

## EUROPE, AFRICA, AND THE MIDDLE EAST

**Introduction:** *In last year's report on Europe, Africa, and the Middle East, an attempt was made to describe in general the situation in the involved countries with regard to television broadcasting. That information can still serve as a reference. This year the Progress Report contains more individual contributions from Western European broadcasting organizations than ever before. They are dealing with the developments and news in their own countries in detail, to which this general report should be considered as a complement. Apart from the factual news of 1979, such as the opening of new studios and the extension of television networks, a great deal of attention is paid to the application of satellites and the development of digital techniques for broadcasting.*

### Western Europe

#### Color Standards and Coverage

Greece and Portugal have officially decided to start a color television service. Greece selected the SECAM color standard which was tightly connected with a \$20 million contract with the French company, Thomson CSF, to supply equipment. This contract was won in very fierce competition with the Germans who offered PAL equipment. It is possible that it will be decided to originate the programs in PAL and convert the signals into SECAM prior to transmission. Regular color television service is expected to start in 1981.

On 26 July 1979, the Portuguese Council of Ministers decided that the PAL standard should be employed for color television transmissions in Portugal. Regular broadcasting will begin in March 1980. The state broadcasting organization, RTP, plans to invest \$50 million in equipment and buildings to convert from monochrome to color.

The number of television sets is growing steadily in all West European countries, although the exact measurement becomes more difficult owing to the counting method employed. Mostly, the numbers are derived from the official records of licenses, which are issued per household. So, therefore, a second television set is not represented in the license count. Per year, the overall number of licenses grow at a rate of approximately four percent, so that the increase of television sets should be at least this same figure.

Monaco still has the highest number of television sets per 1,000 population, namely 650 (16,200 sets with an official population of 25,000), followed by Sweden with 348. It is also remarkable that 85% of the households in Sweden have a color receiver and that every second home has two or more sets.

#### EFP and ENG

Both EFP and ENG have built up considerable momentum in Europe. In many

countries EFP has become a common mode of program-making next to film. Also, the amount of production houses offering EFP production facilities has increased. The professional 1-in helical SMPTE/EBU format B and C are the most popular with the broadcasters for EFP purposes. Hundreds of these machines are now in daily use. There does not seem to be a consensus on the type of EFP camera; 1-in as well as  $\frac{2}{3}$ -in pickup tubes are being used, both with good results.

Some countries are still experimenting with ENG, others have a regular service already. All West European countries still use film for the majority of their news coverage. ENG became one of the main issues of the longest ever industrial dispute with the Independent Television companies (ITV) in Great Britain (11 August to 24 October) which caused a stop of all transmissions. The matter was not resolved at the resumption of the program service, but it was agreed that the issue would be discussed further between unions and management, and in the meantime two companies (Grampian Television, Scotland, and Channel TV, Guernsey) have reached an agreement.

In particular, the availability of the so-called highband U-Matic cassette recorders has improved the picture quality of first generation recordings substantially and has convinced many broadcasters that this tape format is adequate for ENG. A typical example is the recently launched Italian third television network. Twenty-one regional studios each have their own production facilities, each of them featuring three RCA TK76 cameras, four Ampex VPR-2 1-in helical videotape recorders, and in total six Sony highband U-Matic videocassette recorders (including some portable). With this equipment local ENG contributions are being recorded. Editing is done in the studio with the aid of Ampex HPE-1 editing units which interface with the U-Matic recorders as well as the VPR-2's.

#### Regional Television

In Italy, facilities for the above-mentioned third network were installed in record time and all 21 regional stations went on air for the first time on 15 December 1979. Investment cost in equipment (for production and transmission) is quoted to have been \$130 million, including the increase of coverage from the present 46% to 80% in three years time. The running cost per year is expected to be in excess of \$13 million for the 21 stations together. Approximately 40% of the daily 3½ hours (6:30 – 10:00 p.m.) will be networked, the rest will be locally originated. There are no commercials as yet on the third network, but the whole situation (including transmission hours) will be reviewed after two years of service.

Meanwhile, and in spite of the above-mentioned official local/regional television service, the private stations in Italy are still blooming. It was reported that by the end of 1979 — when the third Radiotelevision Italiana (RAI) network became operational — over 400 private stations existed in Italy. However, after the first excitement, the public now expects an improvement in the quality of the programs in competition with those on the three RAI channels. This improvement involves the program content as well as the technical quality. To this extent interested parties, including publishers, newspapers, advertising agencies, and the film industry, have formed some consortiums, each controlling a number of private stations. Programs are brought in centrally, advertising is dealt with on behalf of all involved stations, and production facilities are commonly exploited with professional equipment and experienced production staff. At the moment, the total advertising revenue in the field is around \$35 million and 80% of it already goes to 10% of the stations, operating in the main towns. It is expected that many stations will not be able to survive on their own and will be forced to merge or to cease operation. In the end, the number of stations will probably stabilize between 50 and 100.

Plans for a third television channel for the Catalan part of Spain have been approved as part of the plan for autonomy of Catalonia. The channel should be operational by 1982. Earlier applications by private enterprise (Televisio Catalana, Barcelona) were turned down based on the existence of a state television monopoly. Despite this setback in Catalonia, there are reports of numerous other projects for free enterprise television in other parts of the country. The would-be operators claim that private television should be allowed, taking into account the recently approved Constitution which allows freedom of expression. It is not known, however, whether this would also include the right to set up radio and television stations.

In Portugal a similar situation is developing. In July, the Portuguese parliament passed a law saying that television must be state-controlled, but radio stations could be privately owned. A private company, Independent Radio and Television (RTI), in an effort to avoid the television broadcast restriction, is structuring itself as a cooperative society, which would be allowed to broadcast television services. If this fails, they will probably try a closed circuit or cable television service.

News of another regional nature emanates from Germany. There is a great controversy over the future of the Norddeutscher Rundfunk (NDR), a leading member of the first German Television Network, ARD. Centered on allegations of left wing bias in news presentation — the ARD news is produced at NDR — the po-

litical leaders of the states Schleswig-Holstein and Lower Saxony have refused to sanction the renewal of NDR's franchise which expires by the end of 1980. The state of Hamburg where NDR is actually located still backs the station and the two other states have proposed a new joint television service. This would imply that NDR has to find an alternative link (e.g. Radio Bremen or Radio Free Berlin) or become a local Hamburg station.

#### *Program Distribution Via Cable and Satellite*

Distribution of radio and television programs via cable networks has already been applied in Western Europe since the early sixties. There were several reasons to start using cable. First, the viewers like to be able to receive as many stations as possible, also the ones from the neighboring countries. With the increase of stations, this led to overcrowded rooftops, in particular on high rise flats. One central antenna and distribution via cable was the solution, usually with better results than with individual installations. The second step was that all houses and flats of new housing estates were making use of one single antenna installation. In many instances this led to incorporating whole villages and towns. Once in that stage, it started to pay off to use microwave links to transport signals picked up at the border of the country to areas where direct reception of foreign signals is impossible.

A good example of this principle can be found in *Belgium*. This country borders on France, Luxembourg, Germany and the Netherlands, and in a way also Great Britain (the latter separated by the English Channel). Reception of programs from all these countries is possible. In total, 16 different programs are available: four Belgian (two French spoken, two Flemish spoken), three French, one from Luxembourg, three German, two Dutch, and three from Great Britain. It is estimated that 57% of the Belgian television viewers subscribe to CATV and that the service would be available to 75% of all the 3.6 million Belgian homes. Ownership of the CATV systems is divided into three main categories: completely private enterprises (serving 24% of the total number of subscribers), total local ownership (36%), and a joint venture between municipalities and private operators (40%). The total number of CATV systems in Belgium exceeds 160.

The original system, installed by Coditel — one of the two major private cable companies, each serving nearly half the subscribers — was based on a coaxial cable which would carry up to six channels. Presently they use the VHF-UHF broadband system, developed by Philips and with a capacity of up to 20 channels. Apart from the mentioned 16 channels, some local programming is starting to appear, however, on a small scale. These programs are either of private or municipal origin.

Special PAL/SECAM receivers are obtainable in Belgium (10–15% more expensive than single standard) to receive and properly demodulate and decode the various television standards. Some of these receivers have as many as 16 channel pushbuttons that enable pretuning of all available programs.

Remarkable news comes from *Tele Monte Carlo* which has started a new Italian service recently. The new Italian language service goes on air six hours a day and has an audience of 18 million viewers in Italy and the Italian speaking South of France. The programs are prepared in Milan (Italy) and transmitted from Monte Carlo and picked up in Italy by relays administered by Italian companies.

The French service of Tele Monte Carlo is also very popular with the French viewers, although the coverage is smaller than that of the Italian service. All this implies that there is quite a wide choice of programs in the Principality of Monaco (three from France, two from Tele Monte Carlo, and three from RAI in Italy). Further extension of the viewer public is envisaged in 1983 when Tele Monte Carlo will have five channels on the future European satellite and will no longer be limited by terrestrial links and transmitters.

*Radio-Tele Luxembourg* (RTL) also have an option on five satellite frequencies, all of which they intend to use ultimately. Two services would be in French, two in German, and one in Dutch. Coverage would include large parts of France and Germany, as well as the total of Belgium and the Netherlands. A possibility was to start the satellite broadcasting service (for direct reception) via two unused channels of the French satellite, but the request was not granted for competitive reasons. RTL are now trying to obtain a satellite of their own and have made contacts to that extent with Great Britain and Japan. They foresee the need for three or four satellites (including one back-up) for a duration of ten years. The expenditure over this period for five channels is estimated to be in the order of \$400 million.

*France and Germany* have now decided to go ahead with their plans for a joint broadcast satellite project. The satellite will be powered by solar cells requiring 260-W transmitter power per channel, compared with 5 to 20 W for transmission to a ground station. The frequencies allocated are in the 12–14-GHz band. Launching is planned to be done with the aid of the European Ariane rocket, the first of which made a successful test flight in December 1979. Total initial cost is quoted as DM 300 million (approximately \$175 million). The cost of a rooftop dish antenna and frequency down-converter is estimated to be DM 750 (approximately \$435). This may be high for a private household but could easily be afforded by owners of cable and community antenna systems. It was further

reported from Germany that the accelerated expansion of cable systems was partially caused by the possibility of being able to take advantage of direct satellite broadcasts of radio and television programs.

Advanced plans exist for a similar project (called Nordsat) for the *Scandinavian* countries (Sweden, Norway, Finland, Denmark, and Iceland). Since 1975, several commissions have been discussing the idea, and problems of technical, economic, industrial, cultural, and legal natures were studied. In contrast to similar projects mentioned above, Nordsat is an interstate project requiring cooperation between five sovereign states in fields which have not previously come within the scope of Nordic collaboration. The total system provides for eight-channel coverage of Sweden, Norway, Finland, and Denmark and five-channel coverage of Iceland, the Faroer Island group, and parts of Greenland (which is Danish territory).

In October 1979, the Nordsat Commission presented its final report to the Nordic Council of Ministers. Between 300 and 400 national Nordic authorities and organizations have been invited to discuss this report further. A basic decision is expected late 1980 or early 1981. It is presumed that full operations will be feasible some seven to eight years later. The most important motive for Nordsat is to promote the cultural unity of the Nordic area by increasing the program choice. It will also serve people who have migrated from one Nordic country to another; there are for instance 200,000 Finnish nationals living in Sweden. Languages are indeed different, but in general there exists a mutual comprehension between Swedish, Norwegian, and Danish. Ultimately, this will also apply to Finnish and Icelandic, although this is expected to take some 25 years. Finally, a complication could be that Finland is the only country involved with commercial television — Mainos Television buys air time from state broadcasting company YLE — and that it would be unacceptable for the others to include this commercial station in the satellite service. It is obvious that Mainos will oppose this idea because of the possible commercial opportunities that would be opened up.

The possibilities of the use of satellites have also been recognized in the *Vatican City State*. Radio Vatican is considering plans to start worldwide television broadcasting via satellite, provided the necessary space for one or two ground stations can be found within the Holy See enclave in Rome. Vatican is already a member of the Intelsat consortium and has access allocation to the satellite over the 37th longitude off Brazil's east coast.

#### *Digital Techniques*

Not only have discussions on digital techniques in television continued in 1979, it seems that also some progress has been made. Gradually it has become apparent to

all involved that for the *digital encoding* of television signals, there are more advantages in a component than a composite scheme. In a component scheme, separate digital encoding of the components of a color television signal is carried out. Sets of components can be the *R*, *G*, and *B* signals, the *Y*, *U*, and *V* signals, or the *Y*, *I*, and *Q* signals, etc. In a composite scheme the composite color television signal — with the color information modulated on a subcarrier within the luminance bandwidth — is digitally encoded. It is not in the scope of this annual report to deal with the pros and cons of both methods of digital encoding, but it seems very likely that a common component scheme will be chosen in Europe.

The EBU Specialist Group on the digital coding of video signals recommended in December 1979 the adoption of a component scheme, with the luminance component (*Y*) sampled at 12.0 MHz (768 times the line frequency of 15,625 Hz) and each of the *U* and *V* components sampled at 4.0 MHz (256 times the line frequency). At 8 bits per sample the total bit rate of this system amounts to 160 Mbit/s. EBU members will study this proposal and there is a possibility that the Technical Committee of the EBU will take a decision on its adoption during their annual meeting to be held in London, 14–18 April 1980.

A significant milestone in the development of *digital videotape recorders* was reached by the demonstration of three experimental models by Ampex, Bosch-Fernseh, and Sony during the 11th International Television Symposium in Montreux (Switzerland), 27 May to 1 June 1979. All three manufacturers showed the feasibility of the recording of digital 625/50 PAL signals on tape. The applied videotape recorders were modified analog machines. Ampex showed an eight-head transverse scanning principle on dual channels (called octoplex) at a tape speed of 6.6 in/s on 2-in tape. The video signal was sampled at four times subcarrier rate with a total data rate of 135 Mbit/s. Bosch and Sony, who have both signed an agreement with the research institute (IBA) of the British Independent Television companies for the use of IBA know-how, showed systems with a sampling rate of twice the color subcarrier (Sony by digitally reducing a four times subcarrier sampled signal). Bosch used their 1-in BCN machine with a reduced track width and a tape speed of 4.7 in/s. The total data rate was 80 Mbit/s. Sony had modified their 1-in BVH machine and used a tape format with three parallel tracks, two for the video information and one for eight digital channels.

All manufacturers emphasized that by no means should the demonstrated machines be considered as prototypes for future products, but rather as testbeds to show feasibility and a basis to continue discussions on the standardization of a unique

tape format. Undoubtedly, the next step will be to investigate the recording of the proposed EBU digital coding format (see above) with a bit rate of 160 Mbit/s. There was general agreement — also between the involved manufacturers — that none of the demonstrated formats was the ideal one. Meanwhile parallel to the SMPTE Study Group on Digital Videotape Recording, the EBU has announced that a Specialist Group shall be formed on this subject and that their work shall include the involvement of the relevant manufacturers.

A significant development can be reported with regard to *digital special effects*. Several systems have been taken into use, not only by independent production houses but also for instance by the BBC and the German Broadcasting station, NDR, who have installed one for evaluation. The use of the system with the production houses is mainly for commercials such as pop promos.

Finally, under the heading of "digital," the development of *Teletext* systems should be mentioned. The first regular service started in 1976 in Great Britain, and presently all three channels (two BBC and one independent network) have a Teletext service. Many other countries have also started a service on a trial basis. In France an alternative system called Antiope, which is not compatible with the British system, was developed and tested. It seems that at least W. Germany is also interested in this system, and it should be feared that ultimately two different Teletext standards could be in use in Western Europe.

## Eastern Europe

### Introduction

The news and developments that will follow in this section of the Annual Report were collected in the course of 1979 and believed to be correct (however, with limited possibilities to verify) at the time of writing, January 1980. Whether progress will continue as indicated will very much depend on the development of the political situation which changed dramatically during the last days of 1979 because of the Russian invasion into Afghanistan. The year of 1980 should have become the climax of years of preparation by the Russians to stage the Olympics and to cover this event by television and radio on the largest scale ever. Presently, it is impossible to forecast what will eventually happen. It seems, however, almost inevitable that the political unrest will have its implications on the television services in general and on the coverage of the Olympics 1980 in particular.

### Color Television and Coverage

The East European Socialist Countries (Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland,

Rumania, and the USSR) cover a total area of nine million square miles (2½ times the U.S.), the USSR being over 95% of this. The total population of these countries amounts to approximately 400 million (almost twice that of the U.S.) and together they possess about 90 million television sets (135 million in the U.S.).

The last of these countries to start a color service, *Rumania*, adopted the SECAM color standard early in 1979 as part of an agreement with France to step up Franco-Rumanian trade. Undoubtedly, the 1980 Olympics have been an important factor for the introduction of color television services in Rumania. The number of sets per 1000 population in this country is the lowest of all (140), but has risen by 15% during the last year, indicating that the people are interested, and apparently that the broadcasting organization is offering an attractive program package.

### The USSR

More detailed information than ever is available from the USSR with respect to television coverage of the country. After the completion of reequipping all 43 central television studios for color in 1978, 90% of the programs originating from Moscow and transmitted via the First Network are in color. Coverage of this network is reported to have reached 85% of the population recently. The same applies to the second network which was started in 1979 and the third (educational) network. Many of the frequencies used for these new services are in the UHF band, but the majority of television sets are not equipped for UHF, and concern has been expressed about the inadequate supply of UHF sets and the slow provision of UHF-to-VHF converters for community receiving installations.

For some of the farthest coastal regions in the Pacific Coast area in the USSR, satellites are used for the program distribution. Orbita and Raduga are the two satellite systems in use, and the Ekran system is still experimental.

Literally from all corners of the USSR, reports have come in about new regional television centers and new powerful transmitters. It seems very likely that these extensions are part of an original plan which is carried out at a faster rate so that a maximum coverage can be obtained by mid 1980 when the Olympics take place.

In all three *Baltic countries* (Estonia, Latvia, and Lithuania) new radio and television centers are being constructed, and stronger television transmitters will be operational in 1980 in time for the Olympics. Some of these new facilities will also be used to relay the programs from the Olympics to the (West European) Eurovision television network via Finland.

Five hundred miles east of Moscow, in *Kirov*, a television transmitter is being rebuilt to transmit color on four channels to the whole of the Talas valley. South from

here, in *Turkmenia* (bordering Iran) three programs are available in the area of the capital of this USSR republic, Ashkhabad, and two programs in most other areas. A new network of low power transmitters is being built to improve reception, including color, as part of a program to extend the present 80% coverage. Some 500 miles northeast from here lies *Uzbekistan* with its capital, Tashkent, which suffers regularly from heavy earthquakes. Work is proceeding here on a three-legged transmitter tower designed to minimize the effect of tremors. The almost 1200-ft metal and concrete tower should be completed ahead of schedule, with work by the end of 1979 well advanced on the foundations and legs. Another 400 miles northeast in *Kazakhstan* the inauguration of the 200th transmitter was celebrated in its capital, Alma-Ata. In this Soviet republic, 2.8 million television receivers have been registered and the coverage amounts to 78% of the population. There is a two-way satellite link between Moscow and Alma-Ata bridging a distance of roughly 2000 miles. Also in *Eastern Siberia* in Chita (same longitude as Hong Kong) television is penetrating. The construction of the first color television center in this area is nearing completion. Transmissions were scheduled to start early 1980 to the whole of Trans Baykal.

The above summary is by far not complete, but is meant to serve as an example illustrating that over the whole of the USSR there is activity with regard to expansion of television service. In the focal point of all this are, of course, the Olympics, to be held from 19 July to 3 August 1980 in Moscow. Construction and installation of facilities for radio and television coverage of the Games has been going on at full speed during 1979. Much of the equipment was used in a dress rehearsal in July 1979, called the Spartakiades. In Moscow the Ostakino television center was nearly complete by the end of 1979. Its 1000-ft tower will play an important role in the contribution of signals from the venues to the Olympic television switching center and subsequently the distribution of the various complete programs to all parts of the world. Through 22 television organizations it is estimated that the total television audience will be 2500 million people, which is more than 60% of the world's population. Two hundred million of these viewers will be Russians, watching 70 million television sets, four million of which will be color receivers. The demand for sets in Russia is reported to be higher than the annual supply of five million monochrome and two million color units, part of which is also exported to other East bloc countries.

#### *Other Eastern European Countries*

News from the other Socialist countries is overshadowed by the reports from Russia, but apart from the news about the SECAM adoption by Rumania as men-

tioned in the beginning of this section, there are also developments in some of the other countries worth mentioning.

In *Czechoslovakia* extensive expansion of radio and television facilities is underway. As part of a continual building program by Czechoslovak Television (CST) a new television news center was completed in Prague. It includes studios with top quality cameras, videotape recorders, and electronic editing equipment, and ENG facilities will be implemented in the future. The Intervision Organization, OIRT, coordinating the exchange of programs within the Socialist countries and with Western Europe, will also benefit from the new CST facilities.

In *Hungary* the news programs have been transmitted in color as of early April 1979. This followed completion of color conversion work on the television news studio in Budapest. Coverage of the first television program in Hungary is 92%, and after two new UHF transmitters became operational during the second half of 1979 the coverage of the second television program shot up from 33 to 54%.

The situation in *Bulgaria* is similar. The new radio and television center in the capital, Sofia, is progressing steadily and is planned to be operational, together with its transmitter complex, in 1981. It will be equipped with the most modern professional color equipment, including ENG and EFP units, and the transmitters will be capable of putting out five television programs. National and international relay links will be automatically and remotely controlled.

Finally, in *Poland* there are over seven million television sets in use, and the coverage of the first program (VHF) is 95%. The second program is radiated in the UHF band and covers about 50% of the country. Improvements in these figures are not expected soon because of the considerable cost involved in reaching the dead spots in the mountainous areas. The Polish State Broadcasting Co. has introduced ENG production techniques based on highband U-Matic equipment.

### **The Middle East**

#### *Introduction*

Although many of the Middle East countries have much in common (e.g. oil and the Muslim faith), there are also great differences between them. Some of these are historical, others are political. In the latter category Iran and Afghanistan are obvious examples, but Lebanon and Turkey are also still suffering from previous wars and hardly have the funds to build up (or rebuild) a television service.

#### *Expansion of TV Services*

Television in the Middle East is steadily maturing. For most of the countries a tele-

vision service was made possible by the oil revenues which started to become available mainly in the sixties. Color came about ten years later and has by now been adopted by almost all countries. The chosen standard is either PAL and SECAM, mostly dependent on relations, either in the past or present, with countries such as France and Germany. This implies that the two color standards are scattered over the whole area and with the possibility of receiving programs from neighbouring countries, dual-standard receivers are widely available. In the Gulf area the phenomenon of "ducting" also greatly helps reception of stations which are hundreds of miles away so that sometimes programs of up to five countries can be received; however, this only works for the VHF bands I and III.

There is also a disadvantage to ducting. Very often the local transmissions suffer from interference from transmitters in other countries working on the same frequency. This and the fact that some countries are already running out of VHF frequencies has stimulated the use of the UHF band for new transmitters and introduction of second and even third and fourth networks. Apart from the increase of the coverage by adding new transmitters, most broadcasting organizations have extended their facilities in 1979, either by new studios, OB vans, or ENG and EFP equipment.

Due to the fast growth there is a great shortage of programs. Usually the local capacity is limited and a great deal of material is produced by independent companies in Great Britain, Greece, and lately in Egypt. There are also indications that such production houses will shortly be opened in Kuwait and Qatar. It is obvious that foreign programs are also shown. However, due to the very strict Muslim rules, each program is scrutinized thoroughly and edited if necessary.

#### *Satellites*

The two largest countries, Saudi Arabia and Sudan (each just under one million square miles) have started to make use of satellites for their national television distribution. In *Sudan*, still recovering from years of civil war in the South, three government-operated stations presently offer a monochrome and color service. Fourteen cities receive the programs made at the Omdurman Centre (Khartoum) via a leased channel of one of the Intelsat satellites. There are about 100,000 sets in a population of 17 million and the number of color sets is estimated at 2000.

*Saudi Arabia* also makes use of Intelsat. They have leased two transponders, providing one television channel, two wide-band radio channels and 300 full duplex telephone channels. The satellite links eleven cities of the Kingdom with Riyadh where most of the programming is originated. A mobile earth station is also available and can access the system from any location. One full Intelsat transponder is

dedicated to the SECAM B television signal while the accompanying sound is carried on the second transponder, along with the two radio signals and the telephone channels. By the absence of the sound from the vision transponder, the so-called double threshold effect is eliminated and a better overall performance is obtained.

The present situation forms only the first stage of a five-year plan providing the whole of Saudi Arabia with communications in its widest sense. The plan also includes a terrestrial microwave system for alternative connections. Designer/contractor is the Harris Corp. of Melbourne, Florida. Ultimately, portions of the domestic satellite system will be incorporated into the regional Arabsat system (see below) which is now also getting under way.

#### *The Arab States Broadcasting Union*

Eleven years ago (9 February 1969) the Arab States Broadcasting Union (ASBU) was officially founded. Twenty-one Arab countries are participating in this Union. Apart from the Middle East Arab countries they also include Tunisia, Algeria, Morocco, Mauritania, and Somalia. The ASBU is a legal entity but operates within the framework of the Arab League. Among its goals are: (1) to promote the spirit of Arab fraternity, (2) to develop joint Arab trends, (3) to inform the people of the world about Arab potentialities, (4) to raise broadcasting standards among its members, (5) to stimulate cooperation between Arab countries and international organizations.

Similar to the European Broadcasting Union (EBU), the ASBU has created permanent departments, interim committees, and working parties to work out its objectives. The five permanent bodies are: the Programme Committee, the Technical Committee, the Arab System for TV News (Arabvision), the Sports Working Group, and the Space Group. Funds come from fees paid by active and associate members, publication services, and profits.

One of the major achievements so far was the creation of a common training center for radio and television in Damascus, Syria. The cost for establishment of the center plus operating expenses over five years exceeds \$6 million. The facility, which includes radio and television studios, provides the very much needed training for engineers and program-makers. Presently much of the expertise in the broadcasting stations is imported. Determined to become completely independent, the ASBU members find the training center a great help in educating their own people. There are already plans for other training centers.

Under the auspices of the ASBU a long-term plan for a satellite system called *Arabsat* has been developed. Comsat General of the U.S., technical consultant to Arabsat, has a five-year \$20 million contract to plan the system, including the spacecraft, the

ground control system, and operational assistance. The participating countries are individually responsible for their own receiving stations and transmitters for the distribution of the television programs.

For television distribution, two channels will be provided in 1982. One will be a region-wide channel operating in the 6.4-GHz band for delivering a single program simultaneously to all Arab States. The second channel will operate in the 2.6-GHz band and will enable the use of low cost, relatively small antennas for remote regions to receive a good television picture. In 1986 five or six additional television channels will be provided for domestic needs of various states, such as the earlier mentioned distribution networks in Sudan and Saudi Arabia.

Arabsat will also have 12,000 voice channels (6,000 circuits) for the interconnection of the 21 participating Arab States. For the first time this will establish direct interconnection between the Arab nations; now most telephone and telegraph traffic must be routed through Europe. The Arabsat launch and control system is expected to cost about \$200 million. With every participating country needing one or two receive-transmit earth stations and in total some 1000 receive-only stations, the total cost involved with the whole project until completion in 1990 could well represent a \$500 million investment.

In anticipation of the Arabsat system to become operational in two years time, the ASBU has started a daily news exchange between members, making use of satellites. Basically, the Arabvision system, as it is called, is very much like Eurovision. It will also be used to receive news feeds from various foreign organizations such as Eurovision. Likewise, it enables news from the Arab countries to be distributed to these foreign organizations. A complication of the system is that some participating countries have access only to satellites over the Indian Ocean, whilst others have access only to satellites over the Atlantic Ocean. Therefore, Kuwait was chosen as the exchange center because this country has excellent communications with all parts of the world and access to satellites over both oceans. All contributions from the various countries are recorded on videotape in Kuwait one by one and subsequently played back via both satellites. The recording schedule is worked out in advance during a joint telephone conference, which is also participated in by a news coordinator in Europe for liaison with Eurovision. Initially, the exchange is taking place four days a week and states participating are the United Arab Emirates (UAE), Kuwait, Iraq, Saudi Arabia, Qatar, Egypt, and Jordan. Later, with Arabsat operational, Morocco, Algeria, Tunisia, and Libya will join as well. The running cost for the first year, including link expenses and salaries for the permanent staff, is expected to exceed \$1 million. There is no commercial profit to be gained.

#### *Egypt and Israel*

Meanwhile, some trouble was reported to be brewing within the ASBU as a result of Egypt signing a peace treaty with Israel. ASBU headquarters are based in Cairo, Egypt, and some members found that this should be changed and Egypt be expelled from the Union. As always, the outcome of such quarrels are unpredictable, and we shall have to wait and see what happens. It would certainly mean a major blow to the ASBU if Egypt were to be pushed out.

The peace treaty with Israel has so far not led to any further cooperation on television matters between the two countries. For the time being, Israel still has to solve a lot of problems of its own. The government still bans the introduction of color. The main reason is that they fear that once they have given the green light, every Israeli in the country will hock everything he owns to get a color set. Color is considered a luxury the country cannot afford with inflation recently running at 100% per year.

The Israel Broadcasting Services are technically equipped to broadcast in color (PAL) as was proved on the two occasions it was allowed to do so: during the visit to President Anwar Sadat of Egypt in 1977 and during the inauguration of President Yitzhak Navon in 1978. The greatest contrast came in March 1979 when the Eurovision Song Contest was telecast live from Israel in color to an audience of 500 million viewers, but the Israel population of 3.7 million were condemned by government decree to see the show in black and white. Meanwhile, some 60,000 to 80,000 Israelis — no exact number is known — own color sets and receive color programs from Egypt, Jordan, Lebanon, and Cyprus. Jordan has even set up a special channel, broadcasting in English and the news even in Hebrew.

Lately the Israel Broadcasting Authority has started to transmit two or three programs per week in color. This should, however, not be seen as the start of official color transmissions but rather as experiments. Discussions have also started about a second channel on a commercial basis. The first program is noncommercial.

#### *Africa*

Only very little news has filtered through from Africa in 1979. Part of it was dealt with already in the previous section, including the North African Arab League countries Egypt, Libya, Tunisia, Algeria, Morocco, and Mauritania, as well as Sudan and Somalia in the northeast.

There is some more news from these countries worth mentioning. *Algerian* connections with Intervision (the East bloc system for program exchange) were inaugurated on 21 July 1979 when pictures from the Soviet Union were relayed via the Stationar-4 satellite and a ground station 50 miles from Algiers. This venture marks the start of an exchange of programs between communist countries on a regular basis.

Meanwhile, Radiodiffusion Television Algerienne (RTA) has placed orders with Pyc TVT worth \$13 million for color equipment to be installed in their three studios in Algiers. The contract includes cameras, switchers, VTR's, telecines, audio, and lighting as well as training and spares.

In *Tunisia*, like many other Arab countries, a second language service was started. It is in French, which does not mean that the programs will be imported from France. They will be Tunisian in character although the French are helping to set up the service.

*Mauritania* has signed an agreement with Iraq on economic and technical cooperation. As part of it, Iraq is presenting Mauritania a \$5 million television station, to be built in its capital Nouakchott.

After the war with Ethiopia and the withdrawal of the Russians, *Somalia* signed a similar agreement with Iraq, Saudi Arabia, the United Arab Emirates, and Qatar. Iraq has promised to provide a monochrome television station in Mogadishu, while the other three countries finance the implementation of a network which will be color capable.

Noteworthy is a development in *Niger* (not to be confused with Nigeria). The 15-year-old television broadcasting organization, ORTN, transmitted its first official color program (in SECAM) on 7 April

1979. Apart from the building of a complete television production center, the transmitter network is extended to reach 85% coverage in July 1980. One major problem in many regional areas in Niger is the lack of mains electricity supply. Therefore, in those places, all educational receivers and those at many of the communal reception centers are fed from solar cells. At Tillabery, situated on the edge of the Niamey Valley (close to Upper Volta) a re-broadcast transmitter with a power of 1 W has been installed and is also supplied by means of solar cells. This is believed to be a worldwide first.

With television of any kind only four years old in *South Africa*, four new services were in the planning stage during 1979. The first one is an official second program by the South African Broadcasting Corp. (SABC). Its first program is in English and Afrikaans, and the feeling is that this network cannot be further extended (\$20 million was spent in 1979) until a second network is introduced, intended for black viewers. The go-ahead for this service was given in the course of 1979, and it is estimated that the total cost will be close to \$200 million, the majority of which will be financed by revenues of advertising via the first network. It will provide programs in the five most important black ethnic languages as part of the

South African government's policy of distancing the majority black population from the international culture represented by the English.

The second new service was to be started in Johannesburg early 1979, but as yet no confirmation of it has been reported. It is a cable television network set up by Studio One, initially serving an audience of 200,000 in 1,500 apartment blocks. Advertising rates per 1,000 viewers would be 30% lower than SABC.

Thirdly, the isolated "autonomous" black state of *Bophutswanaland*, landlocked within the Republic since its declaration of independence in December 1977, is also planning a television service, which will also be seen by viewers in the South African area. The service will be commercial and broadcast in color; the initial cost is estimated at \$7 million.

The fourth service will be set up in *Botswana*. Its transmitter will be so located as to be able to reach one million population of Johannesburg and Pretoria. The significance of these two latter services is that it is expected that they will ignore the ban on British television programs by the Unions in South Africa (the so-called equity ban). Therefore viewers will be much attracted by these programs, and advertisers will be equally interested. — *Robert van der Leeden*

# Standards & Recommended Practices

## Approved SMPTE Recommended Practices

Two SMPTE Recommended Practices on the above mentioned formats were approved by the Society's Board of Governors on 23 July 1979: RP 87-1980, Reference Carrier Frequencies, Pre-emphasis Characteristic and Audio and Control Signals for  $\frac{3}{4}$ -in Type E Helical-Scan Video Tape Cassette Recording; and RP 88-1980, Reference Carrier Frequencies and Pre-emphasis Characteristic for  $\frac{1}{2}$ -in Type F Helical-Scan Video Tape Recording.

SMPTE Recommended Practices are available from Society Headquarters for \$1.50 each.

## Proposed SMPTE Recommended Practice

A Proposed SMPTE Recommended Practice is published here for a trial period and public review: RP 26, Label Specifications for Quadruplex and Helical-Scan Video Magnetic Tape Recordings. A revision of RP 26-1968, the practice was modified to include specifications for helical-scan recordings.

Comments should be addressed to Alex E. Alden, Manager of Engineering Services, at Society Headquarters prior to 1 July 1980. If no adverse criticism is received, the proposal will be submitted to the Society's Board of Governors for approval.

## Approved American National Standards

Three new American National Standards were approved by the American National Standards Institute on 17 December 1979: ANSI C98.21M-1980, Dimensions and Location of Records for  $\frac{3}{4}$ -in Type E Helical-Scan Video Tape Recording; ANSI C98.22M-1980, Dimensions of Video Cassette for  $\frac{3}{4}$ -in Type E Helical-Scan Video Tape Recording; and ANSI C98.23M-1980, Dimensions and Location of Records and Basic Electrical Parameters for  $\frac{1}{2}$ -in Type F Helical-Scan Video Tape Recording.

Copies of the standards may be obtained for a nominal fee from the American National Standards Institute, 1430 Broadway, New York, NY 10018. — *Alex E. Alden, Manager of Engineering Services*