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No. 937

June 16, 1936

PRALL OPENS LARGEST RADIO PARLEY; CITES ITS PURPOSE

Opening the largest radio engineering conference ever held in this country, Anning S. Prall, Chairman of the Federal Communications Commission, on Monday, June 15, outlined the objectives of the parley as follows:

"(1) To determine the present and future needs of the various classes of service for frequencies above 30,000 kc., with a view toward ultimately allocating such frequencies to services;
"(2) To secure for the public and the Commission a keener insight into the conflicting problems which confront the industry and the regulatory body in the application of the new frequencies to the service of the public;
"(3) To guide experimentation along more definite lines as may be justified from the evidence presented at the hearing;
"(4) To review present frequency allocations to services in the radio spectrum below 30,000 kc., and
"(5) To assist the government in its preparation for the International Telecommunications Conference at Cairo in 1938.

"Neither individual applications nor individual assignments within service bands are relevant at this hearing" he added. "Such matters may more properly be taken up at hearings which the Commission proposes to hold at a later date, on more detailed subjects such as frequency assignments to stations within the broadcast band, details with respect to television, etc.

"This hearing should deal with development trends, general procedure and general frequency allocations to services. At this hearing the Commission is interested in such subjects as the relationship between frequency allocation, and the design, manufacture and sale of radio equipment.

"We are, and we believe everyone else is, tremendously interested in intelligent estimates of the future trends of radio. For example, will the trend of practical application of radio to the service of the public be toward the greater and more effective use of ultra high frequencies by existing services; or will the use of such frequencies be confined naturally to new services such as television, facsimile broadcasting, two-way police communication, aids for blind landing of aircraft, etc. In estimating trends, it seems that we should also take into consideration the possible effect a new service may have upon an established service.

"For instance, assuming that television ultimately will be practical, what indirect effect would it have upon existing broadcasting, and would this effect be such as to result in the use by regular broadcast stations of the ultra high frequencies for urban service rather than the existing medium frequency broadcasting band. In this connection, it must be remembered that we must safeguard the public's investment in receivers, and give consideration to the investment of the industry in existing facilities for the production and transmission of programs. Hence, we are particularly interested in information relative to this phase of the problem.

"Some feel that ultimately, through the progressive development of facsimile transmitters and receivers, it will be entirely practicable from a technical standpoint to print a newspaper in the home. I do not think it entirely unfeasible to anticipate such an application of radio to the service of the public in the future, because news service is dependent primarily upon speedy communications for the collection and dissemination of news to the public. In other words, time-saving is an absolute necessity and news loses its value as a marketable product immediately after it has become known to the public. Therefore, if there should be developed a practical facsimile receiver for home use at a reasonable cost, newspapers might desire to make use of this system to distribute news to the public, and if such news distribution system proved to be practical from both technical and economic standpoints, and provided such a service proved to be of sufficient importance, demands might be made upon the Commission to endeavor to provide space in the ether for this service to the public. On the other hand, if today it is the consensus of opinion that such a development is unlikely to occur, there would be no great need for extra space.

"As is well known, there is a physical limitation on the number of frequencies in any one band which are available for assignment at a given time for use in one area, depending on the existing state of the art.

"In addition to this physical limitation, this Commission has placed upon it administrative limitations in making allocations of frequencies to commercial and private agencies. For example, the Interdepartment Radio Advisory Committee must determine the needs of the various government departments for portions of the radio spectrum, and in this connection we hope that the evidence presented here by commercial enterprise will be of assistance to the Interdepartment Radio Advisory Committee in arriving at a just balance between government and commercial uses of the radio spectrum, and that as a result thereof the I.R.A.C. will present a constructive recommendation to the President of the United States with respect to allocation of frequencies to the various government services.

"Likewise, insofar as international communications and interference are concerned, we are bound by Article 7 of the Regulations of the Telecommunications Convention of 1932, held at Madrid, Spain. The Regulations will be in effect until superseded by international agreement to be reached at the coming conference at Cairo in 1938.

"However, in the consideration of its proposals to other governments with respect to any changes in the existing Regulations of the Madrid Convention, the United StatesGovernment has an opportunity to utilize the evidence presented at this hearing. The Commission has not the only voice in the preparation of these proposals, but I am certain that the various government departments and the Commission will cooperate in formulating the proposals for the Cairo Conference. The success of the United States delegation to the Cairo Conference will materially affect the ultimate frequency allocations to commercial services which the Commission will make in the future.

"In addition to securing agreement among the nations of the world with respect to allocation of frequencies to the various services and with respect to the uses of frequencies, as well as the prevention of interference, it is necessary for the United States to come to amicable arrangements with other nations in the North American region, particularly with respect to the use of individual frequencies within various bands, and with respect to more detailed matters than would be covered by a general international agreement with all the nations of the world. This has been done in the past; for example. the broadcasting arrangement with Canada, and the high frequency agreement with Canada, Newfoundland and Cuba in 1929, although since that date Cuba has denounced the arrangement. Such regional arrangements as can be made in the future will naturally have a specific bearing on the ultimate allocation of frequencies to stations and services which will be made in the United States, and, of course, may affect to some extent the engineering problems involved.

"We have represented here today practically every phase of the industry, including scientists, manufacturers, operators of stations, communication companies, executives, administrators and representatives from all government departments, as well as the entire Federal Communications Commission. We consider that the government and the industry have a most excellent opportunity to accomplish constructive and intelligent planning for the future development and application of radio to the service of the nation. This is an opportunity which hitherto has not existed very often, and I know it is the hope of everyone that we can make the best of the opportunity thus made available. I am certain that everyone here who testifies will do so from a constructive standpoint and with the aim of rendering service to the public."

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PUBLIC TELEVISION STARTED BY DON LEE SYSTEM

Getting the jump on the Radio Corporation of America, the Don Lee Broadcasting System early this month inaugurated the first public television setup in this country.

The transmitter and receiver were developed secretly during the last year and a half by Harry L. Lubcke, television director, and were demonstrated June 4th and thereafter placed on a regular daily schedule. Cathode ray television, framing 300-line images 24 times a second, is employed.

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RADIO AT CRUCIAL PERIOD OF DEVELOPMENT, SAYS CRAVEN

Radio is not only at the cross-roads in its comparatively brief development in the past twenty years, Commdr. T.A.M. Craven, Chief Engineer of the Federal Communications Commission, declared Monday outlining the technical aspects of the engineering hearing, but it appears to be "at the threshold of creating a new and important branch of the radio industry", as well.

"In my 23 years of active association with almost every phase of communications, I have never witnessed so vivid a cross-roads, nor have I known of such an opportunity for cooperative, constructive and intelligent planning as is before us at this hearing today, where the government and the radio industry are meeting to consider the radio problems of the immediate future", he said.

After sketching the history of radio from 1914, he continued:

"From 1927 to 1936, we not only witnessed a consolidation of the frequency allocations of 1927, but also a gradual growth in the demands of each service at a rate greater than the development in technical engineering refinements could accommodate within the allocation limits. So that now, in 1936, we discover that the developed portion of the radio highway is badly congested from 10 to 20,000 kc and rapidly becoming so between 20,000 and 30,000 kc., as well as in each portion allocated to individual classes of service. We also find that there are demands for new services such as television and facsimile for both ordinary communications and broadcasting. We find also that aviation is requiring more frequencies to afford better navigation in the air, and hence greater safety of life in the aeronautical industry.

"With the increasing use of modern developments by criminals of today, we find police departments all over the country feel that they need radio in order to facilitate the detection and prevention of crime. Demands are increasing for public radio telephone service both in marine and overseas circuits. We also know that the government must keep abreast of progress in its direct use of radio by the various departments and bureaus.

"Fortunately the scientists at this time have shown us that the useful portion of the radio frequency spectrum can be widened, so that we may soon have available frequencies from 10 to about 100,000 kc. The band from 100,000 kc. to 200,000 kc., while still in the laboratory, shows signs of soon being valuable for practical application, and in the band from 200,000 to 500,000 kc., we can see probabilities of future practical application to the service of the public. The spectrum from 500,000 to 10,000,000 kc. lies before us in the dim future, and I am unable to say anything about it, except to express faith that science can conquer it ultimately.

"The vacuum tube is useful today on frequencies up to about 100,000 kc., although improvements must be made in the efficiency of its operation thereon. Vacuum tubes for use on higher frequencies are in the process of development, and while there are extreme difficulties which may make permanent accomplishment a matter of slow progress, I see no reason why the engineering

talent of this country, as well as of the world, cannot also solve that problem ultimately.

"Among the important obstacles to be overcome is that of man-made interference, such as created by automobile ignition systems, X-ray machines, diathermy apparatus, and other industrial electrical apparatus. These can be overcome by effective cooperation between engineering scientists, all industry, and the government, and if the public demand for satisfactory radio is sufficiently great, I have no doubt of the successful solution of this phase of the future radio problems.

"So this brings us to today, when there are about to take place three important events which might affect the radio industry as a whole. The first is the fact that certain government departments feel that they have sufficient information with respect to the efficacy of the new portion of the spectrum to invest large sums of money in equipment to be used therein, and are desirous of obtaining allocation of certain frequencies for their exclusive use. It has been suggested that the Interdepartment Radio Advisory Committee, which is a committee consisting of representatives from various government departments and is charged with making recommendations on frequency allocations to the President, be called together this Summer for the purpose of ascertaining what allocations of frequencies in the new portions of the spectrum should be made to the government services. Their conclusions will form a recommendation to the President of the United States, who may, under authority of Section 305 of the Communications Act of 1934, approve the recommendation if he deems it proper to do so.

"The next important event is our preparation for the International Telecommunications Conference to be held in Cairo in 1938, at which various nations of the world may attempt to come to a new agreement with respect to allocation of frequencies to services. The proposals of the United States with respect to this subject are required to be submitted to other governments not later than November of this year. Interrelated with the General International Conference is, of course, the ever-present necessity and desirability of maintaining cooperative arrangements with the nations on the North American Continent. Such regional arrangements as may be made between these nations will affect the ultimate allocation of frequencies to services as well as the engineering methods to be utilized in the prevention of interference between stations within services. When the time is opportunity we may expect the possibility of such arrangements where necessary and in our planning for the future we should give consideration to the fact that other nations on the North American Continent also use radio.

"The third event is that recent scientific developments have indicated new uses for radio in new portions of the radio spectrum, and thus it would appear that we might be at the threshold of creating a new and important branch of the radio industry.

"Wome fear we do not know enough to proceed with allocations of frequencies to services. To some extent this may be true. On the other hand, some feel that we have sufficient knowledge to proceed along definite practical lines, and they intend to do so. In my opinion, if one service should proceed without consideration of others, the danger that it may handicap those services which are not now ready, outweighs by far the danger that we may lack knowledge of details.

"Another reason for proceeding with a frequency allocation to services at the earliest time information becomes available relative to the practical usefulness of frequencies in various portions of the radio spectrum, is the relation between frequency allocation and equipment design. Early information with respect to the space in the spectrum that will be assigned to a particular service will enable crystallization of the specific problems confronting the design engineer and should also be of vast assistance to the manufacturer in planning his future manufacturing processes.

"Your Engineering Department realizes the dangers of proceeding too hastily, but, on the other hand, we believe that if there is technical knowledge of a general character, we should not delay too long a decision which affects so vitally every phase of the industry. In my experience, progress in crossing relatively uncharted seas was never made by hesitating to proceed cautiously as slow speed."

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GOVERNMENT DEMANDS CREATE STIR AT HEARING

Dr. J. H. Dellinger, of the National Bureau of Standards, threw a bombshell into the opening session of the FCC Engineering Conference on Monday with an outline of the demands for governmental allocations of radio bands. He represented the Interdepartment Radio Advisory Committee.

Of the 1907 frequencies available in the assignable waves between 30 and 200 megacycles, Dr. Dellinger requested that 1012 be set aside for government use and 895 for non-government services.

"The government utilizes frequencies throughout the whole radio spectrum", he said. "In agreement with the practice of the Commission, definitive assignments have hitherto been made to stations at frequencies below 30,000 kilocycles and only experimental assignments at frequencies above 30,000 kilocycles. The assignments are in accordance with the Madrid Convention and General Radio Regulations. The government agencies unanimously feel that the Madrid band allocation has worked out very well. It is considered to be in general satisfactory. It is the present thought that only minor changes will be needed at the Cairo Conference, and none are definitely recommended at this time. It is suggested, in fact, that any proposals for changes in the Madrid band allocations be studied with great care.

"Complete data on the frequencies used by the government up to 30,000 kilocycles have been furnished to the Federal Communications Commission. It is understood that these data are included in the comprehensive tabulation of frequency assignments which the Commission has prepared for this occasion. It is therefore not considered necessary to present in this statement any additional information in regard to the frequencies below 30,000 kilocycles.

"We shall treat specifically herein the government's needs for frequencies above 30,000 kilocycles. The present status of development and availability of equipment for practical service suggests that definitive assignments of frequencies might well be made at this time up to approximately 200,000 kilocycles (200 megacycles). We are therefore proposing an allocation of frequencies for government use in the range 30 to 200 megacycles. It is thought that frequencies above 200 megacycles might well be retained in a purely experimental status for a considerable further period.

"It will perhaps conduce to clarity of consideration of this frequency range to mention that frequencies above 30 megacycles are in general suitable only for short-distance service, i.e., for dependable communication over varying distances up to about 40 miles with sporadic transmission to greater distances. It is important to note, however, that 30 megacycles is not a clear-cut limit of the frequencies suitable for regular long-distance transmission; there are times when frequencies up to some 50 or 60 megacycles are capable of transmission over very great distances. For example, transmission over several thousand miles was possible up to 40 megacycles practically every afternoon during the past winter. Researches on the ionosphere have shown that this occurs in general when the number of sunspots is large. As sunspots will reach their maximum in an eleven-year cycle about 1939, this condition can be expected to be pronounced during the next few years, and to become less thereafter. In allocating frequencies from about 25 to 60 megacycles it is necessary to take account of this fact that the frequencies will at times be long-distance frequencies and at other times short-distance frequencies, the times varying from year to year, season to season, day to day, and day to night.

"The most efficient use can be made of the available frequencies only when due regard is paid to a minimum frequency spacing. Except for television, this spacing, at frequencies above 30 megacycles, is determined not at all by the communication band width but by such considerations as the selectivity of receivers and the stability of transmitters and receivers. The frequency separation in particular cases, furthermore, must be determined by consideration also of the relative power of the transmitters, their geographical separation, antenna directivity, special circumstances necessitating guard bands, etc.

"Despite the differences in the requirements of individual cases, the orderly assigning of frequencies and the minimizing of interference will be promoted by establishing a definite basic system or list of assignable frequencies. The wisdom of such a course is amply demonstrated by experience in the assigning of frequencies below 30 megacycles. It is tentatively suggested, subject to possible amendment after study of all data available, that such basic system provide frequencies separated 0.1%. It is recognized that there will be few installations in the near future so highly developed that adjacent frequencies in this system could be assigned. In fact, some portable services require frequency separations of 1% or more at 30 megacycles. The 0.1% system, however, would allow for future progress, and meanwhile there would be no difficulty in restricting frequency assignments to such separations as experience indicated to be practicable.

"The minimum frequency separation determines the number of assignable frequencies in a given frequency range. They are inversely proportional. On the 0.1% basis there are 1907 assignable frequencies between 30 and 200 megacycles. It is pertinent to note that of these there are 1210 between 30 and 100 megacycles and 697 between 100 and 200 megacycles.

"The government employs practically every application of radio in its numerous services. In the past few years these various services have had an active part in the development and the utilization of frequencies above 30 megacycles. These frequencies have been found valuable for many government purposes. To mention merely a few examples these have included such purposes as law enforcement, aids to air and water navigation, military applications, forest fire protection, weather predicting, and various short-distance communication services."

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RESERVATION OF FREQUENCIES URGED BY SARNOFF

Advance reservation of frequencies to meet the needs of future services, such as television, facsimile, and high-frequency broadcasting, was suggested by David Sarnoff, President of the Radio Corporation of America, in a paper on "The Future of Radio" at the FCC Engineering Conference.

His summarized proposals follow:

"1. Because of the rapid strides of the radio art, advance reservations of frequencies should be made by the Federal Communications Commission to meet the needs of future services, such as television, facsimile and high-frequency broadcasting. This will enable these achievements of radio to give their greatest possible public service as soon as developed, instead of compelling them to contest with older services for adequate space in the spectrum.

"2. Except for experimental purposes, no allocations to individual applicants should be made in these reserved frequencies until actual public service is possible. No one should be permitted to reserve frequency space for future use and then let it remain idle while others carry the burden of development.

"3. In allotting frequencies the greatest economy and usefulness of the available channels should be promoted by requiring, so far as feasible, the multiple use of frequencies.

"4. In determining precedence in the allocation of frequencies, consideration should be given to services on the basis of their comparative importance to the public, the urgency of the tasks to be performed, and the requirements of the public to be served. Radio has made possible outstanding progress in mass communication. Ample allocation should be made for the greatest use of this public service for the broadcasting of sight as well as of sound, nationally and internationally.

"5. In time of war, or other emergency, all the equipment and resources of the radio industry, are by law placed at the disposal of the nation. The government departments interested in our national defense should, therefore, cooperate in making possible the greatest peacetime development of radio by limiting the number of frequencies requested for exclusive government use.

"6. A fundamental and comprehensive communications policy should be formulated, not only for the guidance of the Commission, but of all government departments, to safeguard the independence of America's communication system in international relations. This is especially important because American communication services are at a disadvantage in dealing with monopolistic state-owned foreign communication systems.

"7. In helping to determine the attitude of the United States in the International Communications Conference to be held in Cairo in 1938, the Federal Communications Commission should recommend a policy which will promote the greatest possible international use of radio communications. That Conference will be called upon to apportion the hitherto unallocated frequencies in the upper portions of the radio spectrum. In the international field as well as in domestic use these allocations should be safeguarded against any possibility of freezing radio development."

"We of the RCA are especially conscious of the complexity of the problems your Commission must solve in the public interest. That complexity results from a number of circumstances unique to the radio industry.

"First: It is the youngest of our country's great industries. Because of the aggressive and dynamic development of the radio art, it has reached its present proportions and its vast social significance in less than fifteen years. It has few precedents and no rules of thumb to formulate its policies. At every stage of its progress it must break new ground. It must always be a daring pioneer.

"Second: It is an industry that functions in the present, although it lives also for a greater future. Important new radio services are ready today for practical demonstration. Tomorrow they will be ready to serve the public. Others are still in the laboratory stage of development. But beyond are widening perspectives of usefulness; the promises of further radio possibilities which may well outweigh all the achievements of the past. These developments must be safeguarded against unnecessary restrictions. Radio progress must not be "frozen" at any point.

"Third: We deal in radio with a public treasure that - for the moment - is limited in its extent. The frequencies which make up the radio spectrum constitute one of the nation's most valuable natural resources. Each of them must be made to yield its maximum of service under the stimulation of every new discovery.

"These are the realities of today. But tomorrow, the pioneers in the radio laboratories may open up unlimited reservoirs of new frequencies and then your Commission must be ready to remold its rules to take advantage of the new opportunities, so that the public may benefit at once from these achievements.

"We have no definite yardstick with which to measure radio as a civilizing influence, in the education, entertainment and progress of mankind. But we do know that life itself has been revolutionized by the speed and completeness with which radio has drawn the most distant places, the most forgotten lives, into the orbit of civilization."

"Of the future industries now visible on the horizon, television has gripped the public imagination most firmly. Technically, television is an accomplished fact, although it is not yet ready commercially. In this field American research holds the lead and America's supremacy, as in other fields of radio, is universally recognized.

"To bring television to the perfection needed for public service our work proceeds under high pressure at great cost and with encouraging technical results. Other nations are accepting the standards and methods of RCA engineers and are applying them to the solution of their own television problems. Most of these foreign nations have been working with public funds. No such government subsidies of course have been available in the United States. None has been asked. But for more than a decade in years of plenty and in years of depression, a corps of RCA research engineers has been working unremittingly to give the art of television to the public. We are now entering advanced stages of that effort and will open an experimental television transmitting station in New York within two weeks. We believe that we have demonstrated again that private initiative can accomplish more in America than government subsidy has been able to accomplish elsewhere.

"The television which is assuming shape in our laboratories will not, as many persons assume without warrant, replace sound broadcasting or make sound receiving sets obsolete. The present sound broadcasting services will proceed without interruption. Television must find new functions, new entertainment and new programs.

"As soon as television has been brought to a point of practical service, it will be made available to the American people. But to protect the public interest, television should not be launched until proper standards have been fixed. Television reception as we now know it differs from sound reception in at least one decisive technical aspect. In sound broadcasting every receiver is built to pick up any transmission within its range of reception. On the other hand, television represents an integrated system in which sending and receiving equipment must be fitted one to the other, as lock and key. We must avoid the danger of costly obsolescence which hasty commercialization might inflict upon the public."

"It is the mastery of the ultra-high frequencies which is bringing television and facsimile within the area of practical use. We are steadily pushing farther into the higher regions of the spectrum which only yesterday constituted a 'radio desert', now being made fruitful."

"This expansion of the useful radio spectrum has only begun. Beyond the ultrs-high frequencies lie the 'micro-waves' -- frequencies that oscillate at the rate of a billion cycles a second, wavelengths measured in centimeters instead of meters.

"Future developments in micro-waves may well prove revolutionary. In the past, radio operations have been confined to a limited part of the radio spectrum. Once we have conquered these micro-waves we shall have opened a radio spectrum of almost infinite extent. Instead of numbering the useable channels in a few scant thousands, the radio art will put millions of frequencies at the command of communication services of every kind. When that day comes - and I have no doubt that it will - there will be frequencies enough to make possible the establishment not only of an unlimited array of mass communication services, but of an unlimited number of individual communication connections. In that day each one of our millions of citizens may have his own assigned frequency to use wherever he may be."

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5-POINT TELEVISION PROGRAM RECOMMENDED BY RMA

A basic 5-point program to plan for the successful development of television in the public interest was recommended to the Federal Communications Commission by James M. Skinner, Chairman of the Radio Manufacturers' Association Special Committee on Television at the Engineering Conference on Tuesday, June 16th.

"Television will not be ready for the public for several years to come, but provision must be made now for its growth", said Mr. Skinner, who is also President of the Philadelphia Storage Battery Company, manufacturer of Philco radios. "Sound radio and television will not be competitors. Sound radio is used not only as a primary source of entertainment and education, but also as a background while reading, resting, working or playing bridge. Looking at television requires concentration. However, the addition of daily television programs at certain hours should be a very important addition to the home life of the American people."

The United States is not lagging behind in the perfection of television, Mr. Skinner explained, but owing to the larger area of the country and the lower density of the population the problems of providing a service are greater here than in Europe. He urged the Commission to adopt the following television policies:

1. Establishment of a single set of television standards for the United States so thatall receivers shall be capable of receiving the signals of all transmitters.
2. Development of pictures free from distortion and blur, approaching ultimately the distinctness and clarity obtainable in home movies.
3. Provision for services giving as near nationwide coverage as possible, so that the benefits of television may be available to all sections of the country.

4. Provision for a choice of programs, that is simultaneous broadcasting of more than one television program in as many localities as possible, to avoid monopoly and to provide variety of educational and entertainment features.

5. Lowest possible receiver cost and easiest possible tuning, to stimulate domestic installations of television receivers, both of which are best achieved by allocating for television as nearly a continuous band in the air waves as possible.

While it is not possible at present to determine precisely what the selling price of a television receiver will be, it will most likely cost less than the average motor car, Mr. Skinner said. The fact that the American public has found ways and means of financing the purchase of more than 20,000,000 motor cars, indicates that there is a wide market for television.

"The present job of the Commission is to stake out for the public in the radio spectrum enough television space to preserve the possibility of a nation-wide television service", Mr. Skinner declared. "The Radio Manufacturers' Association feels that the Federal Communications Commission will supply the flexibility necessary to allow the art of television broadcasting to grow."

Television will further expand the service of radio to the American people as a source of education and entertainment, Mr. Skinner said. But unlike radio, television cannot "feel its way" through the early stages of its commercial growth, he added, pointing out:

"Unless tentative standards are now set, and later confirmed by extensive field tests under all sorts of conditions, receivers might be built and sold to the public which would be completely obsoleted within a year or two. Commercial television must be born full grown."

Experimental work in television has reached a "promising stage", Mr. Skinner stated, citing the experimental high definition television broadcasts which have been on the air for some time from the Philco Radio & Television Laboratories in Philadelphia and from RCA Victor at Camden.

With further development, television will provide a stimulus to increased employment and national prosperity, according to Mr. Skinner.

"The Radio Manufacturers' Association views television ultimately as a big business", he stated, "a business which will employ many thousands of people in the production and operation of broadcasting equipment, in the production of receiving sets, in the production of daily programs, and in the fields of distribution and service. Television, we believe, is one of the new businesses the country needs to create new jobs."

Engineers of the radio industry have already held many meetings under the auspices of the Radio Manufacturers' Association and have arrived at practically complete agreement on basic television standards, it was pointed out. Nine basic items have been covered, laying the groundwork for future television developments, all pointing to the same goal - a single television system for the United States, with every receiver capable of receiving every broadcast reaching its locality.

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SUPER-POWER HEARINGS POSTPONED UNTIL SEPTEMBER

Occupied as it is with a general study of the whole radio structure, the Federal Communications Commission has postponed until September 24th hearings on the requests of five stations for permits to step up their power to 500,000 watts or that of the nation's most powerful outlet, WLW, Cincinnati.

The five applications, filed by KNX, Los Angeles; WHAS, Louisville; WNG, Chicago; WHO, Des Moines; and WJZ, New York, were consolidated for the purpose of the public hearing. Other requests for super-power licenses, however, are expected to be filed and made a part of the hearing before Fall.

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NAB OUTLINES PROPOSALS ON RADIO BANDS

James W. Baldwin, Managing Director of the National Association of Broadcasters, outlined technical proposals for providing additional facilities for broadcasting stations while at the same time taking care of other services, at the FCC hearing June 16th.

"In our proposals we have named certain frequencies below 550 kc for broadcasting", he said. "Such use is in agreement with the policy of other nations of the world. The propagation characteristics of these long waves are such as would enable broadcasters to greatly improve the service in rural areas. This will be discussed in detail when we present our technical testimony. Also, in our proposals we have endeavored to provide for sound broadcasting on certain of the high frequencies. We need to know more about them before reaching final conclusions on all their characteristics. Based on the information we have, it is believed they may be utilized for local broadcasting. The specific frequencies requested have been named with the view of making maximum use of receiving sets that may be manufactured for high frequency reception, with a minimum of interference with other services and consistently with your expressed ideas of 'experimentation and evolution'.

"There is one difference between the proposals of the Radio Manufacturers' Association and our own in this regard. We proposed that the frequencies in the bands 36 to 38 mc and 62 to 64 mc be allocated for aural and facsimile broadcasting. Agreeably with the change which has been made in the RMA proposals, as first submitted, we will discuss when we offer our technical testimony, the feasibility of modifying our proposals so as to ask for 40 to 42 mc instead of 36 to 38 mc. The RMA propose that the frequencies 37 to 42 mc be allocated for aural broadcasting and they have objected to our proposal in respect to 62 to 64 mc because it would interrupt a continuous band for television.

"Our purpose in asking for the two bands are twofold: First, we do not know where long distance interference ends. We do know, however, that the probability of troublesome long distance interference, now or in the future, is very much less on 60 mc than on 40 mc. Adequate opportunity should be given to obtain reliable data concerning operation on the various high frequencies. Secondly, we do not consider it should be objectionable to anyone to provide for sound broadcasting in the television band. We know of no reason why the purchaser of a television set should be limited to the sound broadcasting service receivable on the television channels. Moreover, we know from experience that in the manufacture of receiving sets, quality of reception is often sacrificed at either end of the receiver band. It is, therefore, highly desirable that provision be made near the middle of the television band for aural broadcasting.

"A word about international broadcasting. We have proposed a widening of the international bands with but one view in mind. The existing conditions are chaotic. It would seem that this country either should make provision for an international broadcasting service of the highest quality and free from interference or give it up as a bad job. A sufficient number of frequencies, the maintenance of better standards, and more effective international regulations with regard to hours of operation, we believe, can be employed to improve our commerce with the other nations of the world.

"Our proposals also provide for the allocation of frequencies for aural, facsimile and frequency modulation, auxiliary broadcast service such as point-to-point relay for broadcasting, synchronization, mobile voice and facsimile pickup. These will be discussed in detail by another witness.

"Facsimile broadcasting is an impending new service. It is a method of record broadcasting. It is a service that can be supplied through the utilization of existing broadcast frequencies and broadcast transmitters. It is our contention that all frequencies allocated for aural broadcasting should be available for facsimile broadcasting as well. There is every reason to believe that facsimile broadcasting can supplement sound broadcasting. It is an economic waste to deny the broadcasters the opportunity to develop this new service through the use of existing broadcasting facilities. Moreover, the utilization of existing broadcast facilities will permit of the kind of competition that has made American broadcasting the greatest in the world. Prevent the development of facsimile on the frequencies that are used today and tomorrow for sound broadcasting and you may guide this new service into monopolistic hands.

"Now as to television. I appreciate we are concerned here with the technical problem of finding a place in the radio spectrum for its introduction. And we have endeavored to cooperate with other interested parties to suggest bands of frequencies which might be used for television broadcasting. The requirements for a television channel are very great. As far as we know now, one television channel will require a path almost six times as wide as that now devoted to all sound broadcasting in the United States. We have been able to suggest a plan of allocation which would provide eight television channels below 100 mc. This is not enough. A

great many technical considerations are involved and a discussion of these will be left to another witness.

"There are, however, more than technical considerations involved here. The American Broadcasting System is a competitive system. It is a great system because it has been competitive. It has meant a freedom of the air unmatched anywhere in the world. And our plea today is that you allow television to develop on the same basis. Better we delay the introduction of television than, in enthusiastic haste, inaugurate it and find that through the control of patents, so powerful an instrument is in the hands of too few people. Indeed this expression is but declaratory of the spirit of the Communications Act.

"Again, if television is ready to be inaugurated and if you can allocate sufficient frequencies to permit it to grow on the basis of a national competitive service then it seems to me you have a very great responsibility in determining in advance, whether for all practical purposes, the ownership of basic patents, and agreements, if any, between patentees, will permit competition in the construction of television transmitters and receiving sets. We should also know in advance what relationship, if any, may be established between the sending and receiving apparatus. Will there be freedom in the selection of receiving sets or will the use of terminal facilities be controlled in a manner comparable with the telephone? Surely everyone will agree that those who own television patents are entitled to a rich reward for their creative work, but because of the public service inherent in television, patentees should be denied the right to control its use. Keep it free from the hands of monopoly and allow it to develop only on a national competitive basis."

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HORLE SUGGESTS BROADCASTING ABOVE 30 MEG.

Proposing allocation of a portion of the radio spectrum above 30 megacycles for additional broadcasting assignments, Lawrence C. F. Horle, of New York, on June 16th appeared at the Federal Communications Commission hearing for the Radio Manufacturers' Association.

"While the Association cannot estimate what requests have been or will be made of the Commission for additional assignments to broadcasting", he said, "it believes that these additional allocations to broadcasting cannot possibly be adequate for providing additional facilities for purely local coverage, for such transfer of facilities to other bands as may be desirable or necessary in the interest of making possible more clear channel coverage of rural areas and for the encouragement of greater cooperation with the regulating authorities of our neighbor nations. The Association assumes that to meet these needs at least as many additional channels must be assigned to broadcasting as are already in use; and, additionally, that if such new allocations as are made are to provide for any considerable period in the future, several times that number of assignments must be contemplated.

"The Association thus concludes that the only solution to the allocation problem here presented lies in the allocation of a portion of the radio spectrum above 30 M.C. to additional broadcasting assignments of such a frequency range as will provide for all assignments in immediate prospect without duplication of frequency assignments and will thus provide for additional assignments as trial and experience point the way to rational frequency duplications.

"The Association is convinced that no allocation reasonably satisfactory from the stand-point of the American public is possible unless that allocation, like the band now devoted to American broadcasting is a continuous one, free of other services and well protected from interference by other services by the careful geographical distribution of assignments to other services in adjacent bands.

"With these, and other factors in mind, the Association wishes to recommend the allocation of the band between 37 and 42 M.C. to additional broadcasting assignments, both for aural broadcasting and for facsimile broadcasting as will be referred to later; and additionally recommends that whatever assignments in the region of 26 M.C. may have been contemplated, be not assigned to aural broadcasting.

"It believes that these additional assignments to aural broadcasting in the 37 to 42 M.C. band should allow not only of transmission of an audio band of 15 K.C. - a communication band of 30 K.C. - but that they should, in addition, provide a guard band of 10 kilocycles in contemplation of provision for emphasis of the high frequency portion of the audio frequency range in whatever form of predictortion may ultimately be found desirable in the interest of making possible complete fidelity of transmission. This, then, requires frequency separation of assignments of 40 K.C. and the Association so recommends.

"Additionally, the Association recommends that, at least, in early assignments to aural broadcasting in this high frequency band, assignments in the same geographical area be made with frequency separations of 200 K.C.

"Such recommendations as the Association wishes to make with respect to facsimile broadcasting are largely concerned with the aspect of its further development. It believes that provision for its early broadcast use can best be made by making eligible for facsimile broadcasting as an adjunct, i.e., midnight to morning service, all assignments to aural broadcasting in the interest of permitting the use of already operating aural broadcasting equipment in the practical development of this service. Further, the Association believes that in establishing the basis for allocations to the broadcast services during the next few years, assignments to facsimile broadcasting as a primary, i.e., twenty-four hour service, should be contemplated. It may ultimately develop that for this purpose an allocation somewhere between 1600 and 3000 K.C., or perhaps, even in the region of 26 M.C. will be found suitable.

"The Association recommends, in addition to providing for facsimile broadcasting as an adjunct service on all assignments to aural broadcasting, that additional assignments to facsimile broadcasting as a primary service be made in the 37 to 42 M.C. band referred to in the Association's recommendations with respect to

aural broadcasting. It is essential, of course, that in this band there be no interleaving of assignments to these two broadcast services for reasons that have already been given and it is, therefore, recommended that the assignments to facsimile broadcasting be limited to the lower end of this band, possibly between 37 and 38 M.C. and that the remainder of the band be exclusively devoted to aural broadcasting.

"It should perhaps be pointed out in closing, that the recommendations here made contemplate assignments which permit of commercial as well as technical development. If, however, allocations are to be made on a purely experimental, non-commercial basis, the membership of the Association will doubtless, in the future, as in the past, provide such receiving equipment as the public will find acceptable and of use in the development of the assignments made on the basis of these allocations."

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INDEPENDENT RADIO MANUFACTURERS SEE MONOPOLY

To prevent unjust levies of tribute on the public in the television field, Samuel E. Darby, Jr., of Darby & Darby, counsel in patent anti-trust courses, raised the issue of monopoly today at a hearing before the Federal Communications Commission. Mr. Darby appeared on behalf of eleven independent radio manufacturers who have produced about three-quarters of the radio sets in the United States; about eighteen million to twenty-five million.

Mr. Darby warned that the Radio Corporation of America R.C.A. is endeavoring to extend its radio patent pool monopoly to the television field. He warned the Commission against accepting the monopoly principle in television which costs the American people $5,000,000 yearly and has cost them in tribute to R.C.A. about $50,000,000 in the last nine years.

The same patents which have throttled the public in radio manufacture are in process of being used all over again in television.

The independent radio manufacturers, who include the makers of Philco, American Bosch, Zenith, Crosley, Sears Roebuck, Montgomery Ward, Emerson, Stromberg-Carlson, Motorola, Stewart Warner and Sparton, are working jointly in the public interest and their own interest to prevent their and the public's exploitation by R.C.A. in the new television field.

Mr. Darby urged the Commission to consider the record of those who apply for television licenses. He urged that television be not allowed to fall into the same state as radio manufacture had fallen into - in which the public pays tribute to the patent pool monopoly of R.C.A.

"Anti-monopoly today is a public interest issue, an issue taken out of partisanship by the recent strong anti-monopoly plank in the Republican platform and the equally strong anti-monopoly stand of the Democratic party which backed the Clayton Act and which will undoubtedly have a strong anti-monopoly plank in the forthcoming platform. In the public interest, this great new industry must be conserved by preventing monopoly from securing a stranglehold on it at its birth."

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PALEY SAYS NEW VENTURES MUST PAY THEIR WAY

"If broadcasting, aural, visual, or both, is to continue to advance, it must be economically sound", William S. Paley, President of the Columbia Broadcasting System, declared June 16th at the FCC engineering hearing. "It must be kept on a firm business footing. I do not think many of us will disagree on this point. It is part of the basic American viewpoint that a service which is to be a constructive force must be self-supporting. It must be alive enough to pay its own way. This makes it, among other things, responsive to the public will. For it must quickly adjust itself to the public demand, or lose revenue and be wiped out.

"It is worth noting, I think, that economic self-sufficiency has made American radio one of the finest broadcasting services in the world. It has certainly made it the most unshackled broadcasting service in the world. Its independence of political control is one of the surest guarantees that it will help perpetuate our representative political system.

"If private capital is going to continue doing the sort of broadcasting job it has started out to do in this country, its past investment must not be ignored. I say this because there must be constant encouragement to capital flow if the people of America are to have the benefit of every technical discovery, every creative advance.

"For this reason, sudden, revolutionary twists and turns in our planning for the future must be avoided. Capital can adjust itself to orderly progress, it always does. But it retreats in the face of chaos.

"We are on the threshold of a period of transition for the next couple of years. We should do everything in this period to advance experimentation. But we should do nothing to weaken the structure of aural broadcasting in the present band until experimentation in other bands has yielded us new certainties.

"The really immediate question in this connection is whether we should do anything at all to present commercial broadcasting facilities until we know where broadcasting is ultimately going. There already appear to be anough economic uncertainties for us to consider, without our voluntarily assuming still more at this time. The same consideration would apply to any sudden large addition to present aural broadcasting frequencies. Reckless expansion might so scatter the audience that it would be impossible for many small stations to survive economically.

"The same economic forethought should be applied to the proposed use of super-power for stations in the present broadcast band. Since the Commission is soon to give this subject full consideration, I need do no more now than emphasize the importance of balancing carefully the possibilities of increased service against staggering increases in costs of construction and operation.

"Probably the most important economic problem we must face - certainly the one uppermost in everybody's mind - lies in the approach of television. Perhaps not all of us realize just hos important, or how great, this problem will be.

"We may already have accustomed ourselves to think of higher program costs and rapid obsolescence. But I wonder if it would interest anyone at this meeting to learn that a competent preliminary estimate of the cost of a single television station - engineered only according to standards of present day experiment - was in excess of five hundred thousand dollars. And this cost, incidentally, was only for a station for experimental transmission.

"Next in importance, after the principle of economic soundness, is the principle of competition. Adherence to this second principle, also, is essential if the public is to be assured good service - constantly improving service. This is as ture in broadcasting as in any other economic undertaking. Our sureness on this point arises from our own experience. The eagerness of broadcasters to compete for the goodwill and interest of the American audience has greatly advanced broadcasting.

"The third principle I want to stress has already been developed by the Commission's engineering staff. Your own engineers recommend that the Commission hold fast to a policy of experimentation and evolution, I emphatically agree.

"The final principle I want to mention is this: In assigning channels to individuals or to organizations, their demonstrated responsibility should be a fundamental consideration. In some instances this should be a responsibility to the whole American people; in others it should be a responsibility in and to the community the applicant proposes to serve. In aural broadcasting I think the need for such responsibility has been established beyond argument.

"The importance of the principle of responsibility, when we think of television, is limited only by our imagination as to the social and cultural force in the nation that television may eventually be.

"If television is to flourish, it must be made a nationwide service - a vital part of the life of the American people. Whatever the present technical difficulties, the day can hardly be distant when the public and our national interest will demand network television. It will be tremendously costly - that goes without saying. Even the preliminary foundation work cost millions. This can only be justified if adequate allocations are assured. A sufficient number, and, at least in the beginning, only a sufficient number, of responsible organizations signifying a desire to work toward a nationwide, coordinated service should be given some certainty that - if they meet definite requirements in performance - they will receive the necessary encouragement and allocations to go ahead.

"While we recognize the needs of governmental services, we believe their requirements should be very carefully studied, to determine, first, whether definite need actually exists, and second, the extent to which their needs could be taken care of by existing services, including other means of communication."

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