

U.K. Local Radio Site and Channel Survey Contract

One of the first practical steps towards setting up Independent Local Radio in the United Kingdom will be the preparation of definitive coverage and frequency plans for up to 60 stations as proposed in the Government's Sound Broadcasting Bill. Marconi Communication Systems Limited is assisting the Ministry of Posts and Telecommunications in the preparation of these plans.

Broadcasting Division has already completed some preliminary work on the technical aspects involved in bringing on air the network of Independent Local Radio stations. Initial considerations include a survey of the frequencies available, taking into account existing continental and U.K. transmitters, the ground conductivity and the various types of transmitting aeriels that are suitable. Both m.f. and v.h.f. coverage are required in each of the 60 localities.

In the course of the planning work a number of m.f. measurements will be taken and it is hoped that these will help further understanding of m.f. propagation in urban areas, especially built-up areas with high buildings.



A fine example of a 'Pearly King' at the famous Sunday market in Petticoat Lane, London.

Sound and Vision—Winter 1972

Mark VIII Camera for Ulster



Ulster Television with coverage of all Northern Ireland and headquarters in Belfast.

Ulster Television, the commercial television company operating in Northern Ireland, has relied on Marconi equipment since its inception in 1959. The Company, which had for some time used two Marconi B3402 Telecine Systems for its locally originated colour film programmes, ordered Mark VIII automatic colour cameras to inaugurate their first live colour programmes in the Autumn.

Although Northern Ireland continues to be headlined in the news and politically, and this is reflected in Ulster Television's news programmes, an increasing part of its output is being directed to programmes of an entertainment value reflecting aspects of the region. To meet these needs a new technical area is being built at its Belfast Studio Complex, where development will be consolidated to enable Ulster Television to produce its own colour programmes.

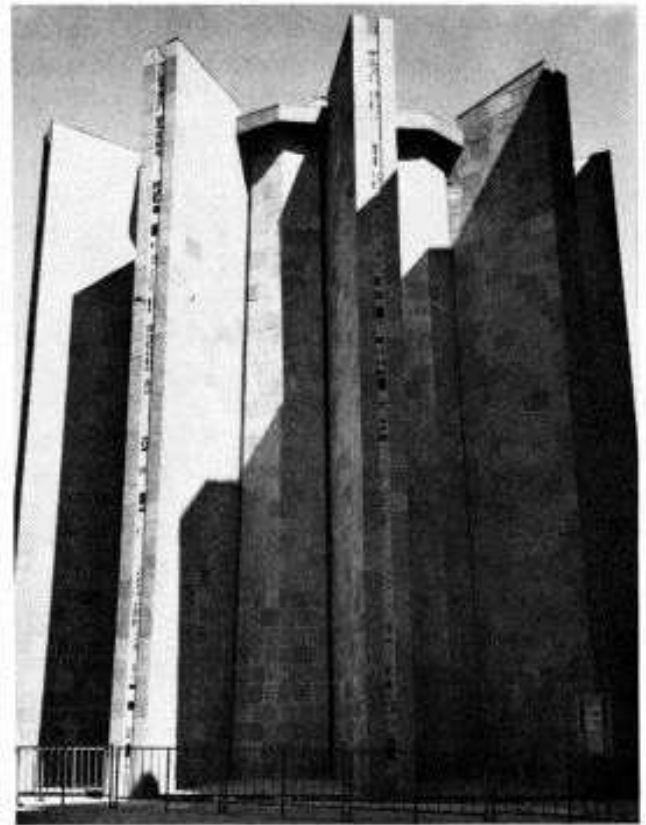
It has chosen the Mark VIII for this extension because of the simplicity of its operation and the excellence of its performance. This is invaluable to operators whose previous experience has been limited to monochrome, enabling them to produce high-quality live colour pictures consistently in a very short space of time. The Ulster Television's order also included a third B3402 Colour Telecine System.

Mark VIII for Churches Television Centre

The history of religious broadcasting in the United Kingdom dates back to Christmas 1922 and, for over 40 years, there has not been a single day on which an act of worship has not been broadcast. Programmes of religious interest, largely but not exclusively Christian, comprise some three per cent of the total programme output of both the BBC and ITA.

The religious bodies early recognized that a high degree of professionalism was essential for the effective exploitation of the broadcast media. The Churches Television Centre was first established in 1959, its work being totally ecumenical and the courses inter-denominational. Its function is threefold - training, production and research. The courses take many forms and are tailored to special needs; student groups, clergy, church laymen and specialists groups of various kinds, etc. There are courses in co-operation with the BBC and ITA, and great emphasis is placed on practical work in the studio.

To ensure its trainees are conversant with the most modern methods, the Centre's Television Studio is being replanned and re-equipped by Marconi's Broadcast Division. The original television cameras supplied by Marconi some years ago are being replaced with three Mark VIII Automatic Colour Cameras. In addition the latest Marconi colour telecine, vision mixing, communications, synchronizing and ancillary equipment is being installed. The Automatic features of the Mark VIII will greatly assist the Centre's small technical staff, some of whom will be trained at the Marconi College in Chelmsford.



The Chapel of Unity—Coventry Cathedral.

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Avenida Auahagabau, Sao Paulo, Brazil's industrial centre.

Mark VIII cameras for Brazil

The first colour programme for T.V Gazeta, one of Brazil's leading television stations, came from Marconi Mark VIII Automatic Colour Cameras, which were installed in Sao Paulo as part of an export contract worth over £180,000. Under the contract the Broadcasting Division of Marconi Communication Systems Limited equipped T.V Gazeta with three Mark VIII Cameras, a B3402 Full Facilities Telecine System and associated equipment.

Marconi was chosen by T.V Gazeta after extensive evaluation of other internationally available equipment, Senor Marco Aurelia Rodriguez da Costa, the station's Director General stating,

'We decided on the Marconi Mark VIII Camera because it is in all respects the ideal camera for us. As a station just starting a colour service, we have been able to give our technicians the unique advantages of its automatic operation. We have already had experience of the Marconi Mark IV black-and-white cameras in our studios, and we have been very happy with them.'

T.V Gazeta Fundas Casper Libero, is one of six television stations broadcasting in Sao Paulo, Brazil's industrial capital, and is an independent commercial channel. The Marconi Mark VIII's will operate on the Brazilian PAL M System, and the associated equipment in the contract includes switching and pulse generating equipment, and a master control unit. Two of the cameras are being used for outside broadcast work, while the third is used as a studio camera. A spare camera control unit in the studio enables one of the O.B cameras to be used directly in the studio when necessary.

Managing Director honoured



*Mr Tom Mayer, B.Sc(Eng), F.I.E.E.,
Fellow of The Royal Television Society.*

Mr Tom Mayer, the Managing Director of Marconi Communication Systems Limited has been honoured with a Fellowship of the Royal Television Society. Founded in 1934, principally through the energies of Geoffrey Parr, the Society is one of the oldest and most respected of its kind in the world.

Tom Mayer has a long association with broadcasting and television having joined The Marconi Company as a graduate apprentice in 1948. Two years later he became a Project Engineer in Broadcasting Division where he dealt mainly with development in television and f.m transmitting systems.

He transferred from the engineering to the managerial side in 1955 when he was appointed Assistant Chief of Contracts in Broadcasting

Division, becoming Chief of Contracts early in 1957. Later in the same year he became Sales Manager and in 1963 Manager of the Division.

In 1968 he attended the Senior Executive Programme at the Sloan School of Management of the Massachusetts Institute of Technology (MIT) Boston. Later in the year he became General Manager of the newly-formed Marconi Components Group, which combined the activities of the Microelectronics Division, the Specialized Components Division, the Hackbridge Crystal Works and Elliott-Automation Microelectronics Limited. When Marconi-Elliott Microelectronics Limited was formed Tom Mayer became Managing Director, at the same time retaining his responsibility for the Marconi Components Group.

In 1969 when GEC-Marconi Electronics was reorganized to form the four main systems companies, he was appointed Managing Director of Marconi Communication Systems Limited.

Tom Mayer was a council member of the Royal Television Society from 1963 to 1967, and played a leading part in the establishment of the International Broadcasting Convention, the next of which is being held in London in September this year, and for which he served as Chairman of the Management Committee. He also is Vice-Chairman of the Science, Education and Management Board of the Institution of Electrical Engineers and was the first chairman of its professional group on Engineering Management.

Tom Mayer is a well-known figure in television and broadcasting circles throughout the world, and the R.T.S Fellowship reflects the esteem in which he is held.

Golden Jubilee of British broadcasting

Compared with the United States, broadcasting in the United Kingdom started somewhat more slowly in the years immediately following the First World War. This was by no means due to any lack of technical know-how, but to a justifiable reluctance on the part of the Postmaster-General to allow unfettered radio transmissions for fear that they might interfere with officially licensed services. In the United States a chaotic situation was arising in a commercially sponsored free for all.

However, there were in Britain a growing number of amateur wireless enthusiasts who were demanding a more liberal attitude towards broadcasting.

At this time The Marconi Company was in a very favourable position to exploit its advanced knowledge of radiotelephony, which resulted from its work done for the forces during the war. In 1919 it was conducting a series of tests from its Chelmsford works which involved the transmissions of speech. This was provided by the dull reading of extracts from railway timetables and similar material. To vary the monotony of this, musical items were introduced, and these were the first beginnings of broadcasting in the United Kingdom. These transmissions became quite ambitious and included recitals by Dame Nellie Melba and Lauritz Melchior, both singers of world-standing. However, they were not enough to change the attitude of the Postmaster-General who remained adamant.

In January 1922 he relented to the extent of allowing a single half-hour's broadcasting per week, so that wireless amateurs might have a reasonable transmission with which to test their receivers. Marconi had set up an Aircraft Department at Writtle near Chelmsford to develop their wartime radiotelephones for civil aviation. Because of their special knowledge of the subject, the Department was given the task of rigging up a suitable transmitter, and this provided Britain's first regular broadcasts from 14th February 1922. Material for these was provided by the staff and their friends and assumed an engaging informality which endeared them to an increasing number of listeners.

In May of the same year permission was granted to start a further transmitting station in London. This was the famous 2LO which was situated at Marconi House in Strand. Transmissions from this were licensed individually and programmes were largely musical recitals of a rather staid nature.

The interest stimulated by these broadcasts increased the clamour for an official broadcasting

service and finally the Postmaster-General formed a committee to study the problem. This recommended setting up a single broadcasting authority, and as a result the British Broadcasting Company Limited was formed by the six major manufacturers of wireless apparatus. The first programmes of this new company were broadcast from 2LO in Marconi House on 15th November 1922. Many of the Marconi pioneers became famous names in the new company which was eventually to become the British Broadcasting Corporation.

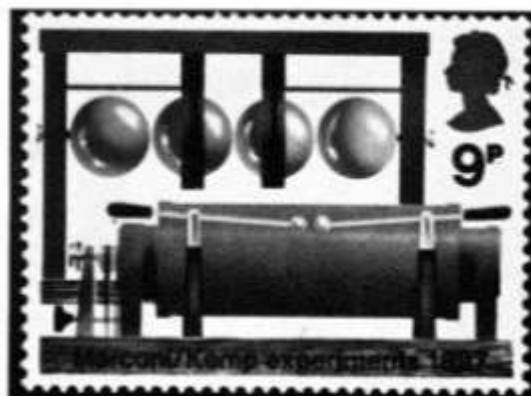
The high standards set by the BBC in its earliest years, both in technical quality and in programme content, have endured to this day and have made the Corporation one of the most respected broadcasting organizations in the world.

Marconi, who provided the first transmitter for the BBC, are proud to have continued as major suppliers throughout the fifty years, during which time the technicalities of broadcasting have proliferated to an astounding extent. The Company are now supplying television cameras, television transmitters and studio equipment and sound transmitters for local radio and for ranges and powers unthought of when 2LO started its modest transmissions.



Marconi House, Strand, London, 1924. The aerials of '2LO' can be seen on the roof.

BROADCASTING HISTORY 1972



Four special postal stamps marking major events in broadcasting history, two of which are shown above, were issued by the British Post Office on September 13th. No less than 184 post offices arranged to provide the special cancellation required by collectors of first day covers.

Three stamps in values of 3p, 5p and 7p celebrate the beginning of regular broadcasting 50 years ago by the British Broadcasting Company from Marconi House in London.

A fourth stamp, with a face value of 9p, marks the 75th anniversary of the first wireless transmission across water in 1897. Guglielmo Marconi and his assistant G. S. Kemp conducted their over-water experiments across the Bristol Channel from Lavernock Point, Glamorgan, South Wales to Brea Down in Somerset.

The 'Marconi' stamp illustrates an oscillator and form of spark transmitter used by Marconi in 1897.

High-power signal combining

A highlight of the International Broadcasting Convention, held recently at Grosvenor House, London was the unique *Rotamode* high-power signal combiner. Visiting engineers quickly appreciated the value of *Rotamode* which can be used as a vision/sound combining unit, a wideband rejection filter or a two channel combining unit. It is far

smaller than conventional combining units and can handle vision powers up to 40kW plus sound powers of 8kW.

Many new items were shown for the first time on Broadcasting Division's stand, including sound amplifiers, vision/pulse amplifiers and the latest version of the Marconi studio or outside broadcast communications system. Adaptable to suit individual requirements, the communications system provides personnel involved in production with full talkback facilities.

Impressive demonstrations confirmed the Mark VIII automatic colour camera as the best camera available today. An operational Mark VIII colour camera was set aside for visitors to operate and examine in detail, to experience the automatic features of the camera and its simplicity in setting up and operation.

From the wide range of sound and television transmitters available the new 4kW u.h.f./t.v transmitter with solid-state drive, and using a single vapour-cooled klystron for both sound and vision, was shown for the first time.

A 1kW Band II f.m transmitter designed for unattended operation, and a low-power transponder, designed and manufactured by Norsk Marconikompani, created considerable interest. Four versions of the transponder are available with output powers of 1W, 2.5W, 3.5W and 10W.

The five-day convention was truly international, attracting broadcasting representatives and engineers from many parts of the world.



The new type B7319 4kW u.h.f./t.v transmitter first shown at the I.B.C.

Fifty countries choose 4½ in image-orthicon

The Turkish Radio and Television Administration has placed an order with Broadcasting Division worth more than £200,000 for television camera equipment. The order is for seventeen MkV 4½ inch image-orthicon cameras and ancillary equipment. These will be used in extensions to the Turkish television services and for backing up existing facilities in Ankara and Izmir.

The contract was obtained against international competition and TRT's choice is in accord with the decision of the great majority of other television

organizations to standardize on the 4½ inch image-orthicon camera for their black-and-white services.

Other recent sales of the MkV Camera include four to Kuwait which becomes the fiftieth country to purchase Marconi 4½ inch image-orthicon cameras. Eighty per cent of the 1,700 Marconi image-orthicon camera chains sold have been to export customers. (For an appraisal of camera pick-up tubes for monochrome usage readers are referred to volume 13, No.2 of this journal.)



The waterfront, Izmir, Turkey.

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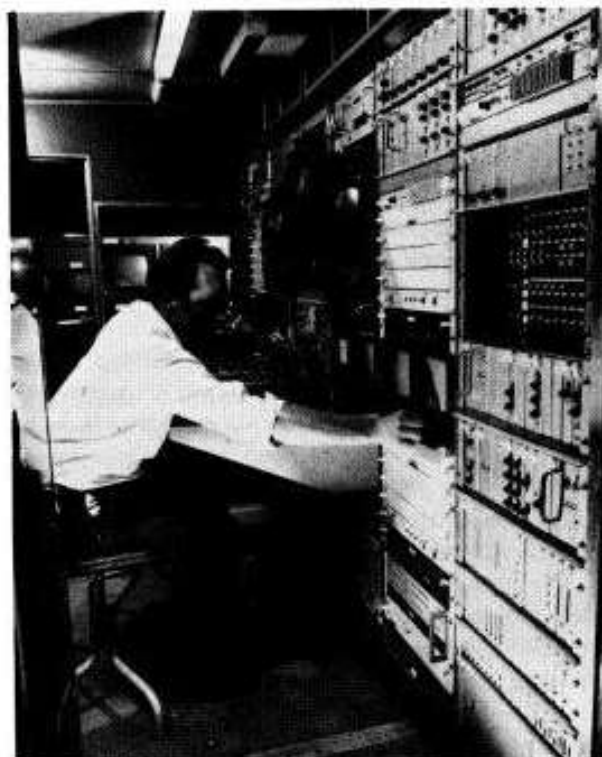
Source: Sound and Vision - Spring 1972

Outside broadcast units for Czechoslovakia

Broadcasting Division has recently completed delivery of a major export order for Czechoslovakia. Included in the order, which was worth £0.75 million and secured against strong international competition, were the three Television Outside Broadcast Units pictured on the front cover. The units, which will operate from Prague and Bratislava, are each equipped with four Mark VIII automatic colour camera chains.

Also included in the order was a thirteenth Mark VIII camera for installation in the presentation suite of the new T.V Centre and, following successful experience with Marconi Telecine supplied earlier, two more Full Facilities Telecines, type B3402.

Delivery of the whole order was completed within six months from receipt of the contract.



An internal shot of one of the three television O.B units for Czechoslovak T.V showing some of the wide range of equipment installed.

O.B. Units for Iraq

Following an international tender the Iraq Ministry of Information has awarded a contract for two fully equipped Television Outside Broadcast Units to Marconi's Broadcasting Division. Each will be equipped with three type B3100 Mark V black-and-white cameras although the vehicle design will allow the subsequent addition of two extra cameras.

In addition to the six Mark V cameras included in this order, recent sales have been made of a further 30 such cameras to Algeria, Greece, Kuwait, Kenya, Malaysia and Thailand, all using the

4½-inch image-orthicon pick-up tube. Although it is now approaching 20 years since Marconi's pioneered the introduction of this pick-up tube, it is still, remarkably, the standard by which all black-and-white picture quality is judged. Moreover it remains the most popular tube in broadcast service. Equally noteworthy is the Marconi sales record for this type of camera which exceeds the combined total sales of all equivalent competitive cameras.



An unusual view in Baghdad of the Tomb of The Unknown Soldier faced by a newly built mosque.

Sesame Street

From the evidence of their reviews the lot of the television critic is not one to be envied. Subjected mainly to a staple diet of vulgar trivia, they are rescued from despair only by the occasional meritorious offering. Such a programme is 'Sesame Street' which received universal acclaim and became television's most honoured U.S programme in its first year, winning no less than three Emmy's, the George Foster Peabody award and the International Prix Jeunesse as well as some two dozen others.

The programme, conceived and produced by Children's Television Workshop (CTW), is not commercially sponsored but is based on television commercial technique and has been described as 'the most thoroughly researched show in television.' The series is unique in allowing the viewers to shape the programming, the contents being determined by the reactions of the target audience, recorded by CTW researchers, to the show elements.

Some twelve million pre-school U.S children in the three-to-six year age bracket form the programme's target audience and its aim is 'to experiment in the adaptation of techniques already proven successful in commercial television to the teaching of certain cognitive skills and affective behaviour to pre-school children'. The basic idea is to use television to capture and hold the child's attention long enough to get across an educational idea — and in such a manner that it will be remembered. CTW research showed that t.v commercials and cartoons attracted children's attention as they are short, bouncy and generally memorable. Thus cartoons and commercials are employed as educational vehicles within the shows' format. Puppets, also, were found to be highly popular and a special troupe of puppets, the Muppets, are regularly employed as 'teachers' in the show.

The series was produced at Tele-Tape Productions' New York complex where CTW were given the exclusive use of a complete production facility, including Marconi Mark VII Colour Cameras.

Sesame Street has already been seen by children in Canada, Australia, New Zealand, the United Kingdom and several other countries where English is dominant or is taught as a second language. Also, the programme has been exported to many other countries and is being produced in foreign language versions, with local actors, producers and animators creating adaptations for their own countries with the advice of local educators.



BIG BIRD, a star of 'Sesame Street' greets three young residents of the famous street. (Photograph courtesy of CTW)



Mrs Ethel Kennedy prepares for a television appearance as a guest on 'Sesame Street'. Her assignment was a familiar one for the mother of 11 children — she read a book on camera to two young Sesame Street residents. (Photograph courtesy of CTW)

Colour television training

Founded in 1901, the Marconi College was the world's first institution to provide instruction in the science of radio. As the new science became an established discipline in universities and colleges, so the type of knowledge provided by the Marconi



Engineers from T.V Espanola on a colour conversion course at the Marconi College.

College changed to fill the gaps still inadequately covered, then and now. Its objectives became two-fold. Firstly, the College set out to teach Marconi customers' personnel new Marconi-applied techniques and the methods of operating and maintaining specific equipment and systems. Secondly, it set out to teach Marconi graduates how to apply their knowledge practically to the increasingly specialized work of the Company. These have remained the College's objectives to the present time and in achieving them it has made a notable contribution to the high standards of technological skill worldwide. During the last few years engineers from more than fifty countries have received training.

A colour television conversion course has recently been introduced by the College specifically for the convenience of Broadcasting Division customers. The course, of four weeks duration, is intended for operations and maintenance engineers who have had an extensive experience of working with monochrome television equipment in a studio complex. The intensive course provides a study of colour television principles and practice, modern semiconductor devices, digital techniques and logic circuits, special test waveform generators, and a modern colour camera channel. The first course, attended by engineers from Spain, Norway, Singapore and the U.K, has already been completed and further courses can be provided subject to customer demand.

Also available is a shortened (two-week) version of this course for customers requiring instruction specific to the Mark VIII Automatic Colour Camera.

and in Kenya

The Institute of Mass Communications, aided by Marconi engineers, has modernized the studio facilities of their Nairobi centre. The equipment required for the modernization was ordered from Broadcasting Division and included three Mark V Image-Orthicon camera chains, complete with remote control and picture matching matrices, to replace the Mark IV Cameras which have been in operation since 1961. The order also included a

semiconductor Vision Mixer, type B3724, plus ancillary equipment.

The introduction of the latest equipment and studio facilities is essential, since the Institute provides training for professional broadcasting personnel who will be working in the various studios of the Voice of Kenya broadcasting service, and the broadcast facilities of other countries.

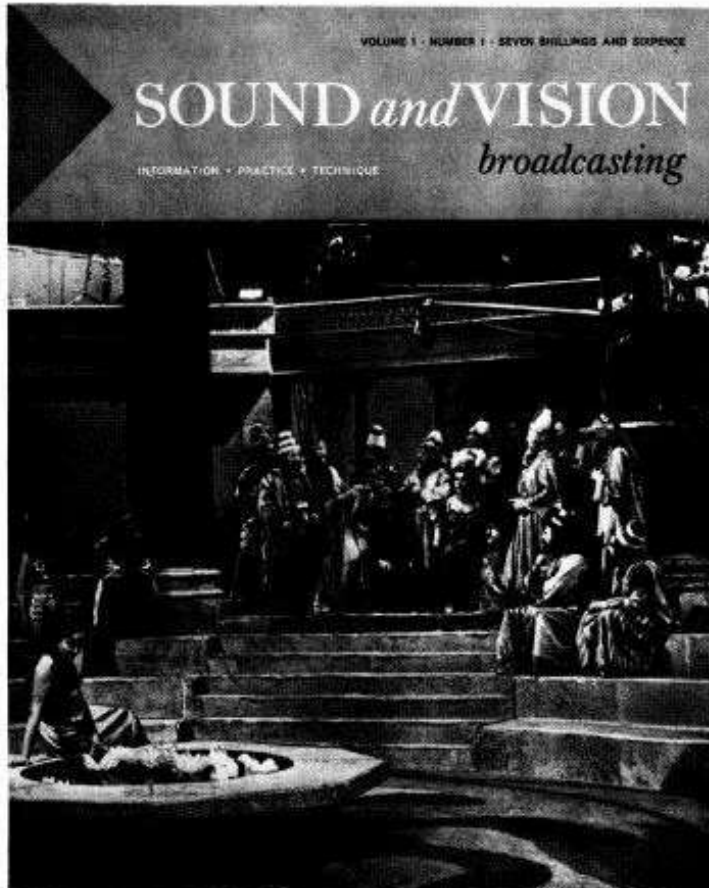


Modern buildings in Government Road, Nairobi.

Growing up

Though they have comparatively recently become identified as a group, teenagers have earned themselves a reputation as trend setters.

Sound and Vision is now a teenager, but it has been reflecting the trend setting outlook of Marconi since its birth thirteen years ago.



Founded primarily to fill a gap in the published literature in the broadcasting and television field, *Sound and Vision* has striven to provide broadcasters with a useful service covering both the technical and programme sides.

The steady technical advances made during this period have been clearly shown in its pages. For example, the first number contained an article on the famous Mark IV, one of the world's most successful black-and-white television cameras, and this issue has one of a series on the Mark VIII, the world's first automatic colour camera.

The amazing difference in techniques employed in these two equipments is indicative of the rate of progress in electronics in general and of the readiness with which it is being applied to television and broadcasting. Many of these innovations have stemmed from Marconi research and development, and *Sound and Vision* has been proud to record their inception.

This period has seen a steady growth in broadcasting and particularly television throughout the world. Colour television, a struggling infant thirteen years ago, is now spreading rapidly in many parts of the world.

Cheap transistor sets and car radios have increased the demand for 'pop stations', and simpler and more reliable transmitters for unattended operation have been produced to meet this demand.

It is interesting to note that the 14th February marked the fiftieth anniversary of Britain's first regular broadcasts from the Marconi station 2MT at Writtle, near Chelmsford. This was the first step along the road which culminated in Marconi Broadcasting Division's present proud position.

We are grateful to all our contributors and all those others who have helped to make *Sound and Vision* a healthy teenager with a balanced outlook.

The first number of Sound and Vision broadcasting appeared in the Spring of 1960 and has been published regularly ever since. Among its readers are the Heads of broadcasting authorities, radio and television engineers and programme producers and directors all over the world.

Major t.v transmitter order from Italy

Broadcasting Division has received from Radiotelevisione Italiana a contract worth £300,000 for ten of the latest v.h.f television transmitters covering powers from 1kW to 10kW in both Band I and Band III. The transmitters will be installed at nine sites throughout the country, with one site, serving the Rome area, consisting of a main and a standby transmitter.

With some 10 million receivers, Italy has long been regarded as one of the foremost European countries in television in respect of both technical and programme quality. The new transmitters, which

are replacing earlier installations, including some supplied by Marconi which have given fifteen years' reliable service, will help in improving the service provided by Radiotelevisione Italiana.

All the transmitters being supplied are from the recently introduced B7103 series which embody the most advanced design concepts. A self-contained unit includes the entire equipment to produce the combined vision and sound transmission signal, with the sole exception of the cooling fan for powers above 1kW. Full exploitation of i.f modulation, including the application at i.f of corrections which are asymmetrical about the vision carrier, has been achieved. Vacuum devices have been reduced to three (one in the 1kW transmitters) to provide the exceptional solid-state reliability and performance stability desirable for unattended and remote operation.



St Peter's Square, Vatican City.