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14 September 1977

TRANSLATIONS ON TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 13

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USSR

WESTERN EUROPE

INTERCOSMOS CONFERENCE ENDS IN ULAANBAATAR

LD221451Y Moscow PRAVDA in Russian 20 Aug 77 p 4 LD

[Text] TASS--The latest conference of leaders of the national coordinating organs of the countries participating in the Intercosmos program has ended in Ulaanbaatar. The meeting discussed the results and prospects of joint research and experiments being performed under the program of cooperation among the socialist countries in the spheres of space physics, space meteorology, space biology and medicine, space communications and remote exploration of the earth by aerospace means.

CSO: 5500

DATA SENT BY TELEX

Canberra THE AUSTRALIAN in English 2 Aug 77 p 12

[Text]

A NEW type of "data modem", called a Telex Interface, will allow computers to send and receive information through the telex network, says its maker.

Called the AM700 series, the interface has been developed by Sydney electronics manufacturer, JN Almgren Pty Ltd. It is Telecom-approved and has a wide range of options including dual processor fallback, automatic answerback, and signalling speed change. Code conversion from Baudot to ASCII can also be accommodated, says, Almgren.

The interface is installed at the computer terminal which can then be accessed by existing telex subscribers from their teleprinters, in a similar fashion to the conventional CRT terminals.

Almgren says that the advantages of the new units are that since no common equipment is involved, each line is totally independent. Also the various options are contained on a plug-in identity module, enabling the functions of each unit to be altered and upgraded by replacing the module.

One interface terminates one telex line and is analogous to a Data Modem. The equipment side of the interface presents the standard CCITT V24 levels to the computer.

As telex traffic increases further telex lines can be connected by adding interfaces. The independence of each line, plus the dual fallback facility, give the system a high degree of reliability, says the maker.

CSO: 5500

NEW ICL ADD-ONS FOR COMPUTERS

Canberra THE AUSTRALIAN in English 2 Aug 77 p 16

[Text]

PLESSEY has moved farther into the mini-computer add-on market with new products announced at the Geneva show this year.

This follows an earlier announcement that Plessey Australia is marketing the recently developed range of memory misers compatible with ICL 1900 range of mainframe computers as "cost-effective alternatives" to the ICL equivalents.

Plessey says these add-ons enable users of ICL computers to expand existing capacity with additional blocks of memory with a minimum of 16K words, increasing by 16K-word increments to a maximum of 131K words of 25 bits in a free-standing cabinet.

Plessey Memories has been an OEM supplier of memory stacks and boards to computer manufacturers for many years and has built up a reputation for compatibility and reliability.

The equipment demonstrated at Geneva included the PM-DS/11B 5 megabytes cartridge disc system: the new 32K x 18 single card core memory; a 75 IPS double density magnetic tape system and the new PM-DS1180 40 megabytes disc storage system, all operating live on a PDP 11/34 minicomputer.

Plessey Memories also first displayed its compatible products for the DEC LSI II microprocessor.

The PM-DS/11 cartridge disc memory system provides a double capacity plug-in alternative to the Digital Equipment Corporation RK 11 disc systems and RKO 5 disc drivers for DEC PDP 11 and PDP 8 minicomputers, says the maker.

The system comprises the PM-DC/11 one system unit controller which can operate up to eight 2.5 megabytes discs, either all PM-DD/11 or mixed with RK 05s.

Each disc drive unit PM-DD/11B includes one fixed disc together with an IBM 2315-type removable cartridge media, which can also be used with the RK 05s.

The new PM-1132 has 32K words of parity core memory on one single card and occupies only two slots in any PDP 11, says Plessey. Operating at a 950 nanosecond cycle time and 450 nanosecond access time, the PM-1132 plugs into all of the new PDP 11/04-34 modified 'unibus' backplanes or into the previous PDP 11/05-35 family of normal 'Unibus' memory backplanes.

The Plessey magnetic tape system, with 2.4-mm reels, reads and writes at 75 IPS with switch-selectable 800/1600 BPI tape densities. The controller occupies one system unit in the PDP 11 hardware and it can control up to four Plessey magnetic tape drives.

Shown for the first time, the PM-DS 1180 storage module disc system uses the latest state of the art in disc technology.

It has a capacity of 40 megabytes and emulates the RP 11 disc pack system at highly competitive prices.

The controller, which occupies only one system unit in any PDP 11 or extension box, can drive up to four PM-DD 1130 Plessey Storage module drives.

Plessey says that the system is completely software transparent, requires no software modification and has word transfer rates twice as fast as the equivalent RP 03.

CSO: 5500

NEW HALFTONE GRAPHIC SOFTWARE

Canberra THE AUSTRALIAN in English 9 Aug 77 p 11

[Text]

VERSATEC INC has released a new software package which enables half-tones and grey scale to be plotted on its Electrostatic Plotters and Printer/Plotters.

The Grey Scale imaging capability does not interfere with the normal use of the line printer on a graphics plotter. The process used is essentially a digital analogy of the printing publishing industry's half toning technique. This has been in use by printers for over 100 years to reprint grey scale pictures. In fact, the printer faces the same situation as electrostatic plotters — ink can only be placed down with one level of intensity.

The company says that these devices can plot a completely black page, or a single dot to the limit of the resolution of the plotter. To date, its plotters have been used primarily for graphics and text applications. However, some customers have used printer/plotters for producing grey scale images. Most of these grey scale applications have built a picture using grey scale characters or blocks (3 x 3, 4 x 4 or even 8 x 8 characters) each having a fixed dot pattern to simulate a particular level of grey. The result is rather poor resolution and very poor rendition of the edge detail.

VERSATEC says that its method conserves the detail of the original picture to the limit of resolution of the electrostatic plotter. The VERSATEC Grey Scale Sysem output is a digital, half-tone emulation of continuous grey scale images. It will allow medical, weather mapping, page composition and seismic users a viable alternative to film output.

The heart of the system is the Versaplot Grey Seale Software Package. It is a set of Fortran callable user subroutines analagous to universal Versaplot in its design.

The VERSAPLOT GREY SCALE SOFTWARE solves the grey scale problem in a flexible manner. This gives the user the ability to half-tone a picture from several different picture sources. The user's application program collects a scan line of pixels* from the picture source (disc file, tape file or on-line device) and performs any preprocessing necessary. Each scan line of pixels is given to Versaplot Grey Scale Plotting Software where it is converted to raster data and output to the plotter. The Versatec software provides several editing capabilities and half-tone options which pre-process a scan line of pixels.

***A pixel is an acronym for picture element which is the smallest distinguishable element of a given picture or image.**

CSO: 5500

ATDA SAYS RESEARCH, DEVELOPMENT FUNDS BEING WASTED

Canberra THE AUSTRALIAN in English 15 Aug 77 p 13

[Text]

AUSTRALIA, of all reasonably developed nations, is at the bottom of the list for government-funded industrial research and development, according to the Australian Telecommunications Development Association.

The ATDA said too much money was spent on R & D done by government instrumentalities, instead of being channelled to industry in the form of development contracts.

It made this claim in its submission to the Senate Standing Committee on Science and the Environment's inquiry into research and development in Australia.

The association says in its submission that the technical and manufacturing capability and capacity is at present lower than it has been for many years.

The main causes for this are:

THE economic recession.

SUBSTANTIALLY reduced ordering of communications equipment by Telecom Australia and by government departments.

CURRENCY re-alignments together with substantial tariff cuts, followed by escalating wage structure with the resultant increase in imports and the almost complete cessation of exports of electronic equipment.

The ATDA said the low point had come at an inopportune time because the industry is in a period of very rapid technological change.

"The industry, to remain abreast of modern technology, has had to devote substantial resources to finance R & D activities and has also been faced with very substantial expenditure on new plant and equipment," a spokesman said.

"The reduction in available work has led to extensive retrenchments resulting in a considerable loss of technical expertise and capacity.

"In the past three years the industry has reduced its R & D staff by about 30 per cent.

LITTLE VALUE

"The Australian Industrial Research and Development Grants Schemes have been of little value in arresting this decline in technical capability and particularly as there has been significant reduction by the last two governments in the level of grants payable."

The association claims that most government research money is being spent in government laboratories where the resultant new technology, if any, has the least chance of being applied for the nation's benefit.

The submission said that Australian government departments now include over 25 different research and development laboratories, together spending something in the order of $250 million per annum and employing a total of approximately 5200 scientists and engineers. 2500 of these are in the CSIRO.

Of that $250 million, only 30 per cent is directed toward defence projects.

The ATDA is asking the Senate committee to recommend that an increasing percentage of R & D expenditure be channelled to industry in the form of development contracts. These should be let after competitive tendering but it was most important to realise the availability to industry of such contracts must be on a continuing basis in order that industry can establish and develop the necessary staffing and other facilities necessary to discharge such contracts.

The ATDA has drawn on overseas experiences, especially the United States, to back up its call for more private industry involvement in R & D.

In the United States, the Government funds about 55 per cent of electronic R & D contracts.

In Australia, the percentage is extremely low and the association points out in the submission that: "It is this type of work which most frequently results in major breakthroughs."

CSO: 5500

DIGITAL UNVEILS NEW PRINTER

Canberra THE AUSTRALIAN in English 22 Aug 77 p 13

[Text]

DEVELOPMENT of a low-cost interactive printer that operates at 1200 baud was recently announced by Digital Equipment Australia.

The new keyboard terminal, called the LS120 DECwriter III, can be used for interactive communication and as a unit in a data — or message — communication network. Engineered for high reliability and ruggedness, the DECwriter III can be used in any hard copy KSR terminal application requiring reception at 1200 baud, says DEA.

The new terminal incorporates many subassemblies of other Digital terminals plus a microprocessor-based controller board.

Standard features of the DECwriter III include a 180 CPS print rate, a 1024 character buffer to maximise throughput, EIA interface, an automatic "paper out" switch, last-character visibility and a self-test capability.

The new terminal is compatible with full duplex and half-duplex protocols. Optional features include a forms handling package, a communications package, an APL alternate character set and a compressed font.

CSO: 5500

TV ERROR COULD COST $70 MILLION

Melbourne THE AGE in English 22 Aug 77 p 3

[Article by Phillip McCarthy]

[Text]

CANBERRA. — A planning error during the introduction of television in Australia could cost up to $70 million to correct.

The mistake was made in 1959 when the Menzies Government decided to speed up development of television in country areas by allotting parts of the international FM band to TV.

The plan involved stations using channels three, four and five.

A report accepted by the Labor Government in 1974 for the phased introduction of FM services said the stations would now have to be relocated on other parts of the broadcast spectrum.

The report also called for the relocation of aircraft distance measuring equipment as a way of bringin the use of the broadcast spectrum in Australia back into line with world practice.

An interdepartmental committee which recently reported to the Government on FM is believed to have put the cost of the rationalisation at between $20 million and $70 million.

The Government has not yet decided whether to go ahead.

However the now defunct Australian Broadcasting Control Board reported last year that a start on the work was now necessary to avoid congestion on the FM band.

The board completed the relocation of most of the stations operating on channel five before it went out of existence last year.

However it said it could make no progress with the more expensive process of relocating stations on channels four and three because this depended on moving the aircraft services.

It said that until the work was completed — and it would take at least eight years — there would be room for only eight FM stations each in Melbourne and Sydney.

Intense lobby

The shortage is the main reason for the intense lobbying of commercial radio stations at present for preferential treatment in the initial allocation of FM licences.

Government officials now concede that the 1959 decision on television services in rural areas was a mistake.

The Government's original plan for television, formulate in 1956, would have left the inter national FM band free.

But that plan was rejected after pressure from the Country Party because it would have cost more and taken longer to bring television to the country.

Last year officials estimated that about 25 per cent of Australian homes got their television on channels three, four or five.

The only alternative to moving the channels would have been to put FM radio on the ultra high frequency band as recommended by the control board in 1972.

However the 1974 McLean report — now the blueprint for the development of FM — estimated that UHF-FM would have cost the consumer about $200 million more than VHF-FM.

This was because no overseas-made equipment is designed for UHF.

CSO: 5500

BRIEFS

RADIO-TV STUDY GROUP--The government on 13 August announced the setting up of an 11-member working group to study the question of converting all-India radio and television into autonomous bodies. It is being headed by Mr B. G. Verghese, a noted journalist. The working group will examine the functional, financial and legal aspects of the proposal on the pattern of similar organizations in other democratic countries. It will also suggest the form and the structure of these organizations and their relationship with the government. The group is expected to submit its report in 3 months. [Delhi General Overseas Service in English 1000 GMT 13 Aug 77 BK]

CSO: 5500

BRIEFS

PHOTOFIBER CABLE DEVELOPMENT--Tokyo, 6 Sept--Posts and Telecommunications Minister Jushiro Komiyama told the cabinet Tuesday he planned to actively promote use of the photofiber cable developed by the Nippon Telegraph and Telephone Public Corporation in an effort to save energy. Komiyama explained that light communication involves a large capacity circuit capable of transmitting at one time several tens of thousands of telephone circuits or several hundred television circuits and that its use is unlimited. Besides, he said, it saves energy because fibers are used in place of copper wires. According to the minister, a photofiber is a small metallic crystal semiconductor which transmits signals through thin fibers by oscillating laser beams. Since it can be made of silicon, which abounds on earth, its use will go a long way toward conserving energy, he said. The corporation plans to start experimenting with photofiber cable late this year. [Text] [Tokyo KYODO in English 1046 GMT 6 Sep 77 OW]

CSO: 5500

COMPUTER CENTER FOR SCIENCE

Wellington THE EVENING POST in English 22 Aug 77 p 8

[Text]

A $9,250,000 computer centre at Upper Hutt, tight security of which will be second only to the Wanganui centre, was opened today by Sir Thaddeus McCarthy.

Sir Thaddeus is chairman of the Wanganui Computer Centre policy committee.

The Upper Hutt computer, the property of the Computer service division of the State Services Commission, is in Anzac Road, Trentham, and will be used mainly to hold scientific research information for many Government dtpartments, and for this reason the security will be tight.

The building is three floors high, each floor being 940 square metres (10,000 square foot) housing a large ICL 2980 computer which takes up 650 souare metres (7000 square feet).

The computer cost $6,250,000 and the building $3,000,000.

Departments

Departmetns using the computer will be Agriculture and Fisheries, Auckland and and Christchurch Technical Institutes, New Zealand Forest Services, the Deparment of Scientific and Industrial Research, the Government Printing Office, Department of Statistics and the Meteorological Office.

Minor users will be Lands and Survey, Health, Electricity and Education.

The centre has its own genreating capacity, if needed, but differs from the Wanganui centre, because the Wangamul centre has a duplicating system to allow the facility to be usd 24 hours a day.

Then Trentham centre is a solo machine, which while storing very important research information, will not be needed on a 24-hour "on call" basis.

The centre will be staffed by 60 trained personnel, about six of whom have been trainnig overseas from one to six months.

The computer has been in the country 18 month and has been housed temporarily at Rongotai, where familiarisation courses and conversion of information has been carried out.

Windows

The centre is fully air-conditioned and this is particularly needed as the building has windows only on the top floor — this is for security reasons.

A gas-flooding system for fire safety has also been installed.

Because no water can be used around the computer, a special gas — BCF — is used along the same lines as the water sprinkling system to extinguish a fire. This gas is non-toxic.

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CSO: 5500

DPRK SHARPLY INCREASES INTERNATIONAL SERVICE BROADCASTS

[Editorial Report WA] FBIS monitoring of North Korean broadcasts indicates that North Korea has significantly increased the scope of its broadcast effort to international audiences since early August, raising the broadcasting output in its international services from 294 hours to 435 hours 45 minutes per week.

The biggest increases on a geographic area basis were in the services beamed to North America, Latin America, Near East/Africa, and Europe. The biggest increases by language were in English, Spanish, French, Arabic and Mandarin. Weekly broadcasts in Russian to audiences in the Far East and Europe were reduced from 28 hours to 25 hours 40 minutes. Korean was also reduced from 29 hours to 35 hours per week.

These output figures do not include 163 hours 20 minutes per week of broadcasts in Korean to South Korea and Koreans living in Japan which have not changed significantly since the previous broadcast schedule. A breakdown of the new broadcast schedule by language and beam is as follows:

Arabic to the Near and Middle East and Africa increased from 14 hours to 42 hours per week.

English increased from 77 hours to 102 hours 40 minutes per week, including: to Europe from 14 hours to 25 hours 40 minutes; to Southeast Asia from 35 hours to 25 hours 40 minutes (representing the only decrease in this language); to the Americas from 7 hours to 25 hours 40 minutes: to the Near and Middle East and Africa from 21 hours to 25 hours 40 minutes.

French increased from 35 hours to 79 hours 20 minutes per week, including: to Europe from 7 hours to 25 hours 40 minutes; to Southeast Asia from 14 hours to 25 hours 40 minutes; to the Near and Middle East and Africa from 14 hours to 28 hours.

Japanese to Japan increased from 49 hours to 67 hours 5 minutes per week.

Korean decreased from 49 hours to 35 hours per week, including: to Europe, the Near and Middle East and Africa from 7 hours to 5 hours 50 minutes; to the Near and Middle East and Africa from 7 hours to 5 hours 50 minutes; to Southeast Asia from 14 hours to 5 hours 50 minutes; to Latin America from 14 hours to 5 hours 50 minutes; to Europe from 7 hours to 5 hours 50 minutes; to Southeast Asia and Latin America (new combined beam at 5 hours 50 minutes).

Mandarin to China increased from 28 hours to 42 hours per week.

Russian decreased from 28 hours to 25 hours 40 minutes per week, including: to the Far East and separately to Europe from 14 hours to 12 hours 50 minutes for each beam.

Spanish to Latin America increased from 14 hours to 42 hours per week.

CSO: 5500

BRIEFS

ASSOCIATED PRESS DELEGATION--Peking, 31 Aug 1977 (Hsinhua)--Chu Mu-chih, Director of the Hsinhua News Agency, gave a banquet here this evening in honor of a U. S. delegation of Associated Press executives and directors led by Keith Fuller, president of AP. Composed of chairman, vice-chairmen and directors of the board of AP, the delegation arrived in Peking yesterday evening on a visit to China at the invitation of the Hsinhua News Agency. Present at the banquet were leading members of press circles in the Chinese capital, the Information Department and the Department of American and Oceanian Affairs of the Foreign Ministry. Chu Mu-chih and Keith Fuller proposed toasts at the banquet to the constant enhancement of the friendship and understanding between the people and press circles of the two countries. [Peking NCNA in English 1618 GMT 31 Aug 77 OW]

CSO: 5500

BRIEFS

REPEATER STATION PLANNED--A repeater station of the National Broadcasting Station of Thailand will be constructed at a site close to the Takua Pa hospital (in Phangnga Province) to cover the southern provinces. [Bangkok Domestic Service in English 0000 GMT 23 Aug 77 BK]

RURAL ELECTRIFICATION--According to the Provincial Electricity authority governor, electricity will tentatively be extended to 4,692 more villages during the fourth national economic and social development plan which covers from 1977 to 1981. This will involve expenses of approximately 19,237 billion baht. [Bangkok Domestic Service in Thai 0000 GMT 27 Aug 77 BK]

LOAN FOR ELECTRICITY EXPANSION--The Asian Development Bank approved on 25 August a U.S. $47 million loan to the Electricity Generating Authority of Thailand for power transmission expansion in northern Thailand. The loan will finance the bulk of foreign exchange requirement of the project and will be repayable over the period of 20 years, with a five-year grace period and an interest rate of 8.3 percent per year. [Bangkok Domestic Service in English 0000 GMT 27 Aug 77 BK]

CSO: 5500

NEW RADIO STATIONS

[Editorial Report OK] Hanoi Domestic Service in Vietnamese at 0400 GMT on 7 September broadcasts the following: "Ha Nam Ninh Province has completed installing and put into operation a radio broadcasting station on the 238 meter bands. On the morning of 2 September, radio Ha Nam Ninh officially began broadcasting a special program to greet National Day, 2 September.

"Meanwhile Nam Ninh and Binh Luc Districts have completed the construction of microwave transmitting stations. Thus, besides the radio broadcasting station in Ha Nam Ninh Province, there are now 22 state-operated [quoocs laapj] radio broadcasting stations and 310 civilian-operated [daan laapj] wire radio stations in cooperatives with a total of more than 100,000 loudspeakers."

"On the morning of 2 September, the Kien Giang Provincial Radio Broadcasting Station officially broadcast its first program. Its daily broadcasting schedule lasts 5 hours and 15 minutes hours, some 2 hours and 55 minutes of which are devoted to local programs."

CSO: 5500

BRIEFS

WIRED-RADIO STATIONS--Since early this year, many localities have installed nearly 70 additional wired-radio stations in major agricultural production areas. Thai Binh has built 15 new wired-radio stations at its 15 main rice growing villages with 4,100 loudspeakers for families. Thanh Hoa has installed an additional 18 wired-radio stations in 18 villages with 9,800 loudspeakers. In Ha Son Binh, in addition to building more wired-radio stations with 1,100 loudspeakers in two villages, the province has conducted a survey and drafted a plan to build a receiving and broadcasting station in (Van Mai) town and drafted a plan for installing three large and medium-sized wired-radio stations at the Da river hydroelectric project and in other units. In the Mekong River Delta region, Dong Thap province has completed building a wired-radio station for the Dong Thap state farm. Long An province has built 8 additional wired-radio stations for villages during the first 6 months of the year. An Giang province is building 10 more wired-radio stations in its 10 main economic villages. [Text] [Hanoi Domestic Service in Vietnamese 1300 GMT 28 Aug 77 BK]

HA NAM NINH GRAIN OBLIGATION--As of 10 August, agricultural cooperatives in Ha Nam Ninh province had delivered to the state granary more than 42,200 tons of paddy, nearly 52 percent of the grain obligation for the 5th-month spring crop. The province has launched a campaign to grow vegetables and subsidiary crops and urge cadres, workers and cooperative members to save grain to help localities solve their grain problems. [Hanoi Domestic Service in Vietnamese 0900 GMT 18 Aug 77 BK]

BEN TRE SUBSIDIARY CROPS--Ben Tre province expects to grow 1,270 hectares of subsidiary crops in this rainy season. In addition, the province will grow tens of thousands of short-term industrial plants such as coconuts, bananas and sugarcane. [Ho Chi Minh City Domestic Service in Vietnamese 0500 GMT 21 Aug 77 BK]

TAY NINH MANIOC CROP--Tay Ninh province is striving to grow 15,200 hectares of manioc, doubling the manioc area of 1975, peasants in the province have so far grown about 7,000 hectares of manioc, nearly 50 percent of the planned norms. They are now preparing land for growing the remaining manioc area to to supply manioc to 159 hand-operated processing establishments. [Hanoi Domestic Service in Vietnamese 2300 GMT 22 Aug 77 BK]

TAY NINH RICE CROPS--Tay Ninh province has so far transplanted about 70,000 hectares of 10th-month rice and grown 10,000 hectares of slash-burn upland rice, fulfilling more than 70 percent of the planned area for the 10th-month of rice crop. Peasants in the province are striving to complete transplanting the remaining 10,000 hectares of 10th-month rice by early September and grow short-term food crops. [Ho Chi Minh City Domestic Service in Vietnamese 1200 GMT 24 Aug 77 BK]

MILITARY UNITS' PRODUCTION--Thirteen specialized cultivation zones in the southern provinces have begun to carry out plans. A large military force assigned to economic tasks has begun to grow rice in Ha Tien and Dong Thap Muoi, rubber trees in Song Be, corn and soybean in Dong Nai, cotton in Thuan Hai and food and grain crops in (Krong Pak). Tens of thousands of troops are actively reclaiming wasteland to expand the cultivable areas, doing irrigation work, building communications and transportation networks and building material facilities for each production unit. A number of state farms, which are managed by the army, have been put into production. [Ho Chi Minh City Domestic Service in Vietnamese 2345 GMT 17 Aug 77 BK]

TELEGRAPH LINE CONSTRUCTION--Hanoi August 31--The General Department of Information is now constructing a 2,080-kilometer trans-Vietnam communication line. The line will run from Hanoi along Highway One and fork at Thu Duc Town, northeast of Ho Chi Minh City. One branch will extend to Ho Chi Minh City and the other will reach to Cape Ca Mau in the southernmost province of Minh Hai. Telegraph stations will be built along the line to connect it with the provincial communication lines to form a complete grid. [Text] [Hanoi VNA in English 0706 GMT 31 Aug 77 OW]

RADIO STATION TO BROADCAST--According to the [provincial] paper KIEN GIANG, after a period of intensive building and testing, and with the assistance of the technical department and various services and sectors in the province, the KIEN GIANG Radio Broadcasting Station will officially begin broadcasting on 2 September. The station will broadcast four programs a day on the medium wave of 326 meter bands, that is 920 khz. These programs will be broadcast in the morning, at noontime, in the afternoon and in the evening to serve the local people. [Text] [Ho Chi Minh City Domestic Service in Vietnamese 1200 GMT 29 Aug]

CSO: 5500

CONSTRUCTION OF EARTH STATION FOR SPACE COMMUNICATIONS DELAYED

Sofia OTECHESTVEN FRONT in Bulgarian 24 Jul 77 p 1

[Article by A. Andreevski: "The Plan Is for an Earth Station for Outer Space"]

[Text] Important deadlines for the completion of the first Bulgarian earth space tracking station built on Plana Mountain have elapsed without the station being able as yet to broadcast signals, for a great amount of work remains to be done. The road leading to Planshtitsa has not been asphalted yet and the cars transporting construction materials, equipment, and workers frequently break down. Water-supplying facilities have not been completed as well. However, the electric power supply remains the biggest problem. The main power cable has not reached the site. All this should have been ready a long time ago.

Currently the efforts of the construction troops of the unit commanded by Senior Ltn Tonko Beloperchimov are focused on the administrative-service building. It will contain the power distributors, diesel engines, offices, rest premises for the servicing personnel, the cafeteria, the kitchen, and others. The brigade headed by Kolyu Mitov has already built the casings for the final reinforced concrete slab for the building. The unit headed by Mitrushin Vladimirov is erecting the armature while the plasterers headed by Aleksandur Rangelov are building and casting concrete on the areas completed by the armature and casings builders. They are hastening to catch up the time lost not by their fault. However, this is affecting the quality of the work. Plastered ceilings are crumbling and many other errors must be repaired.

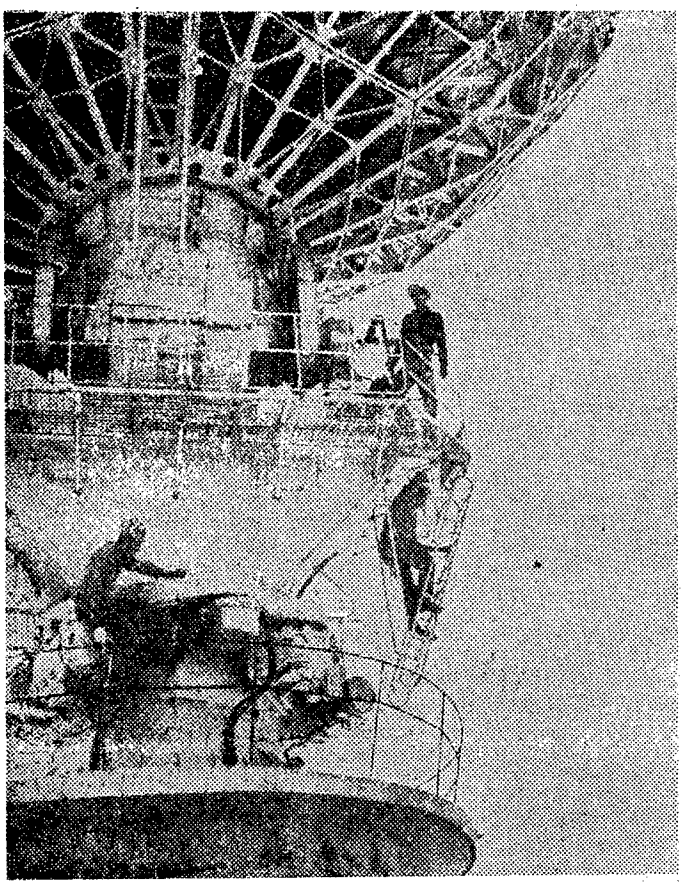
One of the important deadlines--1 July--was missed. On that day the station was scheduled to beam signals to outer space. Currently it can only receive signals. The entire complex equipment delivered from the Soviet Union was installed by the 14 Soviet specialists. Their leader, Eng Vladimir Sanin, is very experienced. He has participated in the building of a number of stations of the Orbita system in the Soviet Union, Mongolia, and Cuba.

"Currently we are training our Bulgarian colleagues to run the station," said Eng Sanin. "Our specialists are reading lectures and sharing their tuning experience. We are pleased that the young, united, and enthusiastic collective is rapidly mastering the new and unfamiliar equipment. Whenever necessary we help the construction workers, particularly those building the radio relay station. No communication between the space station and Sofia's television tower may exist without its rapid completion."

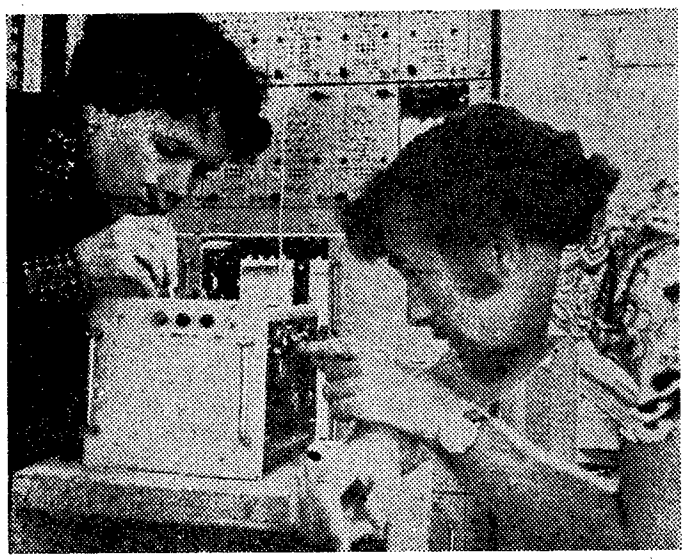
The efforts of the construction and installation workers are focused on the completion of the projects without which the Universiada 77 sports competitions could not be broadcast through the international Intersputnik system with its reliable Mol'niya satellites. From 17 to 28 August all the countries within our socialist comity and the Eurovision public will watch direct telecasts of the biggest sports event of the year.

As to the exchange of other types of communications, Vladimir Sanin assured us that on the eve of the 60th anniversary of the Great October Socialist Revolution there will be test telephone conversations between Sofia and Moscow via outer space. By the end of the year the first Bulgarian station for space communications must be totally completed, at which point it will be possible to transmit not only radio and television programs but also high-quality telegraph, telephone, and phototelegraph communications.

Vladimir Sanin, head of the Soviet specialists, and his Bulgarian colleague Eng Purvan Kazandzhiev, head of a shift, are always together.



The 56-ton antenna is "testing" outer space. Its parabolic mirror is 12 meters in diameter



Soviet specialists Nadezhda Galushina and Leonid Luris test the channel-forming equipment for telephone communications

GROUND-SPACE COMMUNICATIONS CENTER COMMISSIONED

AU221347Y Sofia TRUD in Bulgarian 18 Aug 77 p 2 AU

[Stoyan Bonev report: "A Bridge Through The Cosmos"]

[Excerpts] The constructors and fitters of the Bulgarian ground station for space communications have made exceptionally great efforts to build a bridge through the cosmos in order to broadcast the opening ceremony of the Universiada games. Not only millions of people from our country but also many times more people in the USSR, the socialist countries and distant Cuba will see and hear the ceremony.

The cosmic station has passed its first major test. Vast horizons for raising communications and the exchange of radio and television programs to a new qualitative level have opened up before our country.

CSO: 5500

BRIEFS

TRUTNOV CERNA HORA TELEVISION--The construction of the Trutnov Cerna Hora television transmitter is a Czechoslovak-Polish friendship building project and the organizations involved have pledged to start transmission of the first and second programs by 15 December 1977. The transmitter will be 78 meters high and the builders have reached 56 meters so far. [Bratislava PRAVDA in Slovak 19 Aug 77 p 2 AU]

CSO: 5500

DEVELOPMENT OF TELECOMMUNICATIONS INDUSTRY, PROJECTION TO 1985

Belgrade EKONOMSKA POLITIKA in Serbo-Croatian 18 Jul 77 pp 26-27

[Excerpts from an article by Ante Zmijarevic]

[Excerpts] Some fifteen years ago, by adopting the program for constructing an automatic telegraph and telephone system, the country also determined the direction for the development of the domestic industry of telecommunications equipment. That orientation has been followed consistently from the first program for the development of the PTT [Post, Telegraph, Telephone] from 1961 to 1967; its full justification was shown by the significant results in the Program for PTT Development 1969-1975.

Expansion has included the Nikola Tesla factory for telecommunications instruments in Zagreb, the Iskra electromechanics factory in Kranj, production of high frequency instruments at the Nis Electronics Industry Plant, and others. They are established as recognized producers of telecommunications equipment throughout the world today and have many satisfied customers. At the same time, capacities have expanded for installing telegraph and telephone equipment, so that today the PTT workshops have developed into strong installations enterprises, such as Telefonkabl in Belgrade, Tegrad in Ljubljana, Telenfonvod and the PTT workshop in Zagreb, Telemontaza in Sarajevo and others.

Particularly significant support from the PTT organization to domestic industry came in the process of fulfilling the Program for Developing PTT Communications from 1960 to 1975. A favorable circumstance in that period was the fact that it was possible to utilize a loan from the International Bank in the amount of $40 million. While that loan actually was only about 6 percent of total investments during the period indicated, it was of special quality since it was concentrated on building the most important installations in the Yugoslav PTT network, such as the construction of the earth satellite station; international telegraph and telephone switchboards; line equipment for coaxial cable systems with a capacity of 2,700 channels; radio relays with a capacity of 1,800 channels; new high frequency systems totalling 40,000 channels, etc.

The Yugoslav PTT agency also signed, in addition to the agreement with the Yugoslav Investment Bank as the creditor, an agreement with the International Bank for a project that has had a crucial importance for the PTT organizations in selecting foreign suppliers of equipment through international licensing arrangements. The basic goal was to use the loan for the function of developing domestic industry, and this was completely successful. The result has been that of the $40 million of the loan, about $35 million came from foreign producers in the form of technical and production cooperation with our producers so that domestic producers participated directly in supplying and install g some $18 million in equipment.

The capacity of domestic production continued to develop in very modern systems in the area of transmitting and communication technology. That, in turn, created favorable circumstances for the construction of a new factory for telecommunication cables in Svetozarevo, and the PTT enterprises had already designated funds for that purpose. Further, a new factory for semiautomatic telephone exchanges was built at Iskra in Kranj, which is one of the most modern factories of its type in Europe. There is also a new factory for high-frequency electronic products in Zemun which more than doubles the capacity available at the Nikola Tesla plant in Zagreb, and the latter has notably modernized its Crossbar systems and just recently concluded an agreement with its licensing partner for the production of automatic telephone and telegraph exchanges.

The share of foreign equipment, which stood at 90 percent in the 1960's has been reduced during the course of the 1969-1975 program to about 15 percent, while the need for imports in the 1976-1985 program will decline to merely 3-4 percent.

That has made it possible for this industrial group to become a significant exporter, on whom some industrially developed countries depend seriously for their construction of telephone and telegraph systems. Today the total exports of this group amount to about $100 million, and our producers are involved in supplying and installing major telephone and telegraph switchboards for domestic and international automatic communications in the Soviet Union, the GDR, Hungary, Czechoslovakia, several developing countries, etc. Significant quantities of components, parts and subassemblies are being exported to the most advanced industrial countries of the West, and some of these are even used for the needs of their licensees.

It is natural that such a concept has had its price. Foreign producers have not granted licenses and provided assistance to our producers out of altruism. The PTT, however, has been aware of that and it has been paid for in the end either directly by the PTT organizations through higher initial charges for equipment, as long as they are tolerably above world prices, or by the domestic industry itself in paying its own developmental costs.

Analysis of these orientations has shown that this was a correct policy and that today Yugoslavia is not only freed from importing such equipment but has become a significant exporter of it. The most important fact, however, is that that policy has enabled the development and equipping of domestic organizations and personnel which today are capable of independent development of new technology and its rational utilization. Today production, development and installation of telecommunications equipment employs more than 50,000 persons in Yugoslavia, mostly skilled workers, of whom more than 1,500 are graduate engineers and more than 1,000 technicians.

Under World Prices

The further development of relations between the PTT organizations and domestic industry seeks to enrich their cooperation with new content based on the principles of the Law on Associated Labor and the Law on Planning Systems, and primarily, a self-management contract is being sought to direct long-term commercial and technical cooperation.

This contract will regulate nearly all crucial questions of mutual interest to PTT organizations and the producers and installers of PTT equipment. These are matters chiefly of the technical and technological development of domestic production, mutual selection and development of new systems, joint access to foreign licenses and other partners, the negotiation of mutual policy for the issuing of certification, etc. The contract will also regulate long-term pricing policies, in which the primary mutual point of departure will be the desire to promote price stability in the long term. Here it should be stressed that the present prices used by the Yugoslav telecommunications industry are very significantly below world prices for some equipment, and this compensates several times for the expenditures for equipment at somewhat higher prices at the beginning of the development of domestic industries.

The contract will also provide long-term regulation of terms for deliveries and installation, specify common assignments concerning testing, quality control, determination of technical standards and technical conditions, etc. Neither partner to the contract expects imports of major amounts of equipment except for certain instruments, measuring devices and some special equipment which would not be profitable to produce domestically because of the small quantities involved. It is of mutual interest to the PTT organizations and the producers to keep that minimal import amount of some 3-4 percent of total equipment value effective and without restrictions in the program for imports and exports.

The basis for preparing this self-management contract and one of its inherent parts is the Program for Developing PTT Communications in Yugoslavia by 1985, and this provides the contract with its special quality. In practical terms it assures implementation of the basic principles of self-management planning, by which not only relationships and common interests between

the organizations of associated labor of PTT communications and those of the producers will be regulated over the longer term, but also directions will be provided for quantitative factors in the production of each separate type of equipment. That means that the contract will regulate the quantitative balance of production for an important branch of the Yugoslav economy.

The self-management agreement will be signed by all labor organizations of PTT communications, by the Union of Yugoslav PTT Organizations, and by all domestic producers of cables, telephone and telegraph exchanges, high frequency and radio-relay instrument aggregates, batteries, telephone and telex instruments and cable accessories, as well as by the installers. Thus, for example, it is expected that by 1985 some 2,850,000 lines will be provided for local telephone exchanges; 112,000 hookups for expanding and building automatic long-distance and international telephone exchanges; 148,000 high frequency channels; 3,882,000 km of double cables for the local telephone network; 35,000 hookups for telegraph exchanges; 22,000 telegraph channels; about 2,000 km of coaxial cable; 3,500,000 telephones; and the corresponding amounts of cable accessories, diesel aggregates, batteries for reserve power supplies, etc. This type of precise planning between the organizations of associated labor that are directly involved represents the essence of the system of self-management planning on the level of the country as a whole.

Therefore, assuming approximate completion of the basic elements of the Program for Development by 1985, on the basis of which the self-management contract was prepared, domestic industry can know production in 1985 with an accuracy of ± 10 percent, not only in quantity but also in terms of what systems will be produced and installed in the PTT network. It is anticipated that in 1985 more than two-thirds of the new telephone and telegraph hookups will be in semiautomatic and automatic systems.

This type of development of domestic industry as a whole will mean a doubling of present capacities in 1985 in comparison to the status in 1976, except for the cable industry where capacities are already nearly sufficient and where, without major investments, by normal increases in labor productivity and modernization of existing facilities, domestic needs can be supplied.

12131
CSO: 2800

NAVAL COMMUNICATIONS LABORATORY DESCRIBED

Belgrade Domestic Service in Serbo-Croatian 1800 GMT 29 Aug 77 AU

[Report by Mijusko Tomic]

[Summary] In connection with the forthcoming jubilee celebration of the Yugoslav Navy Day Belgrade radio correspondent Mijusko Tomic visited the laboratory for radio equipment and installations of the Split Naval School Center. Here is his report:

"The laboratory for radio equipment and installations hums with new electronic instruments, the most modern means; and all these installations are the last word in technical development. There is a multitude of instruments with different frequencies. [as heard] Future naval officers acquire here the necessary knowledge to be able to operate various naval vessels, including torpedo boats, submarines and gunboats. Reserve naval officers, too, are trained in this laboratory.

We met Sergeant Milutin Vasiljevic in the laboratory for radio equipment and installations of the Naval School Center in Lovra and asked him some questions.

[Question] "This is a laboratory equipped with extraordinarily modern equipment."

[Answer] "Yes, there are here mainly the latest instruments which are still being introduced abroad our ships. We have here our Stu-400 receiver-transmitter set and teleprinter equipment, and it is planned now to introduce this equipment aboard a majority of our ships."

[Question] "As an electronics engineer, who is serving here his regular military service term, can you tell us to what an extent the modern electronic technology has made progress here and has been introduced here in the training laboratory and aboard ships?"

[Answer] "It is planned to introduce the most modern means and we can say that considerable successes have been achieved in this respect. What is most important is the fact that these means have been made in our country: 80 percent of them have been made in our country and we still import 20 percent of these means, and it is planned to increase our own means to 100 percent.

CSO: 5500

BRIEFS

URUGUAY-ARGENTINA ACCORD-- Pursuant to a resolution issued yesterday evening by President Mendez, in agreement with the Ministers of National Defense and Foreign Relations, the National Telecommunications Administration was authorized to ratify an agreement made with the National Telecommunications Enterprise of the Argentine Republic for an exchange of telecommunications traffic between the two countries. [Text] [Montevideo EL PAIS in Spanish 27 Jul 77 p 9] 8908

CSO: 5500

BRIEFS

BOLIVIAN TELEVISION REORGANIZED--(Alfredo Arce Carpio), former interior minister and president of Bolivian Television, reported on Friday that the Bolivian Television will be reorganized. Various officials will be replaced and there will be one director as opposed to the three previous directors. Television coverage will be extended to Sucre and Potosi. An Argentine enterprise has been contracted for this extension. [La Paz Radio Cruz del Sur Network in Spanish 0230 GMT 20 Aug 77 PY]

CSO: 5500

NEW RADIO STATION FOR SANTA CRUZ DEL SUR

Havana JUVENTUD REBELDE in Spanish 29 Jun 77 p 2

[Text] A new radio broadcasting station installed in a building constructed for that purpose will begin transmitting from Santa Cruz del Sur early in July, it was reported by Francisco Rivero provincial director of the People's Government Radio in Camaguey Province.

It will replace the one now existing in that municipality and it will be completely operated by women, 17 of whom will perform the work of announcers, operators, reporters and similar functions.

From the technical point of view, RADIO SANTA CRUZ will become the control station for the province and will maintain programing in keeping with the guidelines of the Cuban Institute of Radio and Television [ICRT]

Six broadcasting stations operate in Camaguey Province located in the municipalities of Guaimaro, Santa Cruz del Sur, Nuevitas, Florida and two of them in the provincial capital.

Many projects aimed at improving the quality of transmissions have been carried out in the province, such as the rehabilitation of a building for RADIO RECTANGULO in Guaimaro, and a new recording studio in RADIO CADENA AGRAMONTE.

"From the technical point of view," said Rivero, "the ICRT also operates the station installed at the Provincial Pioneer Camp at Santa Lucia Beach and using the technical equipment of RADIO CAMAUGY, it devotes a five and one-half hour program to the children.

"The technicians and workers of the ICRT in general," he explained, "try to broadcast all the activities which take place in the province, and through correspondents, we send information of a national character to the NATIONAL RADIO NEWS PROGRAM and to RADIO RELOJ.

"An extensive plan for hailing 26 July, which will consist of news, historical, educational and recreational programs in all the stations of the province, is being placed in operation gradually, awaiting the main ceremony celebrating the 24th anniversary of the attack on Moncada Barracks, which for the first time will take place in Camaguey.

"Our highest aspiration," concluded Rivero, is to present a number of programs at the level of the activities, which as a tribute to 26 July, were carried out in Camaguey, and to maintain a high quality so that everything that happens because of this important event will reach the listening audience of the province."

8908
CSO: 5500

BRIEFS

NEW TELEPHONE CENTER--The new modern national long-distance telephone center has been operating in Havana since 26 July. This center is under the jurisdiction of the Ministry of Communications. The center is equipped with modern technology and has increased operating capacity by 40 percent. This makes it possible to offer long-distance service which is more in tune with the country's economic development and with the growth of the population. The inauguration of the new national long-distance telephone center coincided with the completion of the national microwave system, which will increase long-distance circuits for the interior of the country. [Havana Domestic Service in Spanish 1600 GMT 15 Aug 77 FL]

CSO: 5500

EARTH COMMUNICATIONS SATELLITE STATION TO BE BUILT NEAR MINAS

Montevideo EL DIA in Spanish 15 Aug 77 p 4

[Text] The National Telecommunications Administration [ANTEL] will soon ask for bids for the installation of an earth satellite communication station.

Technicians of the body are now preparing the necessary list of specifications.

The station will be built near Minas and will make possible direct links between our country and subscribers of America and Europe, and through them with the rest of the world. It will be inaugurated in 1979.

In the first phase it will have 72 telephone circuits beamed to 10 different countries. After three years of operation by the station, 48 circuits will be added. As of that time direct links will be made with 14 countries.

The estimated cost of the land station is close to $7 million, including the cost of equipment to be imported and the installation and civil engineering work to be performed.

Operational Costs

Operational costs of the earth station during the first year of operation will be approximately $823,900.

In the second year the costs will be $849,200; $873,400 in the third, $911,900 in the fourth, $935,700 in the fifth, $1,002,400 in the sixth, $1,035,100 in the seventh, $1,085,200 in the eighth, $1,132,800 in the ninth, and $1,189,700 in the tenth.

Estimates made by experts on the subject establish that the station will have a high profitability which will result in profits of 1,719,400 new pesos the first year, a figure which will increase constantly.

At the end of the 10th year of operation of the earth station, the profit will rise to 12,828,800 new pesos.

8908
CSO: 5500

BRIEFS

TWO NEW AGENCIES--Tomorrow, 28 July, the National Telecommunications Administration will inaugurate two new telecommunications agencies. In this manner it will extend telephone and telegraph services to the towns of Cerros de Amaro in Treinta y Tres Department and Pedro Aramendia in Lavalleja Department. The first will be connected by long-distance lines to the Treinta y Tres and Arbolitos centrals, and the other to the Piraraja and Jose Pedro Varela. [Text] [Montevideo EL PAIS in Spanish 27 Jul 77 p 9] 8908

CSO: 5500

NEW TELEPHONE CONNECTIONS PLANNED FOR NEXT YEAR

Teheran TEHRAN JOURNAL in English 23 Aug 77 p 3

[Text]

TEHRAN — The Ministry of Post, Telegraph and Telephones (PTT) announced yesterday that 220,000 new telephone connections will be introduced in Tehran and provincial cities during the next Iranian year.

According to the latest available figures, about 150,000 people from Tehran and 70,000 from provincial centers have their names on waiting lists for telephone hook-ups.

The ministry has revised its policy so that new facilities are being provided for the installation of the fresh connections.

Using the most modern equipment and techniques available, the ministry will be able to meet present demands for provision of 150,000 telephones in the capital and extend the system to provincial cities with 70,000 additional connections.

But informed sources have suggested that the new methods of installation will still not be able to cope with the ever-growing demand for telephones.

The PTT ministry has revealed that certain parts of Tehran will not receive new telephone connections. These areas include Shemiran, Zafar Avenue, Karim Khane Zand, Abbasabad, Tehran Now, Saadi Avenue, Amirabad, Jamshidabad, Western Tehran, Zarab Khane, Majidiyeh Ishratabad, Narmak, Farahabad and Yousefabad.

According to plans issued by the ministry, new telephones will be provided in the areas of Hafez, Tehran Pars, Daryae Now, and Elizabeth Boulevard.

Provincial cities included on the installation plan are Gorgan, Do Gonbadan, Damghan, Tasouj Shaheen Shahr, Semnan, Sabzewar, Rudsar, Rasht, Ramsar, Nishapour, Najafabad, Mehr Shahr, Langroud, Korramabad, Kerman, Karaj, Elam, Homayoun Shahr, Hamedan, Dezful, Bourojerd, Behbahan, Kashan, Ardabil, Arak and Ahvaz.

CSO: 4820

SUBMARINE COMMUNICATIONS CABLE NEAR COMPLETION

Abidjan FRATERNITE MATIN in French 30-31 Jul, 4 Aug, 6-7 Aug 77

[30-31 Jul 77 p 5]

[Excerpt] The cable-ship "Vercors" from Dakar arrived last night. This ship is to land the submarine cable that will link Abidjan to the Senegalese capital. The operation, which will be carried out near Gonzagueville, will complete the submarine cable link between France, Morocco, Senegal, and Ivory Coast.

Today at 1200 hours, the cable-ship will be out at sea to place the submarine cables. It will return from this mission at 1900 hours. It will go out to sea again a second time tomorrow, Sunday, at 0100 hours, returning at 1245 hours. That will then be the end of placing the cables. The end of the mission will be celebrated with a reception given at 1300 hours on board the cable-ship.

It was in July 1975 that Senegal and Ivory Coast signed the agreement for the realization of this cable, which cost 7 billion CFA francs, with Tele-Senegal and INTELCI [expansion unknown] each paying 50 percent.

Service will not start until some time during the first 4 months of 1978 because, after yesterday's operation, there still remain some 500 km of cable to lay out at sea next December.

The line that will then be open will have a capacity of close to 640 telephone circuits. The result will be an increase in the routing channels, which were proving to be insufficient for the constantly increasing demand.

[4 Aug 77 p 5]

[Excerpts] The "landing" of a major portion of the last section was completed last weekend by the cable-ship "Vercors," which

had the task of laying the cables and which left Abidjan on Sunday evening after it had successfully completed this penultimate stage of the operation.

There is a total of 2,535 km of cable (495 km for the first section laid last February, 1,058 km for the second, and 982 for the last) that will link Abidjan to Dakar, Rabat, and France in this system, the originators of which have given more guarantees of safety, security, and durability than for any other existing telephonic or telegraphic links; according to the engineers from the "Vercors," the submarine cables offer above all the sure advantage of secrecy of communications between the regions concerned.

The cable-ship will return next December for the last stage of laying the submarine cable, called the final splicing, which will take place in Abidjan at the inauguration ceremony of this new telecommunications system.

[6-7 Aug 77 p 6]

[Excerpts] The construction agreement for the Abidjan-Lagos section of the Africa-Europe submarine cable was signed yesterday at the Ministry of Posts and Telecommunications by our country and the four other "promoter states," that is, Senegal, Morocco, Nigeria, and France.

Our country was represented at this ceremony by our minister of posts and telecommunications, Kone Bangali, while the other four states were represented by Jean Grenier, French regional director of telecommunications, Daouda Sow, Senegalese minister of communications, Mr Wakrim, Moroccan director of telecommunications, and the Nigerian charge d'affaires in Ivory Coast, Godwin Jituboh.

This Abidjan-Lagos section of the submarine telecommunications cable is an extension of the sections already completed, which are: France-Morocco, Morocco-Senegal, and Senegal-Ivory Coast.

After numerous contacts and negotiations, the agreement protocol with Nigeria was signed in Lagos on 24 June 1977. The ceremony for which we met today, a logical result of the June meeting, thus leads us to sign the construction agreement for the Abidjan-Lagos section of the electronic transatlantic route that is of such capital importance to the African continent.

According to minister Kone Bangali, this decision meets primarily the need for diversification in means of telecommunications:

"The growing volume of traffic flow requires that an ever larger number of telephone circuits be put into operation. Thus, in order to deal with the international traffic flow," he said, "our country must have close to 400 circuits by 1980."

11550
CSO: 5500

COMMITTEE TO INVESTIGATE AMATEUR RADIO ACTIVITIES

Luanda JORNAL DE ANGOLA in Portuguese 11 Aug 77 p 1

[Text] All activities of the Angolan Radio Amateur League have been suspended and a committee has been named to investigate its activities, according to an order by the secretary of state for communications, Comrade Bento Ribeiro, which has now been made public. The aforementioned committee is comprised of Comrades Pedro Trindade, Aleixo da Palma and Artur Soares da Silva.

According to the order, all amateur station and operator licenses issued up to the present have been canceled.

At the same time, all holders of amateur radio station licenses, as stipulated, must turn over their complete installations to the posts and telegraph service and will receive a receipt. In the case of Luanda, the equipment must be turned over to the Radioelectronic Control Center. All official organs that for any reason have amateur radio installations must also turn them over.

Fostering Amateur Radio

In his order, Comrade Bento Ribeiro, secretary of state for communications, established measures aimed at regulating amateur radio in our country. During the colonial period and the second war of national liberation, radio amateur was employed by fascist, colonial authorities and by puppet organizations for police and repressive purposes in complete violation of the recognized international ethics that characterize that activity. Amateur radio is internationally recognized as an activity meant for individual instruction, for intercommunication, and technical study by radio amateurs, that is, by duly authorized people who are interested in amateur radio exclusively for personal reasons without pecuniary interest, an aspect that will characterize it among us in the future. With the measures now adopted, the secretariat of state for communications also considered that fostering amateur radio is important, especially to encourage interest in radioelectronics among the youth.

The Issuance of Future Licenses

It was decided also that amateur station licenses will be issued by that state secretariat, with requests being handled according to existing

legislation. The issuance of new operators' licenses, the order says, will be made by requisition addressed to the secretary of state. Those applicants who can prove that they have previously taken an examination will be exempted from taking the examination required by pertinent regulations.

8711
CSO: 5500

MAURITANIAN TELECOMMUNICATIONS PROGRAM

Paris AFRIQUE INDUSTRIE INFRASTRUCTURE in French 15 Jul 77 p 68, 69

[Article: "Telecommunications"]

[Text] Unitl relatively recently, telecommunications installations in Mauritania were still few in number. Only a few cities were equipped with telephone exchanges:
--either automatic, for example: Nouakchott, Nouadhibou, Kiffa, Kaedi, Atar, Akjoujt.
--or manual, for example: 'Ayoun El 'Atrous, Aleg, Boque, Boutilimit, and Maderdra.

The transmission network extended from the capital to the cities of the provinces using shortwave radio circuits. At first transmitting only radiotelegraphy, the links were able to transmit radiotelegraphy and radiotelephony with the installation of single sideband transmitters or independent sideband transmitters and receivers.

Mauritania's international circuits were and still are also operated by short waves from Nouakchott and Nouadhibou. There are direct circuits to: France, the Maghreb, and Senegal. Outgoing and incoming international telephone calls are handled by manual telephone switchboards located in Nouakchott and Nouadhibou. Calls to Paris are routed by semiautomatic circuits. Consequently, as recently as 2 years ago, the quality of the few circuits transmitting all of Mauritania's telephone and telegraph traffic closely depended on the extremely variable propagation conditions of the short waves.

A decisive step was taken when the initial results of the study on the PANAFTEL [Pan-African Telecommunications] network were made public. The purpose of the PANAFTEL network is to link African countries using circuits capable of meeting the specifications of the CCIR [International Radio Communications Consultative Committee] and CCITT [International Telegraphic and Telephonic Communications Consultative Committee]. It is designed also to handle the national traffic of each country in its trunk lines. As soon

as the paths of the trunklines of this network had been selected and without waiting for the completion of detailed studies, the Mauritanian Government developed the part that involved Mauritania, from Rosso (a city located on the Senegal River at the border) to Akjoujt, via Nouakchott. This installation together with the reconstruction of the networks and the construction of modern telephone exchanges in the three cities crossed made possible the creation of the first high quality internal telephone and telex links. The mainstay of these links is an SMC 360 coaxial cable equipped with an SM analog multiplex, with an effective capacity of 360 channels. The project was put into operation in November 1975.

Aware of the fact that the development of a telecommunications infrastructure is an essential precondition for the country's economic and social progress, the Mauritanian Government decided to continue its efforts to improve certain national links, especially in the southern and southeastern areas of the country. Because of the distances involved and the volume of the anticipated traffic--which will be relatively small at first, it opted to use short wave circuits.

This program now being put into operation will allow Nouakchott to be connected with Nema and 'Ayoun El 'Atrous by telephone and telegraph. This vital project necessitated the supplying and installation of 7 kilowatt BLI transmitters, receivers, antennas, network connection gear, electrical generators, etc.

In addition, less powerful single sideband radio facilities are being installed at Bogue, Atar, Tidjikdja, and Selibaby. The reunification of the country has moreover led the OPT [Postal and Telecommunications Office] to build a link of the same type with Dakhla.

Furthermore, JANUS automatic switches, already ordered, will equip the cities of Bogue, Tidjikdja, 'Ayoun El 'Atrous and Nema. Each exchange has a 200 line capacity and may be expanded to 1,000 lines.

The list of projects in progress would not be complete if we did not mention the doubling of the Nouakchott-Nouadhibou and Nouakchott-Paris circuits, made necessary by the increase in telephone traffic. Error-correcting systems are planned for the Paris telex and telegraph circuits to obtain the realiability of service that the protected circuits give.

These projects are financed with ADB [African Development Bank] funds for a total of 1,650,000 units of account. The Office's contribution amounts to 45 million ouguiyas.

The last of these scheduled projects, the Rosso-Richard Toll microwave circuit, will connect the Senegalese and Mauritanian national networks. The contract in the process of being signed is to amount to 1 million francs, including the suppliers-credits. The projects in the process of implementation hope to equip Mauritania with an absolutely vital infrastructure and

to disenclose certain areas, but this endeavor is still inadequate in consideration of the requirements of modern telecommunications and of a fully automatic switching system--the goal that the office has established for itself.

Therefore, the office finds it needs more stable and permanent circuits. It also needs to be able to beam the short waves and to increase the use of microwave links or of ground stations.

Making allowance for the special geographic and demographic circumstances of the areas to be serviced, the first project adopted was for "the development of telecommunications in the southern and southeastern regions of Mauritania" while the second project selected was for "the expansion of equipment in the northern zone and the improvement of the international circuits." The reasons for this choice are the following. The river area is densely populated. It includes numerous built-up areas, fairly remote, on an African scale, and which need very much to communicate with each other. The economic development of this part of Mauritania, which is expected to expand with the aid of irrigation projects--which are under study or being implemented, can only suffer from the lack of sufficient resources in the area of telecommunications, hence the choice of microwaves.

In the northern areas, however, the population is much more scattered and is concentrated in villages very remote from one another and separated by the desert. The lack of a road system and sources of energy would complicate the installation and the maintenance of a microwave network, hence the choice of the earth satellite [la solution spatiale].

Brief description of the telecommunications development projects in the Senegal River area

Because of the size of the planned constructions, the project has been divided into three sections.
--First section: 1978-80.
--Putting into operation of a 960 channel interurban microwave trunk line thus capable of conveying a video channel between Nouakchott, Aleg, Boque, Kaedi, Selibaby, and Kiffa.
--Installation of the local exchanges for Rosso and Kiffa (partially) and the exchanges of Boque, Kaedi, Selibaby.
--Neighborly connections with neighboring Senegal: Boque-Dadel, Kaedi-Thiloghe, Gouraye-Bakel.
--Automation of the exchanges of: Kaedi (establishment of a CTR [Radiotelegraph Communications Center], Selibaby, Kiffa.
--Expansion of interurban equipment in Nouakchott and Rosso.
--Automation of the local exchanges of Mederdra, Mbout, Boutilimit, Aleg, Kankossa, and Maghama.
--Installation of the local manual exchanges of Babe and Mbagne.
--Installation of urban networks in Boque, Kaedi, Selibaby, Kiffa, Tidjikja, 'Ayoun El 'Atrous, Nema, Boutilimit, Mederdra, Bababe, Mbagne, Mbout, Kankossa, Maghama, Aleg.

The investments necessary to finance this first section total U.S.$18.5 million, of which 8 percent is in local currency.

Second section--scheduled to be put into operation in 1985.
--Installation of 960 channel microwave circuits on the Aleg-Tidjikdja and Sangarafa-Kiffa paths.
--Installation of the local exchanges of Kiffa, Tidjikdja, as well as Tamchaket and Timbedra, including the development by the OPT of a part of the extension of service in eastern Mauritania.
--Reuse of the released BLI equipment.
--Setting up a routine switching plan for interurban circuits (CTR of Kaedi and Kiffa).
--Automation of the local exchanges of Timbedra and Moudjeria (by reusing the equipment from Kaedi and Kiffa).
--Installation of the local manual exchanges of Tamchaket, Oualata, Tichit, and Makta Lahjar (installation of simplified connections.
--Urban systems in Makta Lahjar, Tamchaket, Timbedra, Oualata, Moudjeria, Tichit.

The investments necessary to implement this second section amount to $8.8 million.

Third section--scheduled to go into operation in 1990.
--Large-capacity microwave circuits will operate among Rosso-Boghe and Kiffa-Aioun-Nema.
--The establishment of neighborly links with Mali: Kiffa and Selibaby.
--Kayes, 'Ayoun El 'Atrous, Nema-Nioro, Nema-Nara.
--Completion of the overhead line in eastern Mauritania. This last section is valued at U.S.$11.5 million. The research for this project was carried out by SOFRECOM [expansion unknown] and financed by ADB which is interested in financing the project.

Project related to telecommunications in the northern area and to the development of international links.

In this area, the office has opted for the earth satellites [la solution spatiale]. The reasons for this choice were explained above and an international invitation for bids has been launched, the responses to which are to be received 20 April 1977.

The installation and supplying of the following are scheduled:
--a standard Intelsat ground station at Nouakchott, for international traffic from Mauritania to France, the United States, Morocco, and the Middle East, with a video capacity.
--a four-circuit international transit center, also located in Nouakchott connected by modulated frequency links to the Nouakchott stations.
--five medium power ground stations to send national traffic among Nouakchott, Nouadhibou, Dakhla, Atar, and Zouerate. The Nouakchott station is expected to be able to transmit television programming for reception at distant stations.

--a 24-channel microwave link equipped with 12 of the 1 + 1 type, which will operate the Fderick-Zouerate link.
--five automatic telephone exchanges in Nouadhibou, Atar, Zouerate, Dakhla, and Fderick.
--the equipment necessary for the installation of the urban networks of Dakhla, Atar, Zouerate, Fderick, and for the extension of the Nouadhibou network.

The projected program is of the turnkey type and bidders are expected to design connections among the transmissions, exchanges and networks. The invitation for bids includes technical and residential buildings, primary and secondary energy, the viability of the sites, and the development of accesses. The total sum of the program is estimated at U.S.$22 million, of which 45 percent is expected from FADES [expansion unknown].

Negotiations are in progress with the FAC [Aid and Cooperation Fund] and the prospective suppliers for the remainder. Furthermore, Mauritania hopes very much to be able to benefit from the services of a submarine cable which would maintain international traffic in the case of a failure of the satellite system and allow access in Africa, Europe, or South America. Taking the project schedule into account, it was not possible to connect with the Casablanca-Dakar cable, which has just been laid; but the government is negotiating to obtain the landing at Nouakchott of another submarine cable currently planned.

9064
CSO: 5500

BRIEFS

FRENCH TELECOMMUNICATIONS GIFTS--The Radioelectric and Telephone Telecommunications company of France [TRT] has just completed the installation of a microwave linking Radio House in Curepipe with the transmitter station in Malherbes. The equipment valued at 500,000 rupees will provide television, radio, and telephonic communications. The link is expected to become operational by the end of this week. In addition to this gift which falls within the framework of a French-Mauritian technical agreement, France will deliver, in September, 30 tons of equipment, valued at 1 million rupees, for improving Mauritian color television. [Port Louis L'EXPRESS in French 23 Aug 77 p 1]

CSO: 4400

COMPUTER INDUSTRY GETS BOOST

Johannesburg THE STAR in English 2 Sep 77 p 19

[Article by Grant Rogerson]

[Text]

South Africa's infant computer assembly industry has been given a boost with the announcement today that Hamac is to produce a micro-computer system. The system, which has been designed and developed locally, will be assembled at Messina (Transvaal) Development's Johannesburg factory where Messina itself has a computer assembly operation. The components will be imported.

Hamac says an important aspect of the move is to make it independent of any particular country for its parts, especially if embargoes are placed on fully-assembled foreign computers which the Republic currently imports.

The system, which is aimed at snatching a sizeable share of the country's R25m-a-year microcomputer business, has been designed to embrace a host of functions in a single unit, including memories, visual display printers, tape casettes and disc-storage.

The company will be getting its new project off the ground with an exceptionally strong base. Its tie-up with Mercedes Business Systems, announced today, is expected to result in group sales of R11m a year.

The first batch of Hamac's new terminals will come off the production lines early next year, with 31 destined for the Durban Corporation in a R150 000 deal.

CSO: 5500

BRIEFS

DIRECTOR OF NEWS AGENCY--Dar es Salaam--President Nyerere has appointed Ndugu Haji Konde to be the new director of the TANZANIA NEWS AGENCY, SHIHATA, with immediate effect. Ndugu Konde takes over the post which was left vacant by Ndugu Benjamin Mkapa, who is now the minister for foreign affairs. Until his new appointment, Ndugu Konde was deputy editor of the DAILY NEWS and SUNDAY NEWS. [Text] [Dar es Salaam Radio in English to East Africa 1600 GMT 19 Aug 77 LD/EA]

CSO: 5500

BRIEFS

PAN-AFRICAN COMMUNICATIONS SYSTEM--The OAU Council of Ministers, meeting in ordinary plenary session on Tuesday 28 June, confirmed the selection of Kinshasa as site of the headquarters of the Pan-African telecommunications system. The plenary session opened with the Plenipotentiary Conference chairman's report on the work of the conference on the Pan-African Telecommunications Union. The chairman indicated that the headquarters-site question remained in suspense. At its 24th ordinary session in Addis Ababa in 1975, the OAU Council of Ministers had agreed to establish the headquarters in Kinshasa. The Plenipotentiary Conference had then deemed it advisable to question this decision and refer it to the present session. Thus on Tuesday the OAU Council of Ministers simply confirmed the decision made by the 24th session. Yesterday afternoon, the OAU Council of Ministers discussed the important question of the organizational structure of this headquarters. [Text] [Kinshasa ELIMA in French 30 Jun 77 pp 1, 7] 8041

CSO: 5500

BRIEFS

LAUNCHING OF 'MOLNIYA-1'--TASS reports: The "Molniya-1" [as heard], the latest in a series of communications satellites, was launched in the Soviet Union on 30 August. It is intended to guarantee the operations of the trunk radio-telephone lines and telegraph communications system as well as transmissions of USSR Central Television programs to locations in the Orbita Network situated in the areas of the extreme north, Siberia, the Far East and Central Asia. The equipment installed on the satellite is functioning normally. [Text] [Moscow Domestic Service in Russian 0930 GMT 31 Aug 77 LD]

CSO: 5500

PROS AND CONS OF NORDSAT PRESENTED

Helsinki SUOMEN KUVALEHTI in Finnish 29 Jul 77 pp 47-49

[Article by Lars Bruun: "For and Against the Nordic Countries' Joint TV Satellite -- Nordsat"]

[Text] The plans for a joint television satellite for the Nordic countries are already in full swing. In the future this satellite hovering somewhere over the equator will make it possible, for example, for every Finn to receive programs from any other Nordic country.

But along the way there are many problems in need of discussion. They are examined here by an attorney of the Nordic countries' league of journalists, Lars Bruun, candidate of law.

In June the Nordic countries' ministers responsible for television broadcasting held a meeting in Husavik, Iceland. At the meeting the question of a joint television satellite for the Nordic countries or plans for the so-called NORDSAT were discussed, among other things. The ministers decided to circulate their report concerning the issue and they hope that there will be an extensive and lively discussion on this issue.

In Finland, however, there has not been such a discussion except for a few bursts of emotion, so that it is perhaps time to initiate an exchange of ideas for and against.

It can be said that we now have in question perhaps the greatest upheaval in television broadcasting since the invention of television itself. As opposed to radio waves, for example, TV waves are sent out in a straight line and up until now have required a direct visual contact between the broadcasting station and the receiving antenna or a suitable cable or a link-up network.

Now we have in question a so-called direct transmission satellite, by which the TV broadcasts of the various Nordic countries can be received directly in Finland without a retransmission, which is the case, for example, when programs are sent via satellite even from the United States.

This Nordsat-satellite, which will remain somewhere above the equator in relationship to the earth, will in principle make it possible that every television viewer will be able to watch programs from any other Nordic country by means of his own receiver.

The prerequisite is that each receiver be equipped with a special adapter and a special antenna, the shape of a board, which is joined as a combined antenna or is attached to the receiver as an antenna making up part of the receiver.

The satellite can be used in many different ways:

1. the simultaneous transmission of programs broadcast in various countries

2. the simultaneous or delayed transmission of a Nordsat-program expressly selected by each country

3. the transmission of a particular Nordsat-program jointly selected and compiled by the Nordic countries

4. to be used only for the purpose of augmenting the link-up network of each country.

The technical questions have been resolved, the remaining questions to be resolved are problems of funding, manufacturing rights and other contractual problems, and cultural questions.

The fourth alternative has not been given serious thought, instead the discussion elsewhere has been primarily concentrated on the first alternative. Therefore, in the following it is considered as a premise.

Pro

In the 19th article of the general declaration of the United Nations on human rights it states:

"Every individual has the right to freedom of opinion and expression; this entails the right to hold an opinion without disturbance and the right to seek, receive, and circulate information by any means irrespective of orders."

The Nordsat-program fulfills these principles. It offers the opportunity to freely view the broadcasts of other Nordic countries thus opening up the field of vision of the viewer and providing opportunities to become acquainted with the culture and society of our neighboring countries.

In accordance with the international principles of the freedom of expression it thereby also becomes possible to compare the programs of other countries and to select that which interests the viewer. In addition it

should be taken into consideration that linguistic minorities will thereby have the opportunity to view programs in their own language to a greater degree than is now possible. Also the range of television programming will be instantly expanded. And there will be no need for expensive and difficult-to-maintain link-up networks.

Compared to the construction of a complete link-up network the Nordsat-alternative is a significantly less expensive alternative.

The problems which have been mentioned can be easily resolved. For example, the problems of manufacturing rights are contractual questions between the manufacturing organizations and the radio corporations, which will be resolved in the same manner as any other contractual questions. Legal problems can be easily resolved with minor changes in the law and there is no cultural problem since this program does not limit but, to the contrary, propagates culture.

Con

The question of the free transmission of information does not apply here. Indeed, all the radio corporations in the Nordic countries are in a monopoly position, and television programs have already undergone considerable screening and editing.

The situation will not be improved by the fact that in addition to a single monopoly system several monopoly systems will determine what we are to see. And if we examine the television programs of the other Nordic countries, it can be seen that there is not much left of their national cultures.

One-third of Sweden's television programs is imported from somewhere else, in Finland and Norway nearly 40 percent, and in Denmark it is more than one-half. In Iceland 67 percent of the programming is imported. Instead of a national culture one can watch the free-time narcotics imported by the large commercial television companies: crime, pseudoromanticism, sex, under the guise of culture and the free transmission of information.

National culture will be condemned to die and multinational commercial entertainment will dominate the airwaves. Of what benefit will be the free selection of programs when at every moment in every country one will be able to see either Baretta, Cannon, Kojak, McCloud, or some other series depicting violence.

The only correct use of Nordsat would be that each country would be its own eliminating or that joint programs would be produced.

Pro

What was stated above is typical guardianship thinking. The viewers do not need to be sheltered. Who is the right individual or organ to state what is correct?

Does not the fact that the viewer even chooses to watch Baretta indicate that he wants this kind of harmless entertainment. He cannot be forcefed culture if he himself does not want it.

Fine, some people will perhaps only choose entertainment. This is their individual right. However, there are people, indeed many people, who disgusted with such programs will want to see something better.

Now they will be given this opportunity. It will, indeed, be another thing to be able to choose from all the channels of the Nordic countries instead of between just two channels.

Nordsat will make it possible to choose between 11 different channels. Moreover, no one has yet been able to explain what is meant by "culture." Is it the so-called refined culture of the elite, at which we frequently sneer?

Is good entertainment less valuable than incomprehensible snobbery? Is the dissemination of opinions always and everywhere more desirable than an individual's own right to select what he wants to see?

Is there not too great of an attempt to cultivate people in a desired direction under the guise of so-called culture. Nordsat, at least, offers alternatives. Perhaps its opponents in their "father-knows-best" thinking are afraid of just this.

Con

Is not a certain amount of guardianship needed? Our YLE and MTV are now already broadcasting approximately 4800 hours of television programming annually. If all the programs of the Nordic countries are broadcast through this direct transmission satellite, the hourly amount of programs would increase to approximately 10,700 hours. Television is already occupying too much of our time.

In the United States it has been calculated that a 15-year old in his lifetime has spent twice as much time watching television than he has spent in school! We do not even allow cigarettes to be sold to anyone under 16 years of age. But the drugs of international television will be offered freely.

Indeed, some kind of guardianship is needed if a 15-year old is offered 30,000 murders and other acts of violence.

Television is such a forceful influence that it has been deemed necessary to place it under the strict supervision of society. It cannot be allowed that society would offer an overflowing profusion of kiosk culture based on the commercial pursuit of profits.

Money does not have a homeland but culture does. If we were now to permit the completely uncoordinated broadcasting of programs, there is an obvious danger that valuable programs will have to compete with light entertainment, sports, and the like.

Moreover, commercial entertainment is not harmless. Its effects, especially in its idealization of sex and crime, are destructive. Furthermore, how would questions of language be dealt with. It has turned out that even in the exchange of programs between Denmark and Sweden within the framework of Nordic vision it has become necessary to provide subtitles. The difficulties are even greater as far as Finnish and Icelandic are concerned.

Pro

The argument concerning an increase in viewing hours does not exactly hold true. Program hours will not increase to such a degree since the greatest portion of the broadcasts will occur simultaneously. Only the opportunity for selection will increase, which is only to the good.

As far as the watching habits of children are concerned this should be monitored by the parents. The government has never been able to eliminate problems through prohibitions. If parents take a lenient attitude toward smoking, for example, then young people will be able to obtain tobacco even though it is not sold to them in the stores.

Television falls within the jurisdiction of the home. Parents are much more capable of supervision than a television company.

As far as the competition between "valuable programming" and entertainment is concerned, a normal competitive situation prevails here.

The producers of so-called valuable programs will have to have the skill and the ability to make the programs such that they will interest the public.

If such programs are not watched, then this is an indication that they have not been able to compile the programs in a sufficiently interesting format.

Nordsat is a definite challenge to program producers.

As far as foreign programs are concerned it is clear that Nordsat will force us to make premeditated procurements. It is not likely that, for example, all the Nordic countries would purchase the same series if one country has already acquired it and is broadcasting it. In this respect also the number of selections will increase.

As far as language problems are concerned they can be resolved technically. It is completely possible to provide simultaneous subtitles in all the languages of the Nordic countries and the viewer can select the text he desires by pushing a button.

My Own Understanding

I am convinced that Nordsat will come into being. How it will be ultimately used is still unclear. There are still many questions to be resolved, among other things, the attitude to be adopted toward television advertising allowed in Finland and Iceland. The most decisive question is how the satellite will affect national programming. I would consider that there are two alternatives. The first has been already mentioned (in point 2), the transmission of the selection made by each country probably as a delayed broadcast since in this way satellite time can be exploited in the most efficient manner and the programming can be announced in the press of the other countries in advance.

Also this would make it easier to deal with the problem of subtitles.

The other alternative is that each country would broadcast only the programs produced in its own country including the news and programs of current interest. Programs produced in foreign countries, would simply be transmitted on those channels which cover all of the Nordic area.

In this way we would not become innundated with commercially prepared entertainment devoid of an independent culture and we would be able to guarantee a viewing opportunity for those who desire to see these foreign programs on domestic channels. The entertainment programs from other Nordic countries would be available for viewing by everyone anyway.

In 1974 a study was done, for example, in those areas of Finland and Norway where Swedish television programs are primarily viewed (the study was explained in the article "TV Across Borders").

Norway:

1. entertainment programs, series, and theater
2. all night movies
3. all night foreign movies
4. foreign entertainment programs
5. sports
6. Swedish news
7. documentaries
8. foreign documentaries

Turku Archipelago:

1. entertainment programs
2. news
3. all night movies
4. sports
5. documentaries

Ostrobothnia:

1. entertainment programs
2. news
3. sports
4. all night movies
5. foreign all night movies

Lapland:

1. sports
2. entertainment programs
3. foreign all night movies
4. news
5. foreign serial programs
6. documentaries

In my opinion this study indicates that viewing habits as far as the type of programs is concerned do not differ greatly from what people want to see when they have only two channels at their disposal. It is doubtful that the changes as far as the types of programs are concerned would be very great when all of the channels of the Nordic countries will be available.

I am of the opinion that inasmuch as there is an excessive attempt to direct viewing habits the consequence would be that the viewers would take advantage of the opportunities of Nordsat. The intent is not that this joint satellite would become just a transmitter of information for the intellectual elite but a means by which the residents of the Nordic countries could follow one another's programs, particularly each other's, and not those compiled by the supranational corporations.

In this connection I will not go into the other problems of Nordsat such as legal and technical agreements. They are not in the final count that decisive. Nor are they irresoluble.

10576
CSO: 5500

'HURRIYET' REPORTS RADIOS TRANSMITTING ILLEGALLY

NC301217Y Istanbul HURRIYET in Turkish 29 Aug 77 p 3 NC

[Summary] Ankara--HURRIYET--Certain radio stations are transmitting programs in Turkey in violation of the law under which the Turkish Radio and Television organization [TRT] has the monopoly of voice and video broadcasting.

The first of these radios, the Ankara police radio, was established in 1954 with the aim of improving relations between the police and the public. Later this radio increased the number of its [Turkish police] stations and established VHF stations. At present the Ankara police radio transmits music and feature programs 10 1/2 hours daily. In addition to the Ankara police radio, the Izmir and Istanbul police radios transmit music and feature daily programs.

According to the information published in the magazine "ELEKTRIK MUHENDISLIGI" [Electrical Engineering], the official organ of the Chamber of the Electrical Engineers, the following radio stations are engaged in illegal broadcasting:

Turkiye Polis Radyosu [Turkish Police Radio], established in Ankara in 1954; Mamak Radyosu [Mamak Radio], established in Ankara in 1960; Meteorolojinin Sesi Radyosu [Voice of Meteorology], established in Ankara in 1961; Izmir Polis Radyosu [Izmir Police Radio]; Havacilarin Sesi Radyosu [Voice of the Airmen], established in Ahlatlibel, Ankara in 1966; Ankara Polish Radyosu [Ankara Police Radio] VHF, donated by the United States; Eregli Komur Isletmeleri Radyosu [Eregli Coal Works Radio], established in Zonguldak in 1967; and Azminin Radyosu [Azmi's Radio], established in Kozan, Adana in 1974.

CSO: 5500 END