1956. We set had sail from Southampton on the late tide on the 22nd November, which was a week after the *Theron* – with the Trans Antarctic Expedition – had left from London Bridge. They had all the razzmatazz. We slunk away quietly after everyone has gone to bed. The reason for our delay was: we were so heavily loaded with cargo that we had to have stability tests. We had too much deck cargo and various tests were done and one tractor was taken apart completely and the parts put under the bunks. We reassembled that crossing the tropics. All this little things... To get things we need down South we had to sort of stow them in awkward places, lower down, so the ship did not tip over too far.

Disc 1, Track 1 [0:04:40] Chris Eldon Lee: *So all the heavy stuff at the bottom?*

Disc 1, Track 1 [0:04:41] David Limbert: All the heavy stuff was at the bottom.

Disc 1, Track 1 [0:04:43] Chris Eldon Lee: *But if you rebuilt the tractor in the tropics, then didn't that readjust the balance?*

Disc 1, Track 1 [0:04:46] David Limbert: Well probably yes, but by that time we were well on our way and did it matter? [laughs]

Disc 1, Track 1 [0:04:53] Chris Eldon Lee: *So this was something that had been overlooked in the preparations.*

Disc 1, Track 1 [0:04:57] David Limbert: Well it was a last-minute charter. They only decided, I think in September, that they were going to send an expedition down, at the same time as the Trans-Antarctic Expedition. The initial intention was that two stations would be next door to each other and support each other. Then the question of getting the team together. On the recommendation of Sir Vivian Fuchs, who was then Vivian Fuchs, they got David Dalgliesh as the base commander, the leader of the expedition, Major Gus Watson from REME. He had quite an interesting life in wartime. He had been parachuted in to France to look at the radar installations there, and anything else that he could see, and he was then taken out by submarine. So he was quite a character. Then they had a signals man who was an ex-SAS man, REME SAS. So Gus was the scientific leader. He was a radio expert. And then we had... They had recruited two carpenters: Johnny Raymond who was an ex-fid and Doug Prior, his brother in law, and a general handyman was George Lush who was a commissioned bosun, who had had a very interesting life in the war; he eventually re-rigged the *Victory*. They got that far and they had to have another scientist, so they got Dr Stanley Evans, from Jodrell Bank. And then one day I had a phone call in the Met Office from the Secretary of the Met Office who said 'Are you doing anything next month? Would you like to go to the Antarctic?'

Disc 1, Track 2 [0:07:30] Chris Eldon Lee: *Casual, like, was it?*

Disc 1, Track 2 [0:07:31] David Limbert: Casual, like. I said ‘Well it sounds interesting. Yes I will go.’ He said ‘Well will you go along to see Dr Martin of the Royal Society?’ I said ‘OK.’ So I went along. Dr Martin was then the Executive Secretary of the Royal Society; he became Sir Dr Martin later on. And he said ‘Well, we’ve got this expedition going to the Antarctic.’ This was precisely five weeks before the expedition sailed. ‘Dr Stagg has suggested you would like to go. He picked you out of a hat, as a likely person. So, right, we want you to... Would you like to go to the Antarctic? Anything to stop you?’ I said ‘No, nothing as far as I know.’

Disc 1, Track 2 [0:08:30] Chris Eldon Lee: *So you weren't married, or...*

Disc 1, Track 2 [0:08:31] David Limbert: I was not married. He said ‘Well. We decided we need a meteorologist because we need to get some meteorological work done. But,’ he said, ‘in truth, you will probably be a carpenter’s mate.’ [laughs]

Disc 1, Track 2 [0:08:44] Chris Eldon Lee: *So did you get to do any meteorology?*

Disc 1, Track 2 [0:08:47] David Limbert: Oh yes, I did the meteorology, but that is not the end of the story of me being recruited. I had to go across to see the Secretary of FIDS, who was Frank Elliott at the time, who I did not know was a climber. He said ‘So you want to go to the Antarctic? Well tell me about yourself. What sports do you play? I know you are a meteorologist etc. I said ‘I play cricket.’ ‘Not interested.’ ‘I do a bit of running.’ ‘Not interested.’ ‘But I do a bit of climbing, rock climbing.’ ‘Oh, you climb do you? Describe a climb to me.’ So I gave a description of Grooved Arete on Tryfan in North Wales. He says ‘You’ll do, lad!’ He says ‘Go along to Harley Street, to this address.’ I think it was the London Clinic or something. I can’t remember the details. ‘and have a medical.’

Disc 1, Track 2 [0:09:51] Now the medical was a bit of a farce. They just asked me ‘Have you got any bad illnesses or anything like that? Have you had any illnesses?’ I said ‘Well I had rheumatic fever when I was a kid, but I’ve been in the air force; it didn’t really matter.’ ‘Is it going to be sledging or anything like this?’ I said ‘No, it’s a static base.’ He did a few lab tests – things like that. I was warm, I was walking. ‘OK, lad. You’re in.’ That was effectively it. And from then onwards, it was chaos. I went back to the Marine Branch of the Met Office, where I was working at the time, and I went down to the met stores down there and diverted stuff which was going the Gold Coast. All sorts of things: meteorological masts, thermometer screens. Anything I needed was diverted to go to the Antarctic.

Disc 1, Track 3 [0:10:57] Chris Eldon Lee: *Was that official or unofficial?*

Disc 1, Track 3 [0:10:59] David Limbert: Unofficial, but it was done. You know, they knew I was going to the Antarctic. It was done by connivance and things like that. I had to go round the various places like Kew; go to Kew Observatory. I had to meet Professor Dobson at Oxford. It was just a whirl, as you rushed around seeing different people for different purposes, somehow fitting in getting your own affairs put in order.

Disc 1, Track 3 [0:11:33] Chris Eldon Lee: *Were you a bit surprised at how lackadaisical it all seemed to be and how last-minute-ish? It didn't sound too...*

Disc 1, Track 3 [0:11:41] David Limbert: No. It was a late decision made. They had made a decision but it had not really got going. But they had got Boulton Paul to make the hut, and it could not be made the same way as the Trans Antarctic Expedition hut because there wasn't time. So effectively we had tongued and grooved boarding, lots of it. Some easy-put-together, self-build frameworks to go inside the main joists and suchlike. And a lot of heavy equipment, and that's it. We set sail, and rolled, went across the Bay of Biscay where we had deck cargo shifted and had to be re-stacked, in the rolling seas.

Disc 1, Track 3 [0:12:46] Chris Eldon Lee: *What was the name of the ship?*

Disc 1, Track 3 [0:12:47] David Limbert: The *Tottan*. The *Tottan* had a good history. It had been a sealing vessel. It was captained by Leif Jakobsen, and the First Officer was Axel Berg. Axel Berg had been at sea, in the Weddell Sea, when Norway was invaded, so he did not see his home again until after the war. He was really the Weddell Sea expert. Leif Jakobsen was the top Norwegian sealer. His vessel was actually a sealing vessel. It was chartered for one hundred days. After that it would go back, up to Halifax, pick up the rest of the crew, and go off sealing. Now the thing about this is: they pay, the sealers pay to go on a ship because of the quality of the man in charge of the expedition. The crew going down with us were going to go on afterwards but they were presumably paying to go on the ship. I don't know the full details of it. But it had... One interesting character was the cook, Jon Snarby, who had actually been on the Norwegian Swedish British Expedition to Maudheim in 1949-52, which by the way that expedition was a very very good expedition. The work they did there really was a, from my point of view, was a good guidance on what I should be trying to look for.

Disc 1, Track 3 [0:14:44] Chris Eldon Lee: *For example?*

Disc 1, Track 3 [0:14:46] David Limbert: Well, the glaciologist was Charles Swithinbank, who lives not far away from here. The meteorologist was a chap called Liljequist who was very very sharp and very good. I used it for many years to prompt my mind of ideas – things like that. They just about got the first editions out before our expedition went. And of course the other man was Gordon Robin who was Director of Scott Polar at the time. Was he? No he wasn't Director of Scott Polar at the time. That was... can't remember the man's name at the time. But Gordon Robin was made Director later on.

Disc 1, Track 4 [0:15:46] Chris Eldon Lee: *We left you reshifting the gear on the deck in the Bay of Biscay, didn't we?*

Disc 1, Track 4 [0:15:49] David Limbert: Well, Johnny Raymond broke his arm, so we had to put in at Tenerife to have it properly X-rayed and properly reset. Meanwhile the Chief Engineer enjoyed himself by destabilising the... shall we say upsetting the timing on the engines. So we had an extra day there to enjoy ourselves. The Chief Engineer of the ship was, later on, after the second trip, he was carted away with DTs. [laughs] A very heavy drinker.

Disc 1, Track 4 [0:16:37] Chris Eldon Lee: *How seaworthy was this sailing vessel and was it...?*

Disc 1, Track 4 [0:16:40] David Limbert: It was a very very good sea boat.

Disc 1, Track 4 [0:16:43] Chris Eldon Lee: *Wooden, presumably?*

Disc 1, Track 4 [0:16:44] David Limbert: No, it was a steel ship. It was a trawler, built at Hull, Goole, which actually had been converted to ice use. It was just a huge great hold, with an engine. Now, the engine had been dredged up from the bottom of the Kiel Canal, well rescued from the Kiel Canal. It was a submarine engine. It could cruise at ten knots, but with the booster in, it could do fourteen, but every rivet would shake and rattle at that. The skin had been actually strengthened with much thicker plates all the way round. So that was it. It was a just a great big hold with forecastle accommodation for twelve people, I think it was, in the forecastle.

Disc 1, Track 4 [0:17:37] Chris Eldon Lee: *There were how many of you?*

Disc 1, Track 4 [0:17:39] David Limbert: There were ten of us, plus... The leader of our expedition actually had, used the Captain's day cabin, or had accommodation next to the cabin, next to the captain. But we used the captain's day cabin as our rest room and 'jollification' room.

Disc 1, Track 4 [0:18:08] Chris Eldon Lee: *Did the ship smell, of seals?*

Disc 1, Track 4 [0:18:11] David Limbert: Not really, no. It didn't smell at all, you know. It was covered with the smells of things we had taken with us as well, you know. The things lying around. The difficulty was walking across the deck. All you had was... You had to walk across lots of planks with just a rope to hold on to. So you were above the gunwales, and you had to be very careful to time your crossings if the weather was bad. In fact if the weather was really bad, you had to signal the bridge as you came out, and they would actually try and put the ship in a position whereby you wouldn't get badly damaged. So it was a bit risky. I used to do meteorological observations all the way down, sea temperatures and things like that, by throwing a bucket overboard. People used to laugh at me throwing this bucket overboard, then hauling it on and putting a thermometer in. Not a very efficient way but it gave a rough idea of how the temperatures were going and how things were changing.

Disc 1, Track 4 [0:19:23] Chris Eldon Lee: *Where else did you call on the way south?*

Disc 1, Track 4 [0:19:25] David Limbert: That time I think we went straight to South Georgia. Let me think about this one a minute. Did we go to Rio or didn't we? Or was that the second trip? Or was that on the way out? I can't remember.

Disc 1, Track 4 [0:19:57] Chris Eldon Lee: *It isn't terribly important.*

Disc 1, Track 4 [0:19:58] David Limbert: But anyway we went to South Georgia and we arrived there on the twenty fifth of December.

Disc 1, Track 5 [0:20:07] Chris Eldon Lee: *In 'fifty...?*

Disc 1, Track 5 [0:20:08] David Limbert: In '55. And we went into Grytviken where we made our... It is the port of entry there, so we had to meet the magistrate and all that sort of business, and David Dalgliesh was sworn in as base commander etc., etc. and had then all legal rights, and we looked at the whaling plan, and all that sort of business.

Disc 1, Track 5 [0:20:37] Chris Eldon Lee: *So Christmas was ignored, was it?*

Disc 1, Track 5 [0:20:39] David Limbert: Oh Christmas wasn't ignored but we did a few things. Then I seem to remember we went round to Husvik, which is in another part of the bay, where there was a slop chest. We had a bit of a problem there because on the way down, the anchor chain had been clamped to keep it quiet from rattling in the forecabin, because Doug Prior could not sleep because of the rattling. Nobody had told the captain about this. We were heading towards, I think it was the *Southern Garden* which was going to be... we would do some refuelling from that. The way the ship worked: it was blowing half a gale at the time. The way the ship worked is that it, they would go straight forward to where they wanted to be. Then stop the engines, reverse the engines, and then 'whop it round' with the motors. Unfortunately, in this process it stalled. There was half a gale blowing, blowing us backwards towards the shore and the kelp. There was lots and lots of kelp there. Well, to cut a long story short, the captain rang for the anchor to go down but of course it wouldn't go down. Luckily there was one of these little single-pop supply boats – single-pop diesels that the Norwegians use – pop, pop, pop. And that nudged us sideways and so we hit the *Southern Garden* at an angle and bent our prow. There was a roar of laughter from the skipper saying 'Ha, ha, ha. You nearly lost your expedition then.' [laughs] It was an exciting time.

Disc 1, Track 5 [0:22:51] Anyway we bought things like chocolate, sweaters, things like this from a slop chest. We must have been back in Grytviken: we went to see the cinema. I can't remember where the cinema was. I think the cinema was at Husvik, so we went to see a film in Husvik, which was very pleasant. I think it was 'Whisky Galore' and it went down a treat with the Norwegians.

Disc 1, Track 5 [0:23:22] Chris Eldon Lee: *Compton Mackenzie*

Disc 1, Track 5 [0:23:23] David Limbert: Yes, that's right. It went down a real treat.

Disc 1, Track 5 [0:23:26] Chris Eldon Lee: *So how did you get to Halley, then? Because that's where you were based, where you were heading.*

Disc 1, Track 5 [0:23:29] David Limbert: We headed for Halley. When we came out from Grytviken we headed towards, I think it was Clark Rocks, just to see that they were there, and headed out. Round about the... Just to prompt myself with some dates. [rustling papers] Yes we went round there and then it was on the 28th that we first sighted ice. As we went along, by this time the *Theron* which was ahead of us, had headed into the Weddell Sea, and having found relatively open water round about South Sandwich Islands, had gone straight down, in the middle. That was a mistake from their point of view because they got trapped. They were caught by the shifting winds, things like this.

Disc 1, Track 6 [0:25:03] David Limbert: Now Axel, who was our navigating officer, wouldn't do that. He said 'We are going to go as far as nought degrees or even two degrees east. We will then turn in close to the coast. There is always open water, warm water coming down the coast; we will get a shore lead there. And we did this, we went around, got on the ice edge, went round the ice edge. We did get stuck once. It took a lot of... It's like toffee when the wind changes. It is very difficult getting out of it when it's this mush. But we hadn't gone too far in. We were able to get out after about 24 hours. Went further along towards the east, then when they spotted water sky in the distance we turned in, and after another 24 hours thrashing through about six tenths ice, six or seven tenths ice, we broke through into open water and went down the coast.

Disc 1, Track 6 [0:26:15] David Limbert: The interesting thing about the trip south is we sailed through what was known as the Stancomb-Wills Promontory, that had disappeared completely – it didn't exist anymore. We sailed on down to 77 South, it was, roughly, and the idea to go to Vahsel Bay. We could see Vahsel Bay. We could see little rock windows but we couldn't get in so we chugged along further west. We went down as far as we could then turned west and we got stuck. We couldn't go any further south, and we were stuck there for 24 hours. We were the furthest south on the 3rd of January. We got down there by the 3rd of January. There was no way we could get in to the fast ice, so we thrashed around a bit. The interesting thing was that at that stage the Argentinians had an icebreaker, *San Martin*, which came steaming past us without even offering us a chance to get out. They went off towards the west to set up their base further along the coast which was a bit annoying to us but we were there and we thrashed around for roughly two days until we struggled and got free.

Disc 1, Track 6 [0:28:14] So we came back up the coast. On the way we stopped on the Dawson-Lambton Glacier just to get one of the tractors and some deck cargo out that we needed for a proper landing. It was obvious that the Dawson-Lambton Glacier, which is about 76 and a half South or just south of that.... They had to get some deck cargo out, one or two things we needed. It was not suitable for any form of base so we went further north. That night we got as far as 75 South. Now, our instructions were 'If you cannot establish a base south of 75, you are to come home.'

Disc 1, Track 6 [0:29:14] Chris Eldon Lee: *Oh, right? Why was that?*

Disc 1, Track 6 [0:29:18] David Limbert: We had to be at a particular location for ionospheric and auroral purposes. We were outside the auroral zone so we could observe the aurora from outside, but close enough to the head of the Weddell Sea, to give a new aspect, study. It was in, in fact it was part of the Caird Coast. During Shackleton's expedition, Worsley had sailed, they had sailed down there and where the Stancomb-Wills Promontory, that had been known as "Worsley's ice bulge". We sailed right through that. Anyway we eventually settled. The skipper found a place with a slope. It looked like a slope on to the... in the distance. Access on to the ice shelf. He moored there on the night of the 5th of January. Next morning a three-man party went off, manhauling a sledge. They walked about three kilometres or so, and they said 'Well, it's as flat as a pancake; might as well put the base here.'

Disc 1, Track 7 [0:30:56] Chris Eldon Lee: *Had the other ship caught you up by that time? Were you meant to rendezvous?*

Disc 1, Track 7 [0:30:59] David Limbert: No, the TAE were still stuck. Our ship, the *Tottan*, had already gone before the *Theron* arrived. We were there a whole month before it arrived.

Disc 1, Track 7 [0:31:14] Chris Eldon Lee: *And this was what was to become Halley, was it?*

Disc 1, Track 7 [0:31:16] David Limbert: It was to become Halley.

Disc 1, Track 7 [0:31:17] Chris Eldon Lee: *What was the first base like, because obviously you did not go underground at that point?*

Disc 1, Track 7 [0:31:21] David Limbert: No you didn't. You just put it on the surface. We laid out a mat of expanded metal. This was a form of foundation. On top of that you put the main floor joists, and purlins and things like that. And to these you bolted these truss trees, weighed just under a hundredweight each. I think there were about fifteen. They were quite big things. We started building and we had got a fair amount of the floor finished before the Trans Antarctic Expedition arrived. They stopped to have a look at our base, whether it was suitable for their point, but they wanted to be further south. But they did get their *Auster* to take off from the sea ice, to take off and make a flight round the... towards the *Theron* Mountains. To show there was a mountain range there which was to be named the *Therons*.

Disc 1, Track 7 [0:32:50] Chris Eldon Lee: *So that was an advanced, a recce party?*

Disc 1, Track 7 [0:32:53] David Limbert: A recce party. They then departed. We had a meal from them. They departed and we were at this time living in tents anyway.

Disc 1, Track 7 [0:33:06] Chris Eldon Lee: *Was Fuchs with them when they came?*

Disc 1, Track 7 [0:33:08] David Limbert: Fuchs was with them, yes.

Disc 1, Track 7 [0:33:09] Chris Eldon Lee: *So you met him?*

Disc 1, Track 7 [0:33:10] David Limbert: Yes, met Fuchs. Fuchs was there. Ed Hillary was there, Lowe was there. I think it was Ed Hillary in his book *No Latitude for Error* referred to us as 'a cheerful bunch, mostly tradesmen' [laughs]

Disc 1, Track 7 [0:33:38] Chris Eldon Lee: *How would you refer to him? He was a mountain climber?*

Disc 1, Track 7 [0:33:44] David Limbert: A mountain climber. A very go-ahead ... He never... If he wasn't working he was horizontal. [laughs]. You know, he conserved his energy. George Lowe was the other member of that team.

Disc 1, Track 7 [0:34:03] Chris Eldon Lee: *This was just a brief meeting?*

Disc 1, Track 7 [0:34:05] David Limbert: A brief meeting, yes.

Disc 1, Track 7 [0:34:06] Chris Eldon Lee: *And Bunny Fuchs, did you take to him?*

Disc 1, Track 7 [0:34:09] David Limbert: Yes, we liked Bunny; Bunny was fine. They corresponded, chatted with each other, made arrangements, and off they went.

Disc 1, Track 7 [0:34:20] Chris Eldon Lee: *So they arrived by plane?*

Disc 1, Track 7 [0:34:21] David Limbert: Well, the ship, the *Theron* has arrived at this point, and tied up alongside, and they came up to the base and had a look at the base. Discussed all the problems with us and looked at our tractors and it was the Ferguson tractors which actually Hillary used to drive to the South Pole the following year.

Disc 1, Track 7 [0:34:47] Chris Eldon Lee: *Was that not the Trans Antarctic?*

Disc 1, Track 7 [0:34:49] David Limbert: That was the Trans Antarctic Expedition, yes.

Disc 1, Track 7 [0:34:51] Chris Eldon Lee: *I saw some film of that.*

Disc 1, Track 7 [0:34:52] David Limbert: Yes, that's right.

Disc 1, Track 7 [0:34:55] Chris Eldon Lee: *So he looked at your Ferguson tractors and that was...?*

Disc 1, Track 7 [0:34:57] David Limbert: That's right, yes.

Disc 1, Track 7 [0:34:58] Chris Eldon Lee: *You think he got the hint there?*

Disc 1, Track 8 [0:35:01] David Limbert: He decided they would do the job. They were cheap enough. Just put full-tracks, we had half-tracks on it but he put full tracks on. We put full tracks on as well, later on.

Disc 1, Track 8 [0:35:10] Chris Eldon Lee: *Were they reliable for you?*

Disc 1, Track 8 [0:35:11] David Limbert: Yes but the one thing you had to be careful, you had to keep... If they had been stored in the cold, the cylinders, the metal tended to crystallise. We looked at a broken cylinder under a microscope and you could see the crystalline structure. Just broken up completely. After that we had to keep heaters under the things to make sure they worked OK.

Disc 1, Track 8 [0:35:50] Chris Eldon Lee: *So they had little heaters underneath the bonnet all the time?*

Disc 1, Track 8 [0:35:54] David Limbert: Yes, we had heaters on them.

Disc 1, Track 8 [0:35:55] Chris Eldon Lee: *Sump heaters?*

Disc 1, Track 8 [0:35:56] David Limbert: Yes. Something like that had to be done, or put them under a shelter somewhere, but we had not got a shelter at that stage.

Disc 1, Track 8 [0:36:05] Chris Eldon Lee: *Not everybody liked Bunny Fuchs, did they, but you seemed to...*

Disc 1, Track 8 [0:36:00] David Limbert: Bunny was OK. He was a 'lead from the front' man. He would take opinions from everybody else and then say 'This is what we are going to do'. And that was it. There was no change from that. He had a very forceful personality. I remember talking to him after he got back, and I said 'When you were that late getting towards the South Pole, I put your chances at fifty-fifty.' He said 'That's about the right estimate.' Because they met all sorts of crevasse problems and things like that. And he was quite fair, you know, on that score. And he was my boss when I was in the Falkland Islands Dependencies Survey, later on. I joined, under Fuchs, the Dependencies Survey, and he was a good boss, but like all good bosses, he would give you a good telling off and you wouldn't do it again.

Disc 1, Track 8 [0:37:41] Chris Eldon Lee: *We've left you with tents on the ground at Halley. Presumably your assistant carpentry skills came in handy then?*

Disc 1, Track 8 [0:37:46] David Limbert: Yes we were in tents at that stage. It was a routine. It was an 18-hour day. We started off using ordinary sledging rations, and sledging rations aren't good for a hard working day, so we switched to having a hoosh, which was made up in a tractor crate, usually by Gus Watson. He had a game leg so he could not do so many things as others but he used to make this hoosh up and we would get in the tractor crate and have a hot stew once a day. But eventually, we moved into the bunkhouse on the 26th of February. The end bit had been finished, the accommodation, but none of us had had a bath at this stage. Now are two ways of dealing with this. We had only been issued with single thickness sleeping bags. They should have been doubles. So one piled all one's spare clothes underneath the sleeping bag. Either you wore one set of clothes all the time, and not bothered to change them, or you changed once a week. Put those away again and put the other ones on, changed about. I think I kept mine going and then I threw once set away when we got into the hut.

Disc 1, Track 8 [0:39:26] David Limbert: I shared a tent with Stan Evans, who was the scientist of the party. The routine was normal. You had an inside man and outside man. If you wanted to go to the loo, well it was cold. [laughs] The interesting thing was that when we had a bath, the bathroom wasn't finished for some time, but we each had a sponge bath, and as one person had a sponge bath or a bath in the kitchen or whatever it was (I can't remember the details now), they moved to a different group. Because the smell was different.

Disc 1, Track 9 [0:40:15] Chris Eldon Lee: *There was the clean and the unclean.*

Disc 1, Track 9 [0:40:18] David Limbert: You moved across like that. It was quite an interesting phenomenon.

Disc 1, Track 9 [0:40:23] Chris Eldon Lee: *So how many days would it take you for everybody to get into the clean group?*

Disc 1, Track 9 [0:40:28] David Limbert: The last one would be ten days.

Disc 1, Track 9 [0:40:30] Chris Eldon Lee: *Ten days?*

Disc 1, Track 9 [0:40:31] David Limbert: Yes, but anyway it was all good clean fun, as they say. You don't get illnesses there.

Disc 1, Track 9 [0:40:40] Chris Eldon Lee: *So just give me a brief description of this very very first hut at Halley. Was it a palace?*

Disc 1, Track 9 [0:40:46] David Limbert: It was a 135 feet long, 32 feet wide. Something of that order. It was meant to be divided into a number of rooms, which would be offices and things like this.

Disc 1, Track 9 [0:41:30] Chris Eldon Lee: *Tell me about this hut then, David.*

Disc 1, Track 9 [0:41:38] David Limbert: Those are the foundations. I was effectively stores officer. I had to know where every piece of stores was.

Disc 1, Track 9 [0:41:54] Chris Eldon Lee: *Because it is radio, you are going to have to tell me about the hut in words.*

Disc 1, Track 9 [0:41:57] David Limbert: Yes. The hut, as I say, was 130 feet long. Built with a big strong main frame, but with four by two framework installed between, and then on that we put fibreglass padding down the outside and then tongued and grooved boarding over the top.

Disc 1, Track 9 [0:42:25] Chris Eldon Lee: *So it was wood- fibreglass- wood?*

Disc 1, Track 9 [0:42:26] David Limbert: Yes and then inside we had more fibreglass, then plywood.

Disc 1, Track 9 [0:42:30] Chris Eldon Lee: *Five layers – five skins?*

Disc 1, Track 9 [0:42:32] David Limbert: Yes, five skins effectively. It worked quite well as a thing but it took us a long time to get into the main hut itself. The full length, it had doors at each end and midway along. It had windows, which eventually became drifted up.

Disc 1, Track 9 [0:43:00] Chris Eldon Lee: *What was the roof made from?*

Disc 1, Track 9 [0:43:01] David Limbert: The roof was actually, again, tongued and grooved boarding covered with Ruberoid. Now putting the Ruberoid on was quite interesting.

Disc 1, Track 9 [0:43:10] Chris Eldon Lee: *What is Ruberoid?*

Disc 1, Track 9 [0:43:11] David Limbert: This is asphalt covering. It's the same stuff you have on garden sheds. This required team effort. It was too brittle to put on

straight out. By that time we had a little generator going, in a generator room. We would keep it hot, warm it up in there. Then the warm roll would be brought up, up a ladder onto the roof, and rolled out quickly and then hammered down very quickly with nails as quickly as possible, before it froze up. And that's how the roofing was done. It worked. Our biggest enemy, shall we say, was: we had been issued sacks of nails covered with what was call Killfrost. Now Killfrost is a grease to stop things feeling cold. It was a menace. We actually had to get rid of it. We just soaked that in aviation turbine spirit which is the gasoline effectively, kerosene.

Disc 1, Track 9 [0:44:21] Chris Eldon Lee: *This was a grease that was supposed to insulate it against the metal getting cold?*

Disc 1, Track 9 [0:44:23] David Limbert: Yes, that's right.

Disc 1, Track 9 [0:44:24] Chris Eldon Lee: *What was the benefit of the nails not being cold?*

Disc 1, Track 9 [0:44:27] David Limbert: There was no benefit whatsoever. It was just a pain in the neck to hold them. Because they just stuck to you anyway with this grease. So effectively we just threw that away.

Disc 1, Track 9 [0:44:36] Chris Eldon Lee: *But what was the thinking behind it?*

Disc 1, Track 9 [0:44:38] David Limbert: I don't know.

Disc 1, Track 9 [0:44:39] Chris Eldon Lee: *Some bright boffin in London?*

Disc 1, Track 9 [0:44:41] David Limbert: Yes, some bright boffin in London. It was all supplied through the Crown Agents you see, this.

Disc 1, Track 9 [0:44:47] Chris Eldon Lee: *So you had to wash off the nails before you used them?*

Disc 1, Track 9 [0:44:50] David Limbert: Yes, wash off the nails before we used them. Anyway the roof was done, and we eventually moved into bunks, for I think it was Easter. [consults paper] We moved into the bunkhouse the 26th of February. The bunkhouse part was filled, and the outer shell was completed on the 31st of March. From then on we built all the offices. The met office and bathroom were completed on the 16th of May.

Disc 1, Track 10 [0:45:29] Chris Eldon Lee: *I will come back to that in just one second. What special precautions were there taken against the whole thing being blown away?*

Disc 1, Track 10 [0:45:35] David Limbert: No need to. Its weight.

Disc 1, Track 10 [0:45:37] Chris Eldon Lee: *It was big enough?*

Disc 1, Track 10 [0:45:38] David Limbert: Oh yes. There was no need to put a hawser to hold it down. It was very heavy. These timbers of the main frame weighed something like between a half and a whole hundredweight.

Disc 1, Track 10 [0:46:04] Chris Eldon Lee: *And there were going to be ten of you in there?*

Disc 1, Track 10 [0:46:06] David Limbert: Yes.

Disc 1, Track 10 [0:46:06] Chris Eldon Lee: *So what was your sleeping, your private accommodation like?*

Disc 1, Track 10 [0:46:10] David Limbert: Like an ordinary bunkhouse. We had double tiers, upper and lower bunks, and you had your choice. I preferred the lower bunk because I could roll out of bed more easily in the morning.

Disc 1, Track 10 [0:46:26] Chris Eldon Lee: *Was there any sense of privacy?*

Disc 1, Track 10 [0:46:29] David Limbert: Well you had a curtain if you wanted of course. You could pull a curtain across and you had some privacy there. It was the only place. You had a little quiet read or snooze there. But eventually, the lounge was finished fairly early on. We were in the lounge. The lounge was built by Midwinter, so we were in the lounge area, and that was an interesting piece of carpentry by our carpenters. They made it look like an old world pub. The only thing was, there were no easy chairs. All you had were benches they made, which you keep things under as well. And they had a fireplace there, with a stove in it. The thing about this fireplace, it was made out of plywood but it looked like brickwork. And it was an amazing place.

Disc 1, Track 10 [0:47:43] Chris Eldon Lee: *So it was Mock Tudor?*

Disc 1, Track 10 [0:47:44] David Limbert: It was Mock Tudor, and they had these boards in the ceiling and they drilled little holes in them to make it look like woodworm, and it was painted to look like woodwork. But they used to do this as their trade, in London, making Mock Tudor buildings.

Disc 1, Track 10 [0:48:08] Chris Eldon Lee: *This was the most southern pub in the world then?*

Disc 1, Track 10 [0:48:10] David Limbert: Yes, that's right.

Disc 1, Track 10 [0:48:11] Chris Eldon Lee: *Did you have any beer?*

Disc 1, Track 10 [0:48:12] David Limbert: Oh we had beer. The ration of beer actually was fairly tight. We were allowed one can of beer per week per man.

Disc 1, Track 10 [0:48:22] Chris Eldon Lee: *But more spirits, I guess.*

Disc 1, Track 10 [0:48:23] David Limbert: A bottle of gin, for ten of us, a bottle of whisky, and on high days and holidays there was wine. We also had some barrels of

5X ale from a brewery up in the Midlands somewhere, I can't remember where it was. That was very nice, especially if you tapped in straight off after it had been brought in from outside; you got very very strong liquor [laughs] because the rest was frozen.

Disc 1, Track 10 [0:49:14] Chris Eldon Lee: *So it did freeze and you had to thaw it out?*

Disc 1, Track 10 [0:49:18] David Limbert: Yes. Actually we had that for high days and holidays, and we had a number of films and we had one film per month.

Disc 1, Track 10 [0:49:44] Chris Eldon Lee: *So you had a projector and a screen.*

Disc 1, Track 10 [0:49:46] David Limbert: We had a projector and a screen which we could use when we needed to. Towards the end, yes.

Disc 1, Track 10 [0:49:51] Chris Eldon Lee: *And presumably blackout facilities, if it was the Antarctic?*

Disc 1, Track 10 [0:49:56] David Limbert: Yes, and games. Saturday nights were games night, really. We used to play shove-halfpenny and things like this, and make our own entertainment. We had a record player which everybody enjoyed using.

Disc 1, Track 11 [0:50:08] Chris Eldon Lee: *Did you get BBC records sent to you?*

Disc 1, Track 11 [0:50:12] David Limbert: No, but we had our own 'Calling Antarctica'. Innes Brown used to do this programme called 'Calling Antarctica'. Our parents would come and give a little message and tell us how things were going back home. It was interesting to hear what was going on in other places and things.

Disc 1, Track 11 [0:50:37] Chris Eldon Lee: *So your parents would go to the studio or would the BBC go...*

Disc 1, Track 11 [0:50:40] David Limbert: I think probably the BBC went to them, yes.

Disc 1, Track 11 [0:50:43] Chris Eldon Lee: *What was this broadcast on? The World Service, or ...?*

Disc 1, Track 11 [0:50:47] David Limbert: I suppose so. It would be short wave.

Disc 1, Track 11 [0:50:51] Chris Eldon Lee: *Right. Just once every so often? Once a week?*

Disc 1, Track 11 [0:50:53] David Limbert: About once a month, I think. And we were allowed to send one letter, telegraphic letter, via the Falkland Islands, where it would be typed up and sent by post to your parents. Radio is very restrictive, in many ways, because communication was with the Falkland Islands, by Morse. Occasionally they could do voice. But when you got an electrical storm, an aurora around, you couldn't do anything like this. The main thing that happened while we were down South was the Hungarian Rising and also Suez.

Disc 1, Track 11 [0:52:05] Chris Eldon Lee: *These were world events, and you heard about them?*

Disc 1, Track 11 [0:52:07] David Limbert: Yes, we heard about them. There was difficulty talking to the Russians because of Hungary and our aggression in Suez. All these events took place while we were down South.

Disc 1, Track 11 [0:52:27] Chris Eldon Lee: *So when you were in the Antarctic and you came across Russian people in the Antarctic, what was happening elsewhere in the world actually affected your relationship.*

Disc 1, Track 11 [0:52:35] David Limbert: Well yes, in a way, it did but these things broke down eventually, communications. The other big thing that occurred: when we went into the Antarctic, big bands were the thing; when we came out, it was rock and roll. 1956 was a big change. Everything happened. It was a change, completely.

Disc 1, Track 11 [0:53:02] Chris Eldon Lee: *In one year.*

Disc 1, Track 11 [0:53:03] David Limbert: In one year.

Disc 1, Track 11 [0:53:07] Chris Eldon Lee: *It was Bill Haley and the Comets, wasn't it?*

Disc 1, Track 11 [0:53:09] David Limbert: That's right, yes.

Disc 1, Track 11 [0:53:11] Chris Eldon Lee: *So while you were away, Bill Haley hit the charts.*

Disc 1, Track 11 [0:53:13] David Limbert: That's right; that was it.

Disc 1, Track 11 [0:53:18] Chris Eldon Lee: *On the radio programmes, did you know that your parents were going to be on next week? Did they say 'And next week we will be hearing from ...*

Disc 1, Track 11 [0:53:27] David Limbert: I'm not sure. I can't remember.

Disc 1, Track 11 [0:53:31] Chris Eldon Lee: *All right. You had your private accommodation. I was going to ask you next about your work space, your meteorological facilities. What were they like?*

Disc 1, Track 11 [0:53:41] David Limbert: Not too bad. It was a sort of eight by ten room, purely for met. I had all my instruments in there that I needed, and I got that installed. I put some solarimeters and sunshine recorders on the roof, on a platform I had put on the roof. The interesting thing about that is that you have to have north and south facing sunshine recorders, so you had to do a bit of calculation that way. Then you got the anemometer fixed up. Then you had to get the wires bringing it down to the place for the recorder, and one of the problems I had was static. You get static which causes false readings, you see.

Disc 1, Track 11 [0:54:46] Chris Eldon Lee: *On what?*

Disc 1, Track 11 [0:54:47] David Limbert: On the recorders, and things like that. So I got rid of that by just putting a high capacitor across the earth and the input.

Disc 1, Track 12 [0:55:00] Chris Eldon Lee: *I'm sorry, where was the static coming from?*

Disc 1, Track 11 [0:55:02] David Limbert: From blowing snow and things like that. If you get blowing snow, you get a lot of static, because the crystals break up when they hit things. You get this positive-negative discharge.

Disc 1, Track 12 [0:55:16] Chris Eldon Lee: *And that was affecting which bit of your recordings?*

Disc 1, Track 12 [0:55:20] David Limbert: Any exposed wires, which would pick it up.

Disc 1, Track 12 [0:55:23] Chris Eldon Lee: *Ah, getting into the wiring?*

Disc 1, Track 12 [0:55:27] David Limbert: Yes, so you would get a sort of discharge, and you could actually go out sometimes to the meteorological screen and put your finger out and you could get a shock off it because you have got a metal frame.

Disc 1, Track 12 [0:55:41] Chris Eldon Lee: *This was the Stevenson screen?*

Disc 1, Track 12 [0:55:42] David Limbert: Yes, the Stevenson screen. The metal frame would give you the shocks.

Disc 1, Track 12 [0:55:45] Chris Eldon Lee: *Did you ever overcome that problem with static electricity?*

Disc 1, Track 12 [0:55:49] David Limbert: Not completely. We got rid of a lot of it by the simple process of a capacitor.

Disc 1, Track 12 [0:56:00] Chris Eldon Lee: *Well, how did you do that, I'm sorry?*

Disc 1, Track 12 [0:56:01] David Limbert: Well, you just got an ordinary electrolytic condenser shoved across the two terminals at the receiving end. It worked, anyway. Like most of these things, you find out by trial and error.

Disc 1, Track 12 [0:56:23] Chris Eldon Lee: *So you were recording sun, wind? Not precipitation, presumably?*

Disc 1, Track 12 [0:56:29] David Limbert: I did set up a network of stakes, measurements and things like that.

Disc 1, Track 12 [0:56:34] Chris Eldon Lee: *How do you mean?*

Disc 1, Track 12 [0:56:35] David Limbert: Snow stakes. Meteorological stakes.

Disc 1, Track 12 [0:56:40] Chris Eldon Lee: *That was to measure drifting?*

Disc 1, Track 12 [0:56:43] David Limbert: Measure the amount of snow accumulating and drifting. So I got some work done that way. This is where I can mix up the 1959 and the 1956 expeditions. In 1956 I did not do as much as I did later on. When I went back in '59 I did a lot more.

Disc 1, Track 12 [0:57:04] Chris Eldon Lee: *We will come to that in a while, if we may. So you were doing some basic readings, and what was the purpose of these readings? What was their destination?*

Disc 1, Track 12 [0:57:14] David Limbert: The destination was actually to get it out to Stanley, which would then go into what was known as FICOL (Falkland Islands Collective) of the meteorological observations.

Disc 1, Track 12 [0:57:40] Chris Eldon Lee: *So you were building up part of a world pattern, I suppose.*

Disc 1, Track 12 [0:57:41] David Limbert: A world pattern. This would go out. It would be fed to Buenos Aires and then go on out to the world, you see, as a collective. We did this every day, when we could. These things became much more sophisticated later on, but it was pretty primitive. It was ... Look at it this way. Our equipment was army equipment. We wore string vests which were ex-army. We wore khaki trousers which were ex-army. Our mukluks were ex-army. In fact nearly all our clothing was ex-WD – none the worse for that. I did not particularly go for long johns myself. I used to wear a pair of winceyette pyjamas underneath, because they were warmer and more comfortable.

Disc 1, Track 12 [0:58:45] Chris Eldon Lee: *The readings that you were taking; were you going outside three or four times a day?*

Disc 1, Track 12 [0:58:52] David Limbert: Every three hours.

Disc 1, Track 12 [0:58:55] Chris Eldon Lee: *Day and night?*

Disc 1, Track 12 [0:58:57] David Limbert: I tried it; it didn't work. After a time, I used to do all the observations from 7 in the morning until 10 at night, and then the ones after that, in the middle of the night, were done by the nightwatchman. You had to have a nightwatchman because of the fire hazards, and in case of carbon monoxide problems as well.

Disc 1, Track 12 [0:59:27] Chris Eldon Lee: *That would rotate, presumably.*

Disc 1, Track 12 [0:59:30] David Limbert: It would rotate, yes. Their instructions were to do the actual measurements and just report what they see, and give an estimate of visibility. I remember one joker put 'Visibility ten light years' or something like that, having looked at the sky.

Disc 1, Track 13 [1:00:06] Chris Eldon Lee: *Were there occasions when you simply could not do that, when you could not get the readings?*

Disc 1, Track 13 [1:00:09] David Limbert: I had one occasion when I wanted to go and do a meteorological reading and it was blowing very very hard. When it is blowing hard you can only see so far in front of you. I had a line of stakes but not a tie line on it, going to where the met screen was. I went out, and got so far, and I realised that I did not know where I was. I was lost.

Disc 1, Track 13 [1:00:42] Chris Eldon Lee: *How far was the screen from the hut?*

Disc 1, Track 13 [1:00:45] David Limbert: The screen from the hut was about 50 or 60 yards, something like that.

Disc 1, Track 13 [1:00:51] Chris Eldon Lee: *It was quite serious then.*

Disc 1, Track 13 [1:00:53] David Limbert: Quite serious. Now it is very easy to get lost in those circumstances. Luckily, as far as I can make out, the wind hadn't changed. I thought 'Now, hold tight. Think carefully. The wind is coming from so-and-so quarter. If I head in this direction, slightly off to one side, I should fall into a snow scoop.' Which I did. But if I had missed that snow scoop, I might have walked into a bit of a stores dump. So I was reasonable on that. But anyway I went down into the snow scoop. So I went back into the hut, got myself a long climbing rope, and had another go to see if I could find the met screen. I couldn't find it. So that it is the only observation I missed.

Disc 1, Track 13 [1:01:50] Chris Eldon Lee: *Lucky the rope guided you back to the hut.*

Disc 1, Track 13 [1:01:52] David Limbert: Well yes that's right. I had that to go back on. But people have walked out before now and got stuck. It happened to a former ... someone who had been a base commander there. He had been out and he got caught in a blow. He didn't know where he was. He got a shelter of an oil drum, got in a snow hole. Made a snow hole there but he survived. But it was a very very bad experience for him.

Disc 1, Track 13 [1:02:31] Chris Eldon Lee: *Do you know who that was and when it was, or would you rather not say.*

Disc 1, Track 13 [1:02:35] David Limbert: I think it was Brian Jones. I can't remember exactly. I suppose it was in the mid '60s some time. I can't remember the details. I wasn't involved with BAS and FIDS then. [Transcriber comment: it was Brian Jones in 1974 – Andy Smith.]

Disc 1, Track 13 [1:02:55] Chris Eldon Lee: *So you were in this team of ten men. You had a base leader. What were the social relationships like? Were you all pals together? Or was there a pain-in-the-neck on the team?*

Disc 1, Track 13 [1:03:08] David Limbert: There was friction. Usually trivial matters. I used to get into trouble sometimes for doing things on my own bat, when I shouldn't

have done. You have your rows with people and get over it pretty quickly in most cases. There were hideaway holes, you know, in the hut, where you could go. But work was the main thing.

Disc 1, Track 13 [1:03:52] Chris Eldon Lee: *Did you go on expeditions, at all?*

Disc 1, Track 13 [1:03:55] David Limbert: No we couldn't very well you see because it was a static base. My job was to run the place properly. The only time you would get out is if you managed to go walking round, go out together somewhere to investigate something or other. I got out once to ... I think I went down to ... I didn't get to Emperor Bay. Others did get to Emperor Bay, which was another bay nearby. Halley Bay was about the furthest I went. I spent a lot of time there, on and off, in the second time I was down South. But I was very much tied to the hut. We did things like ski off the roof of the hut, things like this.

Disc 1, Track 13 [1:04:47] Chris Eldon Lee: *Schoolboy pranks?*

Disc 1, Track 13 [1:04:48] David Limbert: Yes, that's right. Silly things.

Disc 1, Track 13 [1:04:52] Chris Eldon Lee: *Did anything go wrong as a result of a schoolboy prank?*

Disc 1, Track 13 [1:04:56] David Limbert: No. Yes, I did a schoolboy prank. Doug Prior, the carpenter, loved custard. In French on the back it had 'Mode d'emploi'. 'Well that's the French for custard'. [laughs] So he became known as 'Mode Employ'. One day I made some custard. It was my turn for cook, you see. 'Doug' I said, 'I've made some special custard for you.' I had laced it with baking powder. He was very cross with me for that.

Disc 1, Track 14 [1:05:48] Chris Eldon Lee: *Which had what effect, precisely?*

Disc 1, Track 14 [1:05:49] David Limbert: When it was my birthday.

Disc 1, Track 14 [1:05:52] Chris Eldon Lee: *I mean the baking powder.*

Disc 1, Track 14 [1:05:53] David Limbert: The baking powder, yes. He got his own back on me. He made some rock cakes one day with cement fondue icing.

Disc 1, Track 14 [1:06:03] Chris Eldon Lee: *That was your birthday, was it?*

Disc 1, Track 14 [1:06:04] David Limbert: Yes. You see we all took turns at cooking. We didn't have a cook.

Disc 1, Track 14 [1:06:10] Chris Eldon Lee: *What I'm trying to work out is what would baking powder would do to custard. Did it make you fart?*

Disc 1, Track 14 [1:06:14] David Limbert: Well no, it just makes it taste horrible. All sorts of things like that. We used to pull old Doug's leg and we made him a beautiful birthday cake for his birthday and we put it under a tin and then iced the tin. 'You rotten lot.' At a party once he was hung from the end of the door by his string vest.

But we got up to all sorts of things. We had a show once. I think it was a Midwinter celebration party and he was in the loft. He was doing a snake charming trick you see. Someone was up in the loft with a string pulling it up, and then we didn't let on. When he looked up he got a faceful of water and flour. These sort of party tricks took place.

Disc 1, Track 14 [1:07:42] Chris Eldon Lee: *You said earlier on that you had to establish this base beyond 75 degrees.*

Disc 1, Track 14 [1:07:48] David Limbert: Yes, so that we could observe the aurora australis from outside the main quiet zone. When it encroached our way sometimes you would get these huge rays coming down on you. Beautiful.

Disc 1, Track 14 [1:08:14] Chris Eldon Lee: *You saw it overhead?*

Disc 1, Track 14 [1:08:15] David Limbert: The arcs would be coming in overhead, straight above you, when there was a disturbance taking place.

Disc 1, Track 14 [1:08:22] Chris Eldon Lee: *And you did get sightings.*

Disc 1, Track 14 [1:08:24] David Limbert: Oh yes, lots of sightings, and of course Stan Evans was doing auroral observations. He had an all-sky camera there. He was also setting up the ozone observations.

Disc 1, Track 14 [1:08:36] Chris Eldon Lee: *As early as '55?*

Disc 1, Track 14 [1:08:38] David Limbert: Yes, that's right. So he was the auroral / ozone observer.

Disc 1, Track 14 [1:08:43] Chris Eldon Lee: *The ozone observations. Tell me more about those. Where are you measuring it?*

Disc 1, Track 14 [1:08:49] David Limbert: Measuring the total amount of ozone over the polar regions, you see. During the winter the amount of ozone decreases, because of the coldness of the air. There is nothing being manufactured. Come spring, the ozone will develop again. This is where things started going wrong, because the normal cycle, the ozone increase which was usually round about November sometime became less and less. This was when the ozone hole was being discovered, later on in time.

Disc 1, Track 14 [1:09:43] Chris Eldon Lee: *But even in the mid 1950s ...?*

Disc 1, Track 14 [1:09:46] David Limbert: We weren't having anything then. It wasn't showing up things. In the mid-fifties there was nothing showing up. You had a normal cycle. Now Stan Evans set up the first set of observations. He had a hut in the roof - space in the roof where he did his observations. He had a hatch. He opened the hatch and did the observations through there. But also, one of the things he had to do: you can do ozone observations even when there is drifting snow and you can do this if you have got a pipe looking upwards, so snow does not come in on the instrument and you can do some good measurements then. But the main advantage of this is that you

could do night-time observations in the winter as well. That's when he was doing his night-time observations and see what the effect was in ozone in the winter.

Disc 1, Track 14 [1:10:59] David Limbert: The ozone spectrophotometer is a very very clever piece of optical measurement. Using special wedges, optical wedges. You get different wavelengths this way, and from this they can work out the total amount of ozone above you. You can't work out the profile though, just the amount of total ozone. You must remember this is all before ... There was nothing electronic in those days. Calculations were either by hand or Brunsviga. Slide-rules were the main way of calculating and little hand calculators. In fact it wasn't until the 1980's that modern technology started appearing.

Disc 1, Track 15 [1:12:11] Chris Eldon Lee: *Is the hut still there?*

Disc 1, Track 15 [1:12:14] David Limbert: No, it's long gone.

Disc 1, Track 15 [1:12:17] Chris Eldon Lee: *How did you come to leave, at the end of your IGY year?*

Disc 1, Track 15 [1:12:23] David Limbert: Well in the IGY year the main party arrived. We then helped during the overlap and then after the overlap period we had done what was necessary and handed over all our what we were doing. We then went off on the *Magga Dan* down to the Trans Antarctic Expedition, where they were still recovering from the fact that they had lost a lot of their stores from the sea ice. We went there to help finish off their buildings properly, and just be general support to them.

Disc 1, Track 15 [1:13:08] Chris Eldon Lee: *That was further round the same bay, wasn't it?*

Disc 1, Track 15 [1:13:10] David Limbert: Yes, that's right. That was right down past Vahsel Bay, right on the Filchner Ice Shelf.

Disc 1, Track 15 [1:13:22] Chris Eldon Lee: *Did you imagine you would see Halley Bay again?*

Disc 1, Track 15 [1:13:25] David Limbert: I was sad. I must admit I cried a little bit because I felt I had unfinished business and I didn't really know.

Disc 1, Track 15 [1:13:36] Chris Eldon Lee: *All right. Well let's finish the business after a break.*

Disc 1, Track 15 [1:13:38] David Limbert: OK, right.

Disc 1, Track 15 [1:13:39] [End of Part One]

Disc 2, Track 1 [0:00:00] Chris Eldon Lee: *This is David Limbert, interviewed by Chris Eldon Lee on the 1st and 2nd of March 2004 at his home in Cambridge. David Limbert, Part Two.*

Disc 2, Track 1 [0:00:12] Chris Eldon Lee: *Tell me how you got into meteorology in the first place, David.*

Disc 2, Track 1 [0:00:15] David Limbert: Well, I was interested in meteorology partly because in the wartime my brother was flying. He was a pilot, and weather was most important as far as he was concerned. So I got generally interested in that and I was wondering what to do. I decided it was time to go and get a job and I joined the Met Office as a meteorological assistant, and then served as a meteorological assistant in the RAF, first at Hendon, then Bassingbourn and then I finished off at Istres in the South of France, Istres le Tube which is a big French airforce base nowadays. I then came back to this country and applied and got a job with the Post Office Research Station at Dollis Hill where I was a scientific assistant and worked on piezoelectric crystals.

Disc 2, Track 1 [0:00:15] David Limbert: I then was interviewed for a job as an assistant experimental officer with the Scientific Civil Service and was given a job at the Post Office Research Station under Dr Smith-Rose and picked up from then. That was working on wave propagation. I still wanted to be a meteorologist rather than work with the wave propagation business, which actually is all very important for the radio and television transmissions and everything else. So I engineered a transfer back to the Met Office and moved back into the Met Office in 1951 when I went on a forecaster's course, and was posted initially to Blackbush. No, it was Northolt airport. That's right, forecaster at Northolt airport and that's where I met up with an old friend Eric Salmon who eventually went off to join FIDS. I was there until 1954 when I moved to the Marine Branch. I was studying part-time at Birkbeck College and I was given a chance to have a more settled life, rather than working on the bench, and doing forecasts for flights to Europe and such-like. I stayed there from '54 onwards, and it was from there that I was then whipped off to the Antarctic, from that stage.

Disc 2, Track 1 [0:04:40] Chris Eldon Lee: *Well, we've already talked about your first expedition to the Antarctic. You weren't expecting to go back, but you did. How come?*

Disc 2, Track 1 [0:04:49] David Limbert: That was one of these peculiar accidents. Originally they were going to close the base at Halley at the end of the IGY which was the end of 1958. But again a late decision was made, that it was going to stay open, and I think it was Bill Sloman who phoned me from the Falkland Island Dependencies Survey and said 'Would you like to go to the Antarctic again?' I had to think very hard about this one because I was in a different sort of career. I had already set up to do one thing, and going back the Antarctic I thought 'Why not?' I had got to the stage where I was feeling a bit stymied and stale when I was studying. I was not particularly happy the way things were going, so I said 'Yes.' So things moved very fast from then. This was again short notice. I think it was roughly five or six weeks before the ship sailed.

Disc 2, Track 2 [0:06:15] Chris Eldon Lee: *Was the selection process for FIDS more rigorous than for the IGY or less so?*

Disc 2, Track 2 [0:06:19] David Limbert: They just checked that I was warm, that I was alive and prepared to go.

Disc 2, Track 2 [0:06:25] Chris Eldon Lee: *Who did recruit you?*

Disc 2, Track 2 [0:06:27] David Limbert: It was Bill Sloman, who died a few years ago. He was the Secretary or the Personnel Officer in those days.

Disc 2, Track 2 [0:06:46] Chris Eldon Lee: *Were you interviewed, or was it just a nod and a shake?*

Disc 2, Track 2 [0:06:51] David Limbert: I think it was a nod and a shake. Was I prepared to go? I said 'Who else is going to be there?' They said 'Well George Lush is going to be Base Commander.' George Lush had been with us the first year. I said 'OK, I want to have a chat with George.' I chatted with George. I said 'George, I would like to come with you, but when it comes down to scientific matters, I don't want any arguments whether I am right or wrong. I will try and do the scientific... I am happy to come and do my share of the work, and everything else, but I must be sure that I am not going to have a lot of arguments about I can't do this and I can't do that, because it doesn't fit with the base.'

Disc 2, Track 2 [0:07:46] Chris Eldon Lee: *You had had some conflicts the first time you were down there?*

Disc 2, Track 2 [0:07:49] David Limbert: Yes, I had a lot of conflict over this.

Disc 2, Track 2 [0:07:52] Chris Eldon Lee: *You wanting to do certain types of work and being instructed otherwise?*

Disc 2, Track 2 [0:07:55] David Limbert: Yes, that's right. There was a bit of aggro between me and the Base Commander, David Dalglish, the first time. Six of one, half a dozen of the other, I would say. But like all things, life's too short to keep the worst memories going.

Disc 2, Track 2 [0:08:19] Chris Eldon Lee: *So actually you welcomed an opportunity to go back.*

Disc 2, Track 2 [0:08:22] David Limbert: Yes, and here I got a chance to do things that I had thought about a lot, and I rushed around various people getting equipment for this, that and the other, and was actually building things on the ship on the way down.

Disc 2, Track 2 [0:08:44] Chris Eldon Lee: *So what did you take the second time, which you didn't have the first time?*

Disc 2, Track 2 [0:08:47] David Limbert: I took equipment to make a temperature probe into the sea ice. I took micro-meteorological instruments for measuring windspeed at low levels. I took small masts. I took stuff for an arrangement for measuring humidity. I took a new form of humidity device called a phosphorus pentoxide electrolytic hygrometer, and an assortment of odd bits and pieces, you know, just collected together on the basis that 'Well I have time to do these things'. I had made up my mind that I wanted to do... I took a lot of glaciological stakes,

because I had made up my mind that I wanted to set up proper patterns of networks of stakes for measuring snow accumulation. I set up a series of thermocouples going right down deep in the snow, things like that. So effectively it was a new start.

Disc 2, Track 3 [0:10:20] Chris Eldon Lee: *With, by the sounds of it, another bulging ship.*

Disc 2, Track 3 [0:10:23] David Limbert: It was the same ship, but it did not need to bulge quite as much because we did not have to take all the building materials.

Disc 2, Track 3 [0:10:33] Chris Eldon Lee: *Same captain? Axel?*

Disc 2, Track 3 [0:10:34] David Limbert: Same captain and the same first mate; and the same crew as far as I can make out. One or two changes to the crew. But different people accompanying me. There was one person – we were going to take over from the Royal Society, my old team. I was going down as a meteorologist, this time with a different Chief Scientist, a fellow called Mick Blackwell who eventually became my best man. I also had to learn about radio-sondes. I had not done any radio-sonde work before.

Disc 2, Track 3 [0:11:34] Chris Eldon Lee: *Radio?*

Disc 2, Track 3 [0:11:34] David Limbert: Radio-sondes. This is sounding out the atmosphere with balloons and pressure/ temperature/ humidity sounding. I had to learn all that business.

Disc 2, Track 3 [0:11:50] Chris Eldon Lee: *You learned it in the five weeks before you went?*

Disc 2, Track 3 [0:11:52] David Limbert: Yes. It was a one-week course at Hemsby, effectively. A crash course at Hemsby. I had to go and learn about some of the latest instruments. Fluxplate radiometers (Kew Observatory) and one or two other things from Kew. All in all it was a pretty busy time.

Disc 2, Track 3 [0:12:33] Chris Eldon Lee: *It sounds like this was “cutting edge” meteorology.*

Disc 2, Track 3 [0:12:36] David Limbert: It was.

Disc 2, Track 3 [0:12:37] Chris Eldon Lee: *In virgin territory.*

Disc 2, Track 3 [0:12:39] David Limbert: Yes, that's right. You are doing things which people have done elsewhere, but I wanted to do down there. I had made up my mind that there were lots of opportunities for doing these things. I took some decent surveying equipment. I took some ice coring tools, and things like this. All in all I was pretty well supplied with, this time. I can't think of anything else, particularly.

Disc 2, Track 3 [0:13:15] Chris Eldon Lee: *Was the journey South uneventful, or a horror trip? What was it like?*

Disc 2, Track 3 [0:13:21] David Limbert: No it wasn't a horror trip. It was a more interesting one. We called at Rio de Janeiro on the way down; had a nice couple of days there. Then on down to Port Stanley first, where we had quite a pleasant time before we headed for South Georgia and down South.

Disc 2, Track 3 [0:13:59] Chris Eldon Lee: *Had the hut changed at all?*

Disc 2, Track 3 [0:14:01] David Limbert: Oh, the hut was buried.

Disc 2, Track 3 [0:14:03] Chris Eldon Lee: *Really?*

Disc 2, Track 3 [0:14:06] David Limbert: It was buried. There was a little bit of roof just showing at one end, but not much else. It was completely buried as far as we were concerned. We had to get in a shaft down to it. They had an entrance through one end, where tractors could be taken down inside for winter maintenance. The generator shed was a separate building. There was a balloon shed, for inflating balloons, and the generation of hydrogen was still done by a wet process: iron filings and caustic soda.

Disc 2, Track 4 [0:15:18] Chris Eldon Lee: *So the hut had been abandoned for a short period of time, had it?*

Disc 2, Track 4 [0:15:23] David Limbert: No, it had not been abandoned. It was still there, but we were just taking over from another party. Only one man stayed from the last party. That was John Smith. He lives not too far from here. And we came in, George Lush, myself, Mick Blackwell, the Medical Officer was 'wee' Nelson Norman, who eventually became Professor of Environmental Medicine up in Aberdeen. Mike Sheret, who was going to be the ozone man and magnetics. Mick Blackwell was doing magnetics as well.

Disc 2, Track 4 [0:16:34] Chris Eldon Lee: *Generally speaking, was there a very different atmosphere.*

Disc 2, Track 4 [0:16:31] David Limbert: Very different atmosphere. It was very much more focussed on the science this time, rather than building. You all had a different programme to do. It was a pretty big programme and you had to be pretty busy the whole time. The conditions inside the hut were still fairly good. They had improved some things, but other things weren't as good. They put a false floor in up the top, so there was a room upstairs for extra people who wanted to put ... There were twelve us this time, and this time we had a cook.

Disc 2, Track 4 [0:17:17] Chris Eldon Lee: *A blessing.*

Disc 2, Track 4 [0:17:18] David Limbert: It was a blessing. And we had an Army radio operator. He was an Army cook we had, and the Diesel Mech was a Scot, a REME man.

Disc 2, Track 4 [0:17:37] Chris Eldon Lee: *So it was much more organised this time?*

Disc 2, Track 4 [0:17:38] David Limbert: Much more organised. The average age was still fairly high. In the first expedition the average age was roughly mid-thirties/

forties. This one was a bit nearer to the mid-thirties: thirty, thirty-five. Any way there were twelve of us. We had a carpenter. George Lush, the Base Commander, was a general handyman himself. We had two South Africans with us, working on the radio-sonde programme.

Disc 2, Track 4 [0:18:32] Chris Eldon Lee: *So in what way was it more efficient then? Simply because you had a better map of what you had to do?*

Disc 2, Track 4 [0:18:36] David Limbert: Yes, that's right. But you found yourself picking up things. We had expected, understood that the people from South Africa knew something about radar (we had a wind-finding radar); they didn't! So I had to pick up the trabs [phonetic] and learn about wind-finding radar and how to maintain it, and suchlike. So I spent many an unhappy hour trying to get the darned thing to work properly. It always blew up just before a critical moment, you know, and gave you problems. You had to turn your hand to everything, and I set up this programme of glaciological observations, and tri-lateral measurement of the surface to see how it was spreading. We were actually measuring with tape and angles and things like this, to find out how the ice was shifting. I had quite an interesting time. We had some grounded bergs off the coast and I used these as survey points.

Disc 2, Track 4 [0:19:57] Chris Eldon Lee: *So there was more geophysics on FIDS than there was in the Geophysical Year.*

Disc 2, Track 5 [0:20:01] David Limbert: Yes, that's right. Well from my point of view. They had done a lot during the Geophysical Year, a tremendous amount. There were four huge volumes of results from then. But there was this added bit, and the special experiment I set up was down on the sea ice.

Disc 2, Track 5 [0:20:16] Chris Eldon Lee: *Tell me about that.*

Disc 2, Track 5 [0:20:17] David Limbert: This was measuring the growth of sea-ice, and it meant for safety's sake I had a tent up on the ice shelf, above the fast ice, and a tent on the fast ice down below when it was firm, and I had a power line running all the way down from base down there which I could use for powering up the motors I wanted. I had a box of rations and a few spare bits of clothing with me. Because if the ice had broken up, there was not much chance of me surviving, but there was a chance that if a chunk of ice did break off, and I was on it, there might be just a chance for staying in one piece until you could get back onto land somewhere else, but it was very unlikely that it would occur. So you had to be very careful that you did not go and get caught down there in a blow. So that was why I had this tent up on the shelf with food rations in case I got stuck. I set up these experiments down there, measuring the growth rate of sea ice, measuring the salinity of the ice.

Disc 2, Track 5 [0:21:54] Chris Eldon Lee: *Measuring the growth rate, you mean the depth?*

Disc 2, Track 5 [0:21:56] David Limbert: The depth of things. I had a probe already set up, which I drilled into the ice, let it freeze in. This gave me actually the temperature at various points on the way down, and that was very useful. That produced a good paper which I was very pleased with.

Disc 2, Track 5 [0:22:26] Chris Eldon Lee: *So were you there an awful lot or was that just occasional?*

Disc 2, Track 5 [0:22:31] David Limbert: Oh, I think I went down, usually when the weather was fine; probably once a week.

Disc 2, Track 5 [0:22:42] Chris Eldon Lee: *So you were still doing the regular readings at base?*

Disc 2, Track 5 [0:22:44] David Limbert: Yes. Well there was somebody else doing the obs, other people doing the met obs you see then. Because there was Mick Blackwell, myself, and the two South Africans, all met men. So they could all do observations. I used to make arrangement for this, and go down there. It was quite interesting because the line down from the base could also pick up any signs of magnetic disturbance because of the long length of line (cable). I enjoyed doing that. And then the other thing I did, I got these stakes out a long way round, did a measurement of these things, and then travelled around sometimes a fair distance just to angle up, take some survey measurements between points.

Disc 2, Track 5 [0:23:50] David Limbert: I got into trouble one time with the base commander because I did something very naughty. I went down to the sea ice, and I thought 'It's a nice day; I will walk round the side and come up a different route.' I walked round and came up a different slope and then appeared walking back to base from a different direction from where I had gone out. I was hauled over the coals for doing something I should not have done. Which is very true. I should not have done that, because if I had gone out with the ice, that was it. It was a foolish thing to do. The only excuse is it was a nice day and it seemed a good way of doing it.

Disc 2, Track 5 [0:24:41] Chris Eldon Lee: *Was there sense, occasionally, of being lulled into a false sense of security? You knew there was a risk involved.*

Disc 2, Track 5 [0:24:49] David Limbert: I knew there was a risk involved to some extent. I knew there might be some crevassing on the slope back up again and I was fairly careful how I probed things. I was on skis at the time but I probed things very carefully, but in retrospect it was a silly thing to do.

Disc 2, Track 6 [0:25:17] Chris Eldon Lee: *But I'm thinking also of your camping on the ice. You must have spent some nights on the sea ice.*

Disc 2, Track 6 [0:25:23] David Limbert: I didn't spend any nights on the sea ice; I came back up. You see night time was not too bad because that is the least likely time for having any problems because it is very cold. Day time loosens things up. The most likely time for things to break up was round about midday, just after midday. This happened on a later trip on relief at Halley. Things broke up just after noon sometime. Maybe it is the normal cycle of arrangements, or not; I don't know. But not much tidal is obvious because you are floating anyway.

Disc 2, Track 6 [0:26:14] Chris Eldon Lee: *The information you collected; again was that sent to the Falklands by morse, or was that collected on ...?*

Disc 2, Track 6 [0:26:22] David Limbert: It was collected by morse and sent back to Stanley for putting in the collective. But by then, this was still the Falkland Islands Dependencies Survey, but later on, when the British Antarctic Survey was set up, the whole of the centre of operations of radio collection went to Grytviken, South Georgia. But at this time it was still taking place at Stanley which was the hub of things.

Disc 2, Track 6 [0:27:07] Chris Eldon Lee: *But you were also keeping records on base as well, so you had a certain amount of writing up to do?*

Disc 2, Track 6 [0:27:12] David Limbert: Oh yes, you always had the monthly statistics to do, and your monthly climatological summaries, things like this. They are a pain but they have to be done.

Disc 2, Track 6 [0:27:22] Chris Eldon Lee: *So you really did not have much time for anything else?*

Disc 2, Track 6 [0:27:24] David Limbert: It was work most of the time.

Disc 2, Track 6 [0:27:26] Chris Eldon Lee: *Did you get involved in other activities?*

Disc 2, Track 6 [0:27:29] David Limbert: Oh yes. I did my share. Occasionally I did a stand-in for the cook. The other thing was that the Midnight Club was a great thing.

Disc 2, Track 6 [0:27:37] Chris Eldon Lee: *What was that?*

Disc 2, Track 6 [0:27:38] David Limbert: People would suffer from ... They can't sleep at night in the winter. So you have a Midnight Club. People go and cook an omelette or something in the kitchen, and have a meal and then crawl off to bed.

Disc 2, Track 6 [0:27:53] Chris Eldon Lee: *You can't sleep at night...?*

Disc 2, Track 6 [0:27:55] David Limbert: Because you are not working hard outside. You are not getting fresh air. You don't go out in the winter unless you really have to. It is a funny sort of existence in many ways because in some ways it is more protective than being in civilisation but the dangers are obvious, whereas they are not obvious in civilisation. They are there but you ignore them because it is not happening all the time round about you. But it is easy to do something silly and forget about it.

Disc 2, Track 6 [0:28:39] David Limbert: In fact the second time I was down there I was doing an experiment. I got myself into trouble with this one. I wanted a thermal drill so I got a great big steel bolt, wrapped it round with asbestos, wound some heating wire round it. Then covered it all with Araldite, then some more stuff: coating and things like this, and powered it through a Variac. Now that was a silly thing to do. I wanted to get a hole in the ice, you see, in the ice cave that we had got. I got it going; it started going down. It was going down quite nicely but I got impatient and I turned the power up, and there was a Pshwrr! There was a horrible smell of burning. I blew the fuses on the generators and everything else and the emergency lighting came on; the battery lighting came on. I was definitely in bad odour. [laughs]

Disc 2, Track 7 [0:30:00] Chris Eldon Lee: *Did you get it back?*

Disc 2, Track 7 [0:30:02] David Limbert: I got the drill out, yes, but it was useless at that point. It was one of my experiments that failed. [laughs]

Disc 2, Track 7 [0:30:11] Chris Eldon Lee: *Let me just clarify my geography, now. There is a mention here of the Brunt Ice Shelf.*

Disc 2, Track 7 [0:30:16] David Limbert: The Brunt Ice Shelf is where Halley was put. It was called the Brunt Ice Shelf.

Disc 2, Track 7 [0:30:21] Chris Eldon Lee: *You were above ground still, were you?*

Disc 2, Track 7 [0:30:24] David Limbert: We were buried by that time. You had shafts at each end, with a crane to lift things up, or a large ladder you went up. A shaft at each end, and on the roof, just outside, we had a dog kennel for our lone dog that was left, Stumpy. We once sent a cable off to FIDS saying he was the only person on base without a bitch. [laughs].

Disc 2, Track 7 [0:31:04] Chris Eldon Lee: *So you were really underground, compared to ...?*

Disc 2, Track 7 [0:31:06] David Limbert: Yes, we were know as the troglodytes.

Disc 2, Track 7 [0:31:09] Chris Eldon Lee: *Compared to two or three years previously, you were now underground.*

Disc 2, Track 7 [0:31:11] David Limbert: Underground, yes.

Disc 2, Track 7 [0:31:13] Chris Eldon Lee: *Did it make a difference, psychologically, or... ?*

Disc 2, Track 7 [0:31:15] David Limbert: Yes. It does make a difference. You have to be very careful because if the stovepipe of the fire, if the chimney is not high enough above the snow you can't get a draught up. The cold air falling down, you get carbon monoxide poisoning. These were anthracite stoves, you see, nothing else but anthracite, and so once you let the stove out, if you try to light it again you have to heat the top of the pipe with a blowtorch to get the hot air rising, to get things going upwards.

Disc 2, Track 7 [0:31:57] Chris Eldon Lee: *To get the suction.*

Disc 2, Track 7 [0:31:58] David Limbert: To get the suction, and you must have it running, at a height of about two or three feet above the surface, otherwise you don't get a draught. You don't get a vertical drift.

Disc 2, Track 7 [0:32:10] Chris Eldon Lee: *And what about psychologically?*

Disc 2, Track 7 [0:32:13] David Limbert: Psychologically, you were aware. The sun was always up, day and night. Each of us had a job. If there was a panic and a fire, all fire doors were closed. My job was to get scientific records out as fast as possible. There was a spare set of clothing on a dump just outside, and tents if we needed them. Everybody had a particular job to do. There was a firefighting kit as well, but if you could not get it out within thirty seconds to a minute, you had not got much time. You had just got to get out, quick!

Disc 2, Track 7 [0:33:03] Chris Eldon Lee: *There were several exits, still?*

Disc 2, Track 7 [0:33:05] David Limbert: Several exits, yes.

Disc 2, Track 7 [0:33:06] Chris Eldon Lee: *Right. But I was wondering whether the fact that you were now buried underground, whether it changed your psychology, your inner self? Being a troglodyte. I mean people get SAD don't they?*

Disc 2, Track 7 [0:33:21] David Limbert: They do, yes. I got SAD. I think I had an out-of-body experience, once. I was looking down on myself, and then came back in again. My father died while I was on the way South actually. I think I was feeling a bit worried about it from that point of view, and it was just one of those things.

Disc 2, Track 7 [0:33:59] Chris Eldon Lee: *So, generally speaking, the fact that you were buried did not make a huge difference to your wellbeing?*

Disc 2, Track 7 [0:34:04] David Limbert: No, no. I put on an awful lot of weight, but as soon as you got the summer coming, and you were revving again you soon lost it. I was up to about fourteen stone at one stage and my normal weight was round about ten stone twelve.

Disc 2, Track 7 [0:34:19] Chris Eldon Lee: *But the base was buried underground, all the time?*

Disc 2, Track 7 [0:34:22] David Limbert: Yes.

Disc 2, Track 7 [0:34:25] Chris Eldon Lee: *Recreational facilities? More golf?*

Disc 2, Track 7 [0:34:27] David Limbert: No. We had darts; we had games; we had more films, and we enjoyed ourselves. Outside, people, a party went off sledging. Nelson Norman set up a hut down on the ... amongst the emperor penguins and bought back a complete set of embryos of emperor penguins. He and 'Black Michael', Michael Sheret. They called it 'Little Scotland', being rabid Scots. Every time you wanted a celebration, you had either it was a Burns Night or there was a Siege of Gibraltar ... There was one for every day of the year there.

Disc 2, Track 8 [0:35:28] Chris Eldon Lee: *I have got some questions from John King which you have not had any warning about really, and this refers to those two periods in Halley, initially. 'What does David think are the most important scientific legacies of the IGY expedition to Halley Bay? What was the big achievement?' The first time round. Being there?*

Disc 2, Track 8 [0:35:58] David Limbert: The important legacy was finding an accessible site that has stood the test of time, even if we had to move base several times, because it is a moving base. Its legacy on the ozone hole side is now legendary. From the meteorological point of view, it is the site of a very important series of experiments under the STABLE boundary layer experiments. This is a study of how gravity waves and inversions interact with each other on a long, 30-40 kilometres or more, nominally flat surface which you cannot get anywhere else in the world. It is a beautiful experimental site, and John King himself and his friends have exploited it tremendously.

Disc 2, Track 8 [0:37:17] David Limbert: Its location from the point of view of auroral measurements is very good, and its conjugate point, as far as the radio wave propagation is concerned is very important. From the radio-sonde point of view, upper air measurements, it is still one of the most important stations in the Antarctic, and its results still carry great weight with a lot of people. It is one of the top geophysics observatories, whether land-based or ice-based, one of the few great international observatories. If it went it would be a big loss.

Disc 2, Track 8 [0:38:43] Chris Eldon Lee: *It then points out, as you have already pointed out, you were there twice; once with the Royal Society and then with FIDS, and he wants to know how the two winters compared.*

Disc 2, Track 8 [0:38:53] David Limbert: The first winter was one of building, and getting a basic meteorological knowledge assembled. The second one was, from my point of view, scientifically a very important year. I did one or two things that I really enjoyed doing, and I think I made some useful contributions, not least of all on the business of evaporation of drifting snow; where does it come from, where does it go to, etcetera? which did actually generate, in its wake, I think, three or four PhDs. From that point of view I think it was quite successful, and it was very successful.

Disc 2, Track 8 [0:40:01] David Limbert: I was very pleased when we managed to get the STABLE boundary layer series of experiments working because that I think was a most important thing. These were sort of pipe dreams in my day; you could not do them. You have to wait too long. If you want answers, you have to wait a long time to get them, and in meteorology it may be ten, twenty or thirty years before you get the answer you want. Before that, you cannot do anything because you have not got the information.

Disc 2, Track 9 [0:40:50] Chris Eldon Lee: *What was your role in developing the international network of Antarctic meteorological observation stations during that. That was in the '60s wasn't it?*

Disc 2, Track 9 [0:40:58] David Limbert: The '60s.

Disc 2, Track 9 [0:41:01] Chris Eldon Lee: *You had come back at that point?*

Disc 2, Track 9 [0:41:02] David Limbert: I had come back to BAS in 1970. I was recruited to go to Edinburgh. I rejoined it in Edinburgh.

Disc 2, Track 9 [0:41:12] Chris Eldon Lee: *What were you doing in the '60s then, David?*

Disc 2, Track 9 [0:41:14] David Limbert: I was back with the Met Office. That was a very interesting time from my point of view. I worked on the first UK-2 satellite, which was an ozone satellite [Transcriber comment: known as Ariel 2 after launch on 27 March 1964 – Andy Smith]. I worked on some of the ozone rockets for sampling ozone from the atmosphere with Dr Ken Stewart. I spent some time in the States with the satellite work and that was a very interesting time. I made a lot of good contacts.

Disc 2, Track 9 [0:42:10] David Limbert: I also worked on water vapour in the stratosphere at Harwell with Phil Goldsmith and brought the ideas back to the Met Office where I worked on the sampling water vapour with phosphorus pentoxide. But there was something odd about the whole thing, and eventually, together with A.P. Taylor, I produced a paper which showed that you could not measure at water vapour high altitude with phosphorus pentoxide because the vapour pressure of the film that you are using is greater than the vapour pressure you are trying to measure. It was as simple as that, but there was always a question mark in my mind why it always gave a dry stratosphere, a very dry stratosphere. And I interacted with a fellow called Mastenbrook in the States who had a frost point hygrometer, which was which he flew on sondes, and we were always arguing whether it was a wet or dry stratosphere. Wet and dry stratosphere are features; a wet stratosphere is a constant mixing ratio all the way up, whereas a dry stratosphere means it gets dryer as it goes up. It is quite a difficult concept, and the experimental work I did there was time consuming.

Disc 2, Track 9 [0:44:05] David Limbert: It was very very difficult at times but I got some good ideas going and had some fun down at Larkhill as well, flying a great big box with a sampling apparatus with us. I remember we had a sort of aluminium friction brake, because we had to have at least two hundred metres of cord between the balloon to stop contamination, and the package. The package weighed about three or four kilograms, which is not light, and it had these whirring things in here, which selected the signal coming from the sampler and also selected the baseline of the transmitter. And this thing was going 'Bzz! Bpp! Bzz! Bpp! ...' It was a circuit I designed myself, and I was running across the gunpark at Larkhill. There were two balloons in tandem stretch. One was set to cut free at something like thirty millibars pressure. I had to get to ten millibars for anything I wanted to do. It cut off with the pressure.

Disc 2, Track 10 [0:46:02] Anyway I was running across the gunpark with this thing and it was going faster and faster and faster and eventually I had to let go. It swung across and being on a nylon cord it stretched and hit the ground 'Bang!'. It went off across this wall at the far end and went up. Because although it was dead calm at the surface, there was this wind above the inversion and the balloons were above the inversion when it took off, so that was a bit of a hazard. Anyway we measured it. Eventually we tracked it with the radar and we had to let the Air Traffic Control know that it was coming down in the air lane approach to Heathrow. [laughs] It landed somewhere, next to a lady walking her dog, and the parachute as well, and we got it back. But the report was: it had been seen thrown out of an aircraft! [laughs]

Disc 2, Track 10 [0:47:23] Chris Eldon Lee: *Right. So you came back to BAS in 1970 (it was then called BAS), so this question is about what your role was in developing this international network of Antarctic met observation stations during the '60s and '70s. So you were doing that from here? What were you doing? You were encouraging the establishment of more met stations?*

Disc 2, Track 10 [0:47:42] David Limbert: I was organising the meteorological work on the bases and deciding the instrumentation and suchlike. For one reason or another I did not get South again until 1977. During this time radio-sondes had changed a couple of times. We had started off with ones marketed by Plessey. Then we had switched to ones used by the Navy – known as the Graw sonde – which was actually rather manually intensive; it required manual intensity. Eventually we had to started looking for something more flexible, and for quite some time I had been looking at one being produced by Vaisala. Well there were two candidates. There was the one manufactured by VIZ in America and then another one manufactured by Vaisala but the VIZ one, we opted for the VIZ one which was an improvement on what we had before. It was more automatic and cut down on the labour. Later on in about 1981/82 we had a radar at Halley and a radar at Faraday and it was very difficult getting spare parts and we had a disastrous fire at Halley in which we lost the hydrogen shed and all the radar spares etc.

Disc 2, Track 11 [0:50:37] David Limbert: We had to think of something else so I went for the Vaisala Omega Navigation System. Now this was a bit of a gamble because it was not clear whether Omega Navaid would work in that area but it was worth trying. It was fully automatic and was a very big timesaver. You didn't need a radar operator, it saved manpower from that point of view. The other thing was the hydrogen generation. I had put in the steam methanol method of hydrogen generation which was put in a special container and there was a little balloon shed which was also the other end of the container so you could fill the balloon up and launch it from this container. Well that had its problems as well. Later on., much later in my career with BAS, we switched over to using helium cylinders only, not carrying any hydrogen at all. But that is by the way.

Disc 2, Track 11 [0:52:20] David Limbert: I think the first thing I learned was that nothing had changed while I had been away from the Survey. Everything was still being done the same way. I was doing the upper-air training and I said 'What is this Antarctic practice?' The people coming back from the Antarctic said 'We do this.' I said 'Well this does not fit in with the modern synoptic coding practices. It is just negative feedback.' They come back and said 'This is what we do in the Antarctic.' Instead of being told what they should be doing, they were telling people back here what they were doing. This had to be corrected, and all along the line things like this had to be done, and I set up an arrangement of sending back monthly signals with a specific set of questions and answers which they answered in code. It was just one fax message long with A5.2, C2.4, something like this you see. It gave you all the information you needed, in condensed form, for the month and it had also the climate summaries, the climate-temperature summaries which were issued to the WMO.

Disc 2, Track 11 [0:53:49] David Limbert: The other thing was the telecommunications. Now that was a real horror. We had inherited from a Buenos Aires conference a wish list of where people wanted data to come from. It bore no

resemblance to what was going on in the Antarctic at all and it was obvious things were going wrong there and at the 1977 there was an Antarctic Treaty Consultative Meeting and I was one of the alternative delegates and at that meeting we managed to separate out: the Russians were actually going for ‘We want this, that, that and the other.’ Lock stock and barrel and it was obvious that nobody really grasped the real problems.

Disc 2, Track 12 [0:55:02] David Limbert: The problems were twofold. One was a matter of pure communications. Are you inside the auroral zone or are you outside the auroral zone. That is a radio engineer’s problem; it is not a meteorological problem. The other problem was the meteorological data was not getting out because the whole system was out of date. So as a result of that there was an Antarctic Telecommunications meeting in Washington in 1978. There John Heap and myself represented Britain. I think probably Dave Harley was there as well referencing the Met Office international planning. Anyway it was obvious that nobody really knew what was going on, so I had spent the previous year or so researching where data was coming from, where it was going to, with the collaboration of the Met Office. They were pulling out all sorts of information for me and I had worked out precisely where things were going, what was not going anywhere, where it was getting lost and dumped.

Disc 2, Track 12 [0:56:39] David Limbert: So it got round to our turn, the UK turn, and I said ‘Do you mind if I go to the blackboard?’ They said ‘Yes’. I said ‘Right.’ And I put up: ‘This is what we do, this is where our data goes.’ I then went round the table: ‘Argentina, you do this, and this and this and this. Chile you do this, this and this.’ On so on, all the way round the table, and they were gobsmacked because I showed them exactly where their data went, who was interconnecting. I said ‘That is what is actually happening, not what you have said you wanted in Buenos Aires.’ So we worked this out, and we had a session where we drew up three diagrams: one showing the communications within the Antarctic between the auroral and non-auroral zones, communications to the main communications centres outside the auroral zone, outside the Antarctic proper, and the links of the global telecommunications system. And that was when the system was first defined and it is still effectively the same system today.

Disc 2, Track 12 [0:59:07] David Limbert: It has been modified. A big modification was when I put in the first automatic data collection platform working from a Meteosat rather than working from a polar orbiting satellite. The American system always used polar orbiting satellites and they used the business where they just picked up the data as it was transmitting and then dumped it down somewhere in America where it would be sorted out. It is the Argos system, effectively. But this was different. It was a geostationary satellite system, and I had worked out that Halley was on the edge of the system. It had a clear sea path, nothing getting in the way, and would probably work out OK, but it was an experiment nevertheless. And I took the first system in in 1977. I set up the antennae myself, on the mast, thinking ‘Here am I. I am in my fiftieth year, freezing to death, halfway up this mast, wondering what the hell I am doing here.’ Something went wrong with my leg, some nerve. Anyway I got this set up, set it up inside, and I did not get a response back. They had not picked it up. The thing is, it went straight from Halley with the meteorological observations at set times, automatically, straight out to Darmstadt in Germany. Well, all was well.

After two or three days of frantic signalling they said yes, they had picked us up. Everything was OK.

Disc 2, Track 13 [1:00:23] David Limbert: I wanted to do the same with Faraday, which is Argentine Islands. That posed another 'kettle of problems'. The Americans would not accept the DCP I was using. They shifted the goalposts again. Originally it had been accepted by them as being capable of being used on their satellites, on their geostationaries, but Oh No. That was GOES-East and GOES-West, you see. Oh No; they had shifted the goalposts. No longer acceptable. So the MacMichael I [phonetic], which was the one at Halley, had to be left on its own. I had to find another one. So I hunted around in American systems and found one which would probably do, but it had not quite the configuration I wanted in the software.

Disc 2, Track 13 [1:01:32] David Limbert: Anyway I had a very good man working for me, Peter Fitzgerald, who was very good at software writing and also a problem solver. So I sent him off to the States with the order for Sutron. I think it was a Sutron one, and he went there and he effectively rewrote the software that he was going to use inside this thing but he could not get an export licence because it was going outside the country. So I got on to my Foreign Office friend who then got on to their contacts over there, who put pressure on to get an export licence. So I managed to get an export licence, and he got it as he was waiting to board the plane, and then he was doing more software writing on the way back.

Disc 2, Track 13 [1:02:47] David Limbert: Now I had a very tight schedule. I had to get it down to Faraday that year, and get it started. There was a plane leaving Brize Norton the afternoon after he got back. I went to Heathrow and met him at Heathrow, drove him back here and we did a bit more fiddling round. We then packeted it up ready and a courier came to take it to Brize Norton to be put on the plane. It was delivered in Stanley where it was transferred to the ship which was going in, and it was installed and it worked. Whew! So things went out via Washington. They went straight to GOES and into Washington.

Disc 2, Track 13 [1:03:55] David Limbert: Then I came across another problem. What goes into the National Environmental Data Information Service and what comes out and is broadcast by the American Weather Bureau internationally were two different things. I thought 'This is funny. Why isn't this data going in?' So I went across to see the bloke running the American system and it turned out I got he and the head of the communications side from the Weather Bureau. He and I sat down and argued the toss. It turned out that they did not talk to each other. Twenty kilometres apart, on the Beltway, and they did not talk to each other. So that little problem was solved and things started to run smoothly then. Data started coming through regularly, and that was how we got stuff into the network, into Darmstadt and so on round the world.

Disc 2, Track 14 [0:05:30] Chris Eldon Lee: *So you were operating more as a political animal, really, rather than...*

Disc 2, Track 14 [0:05:33] David Limbert: Yes, I was very much a political animal at this stage of the game, and of course even more so when it came down to the Falklands War.

Disc 2, Track 14 [1:05:43] [End of Part Two]

Disc 3, Track 1 [0:00:00] Chris Eldon Lee: *This is David Limbert, interviewed by Chris Eldon Lee on the 1st and 2nd of March 2004 at his home in Cambridge. David Limbert, Part Three.*

Disc 3, Track 1 [0:00:14] Chris Eldon Lee: *So your third period with BAS, David, was when you became Chief Meteorologist in 1970?*

Disc 3, Track 1 [0:00:21] David Limbert: Yes, that is correct.

Disc 3, Track 1 [0:00:22] Chris Eldon Lee: *How did that happen?*

Disc 3, Track 1 [0:00:25:] David Limbert: The British Antarctic Survey sent a circular round to the Met Office asking for anybody who would be interested in the post of Head of the meteorology. At the time I was working at Heathrow, and I thought 'Well, I either go for this one or wait and be posted off overseas to Germany, or wherever.' And I thought 'Well I might as well go for this job, and if I don't like it, I can come back again.' You see within three years you can come back. But like all these things, once you have made a decision to move, you usually stay having moved. There was an interview panel, with the Met Office people there, and I was told afterwards that I was the only candidate that really could have fitted the job. Obviously I think it must have been written for me in mind. I knew the Head of the geophysics side, which was Joe Farman, and we had worked together before, in London, so presumably this had some influence on recruiting. Anyway, so I joined, and early in 1970 I moved up to Edinburgh. I think it was probably April/ May; something like that.

Disc 3, Track 1 [0:02:09] Chris Eldon Lee: *What kind of set-up were you going into?*

Disc 3, Track 1 [0:02:11] David Limbert: It was a separate new unit in the Department of Natural Philosophy in Edinburgh, at the Old Schools, Meteorology Department effectively, run by James Paton and Mackintosh. Joe was nicely ensconced there anyway, as effectively an additional lecturer for the department. It was a series of huts and I was at the end of the heating chain, and it was a very cold winter up there. When the temperature got down to 15C we said 'We cannot work in this' and we went home.

Disc 3, Track 1 [0:03:10] David Limbert: It was an interesting place. I set up a training scheme for new recruits. Instead of the Met Office training them, I was going to train them. I set up a training unit, at a field centre on Loch Tay, where I could train them in basic meteorology, and also in something else to do with boundary layer meteorology, effects of mountains and all this sort of thing. Fieldwork. At the same time we could play because there were canoes there, you could go horse riding and all sorts of things, if you wanted to. There was even a nine-hole golf course not too far away, where you could indulge yourself if you wanted to. So it was a pretty good place for both work and play. I set up a routine of meteorological observations right through the day until late at night, and then started again at seven in the morning. So they got the habit of doing observations, working out the statistics and everything

else. So they had the full training before they went. And at the same time one could examine the people, keep an eye on the people to see how they reacted to things.

Disc 3, Track 1 [0:04:35] David Limbert: One person there we had, from Northern Ireland and he did not fit at all, and eventually I got the Secretary of BAS to come up and have a chat with him, have a look at him. He thought he should have his job terminated. I felt sorry for the guy but I think he was trying to escape from his background. At the same time he was not fitting with everybody else, and you could not allow this to happen. So it was the only time I had somebody terminated before he went South.

Disc 3, Track 2 [0:05:22] Chris Eldon Lee: *So you were doing in the '70s what people like Ted Bingham had been doing thirty years previously?*

Disc 3, Track 2 [0:05:27] David Limbert: Yes, that's right. Finding the right people.

Disc 3, Track 2 [0:05:38] Chris Eldon Lee: *But you weren't just in charge of personnel, presumably?*

Disc 3, Track 2 [0:05:41] David Limbert: No, no, no. I was not in charge of personnel. That was Bill Sloman and Eric Salmon down in Cambridge, or in London at the time. Then they moved to Cambridge. And I used to come up to London for interviewing panels for people who wanted to go South, and they were quite interesting, trying to find people who would fit in. We had people like ... I had one chap who played in an orchestra; I think it was the Halle Orchestra, wanting to go South. Why he wanted to go South I don't know, but I think he would have been very disillusioned after a time. I think he just wanted a break from music, but at the same time being away for two, or even just one year, was going to be a bit hard on him. You have to turn people down on those sort of grounds. You have to think the long term.

Disc 3, Track 2 [0:06:55] Chris Eldon Lee: *So you were very wary of people who were running away or escaping?*

Disc 3, Track 2 [0:06:59] David Limbert: Yes. We had one case where somebody applied to go South and we said where was he living at the moment, and he said 'Oh. I live in a caravan. I don't like people.' [laughs] That was one of the more amusing ones.

Disc 3, Track 2 [0:07:29] Chris Eldon Lee: *The fact that you were in wooden huts, and presumably there were not that many of you, was it still a bit of a Cinderella element.*

Disc 3, Track 2 [0:07:36] David Limbert: It was a bit of a Cinderella element. But we worked all right, you know. It worked because we had the lab and there was the classroom also we could use in the main building, and we could use the main lecture theatre if we wanted. But it was the Old Schools, which was the old infirmary, effectively, where Burke and Hare had been operating.

Disc 3, Track 2 [0:08:04] Chris Eldon Lee: *Any remnants?*

Disc 3, Track 2 [0:08:06] David Limbert: I never quite found it, but people did say there were ghosts.

Disc 3, Track 2 [0:08:14] Chris Eldon Lee: *So was meteorology becoming more important to BAS at that time?*

Disc 3, Track 2 [0:08:18] David Limbert: It was becoming more important because they had taken over from the Falkland Islands Dependencies Survey by then. BAS was responsible for anything in the Antarctic. The Falkland Island Dependencies was entirely different. So we were responsible for the meteorology down there, and the question was to set up a sustainable network which did not involve too much manpower, but always one of the problems with the administration, they always got into the habit of thinking ‘Well, if we want an extra man on base, we will make him a met man, you see, but very often they were general hands and suchlike.

Disc 3, Track 2 [0:09:06] David Limbert: Later on when they tightened; when the accounting tightened they said ‘Oh you have got too many men on your side of the house. I can cut those numbers down quite easily.’ And if you think of it, to keep a man in the Antarctic, you are talking in terms of a hundred thousand pounds a year. Have that same man back in this country, he is only costing ten thousand pounds a year, so there is an order of magnitude difference between the two. So what I did was I tried to shift some of the people from the Antarctic back to the UK and spend more time working up data and things like that, and have fewer people on base.

Disc 3, Track 2 [0:09:52] David Limbert: So I had to sort of streamline the operation as best we could. This meant looking at the whole way we did operating things, and from this evolved eventually (it was not for some time) our first efforts at putting an automatic weather station in. That took place when we got to Cambridge and we started developing this. We could not even find proper processors in those days; they did not exist. By 1976, when we came to Cambridge, we actually had one processor we could program. It was a beer production processor! But you could program it, and this became the first trial of an automatic weather station which recorded everything and one man could then operate the station.

Disc 3, Track 3 [0:10:58] Chris Eldon Lee: *So rather like with lighthouses. Fewer men in the field and more back at home.*

Disc 3, Track 3 [0:11:01] David Limbert: Fewer men. More back at home, you see.

Disc 3, Track 3 [0:11:04] Chris Eldon Lee: *Before you moved to Cambridge, were there some significant meteorological developments in that time, apart from the beginnings of automation?*

Disc 3, Track 3 [0:11:18] David Limbert: Well there was the question of radio-sondes. We had the old Meteorological Office Mark Two radio-sonde, which was being phased out, and the new one was going to come in, the Mark Three which was much too heavy and required big balloons and that sort of business. It was no use for us whatsoever. So we switched to a type used by the Navy, called a Graw sonde. That was quite manually intensive. It meant listening to the signal in a form of Morse, and you had to be able to decode this. Some people were very good at it and some people

were not good at it. So it had its limitations, and towards the end of the time we said ‘Well we had better move away from this.’ We then moved across to a sonde being manufactured by Plessey, or being modded by Plessey, which was effectively a VIZ sonde, manufactured in America.

Disc 3, Track 3 [0:12:54] Chris Eldon Lee: *The word is sonde S O N D E?*

Disc 3, Track 3 [0:12:56] David Limbert: Radio-sonde. S O N D E, which is French for sounding.

Disc 3, Track 3 [0:13:03] Chris Eldon Lee: *You were there in Edinburgh at the time of the launching of the new Bransfield?*

Disc 3, Track 3 [0:13:06] David Limbert: That’s right.

Disc 3, Track 3 [0:13:07] Chris Eldon Lee: *What do you remember of that occasion?*

Disc 3, Track 3 [0:13:08] David Limbert: I remember it was fascinating, because we had seen the thing being built at Burntisland across the Forth. This had to be brought across and they had welded the two bits together.

Disc 3, Track 3 [0:13:23] Chris Eldon Lee: *The two halves?*

Disc 3, Track 3 [0:13:24] David Limbert: The two halves of the ship together.

Disc 3, Track 3 [0:13:26] Chris Eldon Lee: *What? Front and back?*

Disc 3, Track 3 [0:13:29] David Limbert: Yes.. That’s right. They welded it together and the welders struck because they had to deal with armoured plating, effectively. Welding armoured plating and there was a strike for a while until that was sorted out. It was a big shindig when it was launched. We all went down and enjoyed ourselves, had the usual sort of hooray for the thing being launched. Then it was fitted out across at Burntisland I think, a mixture of Leith Harbour and Burntisland across the Forth, and then eventually went on trials. It had water tanks with a weir in the middle, supposed to be stabilisers. The trouble with these things is they have to be tuned, and if it is not tuned right with the way the waves are, you get a sudden lurch as the whole thing tilts. The weir does not work effectively; everything got out of phase.

Disc 3, Track 3 [0:14:51] Chris Eldon Lee: *Did it go into service like that?*

Disc 3, Track 3 [0:14:54] David Limbert: They had a bit of problems on the maiden voyage. They went across from Southampton (even then we were still sailing from Southampton) across to Florida to pick up cargo for Palmer station, for the Americans, and it sailed on down through the Panama Canal and down that way. [Transcriber comment: This was actually on a later voyage. I was on the maiden voyage. We sailed from Southampton on 4 January 1971, proceeding directly to Montevideo. Andy Smith]

Disc 3, Track 4 [0:15:31] Chris Eldon Lee: *Who did the launching ceremony?*

Disc 3, Track 4 [0:15:35] David Limbert: I can't remember. I think it was Lady Fuchs but I am not sure. [Transcriber comment: It was indeed Lady Joyce Fuchs, on 4th September 1970 – Andy Smith]

Disc 3, Track 4 [0:15:47] Chris Eldon Lee: *We can check that, Don't worry. But it was a big occasion was it?*

Disc 3, Track 3 [0:15:50] David Limbert: Yes, that's right. Yes. It was a big occasion. It might have been one of the royals; I can't remember but I think it was Lady Fuchs.

Disc 3, Track 4 [0:15:57] Chris Eldon Lee: *What happened about coming to Cambridge? Was this a centralisation of BAS?*

Disc 3, Track 4 [0:16:01] David Limbert: Well they were bringing everybody into Cambridge. It happened to be a coincidence that Sir Vivian Fuchs lived in Cambridge. There is also the Scott Polar here so there was a sort of Centre of Excellence in Cambridge. We did not particularly want to come to Cambridge. We felt we were quite happy up there, but it was ruled that we should come to Cambridge and so down we came.

Disc 3, Track 4 [0:16:31] Chris Eldon Lee: *And this time you were not in a wooden hut?*

Disc 3, Track 4 [0:16:33] David Limbert: No, no. There was a purpose-built building which is on Madingley Road. We used to call it Fort Lego because it was constructed on a standard principle of blocks put together. It was opened by Prince Philip. It was a good party then.

Disc 3, Track 4 [0:17:02] Chris Eldon Lee: *Now this of course meant you were due to go South again, weren't you? You made two or three more visits to the Antarctic?*

Disc 3, Track 4 [0:17:08] David Limbert: Well while I was up in Edinburgh I contracted lymphosarcoma and I was out of action for several months, and for two years at least I could not be allowed even anywhere near going South. I was not fit enough. Anyway time went on. Things got better and better, and it was not until 1977 when it was considered I was fit enough to go South.

Disc 3, Track 4 [0:17:37] Chris Eldon Lee: *Why were you making that journey South, in '77? What were you going for?*

Disc 3, Track 4 [0:17:41] David Limbert: Well I needed to look at the operation that was going on down South. See for myself what was needed to be done, and suchlike. And also, Antarctic telecommunication s were a bit of a mess. I had been to the Antarctic Treaty Consultative Meeting in 1977, earlier that year, and made a lot of contacts with Americans, Argentinians, etcetera, and it was obvious that we needed to look at the whole range how we operated communications, and I needed to assess what we did down South. I needed to check what we could make on economies. We had to look at the whole structure, what was being done and who would do what. So that was the whole purpose of my first trip.

Disc 3, Track 4 [0:18:39] David Limbert: That one I flew to Santiago via Buenos Aires. Just changed planes at Buenos Aires and went straight on to Santiago and then a few days in Santiago, went on down to Valparaiso and picked up the ship. One of the two notables who joined the ship there was Sir Granville Beynon who was going down to assess the whole of the ionospheric programme for that side of the house, and Yoshi, Yoshida or whatever his name was, who was from the Japanese Polar Research Laboratories. I became quite friendly with Yoshi and we kept contact for some years afterwards, but that has gone a long time ago. Sir Granville Beynon had a reputation for being rather forgetful. Lovely story here. At the last minute he had left a pair of trousers behind. These had to be sent to the ship post haste. He was an interesting character. I chatted to him a lot. Very Welsh.

Disc 3, Track 5 [0:20:30] David Limbert: On that trip we went down to Faraday, then back up and then across to the Falkland Islands, then on to Grytviken where we had Christmas. Now at Christmas time we had the usual Christmas lunch on the ship, where the junior cabin boy becomes the captain for the day, and the officers become the servants, all that sort of business, and we got quite merry. I went up on deck and was chatting to Sir Granville Beynon about things and he said 'You know, it is a lovely place this.' We got chatting about honours and things like this and he said 'When I was offered a knighthood, I thought: Well I don't know whether I should accept or not. Then I thought: It's an honour for the science.' [laughs] And he was no mean snooker player. You could tell he must have spent a lot of his youth playing snooker. He could wipe the table with anybody at the base.

Disc 3, Track 5 [0:22:10] Chris Eldon Lee: *So he and Yoshi were there by coincidence?*

Disc 3, Track 5 [0:22:12] David Limbert: Yes, on the ship. It was just a coincidence. There were always passengers who were down either assessing a programme or someone from another nation assessing your programme. There was always exchange, part of the Antarctic Treaty arrangements.

Disc 3, Track 5 [0:22:33] Chris Eldon Lee: *So when you got back to Cambridge, having done your fact-finding tour, were there some significant changes you made?*

Disc 3, Track 5 [0:22:39] David Limbert: Yes, I cut out some of the paperwork and I trimmed things down a bit. I set up a programme of reports that came back every month in short form. Effectively they told me exactly what was going on without having to put too much in the messages all the time. These were very useful to keep a current state of play. It was obvious that we needed to automate as fast as we could. It was going very bad. This time they were living in Armco tubes buried deep, at Halley, very deep down and it was quite claustrophobic. I remember thinking, when the ship was away a for a while and I was up on base 'I hope the ship comes back because I don't particularly want to spend another winter now. I am getting too old for this game!'

Disc 3, Track 5 [0:24:00] Chris Eldon Lee: *So you streamlined the administration. Were there more scientific breakthroughs, more scientific developments at that time, in that period, whilst you were at Cambridge?*

Disc 3, Track 5 [0:24:13] David Limbert: Well while I was in Cambridge, between 1976 and 1987. Yes, there was the ozone hole business. The development of the ionospheric programme. All the geophysics side expanded considerably, and it was a very very powerful group. In fact on the ionospheric side there was the Automatic Ionospheric Sounder which was a big development. But the biggest disappointment I had in those times: we had to close the upper air programme at Faraday. That was a decision made. They said, 'Oh there is the Russian station of Bellingshausen just up the road. You don't need this.' This was the NERC Council. 'It is not needed any more.' And it was killed, and I managed with the cooperation of the Met Office to keep the upper air programme going at Halley. We did a deal with the Met Office. They provided all the sondes and things like this, and helped to pay for the new equipment which was going to come in.

Disc 3, Track 6 [0:25:51] Chris Eldon Lee: *Were there experiments that did not work? Or were disappointing?*

Disc 3, Track 6 [0:26:12] David Limbert: Could you make any head or tail of the results you mean? Yes I think there were one or two like that but I cannot be specific about them. The data is there. You can go mad looking at data too closely. You think 'There is too much noise in this lot.' But you cannot do much about it. It is a very difficult way of looking at things. I did some experiments with isotope sampling in snow, to see where things had been deposited, where the snow had come from. And I collaborated in some experiments with the Americans on the release of a very stable isotope in the upper atmosphere which could be detected by sensitive instruments. Doing in fact trajectory analysis to see where if a small nuclear device was exploded somewhere, where would the results turn up? Because there had been an unexplained flash in the Southern Ocean somewhere, and they were not quite sure what it was, They never quite knew.

Disc 3, Track 6 [0:27:47] Chris Eldon Lee: *What year was that?*

Disc 3, Track 6 [0:27:54] David Limbert: I suppose it would be around '75/'76, something like this. [Transcriber comment: he is probably referring to the so-called Vela event of 22 September 1979 – Andy Smith.]

Disc 3, Track 6 [0:28:05] Chris Eldon Lee: *The light had been observed and you were looking for fall-out, in case it was a nuclear...?*

Disc 3, Track 6 [0:28:12] David Limbert: We were looking for those sort of reasons. You see then we had this strange development, the great big Weddell polynya. There was a huge warm spot in the ocean just west of 0 degrees. That could have been underwater eruptions, things like this. You do not know what happened in these times. That disappeared eventually and there was quite a notable case, the Weddell Polynya. It affected the weather of the whole of that coast. You had much more excessive snowfall in the mid seventies: '74/'75/'76. A lot more snowfall than usual.

Disc 3, Track 6 [0:29:06] Chris Eldon Lee: *And there was a guaranteed connection between that and this underwater thermal?*

Disc 3, Track 6 [0:29:09] David Limbert: There was an implied... You cannot say it was. It is very difficult to pinpoint, because you have very few observations over the ocean, and the real difficulty was that unless you have some meteorological reports from the middle of the ocean, you have no idea what the pressure distribution is. You can only fill it in by guesswork. There were satellites. You had satellite photography which showed you where depressions were moving and things like this. That record was developing. It has been very useful. That was the biggest thing, really, that happened, was the development of the polar orbiting satellites producing composite pictures of the polar circulation, and so you gradually built up a picture of that sort of thing, but to fit a pressure pattern to that is very difficult. This is how gradually the Winter Weddell Sea Project developed, which was a project that took place in '85/'86, and I was highly involved in that. This involved deploying buoys, planted in the sea ice, from a number of places.

Disc 3, Track 7 [0:30:46] Chris Eldon Lee: *Were these called drifting buoys?*

Disc 3, Track 7 [0:30:48] David Limbert: Drifting buoys, yes. And also releasing some in the Southern Ocean. So that you had some drifting round the Southern Ocean, some actually implanted in the ice. This immediately gave you some markers where you got temperature, pressure, and you got the drift of it. You got the final position every day and this was with the Argos system. So it was a collaborative programme. The Germans were taking part in this; they put some things in, and I think the Americans did some air drops of various sensors, and so gradually you could build up a picture. The whole point was this: it was a real-time episode. Everything was collected, was transmitted straight through the Global Telecommunications System, so it was all available to everybody on the spot, so you could build up a picture of what was happening at the time!

Disc 3, Track 7 [0:32:02] David Limbert: This subsequent analysis was very interesting. I put a buoy in at about 76 South, just north of the position where Shackleton's *Endurance* had got stuck. For a few days it drifted around a bit, drifted down south, then hovered around a bit and then gradually drifted north, and when you plotted its track it was almost bang on top of the track the *Endurance* took. That was fascinating. The German buoys which were put further north came down as far as 74 South, then went north but further east. So you were able to get a picture of the way the whole Weddell Sea behaved.

Disc 3, Track 7 [0:33:17] David Limbert: The upshot of this, my analysis, was that I had one of these flashes of inspiration. You get very few of them. I analysed the northward and the eastward movements, analysed separately. There was a steady flow northwards all the time, on average, and it worked out that it was unlikely that any sea ice in the Weddell Sea would be older than two years. It was all exported, and by the end of the summer season most of the previous winter's ice had gone out except for a little bit down in the south-west corner.

Disc 3, Track 7 [0:34:05] Chris Eldon Lee: *And this was pioneering work? Nobody had done this before?*

Disc 3, Track 7 [0:34:08] David Limbert: They had not made this connection before. That is probably one of the most satisfactory pieces of work that I did. I contributed

90 percent of the thinking for that paper – it was a joint paper. Ninety percent of the work was mine but I had assistance from a lot of other people, programmers and things like this. Because it could not be done without the people that handle the computers and the actual data. It was a very satisfactory project, that one. It was a good one to almost finish one's career on.

Disc 3, Track 7 [0:34:52] Chris Eldon Lee: *Ending on a high?*

Disc 3, Track 7 [0:34:53] David Limbert: Yes.

Disc 3, Track 7 [0:34:54] Chris Eldon Lee: *Let's go back now, if we may, to your second trip South, of the more recent ones I mean. This was in '81/'82. We touched on this briefly last night, but let's start on this fresh now. Why were you going?*

Disc 3, Track 8 [0:35:10] David Limbert: It was obvious that something had to be done on the communications side. This was the first point. The communications were in a mess.

Disc 3, Track 8 [0:35:20] Chris Eldon Lee: *International communications?*

Disc 3, Track 8 [0:35:22] David Limbert: International communications were in a mess. I was going to put in a satellite data collection platform, and I had to sort things out with the Americans on this one. So effectively when I went South that time, I went straight to the USA first, and I spent time. First I went to look at the Beukers radio-sondes, to see whether they would be satisfactory for future use. I called in to see the manufacturer of the VIZ sonde and I decided that I did not particularly like the way they were manufactured. There were some things I was not particularly keen on.

Disc 3, Track 8 [0:36:19] Chris Eldon Lee: *V I Z?*

Disc 3, Track 8 [0:36:21] David Limbert: V I Z yes, which is the Victor Ivor Zemanksi, something like this.

Disc 3, Track 8 [0:36:30] Chris Eldon Lee: *This is actually in the United States?*

Disc 3, Track 8 [0:36:33] David Limbert: In the United States. But, most importantly, I went to the Office of Polar Programmes and chatted with the communications people there. I chatted with the Office of Polar Programs and we hatched a plan for deployment of automatic weather stations, where they would be deployed, because they were going to put a lot of automatic weather stations in the Antarctic, and we hatched a plan where they would go. Together with Chuck Stearns from Wisconsin.

Disc 3, Track 8 [0:37:14] David Limbert: Then I went to talk to James Nealon from the National Weather Service about data reception and transmission, and also a fellow called McCulloch from Environmental Satellite Data Information Service about using the various satellites and things like this. This was when I found out that there wasn't any communication between these two, and I actually got three of us together in a room to try and sort out this twenty kilometre gap in their communications. That was one of the successes, and from then onwards I then flew on down to Buenos Aires where I was met by Alimo who was the commandant of the Ezeiza airport, but also

who had been at the various meetings where I had been, both at WMO meetings and also at the WMO Working Group meetings and also the Antarctic Treaty meetings, so he was one of my main contacts.

Disc 3, Track 8 [0:39:13] Chris Eldon Lee: *His name was?*

Disc 3, Track 8 [0:39:14] David Limbert: Alimo A L I M O. He eventually became head of the meteorological service. We became great friends. The head of the meteorological service at that time was Ettivestay [phonetic]. I went to meet him as well and we chatted about various aspects. That is why I made contacts with various people. Faces I could talk to and make arrangements. But '81, when I arrived there, actually I had made these first meetings in 1977/78 season. I made my first meetings then. I made reacquaintance with them. I was met by Alimo and some of the Foreign Office officials. They were pumping me this time because they had heard we were cutting back our communications in South Georgia, and I said 'It's Mrs Thatcher. She has said there is ten percent cut across the board.' Her mind was fixed. She was a NATO country, and (this is my interpretation) what was happening down South did not really matter so much. It was a big error of judgment, in my view, that.

Disc 3, Track 9 [0:40:53] Chris Eldon Lee: *So, be a bit more specific about the communications that were being cut, and why that was happening.*

Disc 3, Track 9 [0:40:58] David Limbert: We were cutting out one radio operator for South Georgia because we had to cut down the number of personnel.

Disc 3, Track 9 [0:41:11] Chris Eldon Lee: *Why was this of concern to the Argentinians?*

Disc 3, Track 9 [0:41:14] David Limbert: Because we used to send the data from Stanley to open broadcast for them to pick up and include in their meteorological messages.

Disc 3, Track 9 [0:41:31] Chris Eldon Lee: *From South Georgia via Stanley and then out into the open?*

Disc 3, Track 9 [0:41:34] David Limbert: Well no. They either went to Stanley or they could be picked up at Buenos Aires, so they could actually include them in their weather collectives.

Disc 3, Track 9 [0:41:48] Chris Eldon Lee: *And the loss of one man meant this did not happen any more?*

Disc 3, Track 9 [0:41:50] David Limbert: They thought it might not happen any more. I said no, it was still going to happen, but probably just twice a day rather than four times a day. But this would cover the main synoptic hours, which were twelve and six, and then the intermediate hours would be in the same collective, so they would have both sets of observations. This was important from their point of view. They were obviously eyeing the place.

Disc 3, Track 9 [0:42:27] David Limbert: For a long time they had been arguing about the case for the Malvinas and, interesting story here, this is reverting back to the '77/'78 trip. When I got back to Buenos Aires, I was staying in the hotel with Granville Beynon and we were chatting. I was chatting in his room, you see, about one thing and another. He had been talking to one of the science ministers of their government, and while we were chatting, having a cup of tea in his room, a knock on the door and a bloke in a grey sort of leather jacket came in and said the phone was not working. I looked at him and said 'Not working? OK.' and he thereupon went to the phone, took out something and put another one in. When he had gone I said (I turned the television on, turned it up) 'You are being bugged.' This made me think very carefully. He was going home that night anyway, to England, and I was due to meet a friend of mine who worked in the Argentine Weather Bureau. His name has escaped me for a minute, but I used to meet up with him quite often. I had eaten with him, and had meals with him, and things like this. So I said to him. I got on to the agent. I said I was going to stay for the weekend and have a good relaxed time. I did not tell my Argentinian friend. I just phoned up the agent and said 'Get me on the first plane tonight out to New York.' I did not want to stay.

Disc 3, Track 9 [0:44:54] Chris Eldon Lee: *That was in '77/'78?*

Disc 3, Track 9 [0:44:56] David Limbert: '78. This was the time when people were disappearing and I did not want to find myself alone in this part of the world at the time.

Disc 3, Track 10 [0:45:11] Chris Eldon Lee: *So later, in '81/'82...?*

Disc 3, Track 10 [0:45:15] David Limbert: '81/'82 we then had another situation where I was down there, back again, and they were pumping me about why we were cutting the staff there. I said it was Mrs Thatcher, nothing to do with politics, it's pure economics.

Disc 3, Track 10 [0:45:37] Chris Eldon Lee: *They were asking about Britain's intentions, were they?*

Disc 3, Track 10 [0:45:39] David Limbert: Yes, effectively, and I said 'We're staying. Don't worry. We are staying there.'

Disc 3, Track 10 [0:45:45] Chris Eldon Lee: *John King thinks that this restructuring of the meteorological operations may have been a contributory factor to the invasion. Is that how you see it?*

Disc 3, Track 10 [0:45:53] David Limbert: Partly. Partly it was a contributory factor. Anyway, after discussing these things with him I went across to Santiago for a few days and then flew on down to Punta Arenas where I joined the ship. From there I went down to Faraday, came back up again. I was in the Falklands for Christmas. Then I went across to South Georgia and Signy Island, Coronation Island and places like that. I went on round and down to Halley. I had told them that I was putting a satellite communication in there, I said 'You will get the information back on the GTS very much more quickly.' This might have been a contributory factor.

Disc 3, Track 10 [0:47:27] Chris Eldon Lee: *You told the Argentinians that?*

Disc 3, Track 10 [0:47:29] David Limbert: Yes, and actually that was when I put this new system in at Halley. I had a few days when nothing seemed to happen but eventually Darmstadt acknowledged that they were receiving it and it was being put out on the GTS at regular intervals. So that was a change of communications. Now this probably had an impact on the way the Argentinians behaved. I think they had already made up their minds they were going to do it.

Disc 3, Track 10 [0:48:06] Chris Eldon Lee: *It was another excuse, was it?*

Disc 3, Track 10 [0:48:08] David Limbert: It was probably another excuse but not a contributory factor in that sense. They were already obviously planning things. After visiting Halley I came back up to Mar del Plata. One way or another I was at Mar del Plata, and at that stage it was obvious they were getting very aggressive, the Argentinians. The flying of planes overhead.

Disc 3, Track 10 [0:49:05] Chris Eldon Lee: *So this would be March.*

Disc 3, Track 10 [0:49:06] David Limbert: This would be roughly February '82, before things really blew up. This was the mid-season stopover. We changed crews in February I think it was, something like that, up at Mar del Plata. Some people were going to go home straight away. I was not. I was staying on the ship because I was going to do all the bases, the whole trip all the way round. I went with the people going home from Mar del Plata by coach to Buenos Aires. Now it was obvious on the way that there was a state of emergency taking place in the country. Every thirty kilometres or so you would have a road block of military. Something was going on. There was a suppression taking place, left right and centre. People were not very happy with the junta.

Disc 3, Track 11 [0:51:21] David Limbert: We got to Buenos Aires and I just happened to meet my friend from the Argentine Met Service, saying 'Oh, I am going to come and see you tomorrow at your office.' He said 'Don't come. I will come and see you tonight.' So he came and we had a long long chat. He did not tell me anything about being attacked but he told me a bit about the politics that were going on, and that there were big changes taking place in the meteorological service, and suchlike. So that was the last time I saw him then. We had a good chat. We had a meal together as well and then ...

Disc 3, Track 11 [0:52:25] Chris Eldon Lee: *You have not named this man. Was that on purpose?*

Disc 3, Track 11 [0:52:27] David Limbert: No it is not on purpose, but it is one of these silly things. You can't remember a name when you want it.

Disc 3, Track 11 [0:52:36] Chris Eldon Lee: *It does not matter. So were you now suspicious that there was going to be some kind of ...?*

Disc 3, Track 11 [0:52:45] David Limbert: Just give me a minute while I think. What was the man's name?

Disc 3, Track 11 [0:52:53] Chris Eldon Lee: *Don't worry about it because I can always ring you later when you think of it. I will email you my number. At this time were you suspicious that the Argentinians might make a move with force?*

Disc 3, Track 11 [0:53:04] David Limbert: There was something going on. After we had got the new crew in, what worried me at the time was that I was actually in Argentina on a seaman's pass. My passport said I had left the country already and I wanted money. Luckily they did not look at my passport when I went to get some money, get some currency, because it could have been a bit of a problem, and I decided to go straight back by train, back to Mar del Plata. But first I had written a long letter to the Foreign Office in which I told them what I had heard, in this piece of paper, and I took it down to the embassy and said 'Just put this in the diplomatic post.' Whether it was any use to anybody or not, I do not know.

Disc 3, Track 11 [0:54:18] Chris Eldon Lee: *So you did try to warn?*

Disc 3, Track 11 [0:54:19] David Limbert: I said something was going on. I was not sure what. And I pointed out that there were changes taking place in the military meteorological structure at the time but I did not know anything else more than that.

Disc 3, Track 11 [0:54:34] Chris Eldon Lee: *You did not use the word 'invasion'?*

Disc 3, Track 11 [0:54:35] David Limbert: No. No I did not use that at all.

Disc 3, Track 11 [0:54:41] Chris Eldon Lee: *Could you have done, or was that beyond your imagination?*

Disc 3, Track 11 [0:54:45] David Limbert: It was beyond my imagination but I think I implied there was an uneasiness about what was going on, and there was more secretiveness going on.

Disc 3, Track 11 [0:54:56] Chris Eldon Lee: *The reason why I ask this is because of course Lord Carrington famously fell on his sword because he had not...*

Disc 3, Track 12 [0:55:02] David Limbert: Yes well I know more about that. This comes towards the end of this story. Anyway I got back to the ship, very thankfully, and we sailed South. We went down to the Falkland Islands there, and I remember walking on some of the hills and thinking 'This is not going to last. This is unreal. There is something brewing. I can't tell you exactly what it is, but something is brewing.'

Disc 3, Track 12 [0:55:47] Chris Eldon Lee: *This would be March now, would it?*

Disc 3, Track 12 [0:55:48] David Limbert: This was in February. Something brewing. It was an uneasy sort of feeling. So anyway off we went down the Peninsula then, did one or two trips. There was I think somebody overseeing, looking at the whole operation of BAS was there, Sir James Logan or something like that (I can't remember the name precisely), and we were coming back up. We then heard about the scrap merchants at South Georgia, and that the *Endurance* was going to go there to try

and sort this out. I remember saying to Dick Laws ‘We are being wrong-footed. Something is wrong. Something is not right here.’

Disc 3, Track 12 [0:57:00] David Limbert: We went back to Stanley, and from Stanley we offloaded one or two people and took others on board and went across to Punta Arenas, and I flew back up from Punta Arenas, up to Washington, where I was having more meetings with people, and then on to Wisconsin. At Wisconsin this meeting was a meeting on Antarctic meteorological programmes, and it was in the middle of this we heard that the invasion had taken place. It was obvious that I was going to go home anyway. I had scheduled to go home. I got on the first fast flight home, as fast as I could. I arrived home roughly eleven o’clock in the morning, had a bath, changed my shirt and clothes, and went straight off to Geneva to a meeting which was being convened for the Antarctic Working Group of the WMO. I need to do a little bit of a backcast here.

Disc 3, Track 12 [0:58:30] David Limbert: In a previous meeting of the working group of the WMO, Antarctic Working Group, it had been decided that the research side of work in the Antarctic would be covered by SCAR, Scientific Committee for Antarctic Research, meteorological group, whereas the actual operations side of communications and meteorological data collection would be the responsibility of the WMO. So we had separated those two things out at our meeting. So we were going there to talk about communications and the network.

Disc 3, Track 12 [0:59:26] David Limbert: Well we got there and things were unhappy. I was with Geoff Day, the principal leader of the UK group. In fact at that time I think he was the chairman of the group, and it was quite an interesting meeting altogether. There was Alimo sitting across the other side of the table with his foreign office advisor. There was myself sitting next to the American representative, Gordon Cartwright, whom I had known for many years, and next to a New Zealander and what have you. I am just trying to think whether it was Geoff Day chairing the meeting or whether it was Neil Stretton from Australia. I cannot remember the details. It does not matter.

Disc 3, Track 13 [1:00:47] David Limbert: Anyway we were meeting a chap called Vyse [phonetic] who was the head of the World Weather Watch programme; he was having a very difficult balancing act. He was talking to Argentinians in one room and us in another room, and it was agreed between us that we would not touch Falkland or Malvinas. This was the Antarctic. We were talking about the Antarctic. It was outside the region. We had received a telegram from Carrington saying we had to make a diplomatic protest. Geoff Day just sent a reply: ‘This is covering Antarctica which is outside the zone of military operations. We will not make a diplomatic response. We are dealing with matters which are purely Antarctic, south of sixty degrees.’ So that was our first fight for freedom. [laughs]

Disc 3, Track 13 [1:02:07] Chris Eldon Lee: *Was there any comeback from Carrington?*

Disc 3, Track 13 [1:02:09] David Limbert: No. No comeback from Carrington. So the natives rebelled. It was mainly Geoff,. He had been international representative for the Met Office for years and he knew what he was doing.

Disc 3, Track 13 [1:02:26] Chris Eldon Lee: *So it never came up, in that conference?*

Disc 3, Track 13 [1:02:30] David Limbert: Oh towards the end, after the conference was over, we had one or two argy-bargies, but that was different. That was outside the meeting's remit. Anyway the meeting went on, and we discussed things as we went on and the New Zealander was saying, made a comment that we ought to go for their balls, effectively. I said 'No, we will play it nicely'. Any way at the end of the meeting I had heard that some of our people from South Georgia were actually on a ship; were prisoners of war, effectively, and were on this ship which was acting as a relay for the Argentinians. I went up to the Argentinian political man and I said 'I want my men free.' Because there were two of them, a couple of meteorologists there. I said 'I want them set free.' He said 'You colonialist you.' etc. I said 'We will have your guts for garters before we have finished.'

Disc 3, Track 13 [1:03:58] Chris Eldon Lee: *That was the end of the conversation?*

Disc 3, Track 13 [1:04:00] David Limbert: That was the end of the conversation. I was still friendly with Alimo.

Disc 3, Track 13 [1:04:03] Chris Eldon Lee: *Were your men released or not?*

Disc 3, Track 13 [1:04:05] David Limbert: Yes, eventually they were released. Presumably after hostilities, or maybe during hostilities, I can't remember the details. But Bob Headland, who knows the full story of this, he was acting as postmaster. He actually franked stamps with British postmarks after the invasion in South Georgia, to show that it was still British. He smuggled one or two things out.

Disc 3, Track 13 [1:04:40] Chris Eldon Lee: *Just to finish that part, and we must stop then. What was the lasting effect that had on meteorological communication between Argentina and Britain? Were you able to carry on your work with the Argentinians?*

Disc 3, Track 13 [1:04:53] David Limbert: Oh yes. After the war was over, it soon settled down, settled back again, and things were quite amicable. There was a whole new atmosphere, and things were worked out quite well. I saw my friend again in 1985/86 when I was that way again. So it worked out quite well and he came across over here to a WMO meeting; he came and stayed here. It's ridiculous.

Disc 3, Track 14 [1:05:29] Chris Eldon Lee: *Don't worry., I can always get this from you later on. Final question, and it is to do with achievements and satisfaction. What is your lasting feeling about your time with FIDS and BAS.*

Disc 3, Track 14 [1:05:43] David Limbert: In many ways very rewarding. I feel I have made a substantial contribution in the communications and meteorological programme and data collection as a starting point. I oversaw the transition from a labour-intensive to a modern meteorological group. I managed to persuade the powers that be that there should be a serious boundary layer experiment, which became the STABLE boundary layer, which John King has been running for several years. That has generated so much good science. I know when I started it up, I remember thinking 'This is just the start.' On the surface it appears to be a closed-end project but it is

going to ask more questions than it answers, and you have to carry on. But you don't tell your bosses that. The people who come have to make the case. That was very satisfactory and I think I left, roughly speaking, I had in my mind a 10- year plan of what was going to happen in the next ten years. Looking at it in retrospect, I was pretty bang-on what was going to happen over the next ten years.

Disc 3, Track 14 [1:07:30] Chris Eldon Lee: *After your retirement?*

Disc 3, Track 14 [1:07:31] David Limbert: After my retirement. The group has gone from strength to strength. It has got some very good people in it. It is one of the best polar research groups in the world. Probably I think it is the best, but that is neither here nor there. The people there are very good. It is satisfactory to see it has got developed that way. I am very happy with the boundary layer experiment, that one, and I am very happy about some of the innovations I have brought in, like the DCPs, GOES satellite. These are all on the edge of possible or not possible.

Disc 3, Track 14 [1:08:19] What people did after I left is a different matter. I managed to get, for instance, the old equipment from Halley transferred on to the ship. We arranged for radio-sondes to be flown from the ship on its voyage South. That was an innovation. People wanted to scrap the stuff. I said 'No. It is perfectly useable. Put it on the ship.' And things like this build up the general picture of usefulness, of what is going on down South. Referring back to losing Faraday as an upper air station, when the World Ocean Circulation Experiment came along, the person from NERC who had said we should close that station asked to have it reinstated. I said 'I'm sorry. You killed it. You find the funds to reinstate it.'

Disc 3, Track 14 [1:09:19] Chris Eldon Lee: *Did they?*

Disc 3, Track 14 [1:09:20] David Limbert: No. You couldn't. They wanted it back again but once you kill a programme... You see at one time these programmes were considered to be monitoring, and not interesting, not exciting. But they forget that meteorology is a long-term climatological business, and you can't cut it off just like that because it is not interesting, not exciting. So you have to think very long for anything. So I am fairly satisfied. I feel I have done as best I could, and well, time will tell.

Disc 3, Track 15 [1:10:12] Chris Eldon Lee: *David. Thank you very much indeed.*

Disc 3, Track 15 [1:10:13] [End of Part Three]

ENDS

Snippets:

- Golf on the ice with black balls. Disc 1, Track 1 [0:01:49]
- Rock climbing gets David a job with FIDS. Disc 1, Track 2 [0:08:47]
- Clamped anchor chain nearly results in disaster. Disc 1, Track 5 [0:20:39]
- Stancomb-Wills Promontory “not there”. Disc 1, Track 6 [0:26:15]
- Ed Hillary sees IGYE Ferguson tractors, later used for the Pole. Disc 1, Track 7 [0:34:21]
- ‘Clean and unclean’ in different groups. Disc 1, Track 8 [0:39:26]
- Building problems: Ruberoid and Killfrost. Disc 1, Track 9 [0:43:01]
- Fake woodworm in the mock-Tudor bar. Disc 1, Track 10 [0:47:44]
- Winceyette pyjamas good in the cold. Disc 1, Track 12 [0:57:41]
- Nearly lost in a blizzard. Disc 1, Track 13 [1:00:09]
- Custard made with baking powder; rock cakes with cement. Disc 1, Track 13 [1:04:56]
- The Midnight Club. Disc 2, Track 6 [0:27:38]
- Improvised ice drill blacks out the base. Disc 2, Track 6 [0:28:39]
- Big balloon-borne package an air traffic hazard. Disc 2, Track 9 [0:44:05]
- David sorts out the met telecommunications mess. Disc 2, Track 12 [0:55:02]
- Unsuitable interviewees. Disc 3, Track 2 [0:05:41]
- Beer processor used in automatic weather station. Disc 3, Track 2 [0:09:52]
- Sir Granville Beynon forgets his trousers. Disc 3, Track 4 [0:18:39]
- Hotel room bugged and hasty departure from Buenos Aires. Disc 3, Track 9 [0:42:27]