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Dr Tom Boulton OBE TD FRCA in interview with Lady Wendy Ball
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Part One

WB Dr Boulton, you were born in 1925 in Bishop Auckland, County Durham. Did you come from a northern family?

TB No. My family had some roots in Lincolnshire but mostly they were southerners. Yes.

WB So how did it happen that you were born there?

TB Well, my father was in the bank in, in Bishop Auckland at that time.

WB And you were a fairly medical family by background?

TB Yes, apart from him three of my great-grandfathers were doctors and, as I shall say later on, my father and mother were virtually only children. And although I have no immediate relatives, there are a great many cousins too in the family. And my grandfather, one of my grandfathers was a doctor.

WB This was your mother's father?

TB Mother's father, yes.

WB Yes. So she was used to the medical world?

TB Oh very much so!

WB But your father went into banking?

TB Yes. My father was a strange chap. I find it very difficult to explain. Although he held down a job for some years in the bank he never rose above ledger clerk. He had private means to some extent. And I would, I've never really attempted to diagnose, but I would say he was a mild schizophrenic. He was a strange chap. He'd served through the war, was commissioned because he came from a public school as happened in those days. And he had a brother, James, who was very much more orientated, I think, and I think really my mother would have married him, but Jimmy was killed in the First World War. And my mother was an extremely intelligent person, she was very well read and she was a reserve tennis player for Sussex and so on. But she grew up during the war. She was seventeen and she went with the years. And I reckoned she would have married James really, but she married my father and it didn't last, you know. It lasted from about 1923 to 1930, something

like that, but it was not good. My mother separated from my father, and was technically the guilty party, so I was brought up by my grandfather, who sadly was losing his sight. He had been a GP, and had been a bit of a rolling stone himself going from practice to practice as it happened, and hadn't built up a lot of money. So I had a rather extraordinary upbringing in that I went to a good public school, was well financed by my father, but I returned to middle-class poverty in the holidays. It didn't make a lot of difference, but it meant that… Of course it was during the war and there weren't trips abroad and that sort of thing, but having no, really virtually no social life and no father, it did make a bit of a mark on me really, I think.

WB And him leaving, or rather your mother separating…

TB Mother left, yes.

WB When you were rather young was…

TB Yes, when I was about four or five.

WB It must have been upsetting.

TB Four I think, yes, yes. It didn't upset me at all.

WB Really?

TB I think that, I don't remember being upset.

WB You had a younger sister as well?

TB I had a younger sister, about seventeen months younger than me. And she too was I don't think greatly affected at the time by it. But it has made me a very shy person because I had no real social life outside school, you know.

WB What sort of school did you go to as a young boy?

TB Well, I, I was sent by my grandfather, who as I say was medical, to Scarborough, to Scarborough College which had a very good prep school and a senior school which you'd now describe as not a public school but an independent school. And the prep school was fine, but in 1940 at the beginning of the war my mother had long since had an argument with my father about me going on to, to the senior school there. She wanted me to go to what she called a 'proper' public school. And I was finally, after all the arguments were over, sent to St. Peter's, York, where I was very happy really. But I'd lost a lot of seniority, so I never rose to the top of that. I became, I never became a prefect, I became a sort of – and I think I played on it a bit probably – the sort of senior scientist in the school. I won the BMA medal and all that sort of thing. But I was happy on the whole, and enjoyed that position.

WB And well taught in the sciences?

TB Well taught except for … Well no, well taught at St. Peter's, but at my prep

school the languages were very weak and that's been a trouble all along really. At least it's no trouble, but everybody tends to speak English on the Continent now. But I regret it really. I, I just have the basis for learning English and although I was pretty good at the sciences and history and the English subjects, I was badly taught. I can't blame it all on myself, on my teachers, but I feel that probably I have a weakness there. In fact I was taking Latin for (?) … to get into Cambridge at the same time as taking my scholarship papers in science, and thank goodness I finally got them.

WB And why, what was the BMA medal for?

TB Well, it was a thing I think secondary schools, or probably just public schools in those days… They had a medal which they allowed the schools to award to their best – in inverted commas – scientist, I think, yes.

WB So what was the expectation at that time? Was it that you would be, go into medicine or go into something else?

TB Well, I started off by doing the physical sciences really, physics and so on and maths, but… And I passed the Higher at the beginning of my first, last year and, in physics and chemistry and the natural sciences like that. And I began to drive, in the holidays began to drive the local GP around who was then about seventy-six, I should think. And all his partners had been taken away and he was very relieved that somebody would drive him around. It was good practice for me at seventeen. And I began to think that I too would like to go into medicine.

WB Did you help him at all in, in his cases?

TB No, not at all. No, not at all.

WB But you thought…

TB I drove him to – in those days it was all visiting, you know, and I drove him to the places. Oh no, I didn't see… He used to mention the cases, but he, he didn't really… It wasn't considered that I was going into medicine then, except I was encouraged by my mother to think about it. Not pressed but encouraged, because she thought, having a medical father, that the medical profession was the greatest thing in the world, I think.

WB So you took the exams for Cambridge and got in, but…

TB I got into Cambridge all right. And, at that time, they were wanting engineers to, to do a year or eighteen months at Cambridge and then go into the services. And actually I went up to Emmanuel College, Cambridge on the basis of being what they called an engineering cadet, which was with a view to doing about eighteen months or two years and then going into the services. This was 1943, and … it seemed a good thing to do. I must say I was a bit doubtful about things and in my last year at school I had dropped the higher, highest maths and taken biology, which I did in a year for, for the Higher Certificate. And by the time I got up to Cambridge, on the first day I went to see the senior tutor and said I wanted to do medicine. It would be quite unheard of

nowadays, but he asked me a few pretty, gave me a pretty good grilling on the subject and was apparently convinced that I wanted to do medicine, and he managed to get me into the medical school. I had troubles at that time because obviously you were undertaking a six-year course as opposed to two years. And I felt it was a difficult time for medical students at that time, you felt that you ought to be in uniform or at least working up towards it, which I would have done with an engineering cadetship. I think the subsidiary reason, I must admit having dropped maths for a year I felt that I wouldn't be able to tackle it in the engineering and the physics. I would have been able to tackle it, but it would have been a bit complicated. I think that was the subsidiary reason. Anyway, I elected for medicine and fortunately the war ended in 1945 so that I was no longer conscience-stricken about getting in the Services. We did two years at Cambridge at that time and when I'd taken Tripos, which was about the time of D-Day, then I began to get a conscience again because nobody knew how long the war would last again. Fortunately, it ended and I felt I'd had made the right choice, and especially then since you knew that ultimately you would be taken into the services.

WB Did you feel you were under great pressure to do it in two years, to take the Tripos?

TB No, it wasn't, I can't say that the course… And it was much wider than the course which, say you would have done at London, because it involved comparative anatomy and so on. But I cannot say it was a great pressure. I think medicine was a lot, well even those subjects were a lot… Those were preliminary subjects but they were a lot simpler than they are today I think, yes.

WB Fewer drugs, fewer technical…

TB Well, fewer high tech drugs and technical things, but I mean we weren't learning medicine then. I think that the study of comparative anatomy was probably a lot easier than it is today. And certainly pharmacology, yes, as you say was pretty easy. No, it wasn't difficult. The things seemed to be… It's a pity we've rather lost it in medicine because in those days you could literally go up to Cambridge, having done classics, and if you could get into the medical school you could start at the beginning and do the lot, you know, and it wasn't difficult. Now it's almost impossible for people to do that, and that's only a recent development, perhaps the last fifteen years or so.

WB Really? As recent as that?

TB Mm, mm.

WB And why did you choose to go on to Barts?

TB Well, Cambridge didn't, curiously, have a medical school. It had a regius professor of physic, but no medical school at that time. And the custom was to go on to a, usually to a London teaching hospital, but possibly to another provincial one. A colleague of mine went to Manchester for instance, but most of us went up to one or other of the, Barts, one or other of the London hospitals. And my grandfather was a

Barts man so I selected it.

WB And what did you find at Barts?

TB Well it was, the war had just ended, or was just ending at 1945 and most of the hospital had been out at St. Albans in a … a converted mental hospital in the emergency medical service. And Barts itself was just settling down to bringing the people back from St. Albans. The medical course in those days was, clinical course, was much the same, was as it had been before the war. You've got to appreciate that before the war there was no probationary year, what they call pre-registration year now, afterwards, after you qualified. And the day you qualified you were expected to be capable of, of going off as a ship's doctor or into the Colonial Service and doing all the general sort of things like taking out an appendix, giving an anaesthetic, dealing with a … and that sort of thing. And that's the way we were taught. And, of course, if you take the country as a whole outside the great centres it was all general practitioner run. I mean, hospitals with general practitioner surgeons and so on running the hospitals. The specialists were really concentrated in the, before the Health Service they were concentrated in the great university hospitals.

WB Did you get much practice in all these skills?

TB Yes. It was much more practical in a way than it is now, particularly in midwifery and anaesthetics. Now, the point about anaesthetics was that the view was that any doctor on qualification should be able to give an anaesthetic. So, they gave us, I say it was a whole month but it was a lot more than other specialised services. And we were taught intensively how to give an anaesthetic for a simple operation, even to a simple abdominal operation. You've got to remember that at that time it wasn't as complicated as it is now because curare, which we'll come round to I think, hadn't come in at that time. And everybody breathed spontaneously basically inhaling either ether or chloroform, so that you hadn't the problems that… Any advance brings with it problems and curare brought… It was a tremendous advance, but as we will probably discuss it, it brought with it a lot of problems.

WB Yes, yes. And, so how many…

TB When I say problems, I don't mean that it, these were bad problems, I mean that they had to be managed.

WB Indeed, yes. So how many anaesthetics would you say you had given by the end of your, by the time you qualified?

TB I would say, well, quite a lot under supervision. Every day for a month a list would be up to ten cases, so that thirty times ten, well perhaps not quite three hundred… But they would be under supervision, the chief would do part of it and you would learn to keep an airway and so on. So that's, three hundred would be an exaggeration, it was a two, two hundred…

WB And was the whole subject of anaesthesia beginning to attract you or were you still open-minded about being a GP and…

TB While I was a student, no, it didn't attract me at all really. The other very practical subject, which was essential then because midwifery was nearly all domiciliary, was to turn me out as a GP who could give obstetric, could deliver children, put on the forceps. So the other practical element was delivering children, delivering babies, yes. So, and I was keen to be, well, I was keen to be a general practitioner, but I had an interest in obstetrics. I enjoyed the anaesthetics because it was practical and I suppose my attitude was that when I become a general practitioner this is something I will have to do. But I wasn't thinking of specialising in anaesthesia, few people did in those days.

WB And it was at about this time you met your future wife, or a little later?

TB Oh, no, after I qualified.

WB After you qualified, yes.

TB There was no time for girls!

WB Oh, really. You were very hard pressed, were you?

TB Oh yes, the clinical thing was very, very concentrated.

WB And were you still getting a lot of war casualties as well? I mean, people that had to be followed up after the war?

TB Well, we didn't see a great deal of those because we were no… Of course the air raids were finished and the remaining… No, there weren't any war casualties really coming in. The war ended coincident with me going there really, '45.

WB And when you qualified, you were faced with three options because you had to do some national service.

TB Well, when you qualified, you've got to understand that you were then considered to be the complete doctor as I've explained. And you had three options that, which were: either you go straight into the services in which case you became a regimental medical officer or the equivalent in the Royal Air Force or the Navy, or you could do six months at a general surgery or general medical job. And that was practically the choice. Well you had, it was practically your own choice and most people did that. And one of my regrets is that I never did a general medical, you understand a physician's job as opposed to a surgeon's. So at the end of that six months I was much more surgically orientated. And I think in the future in my career, not having done a house job in diabetes and hearts and things has, was at first a disadvantage. I had to learn all that. So that's the second option. The third option was to do another six months in a special subject. And the fourth option, it should be four options, was if you were really bright to take your Fellowship, which you could do then, or your Membership in medicine and go on up to the ladder to be a senior registrar which would take about three years. Now, the services encouraged both the first, the first option, the second option of doing the six months and doing a

specialised subject. Because at that time, the war being over, they were discharging or demobilising all the very, our fathers and elder brothers you could say who were very experienced doctors. And they still had an enormous army, there was Malaya and what's now Ghana, East and West Africa and a host of other possessions which we still had to run and, and control. So, we still had a vast army for some years after the war, which isn't generally appreciated, but it was a different sort of army. The army during hostilities had been rather middle-aged men, particularly in medicine, whereas now you were recruiting people straight from medical school and there was a vast army of young national servicemen straight from school. So it was going to be a totally different army, with apparently a different purpose. But of course we, we very soon found out, soon found ourselves engaged in various colonial wars including Malaya, Cyprus, Kenya and all these places.

WB To which option…

TB So, it was an army of young men, very young men and very inexperienced young men really, both medically and otherwise.

WB And which option did you choose?

TB Well, I chose, I did a house surgeon's job. And I'd met my future wife and was very keen to… Courtship was quite a business in those days, you know; we were very keen to consolidate and get engaged, which was the next stage. She was a very bright girl and I think several other people were interested in her, so again I...

WB She was a nurse, wasn't she?

TB She was a nurse, yes. At the end of the six months I decided well I'd better see if I can get a specialist job, and to cut a long story short I, I was finally offered ear, nose and throat. I tried for obstetrics, but so many people did that I didn't get it. And I was offered ear, nose and throat and my friend was offered anaesthetics. Now, I didn't particularly like the chief in ENT who was a very irascible sort of character, and I wasn't particularly fond of it, that subject anyway. And he [the friend] was the, a cousin, a distant cousin of the chief of anaesthesia and he didn't want to work with him. Although he was a very nice man, he thought it wasn't right. So, we managed to swap it, which was not … considered a rather outrageous thing to do in those days. And that's how I came into anaesthetics. And I spent six months doing anaesthetics and I enjoyed it. But I cannot say that at the end of it I would have chosen it as a specialty. Well I went into the services and, as I've already explained, they were desperately short of specialists of any sort. And because I'd done six months anaesthetics, 'Right you're an anaesthetist.' And within another six months I found myself in North Malaya in the emergency as the only anaesthetist with any sort of training, postgraduate training that is, between Bangkok and Kuala Lumpur more or less, either civil or military, and…

WB How many people were you looking after, roughly? Thousands?

TB Well, we had a brigade, we had, we had the brigade of, the commando brigade which were very interesting people, marines, you know, 42, 43 and 45 Marines. We

had a Gurkha brigade and we had another brigade composed of county regiments, like the Manchesters and the Suffolks and so on. I don't know how big a brigade is, but, whether it's three battalions, perhaps six thousand men, something like that.

WB Really?

TB So that's what, that was North Malaya in those days. And we had a lot of casualties really, and…

WB What were the casualties coming from?

TB Oh, from the Chinese, what we called 'bandits', terrorists in the jungle. Malaya was an unusual situation because the Chinese had, originally had been bought into Malaya as, to look after the tin dredgers and they'd multiplied. And there were two types of Chinese. There was a sort of coolie type, and there was the Hong Kong businessman sort of person running big, big enterprises. And the tin, the coolie type really looked to China, not to Malaya as their native country. And when the Japanese occupied, communism was coming up, and they were organised into a terrorist band, first of all to fight the Japanese, and then to, to... We organised them, we, a man called Spencer Chapman particularly, who was a schoolmaster in civil life, but he did a marvellous job organising these people. And they formed terrorist bands fighting the Japanese. The third thing of the equation is the Malays who were a feudal thing and who really were the proper people, the native people of the country. And I think, I don't think Spencer Chapman did, but I think … the Chinese who went in the jungle were promised rather more than they got afterwards. And it was a sort of Lawrence of Arabia sort of situation really. And they were also under the influence of communism and when the occupation of the Chinese ended, the Malays re-established themselves as this semi-feudal organisation with sultans, and Sultan [of] Ipoh and Sultan [of] Johore and all these things, really advised by the British. And the communists in the jungle formed a terrorist organisation who were frankly bent on re-conquering the country. The Malays wanted independence, but they wanted it in a proper sort of way, as an evolution. They were not like the communists who wanted... So, the whole thing was directed against the Chinese bandits as we used to call them, terrorists who were in the jungle and the casualties came from there in considerable quantities, really.

WB What were the main types of casualties that you were dealing with?

TB Everything, but you've got to realise that there were no helicopters at that time. If you, if you got wounded in the jungle, it took twenty-four hours to get you out, hand-carriage. And so, to start with, I think a number must have died from wounds on the spot. But we got a number of severe casualties from immediately around the towns, in the jungles immediately around the towns. Abdominal carriages(?) and so on. Most of the others that were carried out, sometimes taking twenty-four hours, were limb wounds and that sort of thing. So it was a… And the other factor is that it was a small arms war. The bandits didn't have…

WB Mortars or things like that?

TB Mortars, or not many anyway, or field guns or anything like that. They had grenades. They had very little … explosives. So there was, there was some, but very little blowing up railway lines and so on. If they tackled a railway line, which they did from time to time, they simply took a few rails away rather than blow it up. So, it was a small arms war. And with small arms, especially the small arms of those days, not the MK16s and so on of the Vietnamese war, it was possible to be quite badly wounded but, but not as severely as you would with, with modern weapons. So, it was a quite… By the time that people reached the hospitals, which were static of course in the towns, our military hospitals, I think 96% survived. And that was considered, it was far better than any other previous war, but as I've explained there were reasons for that. Another reason was that penicillin had come in at the back of the, at the back end of the Second World War.

WB But if they got to a hospital which you weren't, as the only anaesthetist, how, how did the hospital cope?

TB Oh well, they, they were evacuated to the military hospital. We had Singapore, which was quite a sophisticated hospital and we had one, two, three, four other hospitals which practically covered the country.

WB But you must have started teaching other people how to use anaesthetic apparatus, did you?

TB Well, yes, although I'd only six months experience I was sent a trainee at one stage, and I did some surgery because... I was lucky to have a very good surgeon. He was an Irishman who had done, Irish republican I mean, who had done three years in England and been, if you did that then you were taken in as a national serviceman. So he was an experienced surgeon in the context of the time, and very good he was too. So I had an experienced surgeon and me as the anaesthetist and then I, I had a trainee, so I, I did some surgery then on the lesser casualties and things.

WB What was your equipment like? What sort of anaesthetics were you giving?

TB The equipment was very good in the military hospitals in the context of the time. The, the anaesthetic apparatus I had was very good. And some of it had… One particular item had been designed by Rex Marrett who was in the war; he had been an engineer originally, and his was a very good piece of apparatus. And most of them were driven by cylinders of which we had a reasonable supply. But at one stage the railway was cut by floods and it was then I learnt the importance of another form of anaesthetic machine which drew ambient air into it and vaporised the vapours. And I gave it to the patient and that was my first contact with sort of draw-over anaesthesia. And I could see the great advantage of this because if you have a machine which depends entirely on cylinders and, then you're, you're finished if you, you haven't got the cylinders. You've got to think of something else. So, the draw-over thing was, was very good and I realised that it, as a military option it, it was of great importance. And I could even then see that in countries where they didn't have cylinders, which is still quite a large chunk of Africa, for instance, then draw-over machines were, were important to have.

WB And this idea was developed, wasn't it?

TB This idea was developed in Oxford, early in the war, by Macintosh[1] who was the, well the only professor in the country at that time and was, who had gone into the services as air commodore and was adviser to the, really to the Air Force, but vicariously to the other services as well. And he was very much involved with Lord Nuffield, and Lord Nuffield at Cowley produced I think between two and three thousand of these things for the armed services which were used in field surgical teams and so on.

WB That was at his own expense, wasn't it?

TB At his own expense, yes. He produced them at his own expense at the Cowley works, yes.

WB So, you were sadly without Helen, but you had quite a colonial lifestyle?

TB Well, I was engaged to Helen and she remained faithful, which seems extraordinary nowadays, I suppose. But that's right and she was ready for me when I came back again.

WB But you had a very pleasant colonial lifestyle in Malaya?

TB I, Malaya was very curious really because within the towns it, it was a very pleasant colonial lifestyle, was much as the Empire had been. There was a district commissioner and the, quite a social life, a club, a chief of police and so on. And the people were reasonably happy, I think. I really do think that, but they all had their separate sort of jobs. The, the Chinese didn't disturb the towns. One reason was that they could move, they could come out of the jungle and mix with the local population and, and then go back again, so they didn't disturb the towns. And, as I say, it was very, very much as it had been pre-war in Somerset Maugham's Malayan stories, really. But if you got outside the towns, then you might get shot at and so on. You mentioned when you talked to me before that being in uniform might be a danger and indeed in the UK it is today, people consider it a danger. But that was not a danger at all. I don't think they would have shot at anybody within the context of the towns, it was only when they were moving in a convoy or something like that.

WB So, did you opt to come back to Barts, or was that one of many options?

TB Well, I did three years of anaesthesia and a bit of surgery. And such was the shortage I was also the consultant in charge of skins and VD. Now I knew nothing about these subjects. I explained I hadn't done a medical job, but I had a book, and a very good corporal who was very experienced. And I ran a skins and VD ward and that was an interesting thing to do. So, I had an interesting… But I had become hooked, if that's the word, on, on anaesthetics and decided that was, that's what I would like to do. I was politically, as many doctors were, not, at that stage not very fond of what the National Health Service had done to general practice. I think that

[1] Sir Robert Macintosh.

was a mistake. I think it did a lot for general practice, but at the time it seemed to be very regimented and so on. So my old idea of becoming a general practitioner was gone because I realised that the specialist services, throughout the country, were expanding, and particularly the… A lot of people who had been in the services during the war doing anaesthetics were getting consultant jobs in, in district general hospitals and so on. And I thought this was the thing that I wanted to do. So I came back to Barts, yes, with the idea of doing that. After doing a few locums around the place… But chiefly because in those days consultants, as the expression is, cast their net wide in order, or had cast their net wide in order to get private practices, which is what they depended on before the war. And so when I came back Hewer found me one or two such as at the West Herts and so on, and in St. Albans. And then, when the vacancy occurred, I became senior registrar, senior resident at Barts. Which is a job that, I don't know whether it exists now but it was the senior junior doctor in the hospital and, of course, the senior junior anaesthetist and resident.

WB Which was a bit hard when you had just got married?

TB Well, resident is… Yes, I got married and we set up outside. And I was only resident on duty, which was three or four nights a week. So it wasn't that bad, and she found her way into the residents quarters!

WB And your first child was born quite soon?

TB Our first child was born, yes, no not at that stage. Yes, I suppose about two or three years, yes, yes.

WB And was there anybody at Barts who particularly influenced you?

TB Well Barts was a good conservative department, but I can't say there was anybody with, pushing the specialty forward. It's a philosophy which I think I've inherited that any department I've been in, I've been determined to get, that the department should have the best of the latest things. But not, I've never been an initiator of these things. I've gone and found out what the best was that was being done. Now Barts' department at the time had two or three young men who were very keen … on pushing things forward using the very latest techniques. Hewer was very conservative. And there was a man called Frankis Evans who I learnt a lot of technical anaesthesia from, but even at that stage… It's curious to talk about Frankis because he was a very good anaesthetist, but so far as the basic sciences and theory of the thing was concerned, he never seemed to worry about that. And the great, the great thing that had happened while I was away was, I mentioned before when I was training everybody breathed spontaneously just inhaling ether or chloroform, but by the time I came back curare had come in, and curare in a proper way. If you look at the textbooks you will find that it says that Harold Griffith of Montreal introduced curare in 1942 which, of course, in the middle of the war... But in fact the way Griffith introduced it was that he gave small doses and the patients continued to, to breathe spontaneously. And it was just an adjuvant to soften up chiefly the muscles of the abdomen to aid the surgeon. It's fortunate that the muscles of the abdomen are paralysed first by curare and the diaphragm and the rib must go on breathing for the patient. So, that's how curare started to be used and it was used very much

peripherally. When I left Barts they were giving an ether anaesthetic with the patient breathing on their own and they were giving tiny doses of relaxant. And everybody breathed on their own. I went away for two years, 1950 to '52. I came back into the department and everybody, well no, that's not true, but the younger men were all paralysing the patients with big doses of curare and using a very light anaesthetic. But because they gave big doses they paralysed respiration and they had to, in those days squeezing an anaesthetic bag to breathe for the patients. And that is the great revolution in anaesthesia. The point being that if you had an abdominal case, this is simplifying a lot, but if you had an abdominal case before curare you had to give a lot of ether, a lot of ether to get enough relaxation for the surgeon. And the result was that the patient slept for a very long time and that led - this was before the days of penicillin, and only sulphonamides - led to them getting pneumonia due to not moving around. It's a very simple thing to say but once you got curare you could paralyse them and run them on a very light anaesthetic so they came round very quickly afterwards.

WB So how did this help you particularly? I mean what did you see as the way forward from this point?

TB Well, of course, naturally, I saw that this was a way forward, but it... Although, as I say from 1942 the real revolution was brought about by Cecil Gray of Liverpool who introduced this technique. Now, when I left in 1950 to go into the, to go to Malaya, the Liverpool school headed by Gray were considered to be quite eccentric. I've been to meetings where people just saw it as a joke, you know, and even Gray took several years to reach the point of his conclusions. And as I say, the real crux in British anaesthesia and probably leading the world then, was that between 1950 and 1952, the whole revolution for, for the technique of anaesthesia on the Gray principle came in. The snag of course is that if you don't breathe properly for the patient, or if you give too much curare and expect them to go on breathing, then they asphyxiate, you know. That's the snag. So, what I said earlier was that any development necessitates new skills on the part of the anaesthetist. And we had to (a) learn to breathe for the patient and (b) get drugs that would reverse the curare at the end of the operation. So, I could see that this was the way and I remember in 1953, going to, this showing how slow the development really came, going to a lecture by Gray at the College of Surgeons. And it was a revelation to me, you know, his whole approach to anaesthesia was different.

WB But, in about 1956 I think you went on a Fulbright scholarship to the University of Michigan?

TB Well, you're right. 1952 I came back to Barts as senior resident and I worked my way up through the ranks as it were to senior registrar. Now that's a non-resident job, and before the war it would be held by somebody who was probably a consultant outside at St. Albans or the North Middlesex or something like that, waiting for a job at the, at the hospital. With the introduction of the Health Service of course it became a salaried job and I was really the senior trainee anaesthetist in the hospital, again rising to the stage where I could become a consultant. And at that time, the thing to do was to go to the United States. I think that this was a… The United States, as I will explain in a moment, were not necessarily ahead of us. But I think generally

people felt that there was a great deal on. And you've got to remember that it was pretty, austerity was pretty bad in this country still. Food was still rationed up to 1953 and it seemed that there was a great adventure on the other side. Most of us only decided to go for a year and so on and learn what we can. And in other specialties, they were in, in advance of us and it would have been a great advantage to other specialties. So far as anaesthesia was concerned, they had a different sort of approach and they took a long time to accept this idea of paralysing people and breathing for them. And there, there was an unfortunate period in the United States when they really gave too much curare to a lot of people and had quite a high mortality rate because they didn't breathe for them. And that was the situation in which I arrived in the United States, and they were using other methods. And it was just after Beecher, who was a leading professor of anaesthesia, published a paper which by modern standards wouldn't be acceptable in any journal. But what he'd done is he'd gone round all the big teaching hospitals in the States and he'd added up all the cases. And he said 'These cases had curare, a lot of them died. These cases had old-fashioned ether and they, a lot more survived.' So, everybody was frightened of, of curare techniques except in very small amounts. In fact, they were frightened of curare because he said curare is, is a bad drug, therefore… Which wasn't true.

WB Wasn't there a time when you got hauled over the coals?

TB Well, I didn't get hauled over the coals, but I had a very good chief who'd, at Ann Arbor, Michigan, University of Michigan – Bob Sweet. The anaesthesia had been run on the principle of nurse anaesthetists using the old inhalational techniques. And a famous chap called Collier(?) who was the senior surgeon… And it's difficult for us in this country to understand what that means. It means that when you're a senior surgeon in those days in an American hospital, <u>everybody</u> did what you said. I mean, for instance, Collier believed rightly or wrongly that all, all abdomens should be stitched up with, with wire and, which as a matter of fact wasn't that bad, but it would, it would be considered rather eccentric nowadays. And every surgeon, however senior, had to stitch people up with wire. He also believed that every patient, however minor, should have intravenous fluid up which was considered absolutely extraordinary in those days for a very minor case. But he, in many ways he was, he had developed the whole technique of giving fluids which was very important. Nobody was given an intravenous drip before the war, you know, and he had been one of the leaders in this specialty. However, he decided that they must have modern, what he regarded as modern anaesthesia. And he said to Bob Sweet who was one of his surgeons, he was a board man in surgery, you call it high surgeon, he said 'You will use, run the anaesthetics and you will go and study under Beecher.' And so poor old Bob went off and learnt Beecher's technique. But Bob was a very clever, very shrewd man and a very kind man. And he saw that there were flaws in what Beecher said but he said nothing – a very quiet man. He came back and founded the department, the physicians department, by getting instructors, of which I was one, from all sorts of different schools around the States and me from England, there were four of us, and he listened to what you said. Well, the story you said was not being 'hauled over the coals,' but on my first day I, I had an abdominal case and I gave the patient 30 mg of curare, and the patient stopped breathing and I controlled respiration as I'd learnt and so on. And some of the people there, they were giving 2, 4 mg of curare and letting the patient breathe in those days. 30 mg, you know, what has this

man done and the chap doesn't breathe! So, they went off and fetched the chief. But he came back and he, he stood at my shoulder until the case was over. And of course my case came round, nothing due to me, much quicker than anything he'd ever seen before, so he was very impressed with this. But he continued to allow each of his instructors and his assistant professors to use the techniques which they were used to. So I might have got into a lot of trouble there. So far as the residents… We had four residents – trainees – and two of them at the end of their residency, which was two years, were convinced about British anaesthesia. The others, some of my colleague instructors were not convinced about the British type of anaesthesia. Now, that doesn't mean that there were, I learnt a lot in the States because they were far, way ahead of us on local anaesthetics, spinal anaesthesia and so on. So I learnt a lot there.

WB Which stood you in good stead when you came back to Barts?

TB Which stood me in good stead when I came back. Because we were, at that time local anaesthesia had fallen, especially spinal anaesthesia had fallen into disrepute, again for the wrong reasons.

WB This was the Woolley and Roe case?[2]

TB The Woolley and Roe case – Woolley and Roe being patients incidentally, they are not the people who wrote the paper. Woolley and Roe were patients on a list somewhere in the Midlands where they gave, were given spinal anaesthetics and remained paralysed. And the great argument was, was this due to the spinal anaesthetics or was it due to some adulteration of the spinal anaesthetics, and I think a lot of people thought this must be the spinal anaesthetics. This has been gone over and over again over the years and there is no doubt at all, I think, that in some way or other the solution had been adulterated. And it was due to either it containing phenol, or more likely it containing… All apparatus was boiled at that time, you know, and it more likely was due to the descaling chemical which was left in the, in the… What do you, I've forgotten what you call the thing, the thing that it was boiled up in.

WB The saucepan!

TB Before autoclaves, yes.

WB So, you were one of the few people who was actually willing to give epidurals when you came back?

TB Sure. I came back and fortunately, if you can call it that, they had reorganised the senior registrar, which was a four-year term. And they had decided, because as I have explained all these provincial hospitals were gaining anaesthetists… They decided that senior registrars who were on the point of becoming consultants should, should have experience in the new district general hospitals which were springing up as a part of the, a part of the National Health Service, instead of before when total training would be in the university hospital. And before I went… So, my four years were planned: two years at Barts, one year what they called research in the States or

[2] Roe *v* Ministry of Health, 1954

elective you'd call it now, and one year to finish off in a district general hospital. And I had engineered it so that I went down to Southend. Now, the chief there was a man called John Alfred Lee, who was a magnificent chap. He'd been a … general practitioner giving anaesthetics in the local Southend Hospital, which was pretty, well a cottage hospital at that time, before the war. After the, during the war – he was a little older, you know – instead of going into the services he joined the Emergency Medical Service. Now, people don't remember nowadays that really that is the forerunner of the National Health Service. Everybody talks about the fiftieth anniversary of the Health Service, but in fact a great deal of the organisation existed in the war in the Emergency Medical Services. All the hospitals were taken into a single unit then. I could go on about that quite a lot, but I think that would be very political. However, they, he joined the MS as a salaried anaesthetist because they were wanting anaesthetists. And these EMS hospitals used to take the air raid casualties and as well a considerable number of, of armed forces casualties in peripheral hospitals around London. Now, it so happens that London had a great number of asylums, mental asylums, at that time and many of these were taken over. And Alfred went to be a salaried anaesthetist during the war. And he got the Diploma of Anaesthetics which was all there was to take at that time, it was nothing like the standard of, of the modern Fellowship, but it was the badge of the specialist anaesthetist. And he settled down and read all there was to read about anaesthesia at the time, and produced a book in 1947 which is, was called *A Synopsis of Anaesthesia*.[3] And this book has expanded and it's gone on and it's, it's what people refer to as 'the anaesthetist's Bible'. It's gone to, I think, eleven editions, ten of which Alfred was himself concerned with. But, he was, he was a great teacher and I was his first senior registrar, first training senior registrar certainly, his first senior registrar and we got on very well. But the great thing about Alfred, he'd never been shaken by this condemnation of spinal anaesthesia and so I was able to sort of, being of a like mind, to learn further from him. And Alfred did a lot for me. He … he really told me a lot of things about being a consultant, I was on the verge of it. He, he was a great committee man. The Southend Hospital at that time, all the other consultants – the surgeons, and the physicians and so on and the ENT specialists – came down from London for the afternoon. And after they departed, looking after the patients was in the hands of the senior registrars, of which there were four – myself, a surgeon, and a physician and an obstetrician. And Alfred Lee was the only consultant of any discipline resident in Southend, so he was able in a quiet sort of way to run it as a sort of fiefdom! And he was a great committee man. These great men came down and he humoured them and so on. He established a very good department which was unique in that way because it, it concentrated on theoretical training as well as… You were sent away sometimes for an afternoon sometimes to read in the library, quite unheard of in any teaching hospital at that time, except, with the exception possibly of Liverpool. But, that sort of thing… And he ran this department extremely well. He had encyclopaedic knowledge. I mean, one of the games was that the *British Medical Journal* and the *Anaesthetic Journal* would come in and he would read it at breakfast and he would come up and say 'Have you seen that article?' Well, you knew perfectly well that you couldn't possibly have seen that article because he'd just got it over the breakfast table. But you very soon found that you could elude him by reading some obscure journal and asking him if he had seen the article. And it all went into the

[3] J Alfred Lee, *A Synopsis of Anaesthesia*, Bristol: John Wright; London: Simpkin Marshall, 1947

Synopsis of Anaesthesia, you see.

WB Did he influence your decision to go to Reading rather than back to Barts?

TB Well, as I say the anaesthetics service was expanding and I decided I didn't want to go to Barts. What I wanted was one of these new expanding district general hospitals like Southend. And I went to Southend last week and was absolutely, even I was absolutely amazed at how it's expanded. But of course he's long, he's dead now. But, one of these new good district general hospitals. And he encouraged me in that really. I mean, there's no doubt that the teaching hospitals were very conservative at that time. And I started applying for jobs, and I applied for Portsmouth and Reading. And to cut a long story short, I don't know what he did behind the scenes, but he, when I was about to go for the Portsmouth interview, he said to me 'You won't get Portsmouth, but you will get Reading.' Which is extraordinary. It would be considered scandalous nowadays, but that is precisely what happened.

WB This was the Royal Berkshire?

TB In fact, the man who got Portsmouth was a man from the Middlesex I think who was just slightly senior to me and he realised that he would probably get it. So, I went to, to Reading.

WB This was The Royal Berkshire?

TB Royal Berkshire Hospital.

WB And what was your post called there?

TB Well, I was consultant there. I was the first consultant. There were four others in those days, there are now about twenty I think, fifteen or twenty. I was the fourth consultant and I was the only appointment they'd had for thirteen years. Now, my colleagues again were very welcoming and very nice. They were very good anaesthetists, very capable, but they hadn't taken on board the new types of anaesthesia. So I was able to offer this, you know. And they were very receptive and tolerant. I don't say they changed their own ideas, I don't think they did, but they appreciated that here was something coming along. And I had a very happy three years down there.

WB Did you have another child by then?

TB Yes, we had a child when we were there, my second son, son arrived. My eldest son was born there, that's right. We'd got a nice big house and I thought that I had got everything that I really wanted. A nice area, the Thames Valley and so on. And then the next thing was that Barts was starting up cardiac, open-heart surgery. They'd done the old cardiac surgery operations and… We were perhaps two or three years behind the Americans in this country with cardiac surgery. They'd gone through a terrible sort of learning process over there, but they were really, some of them like the Mayo Clinic were very well established. Some of the people, the Brompton Hospital was pretty good, but emergent. But all the other teaching hospitals wanted to

take this on. And I was really the only chap who'd been trained at Barts who was experienced in cardiac anaesthesia and all these new techniques of cardio-pulmonary by-pass and things. When I say experienced, Ann Arbor had been doing it but I was very much peripheral. I would describe my situation as being very much an observer, I made sure that I learnt about it and went to their meetings and so on. I didn't do a great deal myself, but I knew about it anyway. And the chaps at Barts, the existing consultants, none of them wanted to take this on. At that time, operations lasted all day and the patients were pretty groggy afterwards and needed a lot of support and so on. And one of the problems at Barts, which I don't think was a major thing, is that there was no private wing there. So these chaps had to go on a clinic and so on and they had a lot of interest outside. And the senior thoracic surgeon, Oswald Tubbs, he, I became great friends with and he did a lot for me. But there's no doubt he was an autocrat, you know, and they were not awfully keen on working with him, I think. However, they decided that I was the chap who would come back and start this cardiac anaesthesia, that was the, for one reason or another. And I'd given anaesthetics for Tubbs as the senior registrar and we got on fairly well. And I was very much younger than him, so, you know, it was not like…

WB Not too much of a threat?

TB I was prepared to listen to him. So anyway, they came down to Reading and said 'You must come back, you know, you don't want to be down… Some of the things they said I didn't particularly [agree with], 'You don't want to be lying in this, in this backwater,' and so on. It wasn't a backwater. We were doing a lot of good work, but not cardiac surgery and so on. The Royal Berkshire is a very good hospital and I was very happy, you know, really happy, and... However, they persisted and persisted and I discussed it with the senior surgeon at the Royal Berks. And he, he was, said 'Well, you know, I had the same trouble, I didn't go back.' But, of course, my situation was very different. If he'd gone back, as he said, he would have to more or less starve in a garret until he'd made his name. Well, I would go back to a good salary with the National Health Service. However, in the end and with the blessing of Reading I must say, I went back again and I spent thirteen years and they were… I don't regret it at all. They were exciting years. It wasn't just the cardiac surgery, we started, or I started really intensive care, recovery units, the new ideas about cardio-pulmonary compression was coming in, I taught a lot. But I was a little isolated in the department. These various pursuits I had took a lot of juniors off, a lot of their time off the wards, off the operating theatres. And some of my colleagues, I think, believed that the anaesthetists should be in the operating theatres and so on. However, we had a good relationship, it was a happy relationship, but I felt just a little isolated, you know.

WB Was there difficulty from the nursing staff about the intensive care unit?

TB Intensive care… There was some difficulty because it, it was before the, I nearly used the word reforms, I'll call it reorganisation of nursing in the sixties (?), which is another story. But there were still powerful Sisters in the wards and so on. And they didn't like their patients being taken away. And I must say a lot of the surgeons, general surgeons, not Tubbs but I mean general surgeons, didn't like the idea of moving. 'I have my nurses with my patients.' But when you had to breathe

for patients in wards, it was extremely difficult. Nobody knew anything about it. You needed a team which had the idea of how to handle people on respirators and so on. It was difficult, but I was tactful and got it. And then, in time, I got a very good colleague who unfortunately died very young, but he came from the London [Hospital], Dick Ellis. And we were very much of a mind and he took a lot of the weight of the open [heart surgery]. And he'd been at the London where they'd done pretty… He'd done pretty well the same thing. But he was younger than me, and he, he was a good cardiac anaesthetist and he understood it all. And another man called Peter Cole who was a very much more academic and could support the physiology and so on which I was perhaps a bit weak on. So, I began to have the odd colleague, which was fine, which made it a lot easier for me towards the end.

WB But, was the idea of intensive care becoming accepted around the country, or was this very pioneering?

TB It was, it was accepted around the country, but chiefly outside, certainly outside London first of all. I, it's very difficult to, you know, without being hypercritical, but I think people outside saw that to concentrate the really sick in one place was a good thing. And it was very difficult for older and very senior people to understand, when they've been used to running their own wards in their own way, that this was, this was a good thing.

WB The wards were totally mixed, were they?

TB I mean, many, many of them still believed that patients who had reached a certain … certain stage really should still be left to go. Perhaps we were a bit over-enthusiastic the other way, we believed that we could resurrect almost anything, which wasn't true. And I can understand that point of view. But intensive care took a lot of time and anaesthesia was much concerned with it. Interestingly, Alfred Lee was the first to run what he called post-operative recovery wards, I think the first in this country, where people could be left after a very severe operation for more than half an hour or an hour. They could be left for two or three days till they were restored, you know, and it developed from recovery rooms, really. The chief, you know, I mustn't be wrong(?), but a lot of it was done by individuals, you know, who decided that this was what was necessary and they'd built up their, their things. And of course that always leads to, to a charge of empire building, you know. However, that was alright. I had good relations with my colleagues. But I could sense at times they thought well, you're taking another registrar off to look round the recovery room and so on, and two more to take to run the cardiac cases and that sort of thing.

WB And during this period you went off to Vietnam, did you?

TB Yes, when I got to these colleagues, yes, that's right, I had become interested in developing countries – chiefly through my experience in Malaya, but also because there was a, emerging from the war, there was the idea of overseas aid for developing countries and that, naturally, was an ethos. And I had become assistant editor of *Anaesthesia* and the Association of Anaesthetists decided that they really ought to do something about it. And one of the things they decided to do was to ask somebody to write a series of articles on anaesthesia in developing countries, and to write it from

the point of view of providing techniques which they could possibly use. And, as I've explained, it's no use writing for people who don't have cylinders telling them that they, they ought to have cylinders and so on. So, and I had this interest in draw-over anaesthesia which was, had come over from my experience in Malaya. And I wrote these nine articles, partly with other colleagues and particularly with [Peter] Cole, who was also keen on these things, and we wrote these articles.[4] That meant that I was involved and travelled a bit, and went to some of these countries for short periods. But my big expedition really was to Vietnam.

WB For Children's Medical Relief International?

TB Children's Medical Relief International, yes. It was a very, it came about because I was, when I was assistant editor somebody wrote a letter appealing for people to go and join this unit, for four to six months. And … I looked at this thing and I thought, you know, I've got one or two who'd like to go on this, one or two of these contacts, colleagues who'd join me. I thought well, why not? I'll go and see what it's all about. And Vietnam was, particularly appealed to me, I think. I won't say attracted, but appealed to me because the teenage children we'd known as small children in America were beginning to come over to the UK. And it was in the, in the late sixties and they were all on about this Vietnamese war, these American children, American teenagers, during their uppy, what do you call it?

WB Hippy.

TB Hippy times, and I used to get rather sick of them leading off about this. So, I had it sort of in the back of my mind and I thought well, why not, I'll go and see for myself. So, I disentangled myself – Barts were very helpful again. Of course I would be, the great advantage of this particular unit was that, unlike things like BSO[5] and that sort of thing, they paid you exactly the salary you would have had at home, and kept you. So I was able to leave my family all right. I was also able to say to Barts I just wanted unpaid leave; you can have a locum instead of me. So that suited. And I went over and joined this unit. It was not quite what I expected. It was a unit in Saigon, which had been founded by an American plastic surgeon called Baskey(?). And he was an old, elderly – I think he was retired, or practically retired. But he decided on the idea, which was a very good one, that he would get, raise money to finance a pavilion within one of the hospitals. And he'd equip it with a small administrative staff and he'd take into it for short periods doctors and nurses in all the relevant specialties, plastic surgeons, anaesthetists, paediatricians and so on. And his initial idea was that he would treat war casualties sort of from the children casualties. In fact, that wasn't the bulk of our work. The bulk of our work, or a great deal of it, was terrible injuries and adhesions between limbs and so on from people who'd, children who'd been burnt, I suppose partly of the, as a result of the war. Because one of the things that happened was they put aviation gasolene into kerosene stoves and the thing, you know, awful injuries. So, that was that. We had one or two, but very few, direct casualties from napalm because we were a tertiary referral hospital. And if

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[4] Dr Boulton is referring to a series of articles, 'Anaesthesia in Difficult Situations' published in *Anaesthesia* between 1966 and 1968.
[5] Dr. Boulton probably means VSO (Voluntary Service Overseas) here.

they survived in the province hospital which was pretty tough at that time and got into us then we could undo their scars and their deformities and that sort of thing. And the other great … series we had were cleft palates and cleft lips. And they are quite an anaesthetic problem apart from being a surgical problem and of course there were a great… For some reason or other, genetic or otherwise, there were a great number, or a considerable number of, of people that had never been treated, you know. If you walked down the street in Saigon, you'd probably see one or two people with an open lip and so on. So the series that we operated on there were almost unique because instead of being operated on in small children as now, they extended up to about twenty, you know, and we dealt with them. The surgeons were very good. The surgeons were mostly Americans, or Australians, mostly Americans, and it so happened that he recruited chiefly British anaesthetists. And this was a very happy combination because American plastic surgeons tend to do a lot under local anaesthesia for economic reasons chiefly, and they were very pleased with having, particularly children, who were kept still while they did the operation. So, at any rate, we got a great deal of, of respect as anaesthetists from American surgeons in that particular situation. And the situation on the civilian side in Vietnam at that time was that almost every nation on earth in the developed world had a team doing <u>something</u> for the civilians in Vietnam. And that resulted in there being at least four, but four British type anaesthetists. By British type I mean either Australians or, either British or Australians [with] which we have a very close professional ethos. And, we did, I was able to, we were able to swap our jobs round so that I got quite a lot of experience in... I'd go off for a fortnight and the chap would come in and do my job in my unit, and the other units weren't particularly bothered provided there was a British type anaesthetist there. And there was a British team which was, which was somewhat restricted through no fault of their own, which were in the big children's hospital in Vietnam, in Saigon. There was a unit, an Australian unit down at Ben Hien(?), a civilian Australian unit which were doing general civilian support, including quite a lot of casualties, sort of people with legs blown off in the civilian population and so on. And there was an Australian anaesthetist with the Australian military. Now, the Australian military anaesthetics, medicine – what they used to do was, well, they used to take a whole unit in a teaching hospital and send them up to Vung Tau(?) to the hospital. So, the chief of surgery they might make a lieutenant colonel and then his registrars were majors and, and so on, for six months or a year. And so it was virtually, we had a great deal of civilians, apart from the CO [commanding officer] and the adjutant they were, they were very much civilian. And I went to them for a, for a fortnight and thoroughly enjoyed it and experienced the results of these helicopter evacuations and so on. And that was very interesting to me because I have an interest in military anaesthesia obviously. And of course there was a tremendous contrast between the wounded… First of all, unlike Malaya, we got them out within twenty minutes with a helicopter. It was a boast that they could get them into hospital in twenty minutes, wherever they were wounded. They were lifted … by the chap going down the rope, whatever they call it, you know, and, and they could get them out in twenty minutes. So I saw those cases which would have been dead in Malaya. But also, the, it was mostly small arms again, or almost entirely small arms, and grenade wounds. But … the, I was absolutely horrified at first at the devastation of the new weapons, the new automatic rifles and so on. Absolutely extraordinary compared with the more or less popguns that were used in Malaya. The damage that could be done was quite extraordinary.

WB I think we must just have a pause here before we take you back to England.

TB Yes, alright.

Part Two

WB Dr. Boulton, before we leave Vietnam, did you develop any techniques while you were there?

TB Yes. If I may just say so, I don't think I covered the point that Baskey in establishing his unit in Saigon had put into it for short times people from developing countries. But he'd also built up a parallel team of Vietnamese doctors and nurses. So both doctors and nurses had Vietnamese shadows. And the idea was that in the end – which was very good, exceptional with some of these aid things – that in the end the westerners would slowly withdraw leaving the trained Vietnamese in charge. It almost succeeded. By the time the Vietnamese came from the North, everybody had withdrawn except the anaesthetist, curiously enough, who was a girl who had been a registrar of mine by that time. And she was one of the last Brits to be lifted out, and of course they had to lift out the surgeons because they were … working in the South and the North were coming in to invade. It's a great pity because it almost succeeded in, in the thing. Now, you asked me about techniques. I, Baskey was very keen that, that we should, for that reason that we should leave techniques which could be used after we had got out. And I, for example, he insisted that his surgeons didn't use the modern electric dermatomes, they used the Humby knife for taking their grafts and so on. I was able to offer this draw-over anaesthesia technique, and I'd been thinking about the matter and developing the idea of a draw-over system. Not using ether as Macintosh's original machines were, but using the modern, more modern anaesthetics such as halothane and, at that time, trilene, but there have been more since. And parallel with that, the Oxford people had been developing vaporisers for this. And we put together a machine, which, instead of using ether, which is inflammable, uses the more modern anaesthetics. And I, I took that out to Vietnam as a prototype. Now, Vietnam, the Baskey unit was well supplied with cylinders and so on and I had American colleagues who, who used the apparatus. But I set myself to prove this draw-over as being the equal of, of so-called plenum gas-driven techniques during the time and used nothing else. And it proved that this was quite successful. And … my, I had for a short time American colleagues who, who were quite amazed by, by this small apparatus. They used to say 'Gee, it's another philosophy!' But, they accepted that it was a principle they'd like to use. And of course they are much more restricted in what they can, or were at that time, develop because their regulations prevent them developing things that were new, they had to be registered and so on. However, that was interesting. And, so, I wouldn't describe it as developing, it was merely an extension of things that had been produced at Oxford. But later on I was in the Territorial Army for some years and I, I was able to persuade the military people that this was a good piece of apparatus. And we produced a thing called the Triservice anaesthetic machine, which was based on the one that I took to … Saigon. And this was adopted as the field anaesthetic machine of the Army, incidentally, in the end. A then major, now brigadier, Houghton had a lot to do with developing and improving it after I'd… And the chief of anaesthetics in the, in the army also developed [it] and together, the three of us wrote the first paper on this apparatus. And it was, it has proved of considerable use. It was used almost exclusively on land in the … 1982…

WB Falklands, yes.

TB Falklands war. So that was in a way a development because I was able to prove that… I think a lot of people believed that I couldn't do everything with, with this machine!

WB It sounds like a considerable triumph.

TB Well, it was. I mean, I am a bit biased but I think that anaesthesia machines could have gone one way or the other. That is a heretical thought actually, and wouldn't be accepted by a great number of people! I mean, we could have developed machines, either it was the draw-over principle or the, or the other. But I was considerably influenced by Macintosh of course in this, who had originally developed the idea.

WB Thank you. So, from Vietnam, you came back to a new appointment?

TB I came back to Barts.

WB To Barts initially, but…

TB Yes, I came back to Barts. And after about a couple of years… Horace Tubbs[6] was much older than me; he was about to retire. And the Reading people had always said… These are the factors. The Reading people always kept saying to me 'Why don't you come back?' And so far as Barts was concerned, I had Dick Ellis to hand over to, and with different ideas. And after a lot of thought, I thought well, yes I would like to go back. The third thing that was important was that I had just been appointed editor of *Anaesthesia.* And frankly, I was now about 45 I suppose, I, I felt that I couldn't do justice to that, which was only a part-, it's not an NHS appointment you understand, it's a spare time appointment. I couldn't really do justice to that and do all the other things that I was doing. And Cole and another chap had taken over the intensive care element, and I felt that I had done what I had set out to do in the thirteen years at Barts. And I didn't particularly want to, I don't want to be presumptuous, break in a new cardiac surgeon. And so I retired with honours and I, I was re-appointed to Reading. And I went back to Reading and they were very welcoming, and I was given a room to run the journal which would have been unheard of in Barts, you know. It was something the National Health Service did for us. We paid a small rent but, you know, they provided the facilities. I went back to more general anaesthesia there and…

WB Was there a lot of teaching? Were you teaching?

TB Oh, of course, a lot of teaching by then because we had a lot of juniors. When I left, when I left Reading, we had about one registrar and two senior house officers. And when I got back it was a big department, you know, and I was able to do a considerable amount of teaching and, and so on. And various other things came, like starting day surgery. When they wanted somebody to start that up, I started that up. Which it needs, certainly, first of all, a management function but it also needs to think about the type of anaesthetics you're going to give to the patient so that you can get

[6] Here Dr Boulton presumably means Oswald Tubbs

them awake and, and send them out. So, that was another thing I did there. And at the same time I was rising in the national thing. Now, my colleagues at Reading were very supportive of that. I think they felt it was a good thing to have someone in the national side. So I was getting on the board of the Faculty as well as the Association council. And, well I was given every facility at the Royal Berks by everybody, which I'm very grateful for. I'm not criticising my … criticising my fellow consultants at Barts but it would have been, within the structure, almost impossible there. The only thing was, because of this rise in the national thing I was invited abroad and so on. And it was very difficult to travel particularly in the United States with the label 'from Reading' or 'from the Royal Berkshire' because nobody really understood this. The Americans, for instance, would ask 'Is it a teaching hospital?' Well, of course it is a teaching hospital in the sense that all teaching, all hospitals in the NHS are teaching hospitals for postgraduates, but they're not university hospitals as such. And for about a year, a year or so, I felt a bit… You know, I felt difficulty from this point of view, and a bit sad that I didn't have the famous Barts label behind me any more. But, Oxford offered me two sessions there and the membership of the Nuffield Department of Anaesthesia. And they were also interested in developing countries with Macintosh and so on. I took part in their courses. I became a clinical lecturer, which is the sort of thing that their consultants are. And so I had the best of both worlds. I had a really good district general hospital, and a very good, in fact the premier department - I'll call it the first department anyway - in, in England as a member of the Nuffield Department of Anaesthesia. And, and from about 1975 until I retired in 1990, I certainly had the best of both worlds, I think.

WB And you had this very influential post through the journal, *Journal of Anaesthesia*? You were…

TB Well, I just… The *Journal of Anaesthesia*, the editor of, of the *Journal of Anaesthesia* is an officer of the Association, automatically on the council, so I was never elected. And I worked my way up that, through that, and in 1985 I became president of the, of the Association. And I'd also been elected to the board of the, what was then the Faculty of Anaesthetists at the Royal College of Surgeons. So I was pretty well known centrally.

WB Through the *Journal*, you were able to write a lot about third world medicine?

TB Oh sure. I had pretty well a free hand with the *Journal*, and I'm afraid my editorial supported my views to quite an extent. Oh no, that's not fair. I, I did try to write about the new things and so on. And it was an … an influential position which I – I tried to exercise my influence with discretion, and I did really. But it was an exciting thing to be able to write for one of the leading world journals, you know.

WB But you had a particular idea about reaching out to people, didn't you, in <u>all</u> the branches of anaesthesia?

TB Yes. Well, you see… Yes, quite right. *Anaesthesia* is the journal of the Association of Anaesthetists and almost every anaesthetist in this country belongs to the Association. And it has a very strong trainee contingent, very strong, which, which was another thing I had a lot to do with developing. And therefore, when you

present the *Journal*, you are presenting a journal which has to satisfy the wants of the practising anaesthetist, practising consultant in the district general hospital. It has to satisfy to some extent the academics, although the *British Journal of Anaesthesia* has a great deal more influence in that thing. It has to produce something that appeals to the novice. It has to produce something that appeals to the old man. That's chiefly history – you know, they like history! And also, being the house journal of the Association, it, I believed, and developed this, which had already existed, the side that it produced information about their meetings and a general source of exchange of the, of the many provincial meetings which were taking place and so on. So it was, it was a very interesting journal to edit. It wasn't just straight scientific knowledge. Nowadays they've, I think quite rightly, separated the house journal side off into a separate publication, which of course means that that can devote even more time than I did to it. But the general, in general, *Anaesthesia* tends to be more clinical than the *British Journal of Anaesthesia*, which was an independent, but is now the official journal of the Royal College of Anaesthetists.

WB And alongside all this, you were very much involved in the foundation of the Royal College of Anaesthetists.

TB Well, yes.

WB Could you describe the situation as you found it initially?

TB Yes. Well, the situation was this. If you go back to the start of the Health Service, all these young men had been trained up by Macintosh and others during the war to take part. Because you needed a tremendous expansion of, in the war, of capable clinical anaesthetists who could look after the field surgical teams as well as working in the hospital. And these chaps were coming out at that time; the Health Service was being founded. Anaesthesia previously, as I explained before, had been largely, in the country at large, a general practitioner subject. Now then, what happened when the National Service, National Health Service came in was that anybody that held a Higher Diploma in surgery or medicine or ENT and so on, on the whole in the district hospitals dropped his general practice and became a consultant. Anybody that didn't have a Higher Diploma dropped his surgery in the hospital and became, went back to being a GP. The great thing was that in either case they were now reasonably well paid which before, of course, they weren't. So, they could do that. Anaesthesia, being entirely general practitioner… There was a very dicey period in 1948 from our point of view when it was thought that anaesthesia, the way they'd run anaesthetics was with a salaried appointment in the … in the hospital at a lower grade than the surgeons or the physicians or the ENT. And this was a very difficult period because they had, they had quite a lot of manpower coming back from the armed services being demobilised. And the surgeons under Sir Alfred Webb-Johnson, who was the president of the College of Surgeons, were very supportive of anaesthetists, but I detect in, at the time that anaesthetists didn't know quite which way to go. And Sir Alfred more or less took them by the scruff of the neck and he said 'The first thing you must do is to, is to upgrade your DA' – which was a sort of general practitioner diploma – 'up to the standard of Fellowship.' Well that's, so they did that under the auspices of the College of Surgeons. And [he said] 'The second thing you must do is you must have an academic body. Now, you're not quite ready

for a College of Anaesthetists, but we will make you a Faculty of the Royal College of Surgeons.' And that was a tremendous thing to do and the fact… The DA was converted to this level and people who had the DA in the past were made Fellows, meant that they were taken on as full equal consultants in the National Health Service. So, if you go back to that… Well, as time went on… This position was alright, alright to start with. But by the late seventies it was felt by many of us that we really… Of course, all our decisions had to be ratified by the College of Surgeons. And I must say the College of Surgeons felt so… Because we became the biggest specialty in the Health Service if you consider that all the surgeons, whether ENT or general or chest or what have you, have to have anaesthetics, and then we had taken over intensive care. We are in fact the biggest single clinical specialty in the Health Service now. And many of us, including many surgeons, began to feel that we ought to break away and have our own College. However, many of the senior men, very senior men remembered how the surgeons had taken us in at the beginning and they were very loyal to the College of Surgeons, so you began to get a divergence between the two. And to cut a long story short there was a very long argument about this. Now, anaesthetists today, you cannot find anybody that disagrees with the creation of the Royal College of Anaesthetists, which actually happened. It's very difficult to find someone who'd think it was a bad idea. But, a lot of us had a very hard, particularly within the board of the Faculty we had a very hard fight to bring it up. And the Association, which is an independent organisation, kept pushing and pushing. And there, there was a period when you were either an Association man or you were a Faculty man. Finally, they compromised, or tried to compromise by the Privy Council changing the charter of the Royal College so that the Faculty could be called a college. So we got a College of Anaesthetists within the College of Surgeons. And that seemed to be going nicely, but then they, they tried, they tried once too often. They tried to get the College called the Royal College of Anaesthetists and Privy Council said 'No, we can't give you the royal title.' Which is important within… I mean, everybody - by then there was the Royal College of Physicians, the Royal College of…

WB Surgeons?

TB …Psychologists, the Royal College of Pathologists, all these people had broken away and got the thing. 'We can't give you the royal accolade unless you are independent.' And that was what finally [convinced] these doubters that they must break away. So, very amicably, amicably, finally in 1992, we got our own royal charter and became independent. But it was a very long, and sometimes a little bit, you know, a little bit of friction, well a good deal of friction between the two camps for a long time. But, for instance, Cecil Gray now says – although he was one of the old school he now says 'I was completely wrong.' He says it in public a little too often, I think. You know, I think he should realise that his, his ideas were perfectly alright originally. But he thinks that, a lot of the others do, and it's very difficult to find anyone that disagrees now. Mind you, the officers of the Royal College, of which there was only one for about six months before my retirement came up, have done a very good job. And they are a different type of person from those on the board of the Association. They tend to be the academics, the professors and that sort of thing whereas the Association tends to be the general run of people. That's because there's a difference in constituency of election. The College is all Fellows, it includes people

from overseas and so on whereas the Association has a strong overseas membership, yet only UK anaesthetists and Irish anaesthetists have voting rights. So you tend to get in the Association more clinically oriented run-of-the-mill anaesthetists appointed. But over recent years there has been a tremendous sort of, once again a tremendous sort of … exchange between the two bodies, and it's becoming very... The difficulty is that the College is concerned with charters and that sort of thing, but it must remain a charitable body, it, and it cannot take part in promoting things like the terms and conditions of service of anaesthetists, you have to have an Association who will do that. And in between, at the moment, there's a tremendous range of postgraduate medical education, which either can do quite all right. And as it, as it is at present, without going into a lot of detail, the type of, of meeting and course that the Association puts on is rather different. It's more clinically orientated than what the College puts on. So they are both serving a purpose and, of course, they are co-operating now, so it's very reasonable. But I, if I can be a little heretical for a moment, I can see a position in ten years time where both institutions will be in one big building with perhaps a common secretariat. And that's quite possible. I mean, within the Association we have managed to, tax-wise, to separate the educational side of the, of the thing as a charity against the terms and conditions. So it's quite possible to do. We have shown that it can be done. But a lot of people still are very loyal to, to one or the other.

WB Yes. Well, as, as president of the History of Anaesthesia Society you have been … Association, you have been asked to write about this, haven't you?

TB Yes. I, after I finished my presidency, I was put out to grass as archivist and I started to write the history, which I have just about finished, of the Association. But I've tried to do it very widely against the social changes of the time, the introduction of the NHS and so forth, and of course the tremendous, the war-time influence which I have talked to you about. And of course the tremendous changes in clinical anaesthesia which themselves have made… First thoracic anaesthesia then cardiac anaesthesia and, to a large extent neurosurgery and things. And then of course, in this country particularly, the tremendous part anaesthesia has played in the, in the development of intensive care in this country, which is not generally understood, I think. So that I've tried to show the development which we've discussed today, really.

WG That's good. So, you'll be able to illustrate many of the achievements of your long and illustrious career? You've also been a…

TB Well, I've not been an innovator. You know, I, I have, any institution, any hospital I've belonged to, I've tried to look around and bring the latest things in. And that has an embarrassing part because the years go by and people tend to think that you've been the pioneer in that when in fact you've taken it from someone else. I mean, draw-over anaesthesia I took from someone else. When I went to the United States, I took a particular type of intravenous needle which was very useful, which was in fact developed by another man at Oxford called Mitchell who had an influence on me. And when I went back to lecture there four, four years later, to my horror it was described as the 'Boulton needle' which, you know, is, is rather embarrassing. But, that's my, been my aim. And, politically, my aim is to get the best for, for the

Faculty, for the specialists, for the specialty.

WB Well, you've done a great deal of teaching...

TB Yes.

WB You've examined, you've championed unlikely causes which have resulted in very beneficial results for the nation and internationally. You've also championed the dentists and dental anaesthesia. And all of this has been, has culminated really in the award of the OBE for medical services, so...

TB Yes, services to medicine. But it is services to medicine. I've never been a great innovator. I mean, I do stress that. I think it's, it's very important that… The academic development, I've never done anything dramatic like Gray's introduction and so on of, of modern anaesthesia. But, it does mean that occasionally I've found myself at loggerheads with my colleagues. For instance, had I been around just, when Gray was developing his things, and he was described… I mean, my teachers used to say 'That chap's quite eccentric. You know, it's, it's extraordinary up there in Liverpool. What is he doing?' If I'd been around then, I would have doubtless been trying to, instead of being in the services, I would have been trying to push it. And I'd, I'd have probably got some opprobrium through that. And I've found that bringing new things in is always difficult. There are always, as I've explained over the course, there are people with very good reasons for having different opinions. And you've just got to be reasonable in the British manner and keep on arguing. I mean, old Alfred Lee taught me if you want something in committee, you go in and you propose it. And if they turn it down, you turn up the next couple of weeks and propose it again. 'In time,' he said, 'They, they begin to think it's their idea and that's fine, you know.' It's no good being too militant over these things!

WB Well, I think you're very modest about your achievements, but thank you very much indeed.

TB Right, that's good.