

DICK KRESSMAN

Edited transcript of a recording of Dick Kressman interviewed by Chris Eldon Lee on the 4th of April, 2012. BAS archives AD6/24/1/158. Transcribed by Catriona Zerfahs on 25th February, 2012.

[Part 1 0:00:00] Lee: This is Dick Kressman interviewed by Chris Eldon Lee on the 4th of April, 2012. Dick Kressman, Part 1.

Kressman: Richard Kressman, London, 28.04.46.

[Part 1 0:00:16] Lee: What sort of education did you have, Dick?

Kressman: Well, the usual O level, A level then to Bristol University.

[Part 1 0:00:29] Lee: To read?

Kressman: Initially to read physiology, but then I switched to electronic engineering.

[Part 1 0:00:41] Lee: Was there a good reason for that?

Kressman: Well yes. Physiology wasn't, I mean physiology is basically the engineering of animals, plants and animals, but I decided I was really much more interested in the perhaps rather narrower field of electronics.

[Part 1 0:01:09] Lee: But physiology came in rather handy later on though, didn't it?

Kressman: It did, yes.

[Part 1 0:01:12] Lee: Which we may come to with poor old Ken Portwine later on in the interview, yeah. Can you remember what it was that made you first become aware that there was a place called the Antarctic?

Kressman: Oh way back, Bunny Fuchs and TAE¹. As I recall they did a sort of UK tour, it must have been I suppose in about '59, '58 perhaps, no that would have been too early, and yeah they came to Watford which was where we were living at the time. So I was aware of it then.

[Part 1 0:01:56] Lee: Did you go and see the tour?

Kressman: Oh aye yeah.

[Part 1 0:01:59] Lee: What are your memories of that?

Kressman: A Snowcat [laughter]. That's about all.

¹ TAE – Trans Antarctic Expedition.

[Part 1 0:02:06] Lee: Was Fuchs with it?

Kressman: I really can't remember.

[Part 1 0:02:11] Lee: No, a long time ago. But I mean was that a pivotal moment that you...

Kressman: Not especially no, but it was definitely interesting. I mean as a kid, well compared with today I had a sort of fairly adventurous childhood.

[Part 1 0:02:37] Lee: How do you mean?

Kressman: But it was nothing special in those days. Well you'd do a lot of camping and so on and so forth, and a lot of boating, father was into boats.

[Part 1 0:02:55] Lee: Outward Bound type stuff you mean?

Kressman: Yeah, that sort of thing, yeah.

[Part 1 0:02:59] Lee: What sort of career did you have in mind when you were doing your degree?

Kressman: Ah yeah, initially do you remember Heinz Wolff?

[Part 1 0:03:09] Lee: I do, in fact I met him quite recently.

Kressman: Did you? Yeah, I mean he was I suppose, what's this early to mid '60s, he was getting a lot of TV exposure and so on, and I thought 'Yeah, that sounds good. I'd quite like to work at (where was it?) Mount Pleasant', where he was based, his biochemical lab, so in fact the slight irony is that a school friend at the time did end up there for a while in the early 70s, working for Heinz.

[Part 1 0:03:58] Lee: So how come your career took a different turn?

Kressman: Oh well that was purely by chance, coming to third year at university the usual sort of recruiting round and so on, and quite by chance I happened to see an advert, just a little classified advert by BAS for radio operators.

[Part 1 0:04:30] Lee: Were you one?

Kressman: Yeah, yeah.

[Part 1 0:04:33] Lee: You were a radio ham, weren't you?

Kressman: That's right, yes. I thought 'Ah yeah, now that sounds fun', 'cos I was you know I had it sort of in the back of my mind that I really don't want 9-5 yet. Yes so I applied, get called up to interview in, oh what was the name of the street, Victoria, an interview with Bill Sloman, and also with him was Roy Piggott, and basically they were saying 'Well, we'd much rather you came as an ionosphericist'.

[Part 1 0:05:26] Lee: Did you know what that was?

Kressman: Sort of vaguely but I wasn't, not in any detail as to the instrumentation and technology that it involved, which in those days was extremely old. It was sort of just post world war.

[Part 1 0:05:51] Lee: So did you leap at the chance?

Kressman: Yeah, yes, signed up there and then.

[Part 1 0:05:58] Lee: Because of the adventure?

Kressman: Yeah, yes it did just attract, it just sounded a fun thing to do.

[Part 1 0:06:07] Lee: What sort of training did they then do with you before you went south so you'd be up to speed?

Kressman: Had about 3 or 4 months at the what was then Radio Research Labs² at Datchet², just outside Slough, from if I remember rightly sort of early July through end of October, sailed on the *Perla Dan* first week or so in December if I remember rightly.

[Part 1 0:06:45] Lee: Was Roy Piggott doing that tutoring himself?

Kressman: Partly yes but most of the sort of the practical work and so on was being looked after by someone else, I forget who now. There were a couple of us who were going south with BAS, myself to Argentine Islands the other guy to Halley. There was a guy there who was, as a research station employee, to go down and do virtually the same job in Port Stanley. Must say I can't remember who he was.

[Part 1 0:07:39] Lee: What did you make of Roy Piggott?

Kressman: [Laughter] You've met him?

[Part 1 0:07:47] Lee: I haven't, no.

Kressman: Oh! You've missed a treat. He's definitely one of life's characters. In some ways he's the sort of epitome of the stereotyped mad scientist but hell of a nice guy, very nice guy and I mean extremely, as you would expect, extremely bright and on the ball. One of his characteristics that everyone will remark on was that he could talk the hind legs off a donkey, and in fact the phrase 'to be Piggotted' came into use. You quickly learnt that you did not go to his office after about 4 o'clock in the afternoon because you'd be there till 7, 7.30 at the earliest then when you'd finally sort of managed to point out to him that perhaps it was time to go home, he'd cut off in mid-sentence and then next morning he'd pick up exactly where he'd left off.

[Part 1 0:09:18] Lee: But was he inspiring at all?

² Radio Research Labs otherwise known as Radio and Space Research Station (RSRS)

Kressman: Yes in many ways, yeah.

[Part 1 0:09:23] Lee: So how did you adapt to this new science of ionospherics then? Did you take it in your stride or was it sort of . . .

Kressman: Oh yeah yes, and I knew a fair bit of the physics and the theory beforehand of course, the only thing that I wasn't familiar with was the actual equipment that they used. I mean the job was basically a technician's job, but good fun with it, interesting, learnt a lot.

[Part 1 0:10:01] Lee: Were you able to spot improvements that could be made to the gear?

Kressman: Mhm, yes.

[Part 1 0:10:07] Lee: Such as?

Kressman: Hmm well in fact during the training course what, amongst other things what we used to do occasionally, every few years, there were quite a number of these sounding machines around, which was the main piece of kit, so it was basically an upward looking radar which reflects off the ionosphere. Every few years one would be refurbished back here and then swapped with the one at either Halley or there were three stations then, Halley, Argentine Islands and Port Stanley and we were actually, a large part of the training was in fact refurbishing one of these machines to go down to Halley, and what they wanted to do - now these were incredibly ancient technology they had a sort of mechanical clock which would set off a sounding on what schedule you wanted whether you wanted just hourly, one an hour on the hour, or quarter hourly with a main schedule. What they wanted to do was to modify this clock so that the sounding on the hour would actually do three soundings back to back at different sensitivity levels, because well essentially the dynamic range of the ionosphere far exceeded that of the equipment, so you wanted to do three, so it was a matter of modifying the clock and then modifying the, what the clock did was to set off a relay which in turn set off other relays which set the thing whirring, so it was a matter of modifying the clock and then modifying the main stop/start relay so it would go through this sequence of 1, 2, 3 at the three different sensitivity levels. So yeah that was one of the first.

[Part 1 0:12:59] Lee: That was a modification you carried out?

Kressman: Yeah.

[Part 1 0:13:02] Lee: Alright OK. How did Roy Piggott react to bright young things messing about with his equipment?

Kressman: Oh he was all for it. Yeah I mean he was one of these, I mean he worked for Radio Research Station but essentially you'd class him as an academic, as I suppose in an ancillary way as BAS still is, but he was one of those people who, again the sort of prime suspect there is a guy called Tudor Jones who was Physics Prof at Leicester until he retired 7 or 8 years ago, and he used to sort of actively kick out his students, his Ph.D. and postdoc students when he thought it was time or past time that

they went out into the real world, whereas the opposite thing particularly actually in academia is a tendency to hang onto your brightest students and so on and so he would very often organise some post for them and then more or less actively kick them out, certainly encourage them to move on, and Roy was very much of the same sort of mould. I mean although he didn't actually have any students in that sense and he had a small group including ourselves which we were a sort of side shoot, but no he wasn't..

[Part 1 0:15:09] Lee: Protective?

Kressman: Protective, possessive in any way. He liked to see people progressing and eventually moving on.

[Part 1 0:15:23] Lee: The other luminary you came up against was Raymond Priestley of all people, who was still around.

Kressman: That's true, yes.

[Part 1 0:15:31] Lee: Well tell me about that experience, what do you recall?

Kressman: Well that was at the, you are no doubt aware of the briefing conferences the recruit briefing conference. In those days we were based down in Slough, as I say the briefing conferences, the accommodation was in Corpus Christi up here, I guess because of Sir Vivian's links with the place, and yeah I mean he was, how do you put it, he was one of the events. The conference basically consisted of a number of lectures, discussions and that sort of thing. Ray Priestley put on what I guess he'd done every year for donkeys' years but it was an absolutely fascinating presentation complete with original slides and so on of his experiences on the, what did they call it was it the Northern Geological Party, yes, that got stranded for 9 months or so through the winter, and then one evening there was one of the events the conference was a get together at Fuchs's house on, I don't know where he was then, and Priestley sort of held court. [Laughter].

[Part 1 0:17:27] Lee: But he was still fascinating even now we are talking about what now 50 nearly 60 years after his time in the Antarctic he could still cut the mustard, could he?

Kressman: Yeah oh yeah, he certainly could oh yes I mean he was the highlight of the conference and everyone who was lucky enough to go to the conference that he attended. I forget when he stopped doing that, I guess it wasn't that long after, 'cos he was certainly getting, he must have been well into his 80s by then.

[Part 1 0:18:03] Lee: As a fledgling Fid in the late '60s did you connect yourself back to the heroic era at all, were you aware of the presence . . . ?

Kressman: I don't think, well yes I mean to an extent but I mean that sort of really did grab you once you got down into the Antarctic, depending where you were I mean at Argentine Islands there was the old what was known locally as the Wordie Hut which

was or was not, [laughter], the 1937 BGLE³ hut, and you could, I guess I don't think I've got any books on BGLE but there certainly were on base, I forget who wrote the definitive book on BGLE, can you remember?

[Part 1 0:19:19] Lee: No I can't but it doesn't matter.

[It was *Southern Lights*, by J.R.Rymill]

Kressman: But anyway you know there was sort of pictures of the ship which was *Penola* if I remember rightly, which they wintered over literally 200 yards down the creek from the then BAS base and in turn a hundred yards a couple of hundred yards from the at least the site of their hut.

[Part 1 0:19:55] Lee: So you felt in the shadow of the Scott era because you could still have the tangible remnants and you had contact direct contact with people who knew him.

Kressman: Yes, yes, and I mean one certainly read up a lot on all the classic books. Scott of course has gone through various phases, hasn't he of ...?

[Part 1 0:20:29] Lee: His reputation certainly.

Kressman: Reputation, that's right. I mean I forget the guy's name [Roland Huntford] the *Scott and Amundsen* book where he slates him off left, right and centre, he was a bit over harsh there, but I think at the time, certainly, and I mean it is the sort of feeling that stuck with me is that Scott really owed his reputation to Ponting doing his lecture tour afterwards to pay off the expedition debts and that, OK one doesn't want to be too harsh on him but I think its fair to say at least that he made a lot of mistakes that he really shouldn't have done.

[Part 1 0:21:20] Lee: We're speaking just the week after the memorial service at St Paul's Cathedral I don't know if you were there?

Kressman: No.

[Part 1 0:21:27] Lee: And therefore all this spring, sorry the early part of this year, there's been a great deal about Scott. Are you surprised at the level of interest in the man that got there second?

Kressman: Yes. Yes it did surprise me when it started, as you say it started appearing in the media.

[Part 1 0:21:45] Lee: At Christmas really.

Kressman: Christmas time yes that's right. Yeah I mean it's all very complicated isn't it as I say. He made a lot of mistakes which was very much a product of his background I think, and then you've got the very much the sort of the stereotypical

³ BGLE – British Grahamland Expedition.

Dunkirk aspect, haven't you? We specialise in wonderful defeats, along with some equally wonderful successes but, yes.

[Part 1 0:22:32] Lee: Would you have been allowed to express that view 50 years ago, 40 years ago when you were a young Fid?

Kressman: I really don't know.

[Part 1 0:22:47] Lee: Was it the sort of things you talked about?

Kressman: Sometimes yes, I really can't remember what the sort of...

[Part 1 0:22:59] Lee: You remember the trip south don't you?

Kressman: Oh very much so.

[Part 1] Lee: On the *Perla Dan*.

Kressman: On the *Perla*, yes that was fun.

[Part 1 0:23:01] Lee: How was that?

Kressman: Oh it was great yeah. Well I mean it was a luxury cruise ship. I mean you know the story is the *Perla Dan*, well the *Dan* ships, Loritzen Line ships, taking part in the lot of them. TAE they went down in the, *Thala Dan*? [It was the *Magga Dan*] one of the *Dan* ships and then there was the *Kista Dan* [It was the *Anita Dan*] which became the *Endurance*, the *Perla Dan*, and the, it's the famous one that ended up on the rocks at Macquarrie not so long ago [The *Nella Dan*].

[Part 1 0:23:49] Lee: Oh yes I know the one you mean.

Kressman: That was the most well known one I think at the time. I'd never heard of the *Perla Dan* until I got to Southampton.

[Part 1 0:24:00] Lee: But you knew, unusual for a Fid you knew exactly where you were being sent, didn't you?

Kressman: Oh yes, yes. I wouldn't say that was unusual, is it?

[Part 1 0:24:09] Lee: Well I think quite a few Fids didn't find out till they got to Stanley where they were going.

Kressman: Yes, you're right. I think that well, at that time yes, because again the sort of arrangements were very different to what they were or what they became even in the early 70s let alone nowadays, yes you're right well, OK there we're talking about the sort of, I don't want to call it a divide but a distinction between quotes scientific staff and ..

[Part 1 0:24:59] Lee: Support.

Kressman: Support. Yes I think you're right, yes I think you're quite right I think I mean one thing you did when you were in Stanley was you actually got interviewed by the Governor.

[Part 1 0:25:13] Lee: Oh how was that?

Kressman: Oh amazing.

[Part 1 0:25:15] Lee: Was that Miles?

Kressman: No erm..

[Part 1 0:25:18] Lee: Cosmo?

Kressman: Cosmo Haskard that's right, yes.

[Part 1 0:25:24] Lee: When you say interviewed do you actually mean interrogated?

Kressman: Yeah literally a one to one interview in his study in Government House.

[Part 1 0:25:33] Lee: What for?

Kressman: I think he, to be honest I don't know. I mean I think in principle he could sack you there and then if he didn't like the look of you, despite what Bill Sloman, Bunny Fuchs and who were the other London office, Derek Gipps and so on thought. I mean he had obviously a more than nominal role in the Survey by virtue of his position.

[Part 1 0:26:18] Lee: So was it a challenging interview? Was he probing?

Kressman: No I really can't remember, no I don't think so I seem to remember it being terribly formal, because again, back to the *Perla* we as I say we sailed I forget I've a feeling it was about the sort of 10th of December or something like that which meant we got into Montevideo literally a few days before Christmas, I think we probably sailed from Montevideo for Stanley Christmas Eve or some time like that because I distinctly remember we had Christmas at sea, and I'm sure it was between Christmas and New Year, and then we got into Stanley it must have been the 30th or 31st straight into the New Year's Day - they used to have a race meeting.

[Part 1 0:27:14] Lee: Where did they get the horses from?

Kressman: There. Oh well there's lots of horses, shepherds. Oh I mean they're yeah shepherds' horses, certainly not thoroughbreds.

[Part 1 0:27:24] Lee: No, ok. So did you go to the races?

Kressman: Oh yes. Yes I mean it was a big Stanley Fete Day would be the races, complete with Cosmo Haskard strutting around complete with his, in full uniform with his ostrich feather hat or whatever and so on, so it was very colonial era just the last vestiges of the colonial service and colonial era.

[Part 1 0:28:02] Lee: So money was changing hands on horses?

Kressman: I guess so yes. Not something that ever interested me.

[Part 1 0:28:14] Lee: I guess they would have kitted you out at that point as well, wouldn't they?

Kressman: That's right, yes we got kitted out in Stanley at the, there was a BAS warehouse right by the public jetty as I recall, where you got kitted out, yes.

[Part 1 0:28:39] Lee: How was that? Was that a frustrating experience?

Kressman: I don't particularly remember anything, recall anything particularly for or against.

[Part 1 0:28:51] Lee: And then the *Shackleton* took you on board.

Kressman: That's right, yes

[Part 1 0:28:55] Lee: And you had a rather convoluted journey I think.

Kressman: Yes that's right. I mean *Perla* sailed off to I mean she was specifically chartered for the Halley relief, so yes at that point we switched to *Shackleton* and did, ooh, a good couple of months bouncing around touring the sort of Peninsula area I remember I went to Signy, I think Signy was probably the first base I saw, in fact I'm sure it was. About the only place we didn't get to during that time was South G. South Georgia remained a to me a little bit of a sort of a mystery place that everyone seemed to have gone to except me, for several years actually.

[Part 1 0:29:55] Lee: You did some seismic work whilst you were at sea?

Kressman: That's right yes.

[Part 1 0:29:58] Lee: Were you involved with that?

Kressman: Yes, very much so.

[Part 1 0:30:00] Lee: What were you doing?

Kressman: Well it tended to be a fairly miserable job but it kept you occupied. Yeah I mean the basic drill was that to do a seismic line the first thing you did was to throw a buoy over, which was basically a 45 gallon oil drum with hydrophones and a little radio transmitter in it, and then what you did was steam slowly away from the buoy throwing TNT over the back at almost as fast as you could go as you steamed away so the hydrophones on the buoy would pick up the echo and transmit it back to the ship where it would be received and recorded. So yes I mean the drill for chucking the explosive over the back you had a, I forget what it was, a 4, 5, 600 foot combination steel wire and electrical cable which you had to winch in and then would be carefully sort of folded along the deck, you'd winch it in using the wee-er winch on the ships

winch, fold it along the deck and then when it was all aboard Peter Barker, who was running the show, would attach the charge to the wire rope and then wire up the detonator and stick that in and then sort of '1, 2, 3 go' you chucked it over the back and hoped to hell that the cable fed out, so meanwhile the ship was slowly steaming, I forget 2, 3, 4 knots and you hoped to hell the cable didn't snag.

[Part 1 0:32:37] Kressman: I gather on one occasion when I wasn't there it did, caused a bit of panic, and then it would be timed. Peter would start a stopwatch, time it and I mean the idea was that shortly before the cable became tight and while the charge was still sinking but the cable as I say was still slack, largely slack he'd press the button and set it off, and larger charges were quite impressive. And you've seen film of, say, Christmas Island atomic tests, where you see the 10, 15, 20 seconds after the bang, well before the bang, but after its been fired, you see the shockwave hit the water and you get this sort of funny sort of shake and sudden smoothing of the surface, you get the same thing with the shockwave coming up from below from the charges. As I say it's a little difficult to describe but the surface sort of jerks and then goes very flat for ..

[Part 1 0:34:21] Lee: A few seconds

Kressman: .. a few seconds yes, before it sorts itself out. After that the shockwave hits the surface.

[Part 1 0:34:30] Lee: And the purpose of all this was to see how deep the ocean was?

Kressman: Yes well no no, no, no it goes further than that. The idea is the shockwave actually penetrates the sea bottom through the rock and gets reflected off the rock strata beneath, so you actually get a little bit of a picture of what rock formations and so on are down there. The classic thing that the oilies are looking for is for an inverted dome of, ideally of sandstone, trapped beneath an inverted dome of harder rock. At least the idea is the sandstone acts like a sponge holding the oil but it can't escape through the rock at the top. That's about my limit of the geology.

[Part 1 0:35:39] Lee: So in your capacity were you simply at the sharp end throwing the banging?

Kressman: Oh yes we were definitely the Oiks.

[Part 1 0:35:45] Lee: You weren't sort of looking at the charts later on to see ...?

Kressman: Well yes I mean we would look. The charts they're remarkably difficult to really get a view of. They don't tell the lay person very much. I mean you can look at it and say 'Ooh yes you can see a stratum going along there and' and so on and so forth 'Ah yes, but', and the same goes for the much later trick of the ice penetration radar. The geometry, I mean it sounds very simple - you fly an aircraft over the ice with a downward looking radar which penetrates the ice, reflects back off whatever's beneath it, whatever it's sitting on and is received back in the aircraft but when you start thinking about the geometry of what's going on it actually gets quite complicated so the picture, the raw picture, that you see is actually - I was going to say nothing like, but that's an overstatement - nothing like what the rock beneath actually is, it

needs quite a lot of sort of interpretation before you get a proper idea of what is down there, and the same is true with the seismics. Seismic is still very widely used in the oil industry except they tend not to throw TNT over the back, they tend to have what they call a gun which is driven by compressed air basically. You have a thing like a pneumatic drill compressor on the deck charges this thing up then it lets out a glop of air, literally explosively, and that sends off the charges, sends off the shockwave which is what you're wanting to see once it's been reflected.

[Part 1 0:38:14] Lee: There are a couple of calls you made at islands on the way down to Alexander Island - one was at Signy I believe.

Kressman: Yes.

[Part 1 0:38:22] Lee: And you witnessed the plastic palace in construction?

Kressman: I think it was just finished then, yes I think it was, I forget now, but I think it was probably the end of its first winter, first or second winter, it hadn't been there long but it was largely complete, yes.

[Part 1 0:38:46] Lee: What did you make of it?

Kressman: [Laughter] Ah well it's a long time since I read Allan's notes that he emailed me some months ago but yes that was interesting because we met the *Perla* coming back out of Halley. I think they must have got in literally just a few hours before we did. Anyway usual drill, particularly at Signy, the ship can only anchor quite a long way out, several hundred metres out and then it's usually a rather wet journey in the launch to get ashore. Anyway so eventually, ok there's a launch running ashore, 'Hop in', so we all did, get to this thing and there's this big plastic hut an' someone, well the front door is obvious anyway and of course usual drill takes you, the outside door takes you into a lobby where you take your boots off and your anorak and that sort of thing, take all your gear off so we did that - it's a two storey building of course, living accommodation was upstairs, downstairs was lab space mostly, and you've got this rather steep and narrow stair going up from the lobby, the boot room, up to the lounge and kitchen dining area there, so anyway I've got my boots off and then just making my way to the bottom of the stair and who's at the top but Big Al, I guess you know Big Al Smith.

[Part 1 0:41:03] Lee: Al Smith, yes I have..

Kressman: Big Al Smith, on his way out from at least one winter if not two I'm not sure at Halley. That was a serious apparition. Big Al is Big Al, and after a winter at a dog base your wind-proofs and so on are pretty torn, ripped and rich. So there was this apparition at the top of the stairs about to launch himself down and there's me wet behind the ears thinking 'Goodness me what have I come to?' [Laughter] First time seeing him, then later when I got to know Big Al ...

[Part 10:42:11] Lee: You also called at Deception Island as well.

Kressman: We did yes.

[Part 1 0:42:16] Lee: Was that before or after the explosion?

Kressman: It was just after the first eruption. Yes the first eruption now were we - we must have been - well it was I forget the date of the eruption that would help.

[Part 1 0:42:32] Lee: I think it was '67 wasn't it?

Kressman: Oh yes it was '67 but the exact date I was trying to think where we were.

[Part 1 0:42:39] Lee: What sort of state was Deception in?

Kressman: Well it had been abandoned the, yes the eruption happened while we were at sea, not that far away, somewhere between Signy and the top of the peninsula anyway, so of course suddenly all this panic goes up.

[Part 1 0:43:04] Lee: Did you turn round?

Kressman: Well I can't remember which direction we were heading anyway.

[Part 1 0:43:10] Lee: You weren't ..

Kressman: I mean we weren't heading to Deception I don't think, so yes ..

[Part 1 0:43:14] Lee: You de-toured?

Kressman: .. we turned towards, yes and then of course within a fairly short period I forget how long now was it a few hours the next day the Chilean ship *Piloto Pardo* arrived at Signy and took everybody off.

[Part 1 0:43:35] Lee: At Signy?

Kressman: Ah ..

[Part 1 0:43:37] Lee: At Deception.

Kressman: .. Deception. Took everybody off. So by the time we got there which can't have been more than two or three days later, it was basically an abandoned island. There wasn't that much damage, some but not much from that eruption. The real damage came from the subsequent eruption the next year, which pretty well destroyed the whole base.

[Part 1 0:44:14] Lee: What did you make of Argentine Island when you got there, bearing in mind that you were arriving knowing that you were going to be there for two years? Was it sophisticated and comfortable or the opposite?

Kressman: I'm not sure sophisticated is the right word [laughter], but yeah it was certainly comfortable, yeah, my first impressions I really don't have a lot of memory of first impressions but they certainly weren't negative.

[Part 1 0:44:47] Lee: But it didn't fill you with fear at having spend two years in this, fairly..

Kressman: Oh no, no.

[Part 1 0:44:53] Lee: .. basic accommodation?

Kressman: No.

[Part 1 0:44:56] Lee: John Dudeney was your base commander.

Kressman: That's right, and boss because he was on the same project.

[Part 1 0:45:04] Lee: Was that the beginning of a long association, a long friendship?

Kressman: Oh very much so yes, yes and we are still very much in touch, nowadays and still ...

[Part 1 0:45:15] Lee: What is it about him that makes him so special?

Kressman: [Long pause] I'm not sure I can really answer that [laughs]. I mean he was a very good administrator. I mean he got to be the head of the upper atmosphere division and he had a very productive time - well it was productive right through from when I finally got back in the early '70s and quote settled down a bit. He was running our little group at Slough, and you know the basic he, well, recognised and acknowledged that I had some capability with designing and making equipment, and yeah we took it from there. We worked together as a fairly good team.

[Part 1 0:46:47] Lee: Was he a good base commander as well?

Kressman: Yes, yes, essentially, yeah.

[Part 1 0:46:55] Lee: So, tell me about the work you were doing then on the Argentine Island as this new beast called the ionosphericist, was it ..?

Kressman: The ionosonde, yeah.

[Part 1 0:47:05] Lee: Ionosonde.

Kressman: Yes. Well, I mean there was a lot of routine work in just keeping that going. The recordings were made onto film. Initially it was actually paper, rolls of photographic paper roughly 120 size, what was, and so I forget how long a roll of paper lasted. I seem to remember it was only about 24 hours at the most maybe a little bit less I forget. So you had to feed it new rolls and then develop the one that you'd taken out just in the usual way, you had a rather crude developing machine and you just developer, fixer, wash and so on and hung it up to dry.

[Part 1 0:48:24] Lee: Were you in a position to read the results?

Kressman: Oh yes, that was the next stage, after that was to go through the records and you basically measured off a few parameters. You had a thing called a daily worksheet for every hour of the day you'd go through I'd say measuring off about 7 or 8 parameters off the photographic image yes, making a note of them and then at the end of the month you produced a big summary sheet.

[Part 1 0:49:10] Lee: Were there any surprises that cropped up? Were the results exactly what you expected or were you breaking new ground?

Kressman: Well, no it was basically I mean, the whole game, and this covers quite a lot of these different techniques and so on, is basically what you're doing is, your classic physics experiment is you set up an experiment and you change this and you change that and you change the other and you see what happens. You know, sit in your Hadron collider and send a few particles round and hope to see some collisions and so on you are largely in control of what the experiment does. Now when you are looking at geophysics the earth, ionosphere, magnetosphere and so on, you can't control anything. What you are doing is sitting observing and waiting for nature to do something different, and that essentially sums it up.

[Part 1 0:50:41] Kressman: I mean again like most projects of that sort it goes through different phases. Initially you put into the machine into somewhere like Argentine Islands, in fact it was previously at Port Lockroy from about, if I remember rightly, mid to late '50s it might have been even earlier than that, and you don't really know I mean nobody knows what the ionosphere, magnetosphere and so on in the area is like, so the initial phase is just to sort of get to know the beast, get to know how it behaves in its sort of normal daily, monthly, seasonal behaviour. After a while that gets to be known so yes, ok, that phase is done, you've done the initial sort of sketching out, then I say you are into the area of waiting for things to happen solar flares, magnetic storms, that sort of thing.

[Part 1 0:52:15] Kressman: I mean one specific reason for going to high latitudes is that a lot of it is controlled by the sun. Now you sit here and look at the ionosphere you'll see a daily change as the sun rises and sets, you'll see a seasonal change but there's still sun on the ionosphere for a significant part of every day of the year. Go to high latitudes and of course the sun gets switched off for between 2, 3 months and 6 months of the year, so you get to see a totally different regime during the winter, and John was, I wouldn't say solely responsible, but for finding an effect which was known as the solar wind which was, well I was going to say unique to the area, that's not true but it was the conditions of the area which basically made it prominent, stand out so one could narrow this effect down quite a lot.

[Part 1 0:53:49] Lee: But in your time there you were talking about these natural phenomena which you are waiting for them to turn up and present themselves, when they did present themselves were they all things that you knew about already or were there ...?

Kressman: Oh no.

[Part 1 0:54:02] Lee: There were things that were new to science?

Kressman: Oh yeah.

[Part 1 0:54:04] Lee: Can you give some examples?

Kressman: Erm, oh gosh!

[Part 1 0:54:10] Lee: [Laughter] Layman's language will do.

Kressman: Yeah I'm just trying to think of a good example that would - I mean jumping forward a bit into the mid 70s, one experiment we were doing with Tudor Jones at Leicester was, still looking at the ionosphere but in a rather different way, what we were doing we'd have a receiving station which was at Argentine Islands and we had 2, 3 transmitting stations one of them was at Palmer, one was at Adelaide where was the third one gosh I can't remember now, and that was just transmitting a pure signal up to the ionosphere, reflect off the ionosphere down to the receiver at Argentine Islands where it was recorded, and what would happen, what we were looking for was waves in the ionosphere which would show up as Doppler shifts of course, you know the classic train whistle effect.

[Part 1 0:55:46] Kressman: Now this was just, wasn't just, was an extension into that area of experiment using equipment which Tudor Jones and his merry men had designed over the previous few years they had a similar set up in the UK, and one of the questions at the time was, well, the whole issue was looking at what are known as gravity waves in the ionosphere. Unfortunately the term gravity waves was used for several different phenomena in physics, but here they're literally just waves travelling through the, pressure waves travelling, well no they're not pressure waves 'cos you haven't got any pressure, [laughter] travelling through the ionosphere, and anyway there was a lot of discussion at the time, of trying to understand these waves.

[Part 1 0:57:13] Kressman: One of the questions at the time as I recall was, 'Was it possible for a wave or a shockwave to travel from ground level up to the ionosphere?' There was a group of theorists who insisted it just wasn't possible. I forget the physics now but basically at around the sort of 50, 70 kilometre region there just wasn't a propagation mechanism, but then highly conveniently along comes Flixborough, remember the explosion at the Flixborough chemical works?

[Part 1 0:58:04] Lee: Oh yes, in Lincolnshire.

Kressman: Up near vaguely Grimsby way, and hey presto what does Tudor see on his array? A dirty great shockwave hit the ionosphere a few minutes later, so that was, although we weren't directly involved in his UK set up, that was a surprise and sent the theorists back to the drawing board.

[Part 1 0:58:37] Lee: And those shockwaves were measured in Cambridge or in the Antarctic?

Kressman: Oh no they were measured at, I forget where Tudor's array was but ...

[Part 1 0:58:46] Lee: In the UK.

Kressman: It was basically in the UK yes around the Midlands, yes.

[Part 1 0:58:51] Lee: Ok. That's a good example, thank you. Let me just ask you a little bit about Ken Portwine⁴ if I might before we move onto more science, because he suffered his illness on the base at Argentine when you were there, and I think everybody had to rally round to help.

Kressman: Oh very much so yes.

[Part 1 0:59:09] Lee: What was the sort of things you were doing for Ken?

Kressman: Well apart from basic taking turn at nursing and so on I did brush off some of the physiology/histology that I'd learnt at university and also in fact I mean one thing I'd done was for a couple of years in sixth form was to work in a path lab at a local hospital, and in these days when you go to the doc and he takes a blood sample it gets sent off to a central path lab and the same is true of hospital as well but in those days most general hospitals had their own path lab attached. I mean that was extremely crude but anyway I worked for a couple of months in the summer holidays in the path lab. It was good fun, very interesting. So I'd done some of that sort of work, but anyway yes for Ken what, of course we didn't have a doctor on base, but what the doc down at Adelaide we used to have sort of daily discussions with, one of the first things he was interested in I mean trying to diagnose what the problem was in the first place...

[Part 1 1:00:47] Lee: This was Mike Holmes?

Kressman: That's right, it was Mike, yes. I mean, I can't remember I think I probably volunteered and said 'Well, I can certainly do a red blood cell count', red blood cell counts and, what's the name, haematocrit which was the sort of total volume of red blood cells because I'd done lots of them. We ferreted around in this rather ancient and amazing medicine chest, medical chest which we had, which had everything from bone saws to goodness knows what in it, and found, well there was a microscope in the surgery there, there was in the chest I found the equipment that you use for doing red cell blood cell counts and so on so 'Oh well yes I know all about this that's easy'. So we started doing the red blood cell counts and they were falling away with time, so that gave Mike a fair bit of information.

[Part 1 1:02:32] Kressman: Then I started getting a little more adventurous and ambitious and thought 'Right well what?', and again after discussion with Mike I think this time he did suggest he said 'What I'd really like would be a white cell count, and in particular what's known as a differential white cell count' which you know there's lots of different types of white cells, and the relative numbers of them is a good indicator of infection. Now that I hadn't had so much experience, I had some but not much and what I had done had just been in a well-equipped lab.

[Part 1 1:03:23] Kressman: What you have to do in order to, well even see the cells properly in the first place down the microscope let alone differentiate between the

⁴ Ken Portwine – base F cook, died of ulcerative colitis October 10th, 1968, aged 32 at the British Hospital in Buenos Aires (Antarctic.org.nz).

different types of cells, was you stain them. Like a lot of histology, living tissues studied down microscopes you use various stains to bring out the different parts of the cell and that sort of thing. OK well fine, we used the same microscope cell and so on but you needed the stain and yes, there was indeed it's called Leishman's stain. There was indeed some Leishman's there but it was just a jar of the powdered stain which I'd never encountered before, as I say what ones I had done all been done in the lab and you reach for the bottle of stain.

[Part 1 1:04:47] Kressman: So sort of read up the book and, the textbook, and it says ok 'Dissolve the powder in acetone'. Well we didn't have any acetone. The nearest, the only real sort of organic solvent we had, I mean acetone is a very common organic solvent but we had no use for it on base apparently so there was none there. Really the only organic solvent we had was methylated spirits. I think I managed, I think there was some distilled methylated spirits, i.e. not dyed if I remember rightly. Anyway I thought 'Well that's all we can do, let's try it, see what happens', so tried dissolving some of this stain and certainly some of it did dissolve and then tried using that to stain a sample of white cells, and, well, it really wasn't working, but nevertheless I had a go and sort of passed some very tentative results over to Mike, to which his response was "He's dead." [Laughter].

[Part 1 1:06:28] Lee: But were you able to refine the process?

Kressman: No, I mean the major problem is that this stain, this Leishman's stain, I mean it is itself an organic stain I forget where, but it's a mixture and the real problem was that it was only half dissolving. Some of the mixture was dissolving in the alcohol, but some of it wasn't so the cells weren't being properly stained so they didn't, you didn't see what you expected either from memory or from the pictures in the book.

[Part 1 1:07:16] Lee: A couple of other notes here one is about having to feed Ken Portwine with seal liver, was that something you did? You're looking puzzled.

Kressman: I don't recall that I must say but its very obvious his red cell count was going down, liver equals iron in massive quantities, iron is the classic treatment for anaemia.

[Part 1 1:07:52] Lee: Do you recall any airdrops that were taking place?

Kressman: Oh yes.

[Part 1 1:07:57] Lee: Toilet rolls.

Kressman: That's right yes

[Part 1 1:07:59] Lee: Amongst other things.

Kressman: Yes right.

[Part 1 1:08:01] Lee: What else did they airdrop? A pumpkin.

Kressman: Oh that's right yes.

[Part 1 1:08:05] Lee: What was that for?

Kressman: I think it was just to weigh down – a lot of the stuff was in, or at least that particular one I mean I can't remember what else, was just in basically a kitbag, a military style kitbag, and I think the pumpkin was stuck in at the bottom just to give it some weight so that as they kicked it out the door of the Hercules it was going to take a proper plummet in a reasonably predictable trajectory, yes.

[Part 1 1:08:42] Lee: Let's just pause for a moment if we can there.

Kressman: Yes sure, yeah.

[Part 1 1:08:45] Lee: And come back.

DICK KRESSMAN

PART 2

[Part 2 0:00:00] Lee: This is Dick Kressman interviewed by Chris Eldon Lee on the 4th of April 2012. Dick Kressman Part 2.

[Part 2 0:00:10] Lee: In your second year at Argentine Islands you were one man down, you were short of a radar mechanic.

Kressman: That's right, yes, and I can't remember why, what happened.

[Part 2 0:00:20] Lee: And some of his responsibilities fell to you I believe.

Kressman: Yes.

[Part 2 0:00:23] Lee: So what were you having to do that you weren't doing before?

Kressman: Well, it was both, that radar was a very old and rather crude piece of kit for following the sonde balloons, radio sondes. Oh it was mainly maintenance, fixing it when it went wrong which was a fairly common occurrence and occasionally driving it, there were several of us that would drive it, there was Dick Rumble who was the diesel mech.

[Part 2 0:01:12] Lee: When you say drive what do you mean?

Kressman: Well you literally drive it. It's a very narrow beam radar, and the idea is that it is basically a cab on a turntable, so you can swing it...

[Part 2 0:01:35] Lee: Rotate it.

Kressman: ...rotate it in azimuth and then on the front was this big dish about a 5 foot diameter circular dish which would tilt in elevation and the idea was to follow the balloon by literally a couple of handles...

[Part 2 0:01:59] Lee: Cranking it?

Kressman: ...cranking it, one for left/right, one for up/down and you followed the balloon and every I forget, minute, you noted down the actual azimuth and elevation of the beast. That particular one had had an interesting history because it had actually been at Christmas Island in when was it '53 the atomic tests.

[Part 2 0:02:36] Lee: Did it glow in the dark? [laughter]. You were on Argentine Island when man landed on the moon, did that pass you by or were you aware?

Kressman: Oh no certainly not. No we were glued to the radio, assorted radios, pretty well the whole period.

[Part 2 0:02:59] Lee: What were you listening to, what station?

Kressman: Oh, whichever we could find, a lot of it was *Voice of America*.

[Part 2 0:03:08] Lee: They'd be covering it, wouldn't they?

Kressman: A lot of it, or *BBC World Service*. I've still got miles of quarter inch recording tape down there with it that I recorded a lot of it on.

[Part 2 0:03:28] Lee: And you were doing your own radio work, radio ham work down there as well?

Kressman: Mhmm, yes.

[Part 2 0:03:34] Lee: How far were you getting with that?

Kressman: Oh pretty well worldwide.

[Part 2 0:03:40] Lee: So were you able to talk to England?

Kressman: Oh yes, yes.

[Part 2 0:03:43] Lee: Were you supposed to?

Kressman: Erm, [laughter] in fact the system did know yes there was a guy called, I never actually met, there was a guy in Swindon called Hal Perkins who I used to talk to a lot, and he would organise, particularly if somebody wanted a radio you'd ask Hal to get you one and he'd feed it into the BAS system. He was known at BAS HQ, or known of, at any rate, and other stuff if you wanted that was one way of ordering stuff to be sent down with the next ship from UK, so he was a constant contact. There was one of the sheep station managers on Falkland, in fact on Saunders Island, would be a regular chat to. There was a guy I knew well on Signy that we'd chat quite a lot, Les Graves, and all round where we would chat a lot to the guys up at Palmer and a lot of their pals up in, mostly in California actually, but yeah it was worldwide.

[Part 2 0:05:49] Lee: Somewhere in the back of my mind I've got this memory that if you were a radio ham in Britain you weren't really supposed to work that far south.

Kressman: Oh no, no.

[Part 2 0:05:59] Lee: You don't remember that, OK alright.

Kressman: No, no restriction.

[Part 2 0:06:02] Lee: Were your mechanical engineering skills used in other ways on Argentine Island? I'm thinking now of freezer units. [Laughter] Which seem a bit pointless in the middle of the Antarctic.

Kressman: The infamous. Yes, well no, no, no and certainly Argentine Islands summer temperatures bimbo around zero which is no good for, you can't keep any sort of frozen food in that.

[Part 2 0:06:32] Lee: So what was the challenge and how did you meet it?

Kressman: Well the challenge was that we had a, it had come in [pause], I think it must have come in the second year, so that would have been in January '69, a relatively small chest freezer, I mean larger than most kitchen ones but there's no doubt plenty of people would have that sort of size freezer in their garage, which proceeded to pack up halfway, and it was suitably supplied with mostly meat, because that was the major thing you were short of was fresh meat, and around halfway through I forget exactly when but sometime halfway through, two-thirds of the way through the winter it proceeded to pack up, the gas all leaked out. So we had the problem of some very precious frozen meat that we didn't want to lose, but a broken freezer so yes, because the radar had been at Christmas Island it was fitted with a fairly powerful air conditioning unit [laughter] which of course never got used, so we whipped that off and between us just literally built a wooden insulated wooden chest, fitted this, it's a bit like the sort of standard through the window, through the wall type air conditioning unit, fitted that in one end of it and fired it up and it worked a treat.

[Part 2 0:08:45] Lee: Was this the beginning of what became quite a long line of engineering innovations that you seemed to be responsible for at BAS?

Kressman: I'm not sure I would say I was totally responsible for that one but certainly one of the...

[Part 2] Lee: But you were there at the time?

Kressman: Well, yeah I certainly participated I forget whose idea it was originally, possibly Dick Rumble's, I think Dick was the major mover in that, he was the diesel mech mechanic, but yes I mean you've no doubt heard plenty times Fids' bodes are frequent and memorable.

[Part 2 0:09:26] Lee: I know you spent another winter in the Antarctic in '71 at South Georgia but...

Kressman: Yep.

[Part 2 0:09:33] Lee: ...what I would really like to talk about more, we may come back to that if we have time later on, is some of these technological developments that you were involved in one way or another over the years because you carried on working at BAS for the rest of your professional life.

Kressman: I did yes.

[Part 2 0:09:46] Lee: And so you moved to Cambridge in '76 with the rest of them but kept on going South for various reasons, but let me ask you about INMARSAT, which I'm not quite sure what INMARSAT is, it's obviously a satellite.

Kressman: It's a maritime satellite system.

[Part 2 0:10:02] Lee: Right which I think you were responsible, partly responsible if not wholly responsible for introducing to BAS.

Kressman: Yes, yes I was.

[Part 2 0:10:08] Lee: So tell me how that came about. What was the problem and how did you solve it?

Kressman: OK. INMARSAT started off in oh I forget mid '70s, '76 I think somewhere around there, as a now I forget did it come under the what did they call it the United Nations Maritime Section unit - International Maritime Organisation that's right, that's what it's called, which is the United Nations/intergovernmental body, regulatory body and so on, strictly for maritime use so the idea was that you put your dish in its little plastic dome, or not so little plastic dome in the early days, to provide basically telephony and teleprinter to/from ships into the international phone system.

[Part 2 0:11:40] Lee: So you could ring a ship?

Kressman: So you could phone a ship yes. Now remember those days were still very highly regulated. All use, I mean spectrum use, radio spectrum use is still highly regulated but nothing like the way it used to be. There was a grand plan which was worked out and organised, policed by another UN agency called the ITU, International Telecommunications Union, which still exists and still does that but things have changed out of all recognition, this idea of auctioning off spectrum space was just - would have sent a lot of people...

[Part 2 0:12:50] Lee: Scrambling?

Kressman: ...scrambling in those days.

[Part 2 0:12:53] Lee: But you must have spotted an application beyond shipping.

Kressman: Well yes I mean it was obviously ideal for us, and again you have to remember the times mid '70s you still waited 3 months for BT or for the Post Office to install your telephone line and that sort of thing, and even when they did, it would probably be a party line, and it certainly was here for literally for 5 years or so after '76. Again, the whole GPO was highly bureaucratic, impenetrable and so on. So we'd started around 1980 was when I started looking at INMARSAT seriously and I tried talking to the GPO as it then was, but of course were in the process of being privatised by Thatcher, the Thatcher government, and I was getting nowhere. I did manage to make one contact but it wasn't terribly good.

[Part 2 0:14:23] Kressman: Then what happened was one of these sort of bizarre twists. It turned out that a guy called George White, who at that time was the GPO Chief Engineer, so he was a fairly loud noise, and he lived in Swindon and he happened to be a neighbour of one of the, I forget who it was who introduced him but,

of course NERC¹ headquarters were in Swindon, there was quite a lot of ex-BAS people in NERC headquarters particularly on the admin side because it's still Civil Service type rules, the way you progress is by promotion, and promotion invariably involves a change of location. You have to apply for a job somewhere else at the next level above you and so on and so forth.

[Part 2 0:15:35] Kressman: Anyway whoever it was, I forget it was an ex-FID, was a neighbour of this guy White and had got to know him and apparently he was in his youth also quite into mountaineering and that sort of thing so he took quite an interest in BAS so it was organised, 'Well, how about a visit to BAS in Cambridge?' 'Oh yes, that sounds a good idea'. So this was all set up, White turns up in his chauffeur-driven limo and we spend the morning taking a sort of guided tour round BAS itself, particularly around the clothing store and that sort of thing which is what people tend to be interested in, and then we decamped to the pub for lunch, and it was there that the serious discussion started, and we were talking about INMARSAT and the fact that we were interested and so on and so forth, and I remember one particular comment at one point he says 'What's your annual budget?' well I think at that time was about 5 or 6 million a year. 'Hmm, mine's about 13 million a day!' [laughter] if I remember the number rightly, but it was considerably more than our budget, he said 'A day!' [laughter].

[Part 2 0:17:26] Kressman: So anyway by the time he left in the afternoon he'd promised to get someone to give me a call, get in touch, and I think if I remember rightly, the guy who took this on board worked for GPO/British Telecom as it was transforming into at the time, and, I'm trying to remember the sort of chronology, no I think what happened was yes this must have been sort of late '81 maybe even early '82 because it went a bit quiet I can't remember whether I did get in touch with anyone at BT but anyway, come April the 2nd...

[Part 2 0:18:38] Lee: Thirty years ago this week.

Kressman: ...thirty years ago this week, I get a phone call in the morning from someone in BT, I think in Mondial House which was then the headquarters of the overseas, international phone department and he says 'Yes you're having a bit of a problem with comms, aren't you?'

[Part 2 0:19:08] Lee: This was of course the day the war broke out with the Argentinians over the Falklands.

Kressman: Yes that's right yes, so the answer was 'Er yes'. He was the guy who eventually did do a lot for us. He was the UK representative on this, on the INMARSAT sort of board, international committee, so he was very much the key guy there but his hands were very tied by the regulations. INMARSAT in turn sort of, through ITU and the frequency spectrum allocation system, basically it had to be for ships - it was marked down on the spectrum of [incomprehensible] that 'This little slot is for maritime use only', which is how things used to be - there would be a slot 'maritime use', another slot 'aviation use', another slot whatever.

¹ NERC – National Environmental Research Council, 'The UK's main agency for funding and managing research, training and knowledge exchange in the environmental sciences'.

[Part 2 0:20:28] Lee: So how were the rules bent then?

Kressman: Eh well, what we decided was well Halley is easy 'cos that's a floating ice ship, it's obviously maritime, a floating ice sheet I mean, that's obviously a ship so we'll do that. Yes and of course the slot isn't just marked 'maritime' its marked 'maritime mobile', that's right, the mobile bit is important. So yes, the way we got around it at this guy's suggestion and so on was that we mount the antenna units, the dishes, on a sledge so that in principle they were mobile. At Halley that's how we would do it anyway because of the drifting problem.

[Part 2 0:21:35] Kressman: I guess you know that one of the current ways is build on stilts, one of the ways of dealing with drifting up buildings is to mount them on a sledge and every six months or so you pull them out from where they've been sat, doze it the drift back flat and then shove it back on its sled and that sorts it for the next six months or so all being well, and that was the obvious way to manage the antenna unit anyway although it could have been mounted on top of the building I suppose which I guess it now is.

[Part 2 0:22:30] Lee: So how quickly was it achieved then? Did you have to wait 3 months?

Kressman: Well as I say essentially things got underway. Meanwhile this guy was going backwards and forwards to IMO/INMARSAT committee meetings trying to get people to open their minds to the idea that what they'd got here was far more than a maritime application, it's basically a global mobile application which was, well, unique at that time. I don't think even your standard broadcast vans these days they only have to go half a mile from Limegrove or wherever it is these days and out comes the van with the satellite dish on top doesn't it? They don't mess around with terrestrial links or anything of that sort. Well I'm pretty sure those didn't exist in those days. I mean the main satellite international communication system was, gosh I've forgotten the name of the system now, but it was basically a fixed system point to point.

[Part 2 0:24:08] Lee: COMSAT? Was it called COMSAT?

Kressman: COMSAT? You may be right, yes you're right the dish that eventually went into Stanley for their COMSAT link was about 20, 30 foot diameter and a fairly substantial structure.

[Part 2 0:24:31] Lee: What I'm trying to get at, Dick, is whether or not after the Falklands War started you were suddenly able to do what you hadn't been able to do beforehand which was to get satellite links to your bases?

Kressman: Yes.

[Part 2 0:24:44] Lee: And how quickly did that happen?

Kressman: Well as I say there had been the groundwork beforehand. As from April 2nd we started working on it seriously. We, I can't remember now how we got in

touch with the company whose name I forget, but it was an oil services company up in Aberdeen who dealt with North Sea rig communications. They were appointed the contractor to provide us with a couple of systems, including what was in principle possible but I'm not sure that anybody had actually done it before, was to hang a fax machine on the, because I mean in principle you'd got a telephone circuit there, well you plug your fax machine into a telephone socket don't you? In practice with that equipment it was a little bit more tricky than that, but we got it running with fax machines.

[Part 2 0:26:12] Lee: Whilst the war was still happening?

Kressman: Well this was by the end of August or whenever it was which I mean there was everything went, there was the actual equipment, you got basically three units you got the electronics cabinet, you got the antenna unit and the fax machine so that was supplied and integrated and so on by this company up in Aberdeen. I guess we placed the contract just with the usual local engineering companies to make up the fairly substantial steel sledges and so on, and eventually it all had to come together sort of usual time August-ish to be packed and put on the ships which duly happened.

[Part 2 0:27:13] Lee: And did it work?

Kressman: Yes it did.

[Part 2 0:27:16] Lee: And was it jolly expensive?

Kressman: Yes [laughter]. As I recall each unit, the actual hardware, I think cost something like 50 grand each which was quite a lot.

[Part 2 0:27:38] Lee: But it was a major step forward?

Kressman: Oh yes, very much so.

[Part 2 0:27:42] Lee: Meanwhile, whilst the war was on, you were adapting your radio ham skills to [laughter] provide communication with South Georgia and your other bases I presume?

Kressman: Yes, yes we did. We didn't actually pass a lot of traffic on there. It was something again that we rigged up on the spur of the moment as soon as the, again it must have been the 3rd of April or thereabouts that we did that. I mean its main utility was really just to, well I suppose morale as much as anything. The guys on base suddenly found themselves with no link to the outside world at all. We got - the communications at that time were handled by Cable and Wireless through the office and transmitters in Stanley, there was meanwhile the guy who actually looked after all the communications side of things Barry, Barry...

[Part 2 0:28:09] Lee: Davies?

Kressman: No. I forget his name now. He had all his contacts in Cable and Wireless and we were able to set up, well Cable and Wireless said well, because again in those days OK there was still a fair bit of shortwave communication going on but it was

rapidly being replaced by satellite and I think it was Bermuda, was it Bermuda or Barbados? I forget, Bermuda I think, was their only other major shortwave communication facility left so we were able through using the amateur thing to set up tests with Bermuda.

[Part 2 0:30:18] Lee: Were you able to receive information that was useful to the British military?

Kressman: I don't recall anything, no.

[Part 2 0:30:28] Lee: But they were interested in the communication you'd established. Or perhaps they weren't?

Kressman: Not particularly. I don't think no I mean we were really very careful what we actually said and did on that link. Ok we were able to tell the radio operators that we were working on it and keep them updated with what was happening until a more substantial and more importantly private link could be put in place.

[Part 2 0:31:13] Lee: Do you remember that week or that month there being War Office personnel at BAS?

Kressman: Yes.

[Part 2 0:31:20] Lee: Quite a lot of them? I don't know – 'cos they were picking your brains, weren't they?

Kressman: Erm yes. I'm not sure how much we should be talking about this.

[Part 2 0:31:29] Lee: Alright. You've signed the Official Secrets Act have you?

Kressman: Yes.

[Part 2 0:31:33] Lee: OK well fine I won't ask you then.

Kressman: I mean it's probably of no interest to anyone, but I don't know.

[Part 2 0:31:42] Lee: Alright, well I quite understand. Of course this opened up lots of funding for British Antarctic Survey after the Falklands.

Kressman: Yes it did.

[Part 2 0:31:49] Lee: which gave you more of your budget, not quite as big as the BT guy's, but it was better than it had been.

Kressman: It certainly was.

[Part 2 0:31:57] Lee: So you were able to set up the Advanced Ionospheric Sounder at Halley in '82, '83?

Kressman: Yeah. That project had actually already been underway again since about '78 and funding had been already found for that in fact so that wasn't a direct result of the extra funding.

[Part 2 0:32:21] Lee: What was advanced about it?

Kressman: [Laughter] Well if you'd actually seen the old sounders that we used to use originally at Argentine Islands and South Georgia. It was all singing all dancing, computer controlled, the data was collected digitally. It contained, for its day, some fairly high tech computing kit which by today's standards is hopelessly crude and horrible but for the time it was bees knees, and one of the, it had a single, again of course remember this was the days before well certainly before the pc, you were just about in the early days of, probably slightly ahead of the BBC micro, and one or two other sort of micro computer systems but which had nothing like the legs needed.

[Part 2 0:33:56] Kressman: You were in the days of the mini computer. So it had a mini computer of pretty standard for the time, the mini computer was the main controlling computer but then it had several sort of auxiliary ones, a bit like a modern pc, the video card in your pc is a pretty damn powerful computer in itself just to deal with the video, well we were essentially dealing with video in the opposite direction. We were taking video in, what was effectively video in, and converting it, digitising it whereas your video card does the opposite, it takes video that's been generated by the main processor and puts it on the screen.

[Part 2 0:34:57] Kressman: Well I say this was essentially doing the opposite and for its day it was a very advanced piece of kit, so yes that's why it got - there was a bit of, well, the history of it was that it was a project which grew out of an earlier project at NOAA² in Boulder, Boulder Colorado, and the initial plan for them was to build about 3 or 4 of these units, 1 for their own use, 1 for University of Utah at Logan, another one for the White Sands missile range where there is a small geophysical observatory, but then well we sort of jumped on the bandwagon and said 'Hey, while you're at it can you build us one?'

[Part 2 0:36:14] Lee: Yep.

Kressman: So also did the Max Planck Institute they wanted to put one up at the research station near Tromsø in northern Norway, so eventually I think there were 8 of them built if I remember rightly. The guys who'd done the earlier project, rather cruder project had dubbed that the Dinosonde, so there was a little period where the various different groups really didn't agree on what they were going to call this bit of kit, and somehow AIS Advanced Ionospheric Sounder dropped out of the discussion and that's certainly what we'd got to use it, but I remember yes Bill Wright of the earlier project made the very valid point that 'Never call something advanced because its going to be obsolete in ten years. What are you going to call the next generation?'

[Part 2 0:37:39] Lee: Around about the same time you were talking about some of the earlier computers you were actually developing a BAS micro which was your own.

² NOAA – National Oceanic and Atmospheric Administration, a U.S. federal agency.

Kressman: Yes that's right.

[Part 2 0:37:49] Lee: Here you are inventing computers, or adapting them.

Kressman: Well not quite. Yes I mean going back a little bit earlier 1973, '74 micro computer hobby kits started coming on the market, very limited capability, at the time there was a project that actually was done by the guys at the Slough lab which was to do with this scaling as its called of the ionograms of the data, the film. I said you measured off some various key points off it and noted it down on the worksheet, well they had a project which worked quite well to put a little bit of automation into that I mean it still needed a lot of human interpretation but the actual measurement scaled off the photographic film was done automatically and so a little bit like a, nowadays a touch screen, you touch the point and the computer knew where you'd touched it and what the frequency/height whatever it was at that point, you didn't actually have to read the scale and write it down.

[Part 2 0:39:45] Kressman: Anyway I think it was Roy Piggott who thought 'This was quite a good idea, why don't you have a look and see if you can..?', well I think the original idea was just to build a copy of it, but by that time we were only a year or two after the original one was doing, so these small computer kits were starting to come in and I thought 'Well they're completely hardware no computer involved, system is starting to look a bit obsolete we can probably make something much more powerful, and much simpler to make, using one of these little computer kits', which is what I did, and then yes later that evolved into the BAS micro. I wasn't direct[ly], well I was sort of on the sidelines involved in BAS micro, but that was mainly the work of a couple of guys called Jim Turner[?] and Peter Fitzgerald I don't know whether you know either of them?

[Part 2 0:40:59] Lee: I know Jim.

Kressman: You know Jim, yeah OK. Well Jim and Peter were the guys who really worked. Jim did pretty well all the hardware design of the BAS micro.

[Part 2 0:41:13] Lee: What was driving this? Was it because everybody perceived a need to speed the processes up from manual to computer, or was it that you knew you could do it, you had this idea it can be ...[overtalked]

Kressman: Oh no, I mean it was just part of the general sort of revolution that was going on at the time.

[Part 2 0:41:35] Lee: Yep.

Kressman: You know things like word processors were starting to appear on the market, rather crude in their original form, but no I mean people saw that just for, I mean one of the sort of drudgery jobs one had to do every year was write the base reports - there were dozens of them there was an ionospherics report, there was a geophysics report, there was a canteen report, hundreds of them and these were all hacked out on good old Imperial typewriters with twenty carbon layers in them the idea of a word processor, even just for that task, was extremely attractive.

[Part 2 0:42:45] Lee: The Advanced Ionospheric Sounder at Halley eventually was able to talk to Cambridge, wasn't it?

Kressman: Yes. In fact that went in, the communication link with the AIS to Cambridge actually went in with the original INMARSAT installation that same year at Halley.

[Part 2 0:43:07] Lee: Right.

Kressman: Yeah we got that going, that was something that I'd been working on as well during that period in 1982, and yes we were able to, at the amazing speed of 1200 bits per second, I think the first use of it I sent a little, because in those days our main computer that we used was in fact the university, the big IBM computer down at Cambridge University, and I knew some of the guys in there and it was sort of fairly late one evening it was probably about eleven o'clock or midnight I just sent a little message to the operator's console at...

[Part 2 0:44:04] Lee: Saying?

Kressman: [Incomprehensible] 'Greetings from Antarctica'. [laughter] Shock horror.

[Part 2 0:44:14] Lee: So you were kinda doing communications, you were piggybacking on the system to send communications?

Kressman: Oh yeah very much so.

[Part 2 0:44:21] Lee: Was that a first?

Kressman: Well now that's a good question, that is a good question. Yes I think 90% certain it was. Some years later NERC in their wisdom awarded some guy I forget where he was, one of the other NERC sites, a technology prize for being the first to send data via INMARSAT and that was several years after I'd done it in 1982.

[Part 2 0:45:04] Lee: Does it rankle?

Kressman: Not particularly.

[Part 2 0:45:07] Lee: Thank you. I am told that 'Dick was a world leader in developing autonomous instrument platforms that could sit on the Antarctic Plateau'. True or false?

Kressman: As always a large element of truth [laughter]. I mean I wasn't the first to do things like that, there was quite a few groups round the world. There was the group at the University of Wisconsin who for some years had been turning out these little autonomous weather stations that they put out. They gave us, I forget how many, 3 or 4 just on the basis 'Oh well if you go anywhere interesting plonk it down and leave it there'.

[Part 2 0:46:07] Lee: My informant tells me the difference between the Kressman models and the American models is that the Kressman models worked all year round.

Kressman: These Wisconsin ones were pretty good yes, but yes I mean we did achieve a pretty high reliability on them, surprisingly high in some respects. I said there were other people had been doing stuff like that, there'd been a, oh gosh I forget a group was now, there was a group in the States who'd been putting out small units, and when you come to, there is a sort of point of philosophy here, when you come to design a system like that you've got two choices - you either use a relatively small whatever its going to be wind generator, solar panel and package, but then you are faced with all the instrumentation that goes in it with essentially custom designing and building it, because you are talking about very low power, low temperature, you are basically talking about space technology, which if nothing else is expensive.

[Part 2 0:47:44] Kressman: The other approach which I chose was to essentially put more effort and money up front into the infrastructure, again wind generators, solar panels, housing and so on so that you could then use much more easily and cheaply available off the shelf instrumentation which is what I did, but yes I think I got a higher reliability than a good few of the others.

[Part 2 0:48:35] Lee: So the moral is the lower the technology the more reliable it will be?

Kressman: In some senses yes. One of the American groups was using, they were using quite large half container sized housings, but they used a gas driven thermoelectric generator as their main power source which of course has two advantages its not dependent on weather in principle, not dependent upon sun and wind, and there is a lot of waste heat involved that you can use to heat the housing. The trouble was, well there were several problems, was that they had to transport large quantities, tonnes of propane out in the aircraft to the sites, the other one was that just as your condensing boiler freezes up in winter so did this thermoelectric generator.

[Part 2 0:50:00] Lee: Do you know if there's any [incomprehensible] decide to adopt the Kressman kit?

Kressman: No, no, no.

[Part 2 0:50:08] Lee: OK. Let me talk about another innovation which was the AGO the Automated Geophysical Observatory, and this is a note from Mike Leach who worked I think with you under you on this project.

Kressman: Right

[Part 2 0:50:21] Lee: It was your own design apparently a pc based system?

Kressman: Pretty well yeah.

[Part 2 0:50:25] Lee: What were the problems? We talked a bit about using heat but what were the big problems?

Kressman: Well yes I mean it was, I say, power supply, wind turbines, wind turbines tended to have a bit of a short life and a gay life. There weren't many available of that sort of size on the market - nowadays you can go down to B & Q and buy one, you'd be very stupid if you do but, [laughter] still, but solar panels during the summer work an absolute treat and they just hum along, produce the power, but then you had to control the temperature within the housing.

[Part 2 0:51:23] Kressman: A problem just on the bases and particularly in some of the labs' equipment rooms is almost always cooling, it always comes as a surprise that cooling is your problem not heating and particularly in somewhere like Halley you can't, the obvious way of course is just to ventilate with air, but you can't do that easily because you're gonna get half a ton of snow come in with it. Getting temperature control within, the caboose that we had the AIS in again was sort of roughly half container sized, the total power consumption and dissipation of the system was around 5 kilowatts so basically you had to spend even in the middle of winter, you're spending all your time pumping that amount or less the smaller amount that leaks through the walls, but you're still having to pump 2 or 3 kilowatts out.

[Part 2 0:52:45] Kressman: In fact there was a guy called John Newman one of the guys who worked at Cambridge in the logistics, he was one of the guys who was responsible for the generator installations and a lot of the quote civil engineering around the base, he came up with a very good and very simple sort of filter which would allow you to draw in large quantities of air from the outside without bringing in half the ice sheet with it.

[Part 2 0:53:37] Lee: Mike Leach seemed to think that the big clever thing that you devised for the AGOs was having containers of liquid, liquid water actually inside them.

Kressman: Well that's right yes we did we just had plastic, well I actually produced a very simple little computer model to model the thermal balance, we've got x watts being dissipated here, we've got this much thermal insulation, so you could calculate how much heat was going to leak through the walls and so on and again that showed that under some conditions, particularly in summer, overheating was going to be a problem, and one obvious way of, and of course you've the opposite problem during the winter when you've got relatively limited power available for heating, and yeah it just became obvious in creating and playing with that model that what you needed to do was just to increase the thermal capacity and thermal inertia. I'd clocked a long time ago, many, many years ago, that a modern house is the worst place for thermal - its too hot in summer, its too cold in winter because its made of lightweight materials. Go to a house well like this one where the walls are something like 18" thick of basically flint rubble and it holds its temperature very much better.

[Part 2 0:55:37] Lee: So the liquid water inside the AGO was like a heat sink that either froze or melted according to need?

Kressman: That's right, yes. It would ...

[Part 2 0:55:46] Lee: When it freezes it actually sends out heat doesn't it?

Kressman: When it freezes it gives out a lot of heat.

[Part 2 0:55:52] Lee: Which is 'O' level physics I seem to remember.

Kressman: It is yes, yes. What's the technical term? [Latent heat].

[Part 2 0:56:032] Lee: Principle yeah.

Kressman: Yeah, but as water freezes it gives out a lot of heat and conversely it takes it back in again when it melts.

[Part 2 0:56:13] Lee: Was this a Kressman brainwave? Do you remember the moment when you thought 'Oh yeah "O" level physics I could apply that to the AGOs?'

Kressman: I really don't remember but yes I guess there must have been a bit of a Eureka moment.

[Part 2 0:56:25] Lee: A light bulb?

Kressman: Yes, yes.

[Part 2 0:56:29] Lee: Got one or two other little points here. 'I think you should ask Dick how he managed to restart South Georgia generators after everybody else had given up on it.' [Laughter] I'm not quite sure what that refers to but doubtless you do.

Kressman: Whose comment is that?

[Part 2 0:56:42] Lee: I think it might be Mike Leach but it could be somebody else.

Kressman: Really? Mike? Good heavens. Because this is a long time before Mike came on the scene.

[Part 2 0:56:53] Lee: Well then it might be somebody else but nevertheless I think we need to know the truth, the public should be told.

Kressman: Well again I mean it certainly wasn't single-handed. There were several occasions where we had problems with the generators at South G. There were actually, well there were 4 generators in the shed there. There was one relatively new one which was actually a marine engine, a Mirrlees 3 cylinder, huge, you climbed up ladders and walked round gantries round it. There were a couple of much older ones which were McLaren generators and McLaren basically used to build steam engines before they switched to diesel, and then there was one very small McLaren which was just enough to drive the, to power the generator shed and workshop but nothing else.

[Part 2 0:58:18] Kressman: Yes we had a couple of epics. One of them, the idea, the plan was that the standard plan is that at any one time you've got one of your three main engines in use, one on standby ready for immediate start should the one in use give up the ghost, and then particularly the McLarens would need fairly major maintenance. They were wonderful old things, I don't know whether you've had any

interest or dealings with say vintage cars, the old days of white metal bearings, scraping bearings, taking the crankshaft out, putting engineers' blue on the bearing shells, putting it back, giving it a couple of turns, take it out, see where the high spots are and scrape them out. That was the level of maintenance that we had to do on the two old McLarens, except that the crankshaft probably weighed half a ton and you hauled it up on a...

[Part 2 0:59:47] Lee: So why am I being told that you could restart them when nobody else could?

Kressman: Well I don't think that's quite true. There was one occasion when the Mirrlees was running and it stopped. There was nobody in the, the generator shed would be unmanned most of the time but things like thermostats and oil pressure sensors and so on, if any of those went adrift the engine would be shut down automatically. Mirrlees was running and it stopped, so there's the generator mechanic, we had a tractor mechanic, meself, toddled down to the generator shed to see what had happened and it turned out to be - that machine had a radiator built into the wall some distance away from the actual engine, with a fairly hefty electric motor driving the fan, and what had happened in fact a little bit of snow had got in under the eaves and into the cabling that powered this fan so fan stopped, engine overheated, shut down. That's fine. OK, now so the plan then is right, you've got one of the McLarens ready to go now the McLarens well all of them were all air start, compressed air start which is standard for certainly marine engines and that sort of thing, and we had I think it was 2 or 3 compressed air bottles, and if it fired first time 1 bottle would just about start one of the engines, so you didn't have a lot but then the catch was that the compressor was electrically driven.

[Part 2 1:02:11] Lee: Ah.

Kressman: There was an old petrol one but it was pretty knackered. So anyway standard technique you try and start the standby engine. If you don't start it, you've exhausted 1 bottle and it hasn't started what you do then is start the little one. You had a lot of pulls at that one from 1 bottle, you start that, that powers the shed including the compressor so now you've got plenty time. Anyway, on this particular occasion that is exactly what happened we fired up the small machine, it fires, off it goes fine, pull the big switch to put the power onto the shed supply, nothing happens. So we're stuck with an engine that's running, we didn't want to stop it, and a fault somewhere in the electrics, in the generator system. Anyway so, and we're in the dark of course, this is all in the dark.

[Part 2 1:03:33] Kressman: Anyway it involved a fair bit of prodding around on this running generator, running engine or at least on the generator bit of it to find out what had happened and in fact it was the - again generators like that are at least two-stage, you've got the main alternator which produces the volts, the volts and the amps, and then you've got a smaller one which generates the field for the main one, and the voltage output of the main generator is controlled by controlling the output of the small one, so you've got wires running backwards and forwards between the exciter as its known, and the main switch panel and control panel and somewhere in there there was a wiring fault.

[Part 2 1:04:38] Kressman: So anyway what we did was what I suggested we do and what we did in fact was to just disconnect the exciter completely and just put in the, I mean they're 24 volt d.c. so you just get a couple of tractor batteries, open the connection box on the side of the main alternator and just connected the tractor batteries in place of the exciter and presto it all comes to life, and you can see for miles.

[Part 2 1:05:20] Lee: One final point then. How you acquired a world-class digital radar for upper atmosphere research for £10,000 and a lot of back of garage activity. [Pause] This is from Mike Pinnock.

Kressman: What are you referring to there? What is he referring...?

[Part 2 1:05:42] Lee: This is something you did with John Dudeney.

Kressman: [Pause] I'm not sure what he's referring to there. Say that again?

[Part 2 1:05:54] Lee: How you and John Dudeney acquired a world-class digital radar for upper atmosphere research for £10,000 and a lot of back of garage activity. The principle at work here, what's coming through all this is your ability to improvise.

Kressman: Yeah OK. Still I'm not quite sure what he's referring to.

[Part 2 1:06:20] Lee: No I can't help you, I'm sorry.

Kressman: Yes there was another sounder that we used which was developed by a group in Sydney? Melbourne? I forget, and yes we bought at least 1, 2 or 3 maybe from them they would have been around the £10,000 mark I suppose. Yeah there were some weaknesses in it that we had to improve on and, but what else is he referring to?

[Part 2 1:07:09] Lee: Well presumably these improvements took place in the back of a garage somewhere.

Kressman: Well no I don't think so we were all in the lab. Back of the garage?

[Part 2 1:07:18] Lee: Alright. Don't worry about it.

Kressman: No, sure.

[Part 2 1:07:22] Lee: The principle at stake which I think is worth finishing on really, is that there was a case of being able to thrive on being set challenges and problems and overcoming them with what BAS at that time had which was quite limited resources and capabilities.

Kressman: Yes.

[Part 2 1:07:37] Lee: And so it's inventiveness, isn't it, and intuition and imagination that put through [talkover]

Kressman: Yes that, and I mean...

[Part 2 1:07:47] Lee: Innovation.

Kressman: Yeah, yeah. Another little story, Mike's big baby for a long time was the over the horizon radar which involved a large antenna array and the transmitters were actually, each antenna had its own transmitter bolted to each mast and there was, it turned out to be a design fault in the transmitter which here, going into the knowing how semiconductors work and particularly how they behave at low temperatures and that sort of thing. I forget what happened, did Mike come and ask me to if I could spot what was going wrong or something but anyway I looked at the circuit of this and thought 'Ah, there's a weak point there. Potentially if that gets to too low a temperature its going to shut down' which is what it did. But I don't think he's referring to that that certainly wasn't a £10,000...

[Part 2 1:09:26] Lee: Alright. It strikes me that you were jolly valuable to BAS because you were innovative and inventive...

Kressman: Yea I think so, yeah.

[Part 2 1:09:33] Lee: .. and able to bodge things together really well. So why did you decide to leave in 2001?

Kressman: Oh a whole bunch of ...

[Part 2 1:09:42] Lee: Was it time to go?

Kressman: Yes essentially.

[Part 2 1:09:46] Lee: Quite a few people left BAS at that time because they felt..

Kressman: They did

[Part 2 1:09:48] Lee: ..the organisation was changing.

Kressman: Yes.

[Part 2 1:09:50] Lee: Were you in that group?

Kressman: To some extent yes. Also had a bit of a sort of, how do you put it, personal problems. There was first one of the guys who worked at BAS a guy called Graham Hughes who was a great mate of myself and John Dudeney and others, died very suddenly and unexpectedly, and then literally a month later father died not so unexpectedly but it was still quite a blow, sort of bit of mild depression and so on at the time. I'd always said when I was much younger mother used to tweak and she'd say 'When are you gonna get a proper job?' which had made me think about it, and I thought 'Well yeah OK. I'll stick with BAS while its fun'.

[Part 2 1:11:09] Lee: But the fun faded?

Kressman: The fun faded at the same time as I say, relatively minor but nonetheless significant events.

[Part 2 1:11:22] Lee: Has that coloured your memories of the good times or do you still have fond memories of the heyday at BAS?

Kressman: Oh very much so, yes, though as I say I hadn't given it a lot of thought because I made the conscious decision when I retired not to look back too compulsively - that's not quite the right word but, you know.

[Part 2 1:12:06] Lee: Are you still able to use those skills you'd developed at BAS in your life now?

Kressman: Not a lot no, well yes I suppose yes and no. Nothing like as much as I did then.

[Part 2 1:12:21] Lee: Well you're part owner of a plane which must need maintaining?

Kressman: That's true, yes, oh yes. Well yes, you're not allowed to maintain aircraft [laughter], no it all has to be done by certified engineers and so on, about the most you're allowed to do is to put petrol in it [laughter].

[Part 2 1:12:41] Lee: I suppose there's that phrase I forget who it was now, was it Winston Churchill who said 'Cometh the time, cometh the man' and do you have a sense that you were the right person in the right place at the right time, at BAS?

Kressman: I suppose you could say that yes - I hadn't thought of it that way but - I mean as you say there were a lot of people, myself, John Dudeney, Dave Walton, slightly later Andy Clark...

[Part 2 1:13:19] Lee: John Newman whom you mentioned earlier.

Kressman: ...John Newman, Big Al come to that. We all sort of joined BAS more or less the same time, Big Al in the what '64, '65 through say people like Andy Clark 'cause I wintered he was at South G when I was there, and BAS was expanding, we all sort of switched from the contract jobs to HQ jobs, more permanent jobs. It was just the way it went and I didn't rate myself any more than people like Big Al, John Newman and company.

[Part 2 1:14:18] Lee: Was it a case of young Turks moving in?

Kressman: No I don't think so, because essentially BAS as you see it now and as it was, sort of quotes formed, in 1976, prior to then was a very different organisation. The science such as it was, there was no BAS science unit what there were, were university units scattered around the country - there was our little pocket in Slough, there was the geophysics group and geology group up in Birmingham, there was magnetism geophysics group up at Edinburgh University. Some of the people in those groups were university employees, some of them were BAS employees, but

quite a fair proportion were university. I think all these units were all headed by university people, although some of those were ex-FIDS in those days.

[Part 2 1:16:04] Lee: So it was a generation then. You all came together in Cambridge in '76 and..

Kressman: Yep.

[Part 2 1:16:09] Lee: ...and a quarter of a century later

Kressman: Yep.

[Part 2 1:16:13] Lee: 2001 people started to leave?

Kressman: Yep.

[Part 2 1:16:17] Lee: Natural process?

Kressman: Yes I think so.

[Part 2 1:16:23] Lee: Its been a real pleasure. Thank you very much.

[1:16:26] Ends.

Possible Extracts:

- Impressions of Roy Piggott. [Part 1 0:07:47]
“ “ “ [Part 1 0:13:02]
- Encounters with Sir Raymond Priestly. [Part 1 0:15:23]
- Marine seismic work. [Part 1 0:29:55]
- Ionospheric studies. [Part 1 0:46:55]
- Unexpected effect of Flixborough chemical works explosion. [Part 1 0:57:13]
- The Ken Portwine affair – a serious illness on base. [Part 1 0:59:09]

- Ham radio in Antarctica. [Part 2 0:03:28]
- How to get round a broken down freezer. [Part 2 0:06:02]
- The struggle to improve communications with Antarctica, and the early days of satellite. [Part 2 0:10:02]
- Communications during the Falklands War. [Part 2 0:27:42]
- Early computers, and the Advanced Ionospheric Sounder. [Part 2 0:31:57]
- Further computer developments – the BAS micro. [Part 2 0:37:39]
- The autonomous instrument platform, and design considerations. [Part 2 0:45:07]
- The Automated Geophysical Observatory. [Part 2 0:50:08]
- Diesel generator troubles at South Georgia. [Part 2 0:59:47]