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Alexandra Palace Television Society

Interview with Norman Chapman - A Solo Account

Film Development at Alexandra Palace – A History

Audio Wav file – 06/01/1996

Norman: This is recorded by Norman Chapman who was in the Planning and Installation Department of the BBC from the period after the War until the closure of the Palace. Obviously, it deals principally with period after the War when I was very much involved, but it also includes some reference to the early days of television from the start until the closure at the beginning of the War.

Although it is concerned, principally, with the design and obtaining and installation of the equipment for the film production side, naturally, since one had to understand all the operational requirements, and work closely with the operational teams, it does cover, really, every aspect of film production throughout this period.

I was involved from the period after the War with the resumption of television, so I can relate very closely with all the experiences in this period but I should also make some reference to the position of film from the start of television until the closure at that time.

Perhaps, at this point it is worthwhile my making a little reference to my experiences and how I became involved in the film side of the Palace.

Before joining the BBC, I was in film production in the studios, principally involved in sound recording but also in other aspects and after a period in the industry, I was also involved in the manufacture of the equipment. This was, principally, for radio relay, perhaps the forerunner of cable television, but I was also involved in the manufacture of various items of film equipment and ancillary items and so I did have a fairly broad experience in this field.

I joined the BBC in 1940, in the Sound Recording Department at Delaware Road in Maida Vale. I was engaged in operational duties on disc machines and still tape recording as it was then, and also the Philips-Miller system of recording. I carried on with this for about a year or eighteen months, gradually becoming more involved in the technical side of the equipment and after this period, I was transferred to the Planning & Installation Department to deal, principally, with the vast expansion of recording equipment which took place throughout the War.

In the Planning & Installation Department a team was put together consisting of Tom Summerville who came out of the Research Department and Roy Baker who was already in the department dealing, principally, with Control Room and studio equipment and myself. We formed a trio which really dealt with the vast expansion of recording equipment during the War. We dealt with disc machines and, later, tape recording equipment to meet all the facilities required in sound broadcasting in this field.

Naturally, since I had some experience from before the War, I was hopeful that perhaps when television started I might become involved in that side and that is, indeed, what happened and when the demand came up at Alexandra Palace for expansion of film facilities of all types, I was moved over to this work and I can relate, as I have said before, in very great detail all the experiences we had in period after the War.

My first big experience of the Palace was working with Film Department on the provision of a new dubbing theatre, principally to cope with the television Newsreel but, also, at the same time, I was involved in the provision of new film cameras, editing equipment and so on. But, perhaps, before we start dealing in detail with this aspect, it's

worth going through the position of film in television in the BBC at the Palace right from the beginning when television started.

When television started at AP in 1936, it was essential to provide telecine for the transmission of any films that might become available. In fact, the first transmission included a BBC film entitled "*Television Comes to London*". The Baird system employed film, of course, but this was not the true use of film as a production medium. There was, in fact, little film available from outside sources throughout the formative years, with only cinema newsreels and Disney cartoons being regularly shown. Some film material was specially shot, including sequences for the live plays, but output was small due to the lack of facilities and, in any case, live TV was the exciting new medium. However, quite a lot of filming took place to produce a demonstration film for morning transmission to move viewers to the new medium. This was continually updated. Since space was rarely available in the television studios for film cameras, chosen scenes were re-enacted in film studios usually stored at Cricklewood – not so far away. In the absence of any recording of television pictures, these films are the only record of the shows in the 1936-39 era.

After the War, when TV was resumed in 1946, the main film activity was to step up sequences for the demonstration film to increase the viewership plus the early production in 1948 of a wholly BBC-produced television Newsreel to replace the previously shown cinema reels.

Perhaps, at this point, it is worth digressing for a few minutes to explain the position of news in television in those early days. When television commenced in 1936, it was the view of management at Broadcasting House that really news wasn't a suitable medium for television. Believe it or not, it was felt that the addition of pictures and announcers in vision etc, etc, could cause slants on the news which might be undesirable and that it was best to keep news as a sound only, very neutral medium and this opinion, obtained through the period before the War and, indeed, was the same when television resumed after the War. However, it was agreed that there could be a television Newsreel similar in content to those commercial cinema reels produced and shown on television before the War, but produced entirely within BBC television.

At this point, I think it is also worthwhile outlining the departmental arrangements at Alexandra Palace in respect of film, particularly after the War. The Head of Film, during this period was Philip Dorté who was Head of Television Outside Broadcasts. I recall his title as 'Head of OB's and Film' and he had a small staff at the beginning dealing entirely with film and this was a separate operation. It wasn't within the Engineering Division or the Facilities for the Operation of Studios or OBs, it was a separate group dealing entirely with the film operations. I recall, during this period, names such as Alan Lawson and Mike Lewis and Dave Prosser, amongst others, who were basically film cameramen. There was Dick Coulston and Vernon Phipps and, I think, Ian Callaway on the editing and production side and on the sound side there was John Byers, who was a giant at this time. The staff was very small, probably not totalling more than about 10 in all and these people dealt entirely with film on the operational side and, of course, when I became involved with this sphere it was decided that I should concentrate on film at the Palace although I was still in the Planning and Installation Department and we formed what was called a "cinofilm unit" in Planning and Installation. In the beginning, I seem to recall that I was the sole member but, as the years went by later on, this unit grew and as film reached its peak much later on particularly with the move to Lime Grove and Ealing I think we were probably somewhere near 30 strong but certainly, at the beginning I was the sole member and, of course, due to the very specialist requirements and the fact that film and television was very new, it was essential that I worked very closely with the people dealing with film at the Palace and it really transpired that I was almost part of the staff at the Palace which was essential since I had to understand the very special requirements so that I could interpret these in the provision of the necessary equipment.

My role was really to understand the operational requirements and discuss these, in detail, with Philip Dorté and with his staff and to interpret these in the way of equipment and design of equipment, the purchase of certain operators and the installation where this was necessary and to equip them in every way with their facilities. I should explain that my sphere was in the film production field covering all aspects up to, but not including, telecine but, of course, since the production of the film was a very involved process and so on, it was necessary to understand telecine and also to co-operate, to some extent, in the design of the facilities so that it matched the output of the film department. So this, I think, outlines the position with Philip Dorté running Film at the Palace with his staff and myself with one foot in the Planning and Installation Department and one foot in the Palace working with the Film people.

So when the requirement for the Newsreel appeared, it was necessary for me to become very closely involved in the ways in which we would meet this requirement in the quickest possible way and with the best equipment and I'll outline now the development of the facilities for the Newsreel. This, of course, involved dubbing facilities and cameras and editing equipment etc, but let's deal first with a major requirement, that of the dubbing theatre. I should explain that the dubbing process really covers the addition of the sound items which constitute not only a Newsreel, but any film. You have the edited film in pictures and it was necessary to project these in an area which could be seen by the other people involved and then you had a sound mixer and the sound producers carrying on the various tracks plus a commentator carrying on a commentary on the film, and these were all mixed together to produce one final track which was either played separately on telecine or, in the case of optical sound, could be combined with the print.

It's important to note that throughout this period on film, not only in the news, but also in the other film activities, that we were on 35mm film. Later, of course, 16mm came in but, at the beginning, it was the only way – to be on 35mm – because there was basically no telecine and film cameras were not well-developed in this field, editing equipment was not available and, of course, the whole process of 16mm film was still very much in the amateur field. There was really no professional approach to 16mm at that time, although we would have liked the lighter equipment, so everything had to be on 35 and it essential to realise this aspect.

The other important basic aspect to remember was that there was no magnetic sound recording after the War when we started at the Palace and on film and there was only optical sound recording and this, of course, had quite a lot of severe restrictions. Magnetic tape had appeared in the sound, but there was not method of applying the magnetic system to film at that time and so we did have that considerable restriction.

Let us deal now with the dubbing theatre which was the major item to be installed at the Palace. The first proposal, which was really based on the severe shortage of money at the Palace, plus the feeling by Philip Dorté, quite correctly I think, that really having got a Newsreel, this should be got on air with minimum delay and the original proposal to provide dubbing theatres was to put the additional equipment in what was the existing review theatre. I think it was proposed that the additional sound that we produced would be put in the small projection room and the sound mixing equipment would be put in the theatre in front of the screen, and I seem to remember that the idea was that the sound mixer would wear headphones and the commentator would use a lip microphone so as not to interfere with the sound being listened to by the sound mixer and I think the sound recorder which was necessary, of course, was also installed in the theatre.

I must say that when I came on the scene and this was discussed, I was a little horrified by the proposal which, although I appreciated that it would be at minimum cost and would enable the dubbing of the reel to get going fairly quickly, it did seem to me that was a process that was very, very restricted and if the reel expanded and perhaps had to be done every night and there was also other film activity, this seemed to me a most

restrictive proposal. I discussed this with Philip Dorté not long after I became involved and he agreed that it was very restricted, but emphasised the lack of finance and the necessity to get going very quickly. However, I will say he did see my point of view and we did have good discussions on this and my first proposal was that since the review theatre was a very long theatre, although restricted in other ways, I suggested that we could build a wall across the theatre half way down, and then the projection room side which existed could be got into being to get the reel going quickly, but behind the wall on the other side we should build a property dubbing theatre capable of carrying all the expansion in the film world which we felt was likely to occur. We did have discussions, actually, on this and although Dorté was apprehensive, I did feel that with the importance of the reel and other film work that finance ought to be found to cover the dubbing theatre, built in a proper manner. I think, at this stage, Mr Knott came in who was on the administration side and he agreed with me that we should put together a scheme for a property dubbing theatre to be built behind this wall, so that the progress of the reel and film, generally, could be coped with adequately.

Actually, what happened was that it was realised that the lash-up arrangement which we had discussed wasn't very practical and it so happened at this time that RCA, who had been involved right from the beginning, were building a dubbing theatre of their own at their Hammersmith centre and Bill Clark, who ran RCA at the time, made the suggestion that perhaps the Newsreel could be dubbed at Hammersmith rather than embark on the lash-up at the Palace until such time as the new theatre was ready at the Palace. This general scheme agreed. The snag, however, was that the theatre being built by RCA at the Hammersmith Centre was really nowhere near ready and there would be a delay in getting this running to the extent that it could be used as the newsroom. Anyway, the scheme was embarked upon and more pressure was put on by RCA and Dorté to get the Hammersmith facility running as quickly as possible. This was quite a venture because I think it was only with the pressure of Dorté and Bill Clark and his staff that the thing was got running at all and in time to get the reel on film quickly. I do recall that the theatre planned down at Hammersmith was at the back of an existing small theatre.

The projectors and the sound reproducers were installed on the stage of this theatre and I do remember a period when this equipment was being installed and the theatre was in use for ballet rehearsals, so we had the curious situation of a pianist with a ballet school rehearsing and on the stage, there were the engineers installing the projection equipment and this looked into the new dubbing theatre which was being built on the other side of the wall and I'm not so sure that this situation didn't carry on even after the theatre had gone into service until a wall was built across the stage to separate it from the old theatre.

I remember the other big snag was the lack of heating and I can recall that when the whole set up was brought into service and it was very urgent to get the reel dubbed as quickly as possible, this was started before there was any property heating system and I can recall the projectionists etc on the stage coming in in overcoats to keep themselves sufficiently able to move around and lace up the equipment in what was quite a cold temperature.

Anyway, the theatre was got running and I, of course, although I was involved in the planning of the new dubbing theatre, I used to make fairly frequent visits to Hammersmith so that I could inject into the new theatre all that we were learning in the operation at Hammersmith. But, I think great credit is due to RCA and to Bill Clark and his people for getting this facility running so quickly. It should be borne in mind that with the dubbing being done at Kays at Hammersmith, the production of the Newsreel in the period (although I'm not so sure that this didn't go on for six/nine months, or it might have been a year before we got the final facility running at the Palace) and working at Hammersmith meant that the film had to be edited, of course, the picture film was processed after filming at Finsbury Park, it was then delivered to Alexandra Palace for editing and putting together of the reel. This was then transported (together with any sound tracks necessary) down to Hammersmith where the dubbing took place, and then

due to the fact that it was photographic sound which had to be processed, certainly the sound track had to go back to Kays at Hammersmith and then up to the Palace to be married or checked with the picture film and got ready for transmission. It was a hairy operation to say the least, and it was credit to all those involved that the system worked at all! But, it certainly did work and apart from one unfortunate night much later on which I will deal with, really it went pretty smoothly until we were able to run at the Palace.

If we revert now to the planning of the new dubbing facility at the Palace, we were very keen on having RCA equipment since this was entirely proven and there were enough problems, believe me, in getting the reel onto the air and we did want any equipment uncertainties and so we did really want RCA reproducing and optical sound recording equipment into the dubbing theatre so that we didn't have any development problems on that side. We did, however, run into trouble here with the Board of Trade who said certain importations were unnecessary and certain equipment was already in the country and I think particularly the sound camera had to be imported, and the Board of Trade felt that we should be investigating more the provision of British equipment although, of course, we were as keen as anyone to have British equipment, but the British equivalents were, in our view, still in the development stage and we really couldn't have equipment which was not yet fully proven into the production of the Newsreel which, as I say, was a very difficult operation in any case.

The British equipment which were in development were the British acoustic equipment being developed by British Acoustic Films at Shepherd's Bush, and the Visaton equipment being produced by a new company who had taken over the basic Visaton design. Of course Visaton was quite a well-established system in the film industry, indeed I had used it in my film production days, but this was a completely new equipment, much more in keeping with modern requirements and, as I say, was still in development. But my investigations prior to this had shown that they were both still in the development stage and we were very, very keen to have the RCA proven equipment.

However, in discussions with the Board of Trade, as in these matters we did find a way in that we envisaged that we would be requiring, before long, a sound recording van for location work in this we proposed to put the British Acoustic Films equipment where the requirement was not as urgent and important as the Newsreel. In respect of the Visaton, we decided to use this in the sound recording side of the new Newsreel cameras which we had to develop and this splitting of the work seemed to satisfy the Board of Trade and we did finally get agreement to purchase the RCA equipment. It should be explained, at this stage, that the principal development involved here is that of an optical sound recorder. The sound reproducers were not so much of a problem but it was the optical sound recorder which was the heart of the whole system and was quite an involved piece of apparatus involving quite a lot of development and even when it is developed, it requires a lot of testing in operational use to make it fully fledged equipment. This was the principal item of equipment which was under discussion. We were very pleased to get agreement because the optical recorder was a very well-known device, widely in use in all studios and although we had great admiration for the development work going on at British Acoustic Films, we were apprehensive, quite naturally, until it was fully developed and proven in practice.

As regards the projectors for the dubbing theatre, there had to be two projectors which was no problem. Here, of course, an English equivalent was available and we purchased Ross machines, principally because these were designed to receive the RCA sound heads and so no development was necessary. There was no problem on the projectors and this went through very smoothly.

We should, perhaps, at this point discuss a few of the overall design aspects of the dubbing theatre which it should be remembered was the first custom-built dubbing theatre for film and television in the UK. In respect of the building design, the conventional arrangement for a dubbing theatre in the film industry is to have an

auditorium or theatre, not dissimilar to the cinema, in which the films are going to be shown and then the mixing desk is placed so that the mixer can mix and hear the sound under acoustic conditions which closely resemble that of the cinema in which the film is going to be shown. The general arrangement is to have a commentary room from which commentary can be added looking into to the theatre through a glass window and then the projection room is normally above, projecting a picture onto the screen in front of the mixer. The final area is a small room, probably looking into the theatre to provide visual contact with the mixer in which is placed the recording machine and this is the normal overall design of the theatre.

However, for television use, we felt that the sound mixer should hear the sound under the same conditions as the viewer and that means that he should mix in a room of dimensions similar to that of the normal lounge in a house. So, we decided for various other reasons, to have the theatre which, as you will remember, was end of the old auditory theatre in which the film was projected to have this with the commentary position in the area facing the screen and we built a mixer room looking into the theatre of dimensions similar to those of a normal living room and, in this area, we placed the mixer. Then, as in the cinema dubbing area, we placed the projection room above and looking into the mixer at the rear, we placed the sound recording room with the window between to provide visual contact. This we felt was the best design for a theatre for the dubbing of films for television and the layout did have an additional advantage in that when it was not used for dubbing, the mixing room and the recording room could be used for sound transfer work and other sound recording facilities whilst the theatre with its projection room in theatre area could be used at the same time for viewing films. Generally, it was thought to be the best overall arrangement.

One criticism which was voiced later years, although not at the time, was that it did provide a mixer room which was not really quite big enough when one takes into account all of the various extra people which seem to appear in a film-dubbing session behind the mixer and certainly the cinema arrangement provides a much bigger mixing area and avoids this congestion. But from the acoustic point of view we did feel that the arrangement, which was the result of a lot of discussion between the operational people and the planning and installation group, was the best arrangement.

The second overall design point which is worth considering is the sound recording characteristic for films to be shown on television. The normal cinema sound characteristic used almost universally for film designed for cinema use, certainly at that time, provided a lift in the upper frequencies to provide good intelligibility in a very wide variety of listening conditions resulted in cinemas of a wide difference of design – some good, some bad – but it was essential to make sure that the cinema audience could have a high degree of intelligibility. This lift in the upper frequencies was accompanied by a roll-off to avoid any problems with processing and so on and, therefore, there was a very considerable upper lift and to compensate for this lift there was a fairly severe bass restriction and so one did have a sound characteristic which was rather bass-thin and accentuating the upper frequencies. It was this that really produced the rather unnatural sound which certain hi-fi enthusiasts used to criticise cinema sound for. It has to be remembered that the film production studios had to ensure that the audience could hear the sound under a very wide variety of conditions and this is why this characteristic was used.

However, for films for television we decided that the conditions are really quite different and that most, well, all people would use the living room for viewing the film and hearing the sound and, therefore, we should really mix and listen to the sound as we said under living room conditions and there was no real reason for the very high upper frequency lift used in the cinema and, therefore, we felt the sound should be recorded with a flat characteristic. There was no real difference between this and normal broadcast sound. This was, indeed, how we commenced although I must say that RCA tended to disagree for various reasons, but didn't make their objections too strongly since they saw our

point about the difference between listening to a film in the cinema and listening to it in the home. So we did begin with a relatively flat characteristic, but it is interesting to note that we did run into a certain amount of trouble (as I think RCA felt we might) certainly recording flat with right up to say perhaps 8/9/10,000 cycles, did result in a blasting due to processing for the optical sound track. This placed too strong a restriction on the quality of the processing and particularly with Kays who, although they were very willing and co-operative, they were perhaps not of the highest standard so in order to avoid this distortion in the higher frequency we had to put in a cut-off around about 6,000 cycles and, of course, this did result in the sound being a just a little deficient in high frequencies and, perhaps, a little boomy. So, in order to compensate, we did reinsert what was known in the industry as the upper frequency and middle frequency lift, the intelligibility lift. This was only so for dB, but it did make an enormous difference and was normally used for films in the cinema but, even with this, the films sound tended to be a little boomy so we did cut the bass a little to compensate. RCA were a little amused at this point since they said "You see. You're moving towards the film characteristic". And it was so. We learnt a compromise characteristic was best. and that it took account of some of the problems of optical sound recording and that did go some way to meeting some of the listening conditions.

An interesting point occurred later on this in that it was rumoured that there might be a possibility of the television Newsreel being shown in cinemas and this posed the problem, of course, as to what to do – whether to continue with our characteristic or perhaps to move further towards the cinema characteristic. In order to try and reach a conclusion on this, RCA arranged a demonstration with us using a cinema in the Hammersmith area which had very good, this padding in the seats and carpets to assimilate the presence of an audience, of course, which we couldn't have, and we gathered one day and played films of the cinema - I recall we played a Joan Crawford film which had a very good sound track - and then we played films from one or two of our television Newsreels. To our surprise, the television Newsreel sounded really very, very good and much better than the cinema sound and so this caused confusion, really although the RCA pointed out that this was a very good cinema and that the comparison might not be the same in a cinema with poor characteristics where the Newsreel might sound, what shall we say, a little plummy. Anyway, the demonstration didn't give us much information on what to do and so we decided to carry on with our original sound characteristics. In fact, the Newsreel was never shown in the cinema and so the problem didn't arise.

The third overall design point was associated with the speed of the film. The standard in the film industry and, indeed, still obtains today, is to run the film at 24 frames per second. Now, in television, (principally for reasons of scanning) on the telecine the film is run at 25 frames a second, being a multiple of the 50 frames per second, with interlace which obtains on television. Due to the fact that we wanted to get the dubbing theatre running really quickly and we didn't want to involve too much development work, it was thought that providing all the additional gear etc. and changes to the film equipment to make it run at 25 frames per second would be too difficult and time-consuming. We solved this by putting in a frequency changer, which converted the mains frequency to one of 52 cycles per second, approximately, which then ran the film equipment at 25 frames. This had the additional advantage, due to the design of the frequency changer, of providing a means of stabilising the mains and keeping the mains supply at an accurate 52 frames and overcoming the problem which existed at that time of the mains being very variable, sometimes even dropping almost down to 48 or 49 cycles. With our frequency changer, we did overcome this problem. In fact, we did install a meter (a very big meter) in the dubbing suite to indicate that the mains frequency was near-accurate and to ensure that we had a check on the performance of the frequency changer.

The final point regarding the overall design of the dubbing suite was the mixing desk. We felt that the mixing desk, as provided by the RCA for film use, was not the right design for film on television and, in any case, was too big to go into our mixing area

which was more the dimensions of a living room as I said before, and it didn't really provide the right facilities, in or view, particularly for Newsreel work. And, of course, we were quite keen to use, perhaps, an item of BBC equipment and, indeed, this was what was done. We took the BBC type A desk which had been introduced recently, provided by the BBC Designs Department and we were lucky enough to get hold of one of these desks which we installed. This was modified, as far as possible, to suit the particular film requirements particularly as regards monitoring and this provided us with enough channels to certainly cope with the Newsreel.

An interesting point here was that this was one of the very first sound installations in which we provided a fair degree of sound equalization. This really, up to this point, had been taboo in sound broadcasting as it was felt that the sound equalization method used in the film industry was not right for broadcasting and installations were not provided with this facility, since it was felt that it might be misused. I think the only equalization permitted in our sound broadcasting set up at that time was the small microphone correction unit to compensate, to a certain extent, for changes in the characteristics of the stereo.

However, for film work, you are not in control of the shooting conditions. This is entirely dictated by the subject or things that the crew wanted to film and the sound, really, had to take second place and, therefore, it was necessary to find equalization to try and overcome any problems from the location work. And so we did install, I think, four equalization units – I seem to remember they were called 'VCU 1s' – so that the mixer did have this amount of control. And so after (I don't know how long it took - I seem to remember after about nine months – perhaps a little longer) it was complete we did finish up with a complete custom-built dubbing theatre and this enabled the Newsreel to move back from Hammersmith into the Palace and provide much more suitable conditions and also removed the necessity of taking all the films down to Hammersmith and the fact that the crew had to get down there and get back to the Palace to track the final assembly.

The whole operation was carried out rather smoothly, really, and in addition to providing sources for the Newsreel, it also provided the facilities for making any special films for television. I seem to remember one of the first dubbing sessions at the Palace, using all the new equipment, was to produce a film in which a journey was undertaken around the world in minimum time and I think this was film shown at Christmas. Anyway, the main purpose was to provide the main facilities for the Newsreel and this it did very well and, as we had thought at the beginning, the Newsreel was stepped up later on – it began with one reel a week and then it was stepped up to two and, I think three – and, finally, there was a reel every night, at least during the week, with an omnibus version shown, I think, on the Sunday evening and, of course, the good and well-planned services at the Palace in respect of dubbing, coped with this situation very evenly.

With the developments in the industry, particularly in sound recording, we'll have to come back to the dubbing theatre because certain changes were made later on to further improve the flexibility, particularly in respect of magnetic recording but we really ought to leave the dubbing side now and catch up with a look at the shooting equipment and later with editing.

Just before we leave dubbing, it is worthwhile just recalling one particular personality associated with the dubbing in Ted Halliday, who was the Newsreel commentator over a very long period and, indeed, we all felt was an excellent choice since he had a really first-class voice and the right delivery for this type of film. The interesting point was that he was, primarily, I think most people knew at that time, a portrait painter of great distinction. He was known as Edward Halliday and had quite a standing in the field of portrait painting. It so happened that not long after the reel had been moved back to the Palace and Ted was doing the commentary there that he told us the most amusing story in that, at that time, he was painting a portrait of the Queen at Buckingham Palace and

after a little while, she sensed that perhaps he was not quite as easy as he should be and so on, and she asked whether there was any problem – whether she was not sitting properly and so on – and Ted finally confessed that he was in a little difficulty with the time in that she wanted the sitting after lunch and, of course, that did conflict a little with his having to get up to Alexandra Palace (I think it was about four o'clock or half-past-four) for rehearsal of the Newsreel. So he explained this and said that he was due at the Palace at four/half-past and this certainly was a little tight as regards time. Evidently, the Queen was most interested in this and she wanted to know all about it as film in television was very new, and she said to Ted, "I am interested. Can I come up and see this being carried out?" Of course, this placed Ted in a little bit of difficulty in that he envisaged his arrival at the Palace with the Queen on his arm might cause a little confusion. So he said, "Certainly, Madam, this can be arranged but you understand that I shall have to put it through the usual channels and I'm sure they will agree." and he managed to sidestep this problem. But it did seem to us the most remarkable situation. You cannot, really, envisage a stranger combination of functions of a Newsreel commentator with a portrait painter engaged in painting the Queen. It seemed a very unusual combination of jobs.

Anyway, Ted was a wonderful character – always so helpful and keen and he certainly was one of the many factors that enabled the Newsreel to settle down and be produced with remarkable swiftness at the Palace in the early days. We shall all remember Ted Halliday.

Another personality we have to remember from those early days is, of course, Paul Fox who later rose to become Managing Director of television at Television Centre and, previously, he was at Yorkshire Television as Managing Director. Paul, in the early days of the Newsreel, was, of course, the main script writer and I can see him now dashing along into the little view theatre projection room or into the dubbing theatre with his clipboard, checking on the script and preparing it for the dubbing.

Another personality was Donald Smith. Amongst other things, I think he was responsible for the "*The London to Brighton*" film and installed a film camera on the front of the train and I remember we collected lots of batteries and I think it's final time from London to Brighton on the screen was ten minutes. It was a very notable piece of filming and Don was responsible for all sorts of projects and, in particular, the title of the Newsreel which involved the aerial at the Palace with the words "Television Newsreel" going round in a circle around the mast and when one looks at all the complicated electronic achievements we see today on the screen of titles moving all over the screen – backwards, forwards – one has to remember that title which I recall was accomplished by Donald Smith largely using a gramophone turntable, which I think I managed to find, bits of string, bits of wood, bits of sellotape and really very much a Heath Robinson setup done in a mysterious room he used to occupy in the Palace. And, really, the finished result was, I think, excellent and still stands up to scrutiny when we see it today in reminiscences of the early days and we must pay tribute to Donald Smith who really accomplished an awful lot with very little and almost no money which, I am afraid, was the situation at that time.

Anyway, moving on we must now deal with the film camera situation which obtained, at that time, after the War and during the resumption of filming and particularly the inauguration of the Newsreel. The only cameras on the Film Department register were, I think, a Vinten H which, I believe, came over from the early Baird experiments, several Newman Sinclair cameras which will be remembered by its rectangular box-like shape and, I think, one or two Eyemo hand-held 100' capacity cameras and this was the total compliment. Oh I think there was a Michel of uncertain age also in the range of cameras available. These were all silent picture cameras and were not equipped for recording sound, an aspect which I will deal with in a minute.

The Newman Sinclair, which was one of the main cameras, was rather an old-fashioned camera, although very reliable, and two features on this camera which were felt very desirable was the addition of the shutter-view systems whereby the cameraman can look through the lens when he's filming and a three-lens turret to enable and compliment of lenses to be carried with a quick change from lens to lens. The original camera just had a single lens turret and a side finder. With a view to getting a camera developed to provide these two additional features I've just mentioned, we did take up the matter of further development with Newman Sinclair, but I must say that in my first discussions with them (although I had great admiration for them as a company which, at least, produced some British film equipment) I really felt that perhaps their facilities were not good enough and their schools not equal to the task of adding a new shutter and a turret. Anyway, they agreed to take the development on and finally did deliver to the Palace a modified camera with these facilities but, I am afraid to say, that one of the first assignments the camera was sent on was a filming session at Hyde Park on the Serpentine Lake and the crew came back finally with the story that the turret had fallen off during filming, vanished into the Lake and, as far as I can remember, was not seen again with its compliment of lenses. Certainly, the crew came back with a great tale and I must say that I was not greatly surprised knowing the engineering standards involved and, finally, the idea of developing the Newman Sinclair further was abandoned and we carried on using them as the original design.

The main thing lacking, of course, in the compliment of cameras was a sound camera – a camera capable of recording not only the picture, but also the sound. I should explain that for Newsreel purposes in the United Kingdom, it was considered, certainly through the Newsreel area in the cinema and pertained to our earlier work for the television Newsreel it was essential to have what was known as a combined camera, ie. one that recorded the picture and the sound on the same film at the same time. The use of separate sound equipment as used for feature work etc. was considered too clumsy and slow for news filming and this was also the opinion in the States - we all felt together that, for news, you must have a combined camera.

Now, the only combined camera available in 35mm at that time as a ready-made equipment was what was called "The Mitchell RCA" equipment in the States. This consisted of the first-class Mitchell camera and it had an RCA sound recording goniometer on the back together with sound drown – all very elegantly engineered as one unit. The camera was very quiet and very nice to use with very good sound. However, in view of our previous negotiations with the Board of Trade regarding importation of equipment from that States (particularly RCA), we felt that, perhaps, it was inadvisable to make an application to import this equipment and so we did investigate the possibility of developing certain equipment in this country, although time was very short in the news reel. But, as we mentioned previously, the Visaton equipment was beginning to be available which provided the suitable goniometer and amplifier etc. and the vinternage camera which was a move shutter camera built by Vinten's at Cricklewood and we felt that this combined with the Visaton sound could provide us with a Newsreel camera and a contract was place for three of these and the development was undertaken. I must say that this was a very difficult development for a host of reasons but, particularly, the two companies (Vinten's and Visaton) although pretty willing and so on, didn't seem to gel – they didn't seem to get on together and work in unison and it took a lot of effort, particularly on my part, to get them together and to keep them together – essential for the development of the equipment of this type. I remember one disturbing day when my phone rang in the office from Visaton to say that they had been to Vinten's and discovered that a camera control rod (which controlled the phasing of the shutter) came out the back of the camera and was actually positioned where the galvanometer would be added in the unit to be provided by Visaton and I had to rush down in a taxi to Cricklewood and try and sort this out and finally find another position for this rod. This was typical of the situations that did occur from time-to-time that we had to sort out.

Anyway, finally a complete equipment was finished and this was delivered to the Palace and seemed to do the job pretty well. It was certainly a good film camera – the Miller shutter and 1,000 watt capacity and all the facilities we wanted and the Visaton equipment recorded quite a good sound track and it all worked with a DC motor and provided the sound recording facility which was necessary for the Newsreel and, as I have said, three of these equipments were built and these provided the sound recording facility for location filming for the reel.

Although they worked very well, they did have two restrictions. One was the weight – it was, undoubtedly, a heavy piece of equipment – and the other was that it was noisy as it hadn't been designed from the outset as a quiet camera and these two requirements did make it rather unpopular, but I think most people realised that really this was the only way in view of the fact that we didn't feel that we'd ever get a licence to import the RCA Mitchell equipment which was much lighter and quieter. Anyway, as I say, we managed to get these into service and they were ready by the time we were due to launch the Newsreel.

An interesting little story that can be told here is that, I think probably by design, but anyway it did happen that the Vinten Visaton equipment was sent down at a later date to cover a news story consisting of a speech by Princess Margaret and I recall that this was at Bristol. Following this, we did get a letter of complaint from the Controller of the Royal Household complaining about the noise of the BBC camera and saying that this had disturbed Princess Margaret and they hoped that this would not happen again. Of course as you can imagine, when we received this complaint (which was a year or so after we started the Newsreel) we promptly put forward an application to the Board of Trade for one RCA Mitchell equipment to cover these occasions particularly the Royal occasions and it can be recorded that permission was granted immediately – almost by return! So we did finally obtain one mature RCA equipment which was used when quietness was essential.

The final part of the chain of equipment and facilities in the production of the Newsreel must now be mentioned and that is of editing the film. There was not much development necessary here in respect of equipment. The English-made Editella was available, and this was very much liked by the editors. Although this was a bit of a mangle of a machine (certainly compared with modern equipment) and the picture was not very good and the sound was worse, it, nevertheless, did provide flexibility, fast backwards and forth running and you could run very short bits of film and catered, of course, for separate sound if this was involved, or combined sound. It was very much liked by the editors due to its flexibility and it was reliable and really fulfilled their requirements and so this, together with the synchronisers, made by Achmade and, generally, rewind equipment was available and so on the editing side, at least in the beginning, in the 35mm gauge with optical sound there was virtually no development required really altering these machines and getting them into service.

The only problem, in the beginning, was the provision of suitable cutting rooms. Since we were on 35mm the fire hazard had to be taken into account, although the film was non-flam the view of the authorities really for a very long period was that if you were using 35mm film, although non-flam was in use, the possibility of nitrate film coming into the room couldn't be discounted and, therefore, they did apply stringent requirements for the use of nitrate 35mm film and this was applied very strongly by, I think, it was the Hornsey Borough Council who was responsible for the adherence of fire regulations at Alexandra Palace. However, finally, we did find two rooms at the front of the Palace which had access to the outside (to daylight) and met the fire regulations with the addition of suitable doors etc., but it was the immediate access to the outside which enabled these rooms to be approved and this is why the first two cutting rooms were in that position. Indeed, I think the two rooms can be seen to this day and these rooms coped with the majority of the work on the Newsreel.

I think another cutting room, or perhaps two cutting rooms, were found later on somewhere around the back of the Palace and whether these conformed with all the fire regulations I can't recall, but certainly the two main rooms were at the front of the Palace and, of course, these had the additional advantage, as far as Philip Dorté was concerned, that they were underneath his office which was in the tower and he could pop down and just keep an eye on what was happening very easily. And, of course, the proximity to the dubbing theatre was very good. So, that was how the editing requirements were met.

So, at the start of the Newsreel, if we summarise, we had the dubbing theatre running. This had two projectors, three sound reproducers and the mixing desk and the commentary position and the recorder to produce the final sound track. We had the cameras consisting of the Vinten Visatons to record picture and sound backed up, as I said, with one or two Eyemos and the Newman Sinclairs and this provided the filming element and the editing equipment I've dealt with with principally the two editing rooms at the front.

All the processing, at least for the first years, was carried out by Kays at Finsbury Park - not so far away - and with the administrative side I remember Harold Cox particularly, who I think was Allocations Manager and various people involved in the production of the reel. That was the situation when the Newsreel started and maintained really throughout its life up to the inauguration of one reel a night during the week and the Omnibus version on, I think, Sunday.

Dick Coulson gradually assumed more responsibility and he really was finally the Producer within the Palace and not only of the Newsreel but the Omnibus version on a Sunday, plus other specialised film projects.

So that is a survey of the facilities running on the Newsreel and as I said much earlier, the Film Department were engaged in other activities to an increasing extent involving our filming in the field of the interval films, film sequences for plays and film sequences for the demonstration film. This, of course, involved filming equipment and the sound recording equipment of the more conventional type as used in the industry and, in due course, for a lot of this work a Vinten Everest camera was purchased which was a studio camera, very quiet and with mirrored shutter and with all the facilities required for the more studio-type of filming. I think the Mitchell, which we mentioned earlier was also available for this work and, of course, the Newman Sinclairs came into the work where sound was not required.

Just a few words about these interval films which I have mentioned before. These were films which were produced and were available to cover breakdowns of the television equipment which, in those days, were really quite frequent. Also the fact that the timing of programmes was not as accurate as it is today, for various reasons, and where there was a gap perhaps for a few minutes before the next programme scheduled to start, perhaps on the hour, an interval film was shown. These, believe it or not, were really very popular. Many titles come to mind, but there was one of the ploughing of the field, or rocks. I remember Portman Bill came into it with the sea breaking over the rocks, there was a cat playing with a ball of cotton on the floor and one very interesting one of fishes in a tank and there was quite a selection of them. Although mention of these films causes moaning these days, in their time they provided a valuable purpose and were very much liked.

As I said, the other activity was filming sequences for plays, sometimes a sequence was too difficult to do live in the television studio (remember that all television was live, there was no recording) and if there was a very difficult scene, involving water or fire or some complicated scene, this was pre-filmed and injected into the play at suitable times, and this was another area of filming which, indeed, carried on for a very long time.

The other aspect was doing film sequences for the demonstration film, so that this could be built up to provide a film which would woo viewers to television. Remember there was no recording of television for many years and, in quite a few cases, these shows produced on 35mm film represented the only recurrence of early television productions of various types. Often people see these, these days, and say "Well, how were they done if there was no recording?" and the fact is that they were directly filmed at the time all on 35mm, of course, but as I said earlier there was no 16mm facilities available and anyway there was no 16mm telecine. That came later.

Now, in respect of this area of filming as opposed to the Newsreel, there was the sound recording problem and remember we were still on optical sound and the separate optical sound equipment at that time was very bulky consisting of a lot of cases of equipment and also there was the problem of synchronisation. Separate sound was not only, you know, quite suitable for this sort of work (in fact, it was preferred) and one snag was that the picture camera the Mitchell or the Vinten Everest has three phase motors (220 volt) and this voltage had to be supplied with the right frequencies and difficulties were experienced at that time with slow running, particularly in cold weather, and so it was not so bad for feature filming where there was much more time and cameras could be warmed up and so on, but for television filming which was already requiring much faster operations, this was quite a problem.

Therefore, the idea was brought into being of having a sound recording plan which would not only house the optical sound equipment, but would also produce the 220v, three-phase power for the film camera and since this voltage would be carefully controlled, it was always available and the picture camera would get up to speed even in slow weather. In fact, a very large proportion of space in the van would be taken up by the batteries to run the master generator and, as I said before, this provided an opportunity to use the British Acoustic Films optical sound recorder and in considering this possible development, we were lucky enough to find a recording van originally built for disc recording for sound broadcasting which had fallen into disuse (I remember it was up at Aldenham – this was the T30 as I remember) and this was available to us free of charge and so the scheme was brought into being of converting this van to house the three-phase generator running from batteries and the optical sound recorder and with mixing facilities so as to provide a very convenient location, sound recording vehicle which would not only provide the power for the camera, but which would also carry all the cables which were an essential part of this operation.

In fact, it is interesting to record that the whole project was put into the hands of British Acoustic Films. We did the overall design work and the project was given to them and they did all the installation and finished up with the completed van. It is worthwhile recording that because in these days of producer choice and putting all the work out to industry, they were doing that right in the earlier days, as far as we could. So, for the outside filming of the document or feature film we had this van with the Mitchell and the Vinten Everest camera and this covered this sphere of work. Whilst the equipment worked very well, one severe restriction was the size of the T30 van and I think it is fair to say that one of the main difficulties was finding space to park this very large van. This was more difficult than getting permission to film since, invariably, it needed to be parked fairly near the filming and it wasn't long before the Police arrived and demanded that it be moved or shifted on and so that was the main restriction of its use - it worked well, but its size was a restriction. We did, in fact, build a smaller van later when magnetic recording came into being. We'll deal with that later.

So, there we have a general survey of the situation regarding filming at Alexandra Palace in the early formative years after the War. The Newsreel production side I've described, I and the production side for the interval films or film sequences for plays and for the demonstration film etc, etc, have all been covered.

By this time, of course, the Film Department had grown (I don't know what the total number of staff was, but I suspect it was in the 20s, 30s, perhaps 40s) with the increase of administrative staff and people organising the filming etc, and increases in the camera side and film dubbing and editing. Certainly the Department had begun to grow considerably and I think it was around this time that Philip Dorté told me he was given the option of either concentrating on the production side of outside broadcasts or the film side. You remember, I said earlier on that he was the head of both operations in the earlier days and I know he did carry round for some days the difficult decision of which way he would go and he did discuss this with me, I remember, on one or two occasions. Finally, I think correctly he decided to opt for films since this was a field in which he had great experience and so he did become Head of Film in television at the Alexandra Palace.

Now, I said right at the outset that my field in film at the Palace consisted of all the production equipment involved in the producing of the film and it did not cover the telecine transmission equipment but, of course, since we had to design the output of film equipment to match the telecine and vice versa, I was bound to be involved, to some extent, in the facilities on these machines and also their performance to match the characteristics of the film. One episode I can remember is in connection with the Mechau or continuous motion telecine which was used, primarily, for the transmission of the demonstration film to take this duty away from the main telecine room. I should explain that the Mechau was a continuous motion projector using oscillating mirrors and this was developed in Germany before the War and did provide a means of bridging the problem of the motion of film which was intermittent, of course, and television which was continuous and by using the Mechau you could transfer from one to the other in relatively easy mode. The problem, however, was the reliability of the Mechau and the very accurate adjustment of the mirrors, but this aspect must be covered in another field of recording the history of Alexandra Palace.

Anyway, there had been developed a telecine using this method, consisting of a Mechau projector focusing the image, at the beginning, onto I think it was an Emitron camera and, by this means, you could film at 25 frames per second and produce a quite reasonable picture without further problems and as I have said, this was used primarily for the demonstration film which ran for an hour or an hour-and-a-half every morning. Whilst the pictures of this, even in the early days, were not too bad the sound really was not at all good and the reason for this was that the sound head had been added to the Mechau in the early days of its development and whereas in the design of a projector you should really drive the sound head first and then the picture mechanism afterwards, on the Mechau the picture mechanism was driven first and after a lot of shafts and gears and belts the sound head was then driven and this did result in a fairly poor performance in respect of flutter.

For some reason we never really ascertained on the film side, this didn't seem to worry the engineering division too much, but on the film side where we were responsible for the production of the film and the quality, we were very much disturbed by the sound quality and I can remember that Big Ben was on the film fairly early on striking the hour and this really was the most atrocious sound – the gongs going “yaung, yaung, yuang” and this going out every morning, we felt gave television a very bad reputation and certainly those responsible for the production and recording of the film were very disturbed. Somehow or other, the possible improvement of this aspect of the performance of the Macau came *my* way and I was asked to investigate and see whether anything could be done. I felt that this was going to be very difficult because we couldn't really take the thing out of service and we couldn't spend much money – finance was limited as I said before. Finally, I decided to call in RCA who had a very good reproduction division responsible for the sound reproduction of the sound recording in the cinemas, and this side of RCA had two good engineers – I remember one was a Mr Odell and the other was a Mr Sinclair. They were not only well-versed in all the problems of sound reproduction, but they were also very good engineers in their own

right and so I discussed this with them and they said well, we must have a go, and we did place a small contract with them to try and overcome the problem. Of course, they said immediately we can't really do anything unless we have a machine to play with and so we did find a Macau (the BBC had bought quite a number) and we moved this down to the RCA reproduction division premises at Hammersmith and set it up with the sound head and they started work to see whether anything could be done, although I must say they were pretty doubtful when they saw the host of gears and belts and so on involved.

However, in a remarkably short time (I think it only took a month, or so) they did come up with a modification for the sound head, it had to be kept simple, of course, with extra strings and vamping arms and rollers which did cause quite an improvement in the wire plus performance. It was still very, very far from any Hi-Fi quality and, indeed, was nothing like as good as the conventional sound head in use on projectors at that time with the fabric and so on, but, nevertheless, it did cause quite an improvement and so we applied this modification to the sound head at the Palace and, indeed, the improvement we required experimentally at the Palace was obtained. From that time onwards, with very little expense and no great changes, the demonstration film went out in the mornings with quite an improvement in the sound quality - still not hi-fi, but at least it was acceptable bearing in mind all the problems involved.

Of course, the other great development on the telecine side which really requires a recording of its own, was the arrival at the Palace of the Cintel flying spot 35mm scanner. This was developed by Cintel, as they were known then - later to become Rank Cintel - and the engineer largely involved, I think we will all recall, was Nuttall and so I think a contact was placed for this development and the BBC kept closely in touch in advising through its development and finally a machine was completed and delivered to the Palace. This caused an enormous improvement - almost a sensation, really! The quality was certainly the best seen on television at that time. Remember, the telecines prior to that had used camera tubes and, indeed, the cameras themselves (the Emitrons) were not capable of the highest quality, whereas the flying spot Cintel machine, the news television cameras and it did produce remarkable 35mm quality. Indeed, given good-quality film, it was the best quality seen on television through those years and represented a remarkable development.

Inevitably, in such a history of film at Alexandra Palace, one is bound to dart about a bit. You cannot keep it all in logical order and I'm afraid that this is inevitable if we are going to cover all aspects.

It has to be remembered all the time there was no recording method of television images, and we ran shows live and that was it - you had no record of the event unless film cameras were there and an interesting use of film to provide an evening sort of Omnibus of the events was at Wimbledon. Wimbledon was covered by live television cameras from very early on - almost, I think, from the beginning of television - but people did want to see a sort of summary of the day's play in the evening and this was achieved, after the War and after the Vinten Visaton Newsreel cameras had been produced, by having one of these Vinten Visaton combined sound and picture cameras at Wimbledon. I recall Dick Coulson was the producer, and he had a commentator with him and they would be there throughout the day and they would choose highlights hoping to capture the most interesting and exciting moments. This was done throughout the day and in the evening it was transmitted as a condensed coverage of the day's events.

Of course, it was very difficult to know just when to film, but I think Dick got a very good sense of covering the most exciting events and this was a very popular item in the late evening. Commentary was all on the film all in synchronisation and there was no editing required, merely topping and tailing and after processing, the film was ready for transmission.

We must now cover a very important technical development in film production – the magnetic recording of the sound. As I said earlier, in all the early days of film at Alexandra Palace, as was the case in the film industry, the photographic sound recording method had to be used and this had the great disadvantage that the recording had to be processed and, until you got it back from the laboratory, you couldn't be sure of the quality and the suitability of the recording and, of course, you couldn't marry up the sound and the picture. It made the process not only complicated, but also hazardous. It wasn't so much of a problem for the film industry and feature films, but for television, where fast working was required particularly in respect of the Newsreel, it was a considerable disadvantage. Therefore, when we heard that a magnetic recording was coming into being from a production point of view, I think it was in America, we, of course, became very excited and decided that this must be introduced if it was possible.

Of course, recording on magnetic tape had been around for some little time and was beginning to be introduced into broadcasting and supplanting other methods of recording, but recording on tape was not suitable for film production due mainly to the editing process and the marrying up with the picture. In later years, it became the method for recording sound of the picture with the film camera, but this was not until much later on and even then, the use of magnetic film – perforated film – still obtained in the editing and dubbing stages due to the necessity of matching it with the picture film.

The introduction of magnetic tape was made easier by the fact that RCA pioneered the system in the States, and we heard they were producing over there modification kits to enable existing optical sound equipment to be converted to magnetic and since this obviated the necessity of buying completely new equipment, obviously this was of great interest.

In discussing the use of magnetic generally, we did discover there was some reluctance on the part of the editors – it wasn't opposition, it was just some reluctance – in that the benefit of using the optical sound track was that they could see the sound modulation, and this often enabled them to marry it up with the picture very quickly or to find start marks etc. and they did voice some concern that the magnetics system would not have this advantage. As I said, they didn't oppose it, they just voiced it as a worry.

At that time, there were a number of aspects of film production which it was felt should be investigated in the States and this aspect of magnetic recording was certainly a major one and so a visit was made to the East and West coast by John Byers and Bob Vole and myself, particularly with the object in mind of seeing how the studios were coping with the introduction of magnetic. We visited a number of Hollywood studios on a trip and we quickly found out there was no problem at all. In the cutting rooms there were little rolls of magnetic tape with elastic bands around them all over the place and there seemed to be no problem at all. The equipment, of course, the editing equipment, the moviolas etc had been equipped with sound reading heads so that the editor could run the magnetic over and listen to the modulation and find the start-marks etc. and also there were available separate sound reading heads as well as those on the editing machine. In general, there really was no problem.

It is just interesting to note that British Acoustic Films in England were also experimenting with magnetic at this time, and they had introduced a method of dusting the tape with a magnetic dust and this made the modulation visible. They put this forward this as a method of, possibly, helping the editor to find the start-marks etc., but although it did this, it was obviously not very practical in the editing room and was not really any more than just an experiment. We found there was really no problem over the editing of magnetic film and that was in feature production, of course, where the editing does tend to be quite complicated. Therefore, on our return to the UK we did discuss with RCA the possibility of modifying the existing equipment at the Palace to cope with magnetic film. I should emphasise again, this was magnetic, perforated, 35mm film of exactly the same dimensions of the picture film.

The first magnetic, coated films which were available in the States were, I think, from Minnesota Mining although, later, other stocks appeared, but they certainly were the pioneers as far as I can recall. Of course, this was quite a big development and undertaking and it is interesting to note that having gained all the information of what was involved, a redoubtable pioneer in sound broadcasting particularly, Mr Kirk, in the Research Department, came into the investigation and I took him down to the Hammersmith premises of RCA where they staged a demonstration. For me, a young engineer, I was very impressed by Mr Kirk and I felt greatly honoured to have the job of taking him down in a taxi to Hammersmith, explaining to him what was involved and how the equipment would be modified. I must say RCA put on a very good demonstration of the modified kit using optical sound equipment modified for magnetic, and it really was very impressive. Mr Kirk was convinced that this was the right thing to do and we did put a contract through with RCA to modify the equipment at the Palace.

The modification of the sound reproducing was really straight forward. This involved just putting heads in the sound reproducing path at a suitable point where there was enough tension on the magnetic film to give good contact with the head. This coupled with the head amplifiers, which were installed with each reproducer, was a fairly straightforward conversion. The modification of the sound recorder was the main item of equipment and here RCA produced an assembly consisting of the erase head, which had to be there to erase any previously recorded sound, and the recording head and the and producing head - the three head assembly. This was designed to fit into the recording machine and use, basically, the same film path as was used for the optical sound and it was a very good conversion which worked extremely well. It would only run forward, of course, as would the producers but, given this restriction, it worked well without any experimentation and the installation of these items was installed and went into service really very smoothly.

I seem to remember that although there was an erase head on the recorder, we did also use bulk erasers where the whole reel of film, once it had been used and was not required any more, would be erased by the bulk eraser and then it was ready for recording again.

Supplies of magnetic film, in the beginning, were restricted and so we were not able to store whilst with the magnetic film although this was possible later as stocks of magnetic became more general. The introduction of magnetic really, from a technical point of view, was really quite smooth and was quite a revolution in the dubbing process in that once the dub had been finished, it was possible to rewind the film with the sound and to play it back and check the doors well and, given that there were no more picture items to be added, it could then really be added to the telecine for transmission with the knowledge that all was okay, technically. Of course, it became widespread in the film production studios around the same time, although I think our installation at Alexandra Palace was one of the first in the UK.

We must, at this point, give credit to British Acoustic Films at Roger Verge, Shepherd's Bush, who were also developing the use of magnetic film and they did produce a magnetic 35mm recorder and this did enable us to produce a much smaller truck than the big T30 wagon which we talked about earlier with photographic sound. The advent of the British Acoustic Films perforated magnetic film recorder, really a bigger version of a tape recorder, enabled us to develop a much smaller recording wagon really more of a shooting break type in which we installed one of these British Acoustic Film magnetic recorders. This largely took over from the big truck and enabled the recording of location sound to be accomplished much more smoothly with the great advantage that you could check the sound on the spot. Of course, it was still necessary to use three-phase motors - the recorder had a three-phase motor and the camera a three-phase motor. They were supplied from mains type suppliers, I think, in the case of the truck. I don't think we installed a generator as we did on the big recording van and it all made for much more portable equipment.

Coming back to the dubbing theatre, as I say, the introduction of magnetic did revolutionise the process, really, and made it a much more smooth operation and improved the sound quality quite considerably since, as I outlined before, the restrictions which were involved in optical sound recording in achieving the highest quality.

We should just mention that in respect of editing the magnetic film, it was necessary to add magnetic heads principally to the editorial machine so that the separate sound track could be magnetic and edited with the picture film, but this was not too great a job, bearing in mind the sound quality was only required to be intelligible and no more than that and this enabled a magnetic head to be installed in the film path fairly easily. In addition, as we had seen in the studios in Hollywood we installed magnetic sound reading heads which were beginning to come available so that the editor could run the magnetic film and find out the position of the start-marks and modulation etc. The modifications to the editing equipment were quite straightforward really and didn't present a problem.

I mentioned before when talking about the installation of the magnetic conversions that these were made easier by the fact that the equipment the sound reproducers and the recording machine didn't have the facility running back, they only ran in a forward direction and this did simplify the conversion. However, it must be remembered that the fact that the equipment, including the projectors, would only run on a forward direction and had no reverse running made, really, the whole operation quite time-consuming compared with modern equipment where with just a touch of a button all the equipment runs back even at high speed.

You have to remember in those days of dubbing at Alexandra Palace, we used quite heavy 35mm projectors and you couldn't rewind the picture film, you had to do it when it came to the end of a rehearsal or dub. You had to take the film off and rewind it by hand and the same applied to the sound reproducers and, of course, when magnetic came in it applied in the same way and if you wanted to get back to the beginning you had to either take it off the machines or after the magazing in the case of magnetic you had to rewind it by hand. It's surprising, really, that everybody did this as a matter of course and didn't feel like there was any great restriction.

Of course, one of the factors of dubbing was that when you got to the end of a dub, it was more often than not the case that much discussion occurred and argument about this item and that item and so time was taken up in that respect and really, by the time the dubbing people were ready to record again, the film had been rewound by hand and this didn't represent any great restriction. However, it does make a very considerable comparison today where high-speed rewind is considered to be an absolute must and this really didn't come in for quite a long while and certainly wasn't available in the dubbing theatre at the Palace. It just shows what you can do when you have to when the facilities are just not available.

There is one further technical aspect of the film production process about which I ought to say a few words now, I think, and that is the processing of the film. Now, of course, with magnetic it is just the processing of the picture film and all the way through the early days at the Palace, the majority of the film was processed at Kays at Finsbury Park, not so far away. I think some went to other laboratories, but certainly Kays carried the maximum amount and I think it was generally thought that they gave us good service. Perhaps, technically, the processing was not of the highest quality but, nevertheless, they did provide a very good service and when it was necessary, pulled out the stops to give us that extra bit of service for late stories or, perhaps, an increase in load particularly over the Christmas period. I think, generally speaking, Kays gave television a good deal. However, it was felt through the years, particularly for late stories, it might be beneficial for there to be a small amount of in-house purchasing at the Palace, particularly for the Newsreel. This would be 35mm and, of course, it was still black and white but, of

course, it was not possible to consider the installation of big processing machines with deep tanks and chemical mixing and all that.

So, we did look around for possible ways of processing with the smallest amount of equipment and, around about that time, there did appear various quicker ways of processing, particularly high-speed processing machines, and these were all investigated to see whether they had any possibilities for the Palace. There were high-speed spraying machines, and I remember Kodak had a machine, I forget the name, but I think it employed chemical packs and this was investigated fully. However, they all seem to have got some disadvantages or hazards and we didn't really find a machine which was capable of easy installation and suitable for addition to the facilities at Alexandra Palace.

Until the Debris company in Paris produced what was called the "Egdon" machine, I'm afraid this is not a very good story as regards provision of facilities at the Palace, but this machine did seem to offer a lot of advantages. It was about the size of a domestic refrigerator and the design involved a tube in a spiral formation inside the tank inside the refrigerator-type cabinet, and the idea was that the film was pushed in one end or driven by fiction rollers and it went round the spiral and came out the other end and design intervals in the spiral - the various processing, fixing and washing liquids - were injected, but under high pressure and since it didn't use any great propensity of chemicals, which was one of the reasons for its design, the chemicals were contained in relatively small charges in the machine. Another great advantage of the machine was that you only used it when you had film to process, it wasn't burning all the time and it did seem to have all the advantages for Newsreel work (late stories, that is, not the main bulk of the processing). I think it was, originally, designed for black and white processing for the film lens in a 35mm camera, 36 exposures etc, so that these could be installed all over the country and shops and the shop could process 36 frame exposure films without any other equipment.

We certainly went to Paris, I think Dorté and I went together and we saw this machine and we were very impressed with the overall design and felt that one or two of these at the Palace would be invaluable. I think we should have been warned, perhaps, because I remember on one of our early visits Debris showed us the machine and they happened to have a customer in the works at that time - he was an African explorer, I think, who had brought back a whole load of film, still photography and 35mm and 36 exposure lens and they sell well, we can process your film in the new machine and I remember that this was a bit of a disaster because although the machine took the film alright, it didn't come out the other end and when the lens was opened, all the film burst out. Debris explained that this was something they were experiencing and this would be overcome so I said we should have been warned in view of what happened later but, anyway, we accepted their explanation (they were experts in this field) and I think we were perhaps persuaded by the overall conception that this really was an excellent idea.

We did do further tests and the machines seems to be running pretty well and certainly processed the film really well due to the high-speed spray. Also it was really quick (I can't remember the speed at which the film went through) but I seem to remember the overall processing cycle was something in the order of, perhaps, ten minutes or even less and, of course, it didn't involve the installation of chemical mixing tanks and what-have-you. The only requirement on processing was fairly accurate control of the water temperature since this really did control the whole machine's operation in respect of temperature.

So, we went ahead and I think we installed perhaps four of these machines - they were only negative machines as far as I can remember, but it was felt this would be a valuable additional facility. The bulk would still go to Kay's, but these would be very useful for late stories and these were duly installed at the Palace and put in one room. I remember the installation was very easy except for the water temperature control system, since this

had to be very accurate but this was put in our building department and seemed to meet our requirements.

However, I must say, it wasn't long before we did experience drive problems with the machine, as it happened during our first visit to Paris, which we should have taken better note of. However, as I say, in the tests in between the machine seemed to work very well, but I have to say that at the Palace we did gradually get this drive problem. The film was friction driven, I think, at the beginning of the path and then it was pushed through the spiral tube assembly and I am afraid many times, the film was put in at the beginning and one waited, and one waited and one waited and it never came out the other end and then, of course, one was forced to open the lid to see what was happening and the film would all burst out towards you. That's not to say the machines were a complete disaster, they were used to a very considerable extent, but this hazard did exist and I'm afraid the engineer who was appointed to run the machines was not at all keen – he'd had too many experiences of the film jamming – and I must say that this particular venture didn't cast a great deal of credit on us although it was a giant decision and as Dorté said it all seemed to be alright in the beginning and was suitable. I think we were probably justified, it was just that we probably ought to have done more testing in the beginning.

Anyway, that was an episode which must be recorded, it was justifiable and certainly the Eglon was the only machine which seemed to provide this facility without any great installation, but we did learn from it. I certainly learnt from it – that with processing it's really best not to be clever, to always go for deep temp machines with the film driven by conventional means and never experiment or try new systems. I can say more about this later, but that was the lesson we learned with the Eglon. We never put in printing equipment – this wasn't necessary, because we could transmit the negative – and until later on when we started to use 16mm at the Palace, this was the sole piece of processing which we undertook ourselves.

The only other item that perhaps I could just say a few words about in the technical sphere were the lenses on the 35mm cameras. We didn't play much part in this in the Planning & Installation Dept. 35mm lenses were available and I think one or two zooms were beginning to appear at that time and these seemed to meet the operational requirements. So we really just bought the lenses the Film Department and, particularly, the cameramen thought were the ones needed to do the work and we didn't carry out any development work in this sphere. This came later when 16mm appeared on the scene. I think the only bit of development that we carried out with the Film Department on the lens side was the purchase and mounting of long focal length lenses. I remember one of the lenses purchased was a Dallmeyer this was obtained, principally, to enable us to get good pictures of the balcony at Buckingham Palace with the camera mounted on or near the fountain outside. Development work in this connection was really the mount. The setup really consisted of a pretty big lens with the camera mounted on the back and certainly the mount was the subject of a certain amount of design work. I think the mount was manufactured by Vinten's particularly to suit the Vinten H cameras and the lens, I think, was a Dallmeyer but as far as I can recall, that was the only bit of development work in which we became involved on the lens side.

I seem to recall perhaps one or two zoom lenses were beginning to appear, perhaps one by Taylor-Hobson but these were not used to any great extent. We were still using prime lenses and switching from lens to lens on the lens turret, certainly on the Vinten H Newsreel cameras.

I think, perhaps, at this point it's worthwhile just standing back and surveying the general situation at the Palace with the Film Department and the use of film. Through the years in which the various developments have taken place and we've described, of course the Film Department had grown. I suppose, at this stage of development, it had probably grown to 50 or 60 strong with administrative staff and allocation staff and more cameramen, more editors and so on, and so on. I should guess it was around 50 or 60

and the Film Department was carrying out a fair load of operations performing a valuable part of the overall operation at the Palace.

I don't think, up to this time, many complete films of the feature type had been made, but certainly, there were quite a few feature documentaries made. There were also the interval films made, which I have mentioned, the demonstration film was always been added to and coupled with these activities there was, of course, the Newsreel and, as I have said before, this had reached, I think, five issues a week and the compilation Omnibus version on a Sunday. I remember an additional, almost epic, that the Film Department used to take on each year around the end of the year for New Year was a retrospect which probably lasted an hour or, perhaps, an hour-and-a-half and this was a compilation of all the major news stories of the year and did represent very good coverage of all the main happenings. I think Dick Cawston produced this, as far as I can remember, and it was a pretty big venture in the week or two preceding, I think, New Year. It was certainly a major operation in the dubbing theatre and in the editing rooms, putting all this together.

I can recall some feature documentary. One, I think, was when Dorté went around the world, I can't remember why, but I think it was an association British Overseas Airways and he did an around the world trip in a very short time and this produced a very good feature documentary covering an air trip right around the world in a short time, alighting at various airports on the way. I recall, also, one or two films made in association with BOAC of the first flights of the ill-fated Comet – the first jet airline – and I seem to remember a trip was undertaken to South Africa and I can remember one shot in the film where a pencil was up-ended and stood on the table before the passenger and just remained undisturbed, as an indication of a lack of vibration. Oh, yes! There were quite a few feature documentaries.

Also, I think there were several series of films made for the children and I think these were made at Stoll Studios as complete films to be shown during the Children's Hour in the afternoon and one, in particular, was the donkey – oh dear, I forget the name – it was a household name at the beginning and other films – I remember "The Flower Pot Men" (Bill and Ben). These were all shot on film at this time and, as I said, they were done at Stoll Studios. I think Alan Lawson played quite a large part in the filming of these items.

So, you can visualise the overall load of the Film Department and it's worth pointing out for history's sake that although there was a feeling abroad that Philip Dorté was pushing ahead with the Film Department and expanding, perhaps, Empire building, I, personally, as far as I was involved observing events, I didn't feel that this was justified. The film load came naturally onto the Film Department. Film was so useful for covering quite a large array of subjects that the growth of the Film Department which compared with what came later was quite modest but, nevertheless, was a fair load, I think grew naturally out of the desirability of using film for a wide variety of ventures and I think it's worth mentioning this.

Of course, the big expansion on film took place later on when Lime Grove came into being and, particularly, when Ealing was purchased but, certainly, it was beginning to grow at the Palace and the need was beginning to be felt at the Palace for more cutting rooms (these, particularly, couldn't be built due to space and fire regulations) and more offices and one particular need was studios for filming. It was not possible, really – the studios at the Palace were fully booked up – and filming took place in odd places, but there was a need for one or two film stages to cope with specialised filming. You see, film sequences were undertaken for plays where a difficult sequence occurred which couldn't really be done live and so fire, flood or water scenes and so on, these were not only quite complicated to do, but often took some time, due to their nature and so the need was beginning to be felt for a film stage, or stages, and I remember John Byers began to look around London to see whether there was any possibility of finding a suitable building of this type and this search carried on even after the purchase of Lime

Grove Studios which, again, were fully booked and Film found it very difficult to find any booking periods. I remember John Byers was rather desperate – he turned down so many unsuitable areas – and, in fact, in desperation, the Film Department came quite close to considering the purchase or lease of the roller skating rink (I think it was roller skating) at Cricklewood. This seemed to have some points of suitability and was, of course, well-located – not so far from the Palace – and, later, Lime Grove, but everybody had great misgivings about this as they were not sound-proof and their position was not good and car-parking was not good. However, they did seem to be about the only area and it was only the fact that Ealing Studios came onto the market later on which enabled this project to be forgotten because Ealing provided the long-awaited extra filming space that the Film Department needed.

Coupled with this general survey of the size and activities of the Film Department at this time, it is worthwhile including from the historical point of view the position of film in the BBC. Certainly, around that time, (and I think it went on for considerably longer) it should be remembered that all the film production resources ie the Film Department, were carried out by this department which was really, I suppose, in the Programme Division and that on the operational side - I'm speaking of the production of film ready for delivery to the telecine – this was an area entirely covered by Film Department and Engineering Division didn't play any part in this area of activity. This, of course, made it rather difficult for me being in the Planning & Installation Department and really solidly in Engineering and yet, working very closely with the Film Department that was not in this Division. I seemed, all the time, to have one foot in the pure Engineering Division (based down in London) and one foot in the Film Department at Alexandra Palace and this situation did have its difficulties. Often, I felt I was walking on a bit of a tightrope between the two.

I think at this time in Cine film Unit in the Planning & Installation, we had probably grown to about four engineers engaged solely involved in this type of work and I remember my main assistant at that time who had been moved over from Sound & Broadcasting was Harry Goodings who most people knew about the place at that time, and he came over particularly to help me with the completion of the dubbing suite at the Palace.

Another stalwart who must be mentioned in the history books is Laurie Ellis who was our wireman/mechanic – particularly mechanic – and Laurie's cheerfulness and willingness to undertake any sort of mechanical work (and quite a lot was necessary to modify equipment in the film era) and his efforts must be recorded as he really was a stalwart in that period and always ready to undertake almost any mechanical job or modification.

To revert back to the position of film, we have to record that although film had grown very considerably, it didn't have very great popularity, particularly in Engineering Division. I think the feeling was that it was a bit of an interloper and no part of the pure television system. Somehow it was there and was used because it had various advantages, but we certainly, working in the Cine Film Unit (and I think Film Department felt also) that we were never made to feel a legitimate part of the television process and we did find it very difficult in many aspects, particularly the financial one. We used to watch engineering schemes for television whistle through, what was then, for very considerable sums of money, but directly a scheme went up to purchase additional film cameras or editing and so on, it seemed to have a much slower process and more difficult process through the financial approval circle.

I was interested to discover in my travels in Europe later on in search of film equipment, that this was not entirely isolated at the BBC. There was a general feeling in television in many countries in Europe that film was a bit of an interloper and was not viewed with any great enthusiasm particularly in the engineering circles. This may be unfair, but it was certainly our feeling and certainly, financially, we found that in the early days it was very

difficult to get approval for what we felt were the equivalent facilities on film to the same standards that were being applied in television.

We now come to a major development in television which occurred towards the end of the BBC's tenure at Alexandra Palace, that in the change of the presentation of news. It will be recalled, that I said right at the beginning of this history that the original decision of management in respect of news was that it wasn't really a suitable medium for television, since the addition of pictures and perhaps announcers in vision could produce slants on the news which might be undesirable and, indeed, difficult to produce and arrange and it was felt that news was best kept on sound radio with a neutral delivery and this obtained before the War and carried on after the War and was the reason for the Newsreel being the main coverage of news, in fact the only coverage of news on television for a good many years after the War. However, there then came a change of thought on the part of management and it was felt at least news should be covered to see how it settled down in the television service. This meant that it was felt that it would be best to place this under the control of News Division in London and so the project was put in the hand of introducing live news programmes in television, with announcers in vision and with film just an adjunct to illustrate various items of news as necessary and the Newsreel would eventually be discontinued.

Of course, this represented quite a revolution at Alexandra Palace, really, and it did, in the beginning, result in quite a lot of difficulties. I don't think these were anybody's fault particularly, it was just that it was new to everyone and certainly handling pictures and, to a lesser extent film, was completely new to News Division. Anyway, the project was put in hand, one of the studios was equipped for news so that the announcer could be shown in vision and various other facilities, caption devices etc. I remember Mr Tahu Hole (one of the original news editors) who was very much involved in the production of news in the early days (that's pure news, if we call it that), at Alexandra Palace. Apart from the production aspects, it was decided (I think jointly) at this time that this really was the right time to introduce 16mm film and that film, it was thought at the beginning, would only be an adjunct to the news and it was felt from a lot of aspects that this was the right time to switch to 16mm to reduce the cost and also to make the film equipment much lighter and easy and less costly to transport around the world.

However, it has to be said that, really, 16mm gauge on the whole was not ready for this excursion into what was professional use of the medium. It was still very much in the amateur sphere in all aspects and it did present very considerable problems with the introduction to the new type of new programme. The processing was still not really up to professional standards and cameras were not available and so on, and so on, but the decision had been taken to go ahead and, of course, we in the cine film unit had to switch our resources to dealing with this problem to provide film production facilities in the 16mm medium.

Of course, the main item of equipment that had to be installed was telecine in this gauge and I seem to recall a Pye telecine was installed using a camera/projector tube and the quality from this machine, certainly in the beginning, was quite good and improved as time went on due, particularly, to the efforts of Sylvan Mesinga and his boys in the Planning and Installation Department.

On the film production side, one of the main items of equipment which had to be brought in was the 16mm camera, and the same requirement was there in respect of newsreel cameras in that it should be a combined camera recording the picture and the sound on the one film. This was for the same reasons why combined cameras - the Vinten H and the Visaton sound - was brought into use in the newsreel and it has to be said that at that time there wasn't a professional camera of this type available. The nearest was the American Auricon which was really a semi-professional camera, a really good amateur camera but it did, at least, have the virtues of quietness and it did record the sound on the same film and was available as a combined camera. However, it had

several disadvantages. One was that the sound was optical (at least in the beginning) which was difficult enough in 35mm, but to achieve good sound quality on 16mm optical was obviously very difficult indeed. The other disadvantage of the camera was that it had a mains driven motor. In the States this was 110 and a power pack was necessary to produce from batteries the required voltage and this, of course, was an additional, quite heavy item of equipment to be carried since you couldn't rely on mains and this facility running from batteries was an absolute must. They didn't seem to find this though in the States where the camera was widely used on news programmes. They seemed to find 110v supplies without too much problem and there wasn't so much demand for battery-driven equipment although it was there for quite a lot of the work.

Anyway, there was no other camera available (not as a combined camera). Silent cameras were available, but the means of running separate sound was not really engineered at that time and, anyway, as I said, the production requirement was for combined camera. So, we did, indeed, go ahead on some Auricons to get the service going but although the camera – it's an extraordinary camera really, or was – was really an amateur camera, it did produce extraordinarily good results as far the picture was concerned. The picture movement was elementary in the extreme and yet the pictures were steady and it was very quiet, which certainly wasn't so with our earlier 35mm Vinten Visatons. So, it did have this virtue of working very well, being reliable and being quiet. So we did go ahead with several cameras of this type to get the service running.

However, the camera was not really suitable and so we did undertake (we couldn't find anyone in industry who was interested and certainly Auricons in the States were not interested) in the Planning & Installation Department and cine film unit a modified cinevis camera (it was called the cinevis) which provided a battery driven DC motor and also it was capable of recording magnetic stripe on the picture. This facility was largely developed within P&ID (as we were known then) and after a considerable amount of engineering work we did provide a very good modification of the Auricon equipment. We used the camera case of the Auricon and we used the main mechanism plate and, of course, we didn't touch the picture movement which was really very good, but we did make provision for 400' magazine on the top, we provided for magnetic sound recording with a sound-recording drum of conventional and good design and, most important of all, we installed a DC motor so that it could be driven off the battery and, of course, we took care to retain the quiet feature of the Auricon.

This development was very, very successful. I think we made six in the beginning, and when more were required we managed to get a firm down in, I think, West London, who took on the building of another six. We couldn't really do this ourselves and perhaps, in the end, we built about twelve of these cameras and they were very successful and much liked by the operational crews – certainly compared to the heavy and noisy 35mm Vinten Visaton they were quite a joy to use – and, of course, they operated at a wide range of temperatures without too many precautions being taken.

A restriction on the camera was the viewfinder, of course. We did investigate the possibility of modifying the Auricon to the move shutter system whereby the cameramen could view through the lens, but this proved to be difficult and although we took it up with the Americans, they were not interested either. So we did have this problem that the camera used a sidefinder which was not very easy to use and used different masks to cover different areas for different lenses and there was just a single lens mount on the camera and I don't think we ever achieved a three lens type. This was too much of a modification and, anyway, we felt this was likely to destroy one of the great features of the camera which was its quietness.

Fortunately, about that time, 16mm zoom lenses began to appear and I remember one of these zooms was equipped with a viewfinder (I think the Bolex) and so it was possible to use this lens provide a viewfinder through the lens and it did overcome, to some extent, the restrictions on the viewfinder arrangement. This apart, the camera really was

successful and, in time, (it took a long while - probably a year) it did meet the filming requirements for 16mm.

On the editing side, we had to search around the Editola which had been used on 35mm but was not available in 16mm and not capable of modifications and so we had to search round for editing equipment to enable the 16mm film to be used. I should say that, at the beginning, there was a considerable adaption in the use of film since it was felt that this was not really the correct path of news, that the thing was to have the news reader and stills and so on and film didn't really play a very big part in the beginning. Nevertheless, the requirement for editing was there and in our searches, we did find a machine made in Denmark called the Arno. This was a flat table type of machine with plates and so on rather like the Steenbeck which came into being later and, of course, it wasn't very much favoured by the editors in the beginning since they preferred the Editola layout for fast editing for news. Xxxx was a well-made machine and due to the picture scanning on a single socket could run very short lengths of film – even a foot of film could be handled quite well and this was an essential feature for filming in the newsroom and we did place an order for four of these machines.

However, at that time, on a visit to the big film exhibition in Cologne, I came across a new company to us – Steenbeck – who were showing their first four-plate 16mm editor of similar design to the Arno but, in our opinion, better engineered and with more advanced facilities. So we did, I think, on the editing side switch part of our order to Steenbeck and so the Arno (I think we bought two) and the early Steenbeck were used at the start, but neither machine was particularly popular. The editors felt that the layout was not really correct for fast editing and so we did pursue our efforts to try and meet this requirement.

We did put in hand with Achmede at Uxbridge in England the design of an editing machine where the film ran from left to right but, if I can describe it, with the film horizontal running in front of the editor and this meant that he could view it easily and cut it and handle it in the way that was thought to be suitable for news operations. In between these spools and the sound and picture mechanism, we inserted bags (linen bags) and then they could run the film without using the spools. The first machine of this type which was rather large but, nevertheless, very much liked by the editors. They felt the film was running in the right plane and they preferred it to the table top flat plate machine. I think we built one or two of the big machines and I seem to remember they were nicknamed "The Tram", rather unfairly, because it was a very much liked machine but it was really too big and clumsy.

We did persuade Achmede to develop a much more compact machine, using the same principle of the film flat running from left to right with the spools vertical as it were, and with the bags in between so that they could run the films into the bags and a very much more compact machine was produced with all the original facilities and this did become the most liked machine for news in the 16mm. I think we purchased, perhaps, six or even more of these machines. They were not very well engineered, it has to be said, and the picture quality was not very good or the sound, but they did provide the operational dexterity that was required by the editors and this Achmede machine did become the favoured machine. It was very nice to have a piece of English equipment in the systems since there was little development of film equipment in this country, and this carried on for some years.

So we had the tele cine running, getting pretty good results, we had the film camera side with the modified Auricons working well in this respect, and we had the editing side with the Achmede machine. The processing at this time was still undertaken by Kays and it has to be said, I'm afraid, that although these items of equipment we've mentioned were very successful, the overall results at the beginning the 16mm on news were not far short of a disaster. The handling was not really understood, the processing was not of a very high standard dirt and scratches and so on were a feature of film in news, certainly in the

first six or nine months and it did take a considerable effort by all concerned to elevate the quality to the standard even suitable for news.

However, we persevered and a great deal of this work was in improving the operational handling. I remember Lesley Wheeler who joined the staff at that time from Kodak played a very great part in getting dirt down on the film and teaching the editors how to handle the film properly to obviate this problem and the processing improved and, gradually, we did get 16mm film to a standard which was, at least, acceptable. So it carried on, and it has to be said that as the news division began to understand the handling of news more at the Palace the programme generally, which had a very indifferent start due to not really understanding how to couple the vision with captions with film, gradually the programme settled down and took a more acceptable shape and this with the improvement of quality of 16mm made it far more acceptable.

On the processing side, it was quickly realised that we really did need our own processing, not only for handling quick stories and late stories, but also in order to improve the quality. The Eglons, you must remember, were only 35mm and, anyway, I think they had been taken out of service by this time and so we did pursue the development. As I said earlier, we learned our lesson with the Eglons, in that we didn't view with any favour any startlingly new developments, we decided to be very conservative and stay with deep tanks and rollers of conventional design and we did go ahead with an order on Newman & Guardia at Harlow in Essex for, I think, two black-and-white machines and these were of conventional design and of compact size which enabled it to go into existing areas without too much building work. However, they did, of course, involve chemical mixing equipment of the conventional type and the installation was a bit like a laboratory which was quite considerable.

Although these machines, which were fairly early designs being marketed by Newman & Guardia did require quite a bit of development, particularly on the drive side to make them reliable, finally these did come into service and were finally very successful when installed at the Palace, and I think the majority of the film load for news was undertaken by these machines and the whole operation was pretty successful. In addition, since everything was under our control, the quality gradually improved to an acceptable stage.

The main development on 16mm, of course, took place later when the move to Lime Grove and Ealing took place and 16mm began to be used for all filming in the Film Department, and this entailed a great deal of later development to get it up to the standard necessary for the transmission of high-quality programmes, but we're speaking now of just attaining the quality for news and I think, towards the end, this was achieved.

I think, in this period of the takeover of news by News Division which, of course, was not naturally viewed with any great favour by those who produced the Newsreel at the Palace, either as regards production qualities or technical quality, but I think at that time the cameramen and, possibly the editors and the processors, were moved over from Film Department into the News Division – the “Establishment”. However, the other areas of film operations were carried on by Film Department and the production of film sequences and the beginnings, perhaps, of complete films and so on, these remained on 35mm and continued under the aegis of Film Department.

Gradually, of course, in this period the Film Department moved Lime Grove - the administrative staff and so on, on the filming side – and so the only part of film that was left at Alexandra Palace was the news requirement with the film operational staff on the establishment of News Division. As far as I can remember, the whole of the Film Department operation moved over to Lime Grove where there was more room and later on to Ealing but, of course, that is another story.

So we finish, really, the film story at Alexandra Palace with this film operation within the news division which they say was a very difficult one in the beginning and the results

were certainly not good but, gradually, the film quality improved particularly with the handling of the film and the film became quite an integral part of the news programmes and the whole thing became much more professional in handling and as regards technical results.

I think one final aspect of film at the Palace was that later on, the new state of the Palace required some time, I think, until it moved into the Television Centre into the new areas there in news production. One aspect, of course, that was beginning to appear was the switch to colour and here it was obvious that we were going to have to provide colour film processing at Television Centre and, again, with our bad experience of the Eglon and being clever etc, we did decide, again, to be very conservative and to stick to deep tank machines of conventional design. When the colour requirement came up, after investigating various companies involved in this work, we did place a contract with Photomech at St Alban's and they had recently obtained a contract from a laboratory in London (whose name escapes me, but a very well-known laboratory) we thought the wisest thing was to go in behind them – "Humphreys" that's right. Humphreys had placed an order for two Eastman colour machines with Photomech and so we placed an order for a third machine and this did finally prove very successful. In respect of Alexandra Palace, we did install this machine at the Palace at a suitable layer for its initial tests and I think this was really our last activity at the Palace and this was mainly because of space which enabled them to have the machine running up there before it was installed in its operation in-situ at Television Centre.

I'm sure I've forgotten all sorts of aspects, but I think this brings to an end my account of the history of film at the Palace. I think it was during the period of the introduction of news at Alexandra Palace that Philip Dorté resigned from the Corporation and moved into commercial television, principally, with the start of ITN where he was very much involved with other people in the start of ITN and later he moved to ATV in Birmingham. Certainly, following his resignation from the BBC, he became very much involved in the start of the news programme on ITN and was able to put into practice all we had learned through the years on the production of the newsreel and, from observation, on the problems of starting a news-type programme with an announcer in vision in television. I think most of the other staff of Film Department moved over to Lime Grove and, of course, later to Ealing. Lime Grove provided the essential space that was necessary space because the Film Department was still expanding and was probably of the order of about 100 staff in the period of Lime Grove and the start of Ealing and expanded later and certainly we in cinefilm unit had to cope with this increasing use of film and load on the Film Department and I think my staff probably went up to nearly 30 in the peak period.

Of course, with the cessation of activities at the Palace on the film side, this was balanced by the regions which started using film and by a great expansion at Lime Grove and Ealing. Of course, since the switch to 16mm had been made with the news programmes, this carried on in the regions and eventually took over all the 35mm operations in the Film Department.

I will conclude this history of film at Alexandra Palace by making reference to the important operational aspects which I don't cover fully, because my sphere was more on the engineering side. The account is bound to be biased towards the equipping of the service for film since this was my particular area of responsibility although I have, as far as possible, tried to put in, from time-to-time, the operational aspects and the organisation necessary to control and achieve good results in the film area.

One is very conscious that the area of operations, particularly in the newsreel field, was not being covered sufficiently and I hope that somebody who worked in this area can supplement this particular history. That is not to say that we didn't pay very much attention to the operational aspects – these were studied in very great detail and this was necessary in order to provide equipment closely associated with the operational

requirements and this pertained particularly in the camera and sound recording field. In fact, I remember in the early days, I went out several times with the crews to learn their experiences and difficulties and try and improve their equipment to help in this respect - I remember going out with them on two or three occasions with the Vinten Visaton equipment to study the operational needs. I remember going to an awards ceremony at the Savoy Hotel very quickly after it was delivered and I went down and stood at the back with the waiters, actually, behind the screens watching all that was going on and how the event was covered. I went out on several occasions but restricted, of course, to this country and I did learn there that, certainly in respect of newsreel coverage and with the 35mm equipment as it was then, that a great deal of the operational work was really the humping of the equipment the direction of rostrums perhaps and moving it around and unpacking it and putting it up again, transporting the equipment by air or road as the case may be, booking hotels and arranging facilities for filming, either with the local authorities or, perhaps, the police and this seemed to me to take up almost 90%/95% of the time and the filming operation which was absolutely, really formed quite a small part of the overall effort.

I think this probably still applies, even today, with electronic equipment - it is the setting up of the whole situation which takes the effort and the time which is not fully realised by the viewer. Anyway, as I say, going out with the crews did give us in cinefilm unit this experience and this must be recorded as part of the operation.

We did realise, of course, that one of the disadvantages of film (although it was the only media at that time for covering events like this) was the fact that the courier did not know whether the results were successful technically or from a programme point of view. You'd film and the main problem was then to get the film out of the magazines and into cans and arrange transport back to the production base and, in the case of news, Alexandra Palace and really you didn't know whether your results were successful. Indeed, in nine times out of ten, you never really saw the results until much later on which I think we all realised working in films was a big disadvantage.

When the Eurovision network started to evolve, attempts were made to overcome this to some extent. I remember in Perfectone a firm which I worked for later after return from the BBC, they did produce portable equipment consisting of a film scanner - this was on 16mm - for picture and an associated sound reproducer running in sync if the sound was separate. It could cope as well with combined sound/picture and this, if the film could be processed, wherever the event had been filmed, the film could be put on this machine and the picture as television could be transmitted over the Eurovision network to the base, saving getting the film back by air or by road. However, this depended on some means of recording at the other end, either on film or, later on, on tape. The attempt was made, however, to try and overcome this problem of getting the pictures back to base quickly.

I don't think we ever realised the developments to come later with portable video equipment and satellite transmission which overcame this problem and even made it possible to have immediate coverage of an event right over the other side of the world. However, as I say, we were conscious with film that this was a difficulty and even in the UK one of the major parts of the operation this getting of the film back to base for processing and editing and injection into the newsreel and all the news programmes that happened later on. But, we did study all these aspects and realised the problems of the news crews in this respect.

We certainly realised very much the problem of weight, particularly on news filming and we did, at that time of course, use 35mm equipment and we did realise the possible switch to 16mm would help this particular aspect very considerably and, of course, it would enable longer takes on the film camera and obviate changing of the magazines at too frequent intervals. Anyway, this is just to say that, certainly, as far as we are concerned in Planning & Installation Dept we did, as far as possible, get experience in

the operational field and I hope that the few comments that I made in the last few minutes does give a rounder picture of the whole operation.

Of course, on filming sequences and for plays and feature documentaries the situation was very different where the recording band was used and more studio-type cameras and here, of course, the weight was not such a great restriction although, even here, mobility did start becoming an essential feature and as I said, the advent of 16mm here with portable tape recorders with sync-pause techniques did really cause quite a revolution in this area, but that came later on.

Of course, a very important part of the newsreel operation, and I suppose it applied later when News Division took over, was the facilities organisation, that is, the study of events and also quick reaction to the news and the arrangements for filming crews to be sent and for coverage to be obtained. This was a very large part of the film operation which is not always realised and this area is, again, in order to give a complete picture of the film operation does need to be filled in by somebody engaged in that side of the work.

Perhaps the greatest omission from my history of film at Alexandra Palace is all the experiences of the film crews all over the world who played such an important part in bringing to television, events of every description in every part of the world and, sometimes, under very difficult conditions either due to the elements or, perhaps, in times of disturbance or even times of war. The crews played an enormous part in the building up of the newsreel and later in the News Division, coverage. It's difficult to single people out here – all the crews played an equal part – and, really, this part of the operation ought to be covered by somebody engaged in this work, since it is a story all of its own but at least, in this history, we must pay tribute to all the crews who, as I say, played such a vital part in the bringing of news to the newsreel at Alexandra Palace.

Well, I think I'm fast coming to the end of my experiences and I hope that this has provided a reasonable picture of film and its growth from a very small beginning at Alexandra Palace. I don't think any of us working at the Palace during this period realised that we were doing pioneer work – it was a job to be done and we all did it to the best of our ability and I don't think anybody at that time thought about the pioneering aspect but, of course, looking back, they were the pioneering days and we shall always remember the great spirit in which all these activities were taken on and accomplished by those of us involved.

I do hope that this has given some idea of the scope of film at Alexandra Palace.

Checking and transferring all these recordings, one is bound to find omissions and, of course, it is very difficult to add these without re-recording the whole story and so I am including, here, I think an important omission in the hope that this can be included in the story when this is all put together in print.

The aspect I refer to is that of the addition of more silent film on cameras particularly for the newsreel. I mention the odd Eyemo's and the Newman Sinclair and the Vinten Visaton's but, of course, it rapidly became necessary to buy more silent film cameras and the main choice here was the Éclair Cameflex which was a movie shutter camera and available in 35mm and I seem to remember it had a three lens turret. One of the features was the plug-in magazine system so that if you had two magazines pre-loaded you could quickly change from one to the other in perhaps a minute or longer gap between the filming. This camera was purchased in quantity and was not terribly successful because it was noisy but, it really was the only camera available at that time in quantity and without development and it did have a very considerable feature in that it was dual gauge and was easily convertible to 16mm. This meant that it was very much easier to get approval to purchase this camera since the management was very unhappy about purchasing too much 35mm equipment since in the end it was felt that 16mm would take over so that the fact that the Cameflex was available in a dual gauge version considerably eased its

progress through the finance meetings. It has to be mentioned that it wasn't a very successful 16mm camera since it used the 35mm lenses and also the film magazine in 16mm did have some problems, but the point is that it enable it to be approved financially but it did have the capability of being converted to 16mm later on.

This is an important omission and I hope that it can be included if and when the whole story is put into print. It was the main camera purchased. I don't think at that time Cameflex cameras were fully available although these became the preferred camera later on. Of course the Éclair Cameflex was superceded by a 16mm only camera - I think it was called the ACR - and this was very successful in silent filming in 16mm with a separate tape recorder but, of course, all this is a another story with the further development of film into the 16mm area much later on in Lime Grove and later at Ealing.

A final point I should mention is that photographs are available of pretty well all the equipment which has been mentioned in this history and also of the operations in the dubbing theatre and in the field. A vast mass of photographs were available to supplement this recorded history.

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