The Amateur and the International Radiotelegraph Conference

By K. B. Warner, Secretary, A.R.R.L. and I.A.R.U.

THE International Radiotelegraph Conference is over! The Washington Convention of 1927, signed on November 25th, attests the eight weeks of strenuous work of 200 delegates, 178 special representatives, and uncounted functionaries, attachés and clerks, representing 55 countries and 23 dominions and colonies. The London Convention of 1912 is no more—a new order prevails. In it, for the first time, the radio amateur receives an international status and recognition as a factor in radio, the rules governing his conduct are set forth, and his rights and privileges are defined. Those privileges in most respects are entirely adequate. We have achieved a great victory.

Highlights

Recognition of amateur radio.

Amateur bands near 160, 80, 40, 20, 10 and 5 meters.

Amateurs of every country in the same bands.

Ample bands for domestic work, ample for experimentation, probably enough for DX day work, uncomfortably restricted band for international night work.

Power of amateur stations fixed by each nation.

Each nation free to permit or prohibit amateurs as it desires; each nation free to withhold from amateurs any or all of the bands.

International amateur message traffic forbidden except by special arrangements between nations.

New system of amateur calls to indicate nationality, restoring intermediate "de" and abandoning "international intermediates".

Convention effective January 1, 1929.

It is extremely difficult to compress within the confines of a single magazine article an accurate account of the eight busiest and most anxious weeks of one's life, weeks when the ultimate fate of the amateur hung momentarily by a thread. I do not know where to begin. I have written much about this conference in my editorials of the past several months, not only because it was the most important news of the day but also because it was a subject that had been occupying me almost exclusively during those months and I knew more about it than anything else. In those editorials I have attempted to depict the gradual unveiling of the Washington picture, and I ask our readers to accept them as the background for this account and let me go on from there.

Vice-President Charles H. Stewart and I were in attendance during the entire eight weeks of this conference. We didn't miss a day. We were joined at critical times by Mr. Maxim, president of the League and of the Union, under whose leadership we worked. We were gloriously backed and represented by the American Delegation and valiantly assisted from time to time by delegates from Canada, Italy, Australia and New Zealand. Most of the rest of the world was against us. Even Canada, thru no fault of the estimable Commander Edwards, was against us when it came to wavebands —of which more anon.

I have previously described how the conference was divided into committees. Some matters affecting the amateur arose in most of the committees but most of our matters were centered in the Technical Committee, presided over by the renowned and beloved General Ferrié of France. This committee had three sub-committees, presided over respectively by Professor A. E. Kennelly of Harvard, of Kennelly-Heaviside Layer fame and a former A.R.R.L. Director; Mr. E. H. Shaughnessy, assistant chief engineer of the British Post Office; and Professor G. Vanni of Rome, who amongst other titles is president of the Italian Section of the I.A.R.U. The amateur matter first arose in Mr. Shaughnessy's sub-committee when Great Britain's proposal for amateurs was reached for examination, and the battle was on when Japan led off with the devilishly ingenious suggestion that all transmitting amateurs be obliged to use phantom antennas. Mr. W. D. Terrell, Chief of the Radio Division of the Department of Commerce, stemmed the tide with a splendid address on behalf of the amateur, and served the first notice that the American Delega-

tion was expecting its amateurs to get a fair shake. And so a sub-sub-committee on the amateur was appointed, consisting of eleven members with Professor Mesny of France as its chairman. Thru the kind efforts of the American Delegation I was made a member of this sub-committee, as a representative of the amateur.

It is necessary to pause here and say that the preservation of amateur radio on the face of the earth to-day is very largely attributable to the efforts of the United States Delegation. Amateurs in every country of the world are indebted to them for their preservation. There were liberally-minded representatives from other countries, most notably Captain Montefinale of Italy, Commander Edwards of Canada, Mr. Brown from Australia and Mr. Gibbs from New Zealand, and of course the amateur representatives were doing their very best. But all of us would have been sunk if it had not been for the American Delegation. Our people served notice from the first that they would demand that the amateur be cared for. At first the opposition was equally insistent but gradually it wore down a bit, and the eventual result, as in all such things, was a compromise. But for one reason or another, chiefly the economic demand for international waves and the fear that the activities of amateurs in various directions couldn't be controlled, the bulk of the world was bitterly opposed to us. I shall say something on the editorial page this month about these reasons. This seems the proper place, too, to retract the hymns of praise we sang in a recent editorial about the remarkable friendliness and openmindedness of the British Delegation, as judged from a first impression at Ottawa. We regret that we must alter our opinion of them. The leaders of the opposition, they were the amateur's most bitter opponent, and unremittently and relentlessly they pursued us and hacked at us in every committee. The British are said to be the best negotiators on earth. We presume that from their standpoint they may feel that they did a good job at Washington. For our part, we offer our apologies to the British amateurs for our inference that they didn't know their officials.

And now to get back to that sub-sub-committee on amateurs. It met the next day, and Messrs. Terrell, Edwards, Brown and Gibbs spoke, as delegates from their respective countries, on behalf of the amateur. It was evident that there were going to have to be amateurs. The British delegate at this meeting was Mr. F. W. Phillips, assistant secretary of the G.P.O. Mr. Phillips believed in amateurs too—had they not 1200 of them in England? But of course the amateurs would have to expect to be restricted to narrow territory. Mr. Phillips had a little paper all ready, as it seemed every British delegate always did, and he thereupon proposed that amateurs be assigned a band in the vicinity of 150 meters and not more than six narrow bands, distributed thruout the short-wave spectrum in harmonic relation and located, for example, at 109.33, 82.00, 54.66, 27.33, 13.66 and 6.83 meters. These unusual figures are, with the exception of the 82-meter wave, harmonics of 2750 kc. They were no strangers to us, for we knew that the British had a scheme for the division of short waves which provided a boundary between mobile and point-to-point services at 11 megacycles (about 27 meters) and that, using this as a starting point and working in both directions, they had arrived at this set of figures for us. We had other ideas, but this *petite comité* could do no actual allocating—it was merely making a recommendation, and of course we were in sympathy with the idea of harmonicly-related short-wave bands thruout the spectrum and this was but an example. The argument then hinged on the word "narrow". The friends of the amateur did not want that restriction, as this committee at best was but recommending, but Mr. Phillips (and he was not alone in it) stuck out for "narrow", offering at one time to replace the term "narrow bands" with "bands not over 100 kc. wide". Finally, by a vote of 6 to 5, the word "narrow" was retained. The meeting then decided to recommend that each nation remain free to determine the power of amateur stations; that amateur stations be under the obligation of keeping their waves within their assigned bands, stable, and free from harmonics; and that they sign their calls frequently. When the meeting adjourned it was freely predicted that we amateurs would eventually get 100-kc. bands at the British figures, and nothing more.

This amateur report was accepted by Mr. Shaughnessy's sub-committee and eventually by the whole committee under General Ferrié, and from there the recommendation for amateur waves went to the consideration of Professor Kennelly's sub-committee, which dealt chiefly with the allocation of wave-bands. There a considerable delay ensued, for that committee was then working on the allocation of waves down to 200 meters, in which we did not figure, and it was some weeks before the short waves were agreed to.

In the meantime the question of the nature of communications to be permitted amateurs came up in the Committee on General Regulations, where the chief United States representative was the Hon. Wallace H. White, jr., Congressman from Maine, father of the numerous White radio bills, and our friend for years. In practically every country outside of North America, the governments own and maintain all of the communication systems as a state monopoly, and they were all very insistent that this monopoly be protected against in-

fringement by amateur messages. Many countries had made proposals about this, some of them amazingly drastic. France formulated a compromise between the proposals of Germany Great Britain and Switzerland which would confine amateur signals in every country to those relating to experiments under way and prohibit code, secret language, commercial language, "personal or actual information", or information for a third party. This was terrible. This was an international conference and its findings should not concern the domestic policies of any country; a country should be free to permit her amateurs to handle messages internally if she wishes; even internationally if both countries agree. It looked like the rest of the world wanted to prohibit our American amateur traffic just because they didn't want their amateurs to handle messages. We rushed to Mr. White; he was already looking for us, to help. The British had a less obnoxious counter-proposal—they felt that the French proposal went too far, altho why we don't know. We seized upon the British compromise as a basis, but this text forbade any international messages under any circumstances and even international contact between amateurs if one of the countries concerned should object. Mr. White negotiated a further compromise for us, and by the next meeting had the agreement of the British, French and Germans. At that meeting he made a fine and able plea for the amateur and eventually we had the pleasure of seeing the compromise text adopted. Without his assistance we would again have been sunk, with useful message-traffic absolutely denied us. When the text finally came out of the Drafting Committee it read as follows:

"The exchange of communications between private experimental stations of different countries is forbidden, if the administration of one of the interested countries has given notice of its opposition to this exchange. When this exchange is permitted the communications must, unless the interested countries have entered into other arrangements among themselves, be effected in plain language and limited to messages bearing upon the experiments and to remarks of a personal character for which, by reason of their unimportance, recourse to the public telegraphic service might not be a consideration."

If this sounds hard, consider what it avoids! It is cruel to hear talk of an administration denying its amateurs the right to communicate internationally, but of course that has always been a nation's privilege if it wanted to exercise it. As to the necessity for special arrangements between countries before international traffic is permitted us, we've never had any particular international traffic except with Canada, and that we feel sure can be arranged. The amateurs of other countries have been prohibited from message handling anyway—which is possibly proper enough in the case of actual messages whose handling actually denies revenue to the state—and so they lose nothing. The general freedom of action allowed under this provision I find quite gratifying, and certainly infinitely superior to the original proposal which would prohibit every amateur from saying anything in the way of "personal or actual information".

And now let us return to our wavelengths, where the real story remains to be told. The sub-committee on allocations was an unwieldy body. Its work was of vital importance to everybody, so its meet-

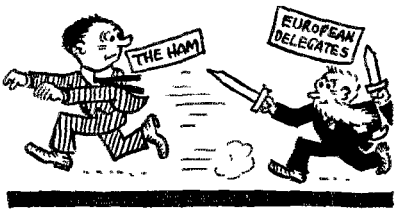
AMATEUR FREQUENCY BANDS

assigned by The Washington Convention of 1927

Kilocycles	Width in Kilocycles	Assignment	Approx. Meters on basis factor 3	Meters on basis factor 2.998	Harmonic family for centers of related portions		Amateur Purpose
					Kilocycles	Meters	
1715-2000	285	*Amateur, Mobile, point-to-point*	150 - 175	149.9 - 174.8	1775	168.92	*Domestic*
3500-4000	500	" "	75 - 85.7	74.96 - 85.66	3550	84.46	"
7000-7300	300	*Amateur Exclusively*	41.1 - 42.9	41.07 - 42.83	7100	42.23	*International Night*
14,000-14,400	400	" "	20.83 - 21.43	20.82 - 21.42	14,200	21.11	*International Day*
28,000-30,000	2000	*Amateur & Experimental*	10.00 - 10.71	9.99 - 10.71	28,400	10.56	*Experimental*
56,000-60,000	4000	" "	5.00 - 5.36	4.997 - 5.354	56,800	5.28	"

ings were attended by the delegates of 78 nations and the representatives of a hundred special interests. It had to conduct its business formally, with recognition from the chairman, interpretation of remarks into French or English, and its minutes had to be kept carefully, paralyzing free speech. In the case of the long waves, then, it was early recognized as hopeless to attempt an agreement in so large a body, and so the committee adjourned while the various delegations attempted to get together and agree informally on a tentative program to be set up as a basis for discussion. Specially-trusted representatives of the bigger powers met each other informally and discussed wave-lengths, over the afternoon tea-cups or in hotel rooms at night. Gradually the "tea-cuppers", as they came to be called, found themselves approaching an agreement. Then two of them would meet the representative of another country, reach an agreement that the three of them could accept, and so progress to the point of taking in a few more countries, until eventually a tentative agreement had been reached between the eight or ten leading powers. This had all been done entirely informally, outside the actual conference, without official committments, with no records kept and with everybody therefore able to speak freely. Ten days or so were thus consumed, and then the sub-committee reconvened and received the suggestions. By that time it had the endorsement of the leading countries and provided an admirable basis for discussion, being of course altered in the process of discussion but eventually being adopted closely as negotiated over the tea-cups.

When all the waves down to 200 meters had been decided upon it was determined to employ the same method for a preliminary



agreement on the short-waves, and the sub-committee again adjourned to await a recommendation. Our anxiety then can be imagined. We had seen the long-wave agreement negotiated informally, the only possible way but with many people unable to participate in the original formulation, and we had seen that plan subsequently adopted with little alteration. The short-wave problem was admittedly much more difficult, so difficult that the possibility existed that there would be no agreement at all. But if one were eventually secured, what chance would there be to get alterations in it if we didn't like it? About zero, we figured. It was therefore a tremendous relief when I was personally invited to participate in the short-wave discussions, to represent the amateurs.

Altho elated that I was to be a tea-cupper myself, we had our grief even then, for they informed us that the room where the get-togethers were to be held was so small that there was room for but one amateur representative. And so we had to break up the old Stewart-Warner firm and I went alone. I cannot tell you amateurs of my emotions as I sat for days in those meetings, the only amateur representative. I felt that my responsibility was a very heavy one. The fate of the amateur world rested largely on how I conducted myself. I had loyal friends in the United States representatives present, and an occasional one from another country, but the rest of the world was frankly against me. Would I be able to put it over, even with all the help of powerful friends? Would I be able to tell our story convincingly enough to get our modest requests from an assemblage which was determined not to give it to me? I had no one with whom to consult during the meetings; I could only keep my wits about me and do my best. But between meetings Mr. Stewart and I had long sessions of our own, analyzing the work to date and altering our plans as the situation changed, and then I would go back to another meeting to carry on.

It is necessary here to digress a moment to explain the informal American organization which represented this country in these wave-length discussions. All technical matters of the American delegation were under the direction of Major General Charles McK. Saltzman, Chief Signal Officer of the Army. General Saltzman is a loyal friend of the amateur, and he proved it thruout the conference. Amongst the technical advisers attached to his staff for the conference were Lieutenant Colonel Joseph O. Mauborgne, for the last several years in charge of research and development for the Signal Corps but now on duty at the Chief's Office; Captain S. C. Hooper, in charge of the Radio Section of the Bureau of Engineering, U. S. Navy; and Lieutenant Commander T. A. M. Craven, U. S. N., who was recalled from sea for duty at the conference on behalf of the Navy Department because of a previously demonstrated peculiar aptitude for this kind of work. These three technical advisers represented the United States in the wave-length negotiations. There was the real meat of the whole problem, and there was where their insistence on behalf of their Government that amateurs be provided for was really effective. We amateurs have much for which to be grateful to them, for they saved the day for us. Captain Hooper

presided at all the informal meetings of the "tea-cuppers". Commander Craven conducted the actual negotiations. In fact, the structure of wave-length allocations finally arrived at is largely his handiwork. This young Naval officer has made an enduring name for himself. It may be said that he is personally responsible for the successful negotiating of the wave-length agreements embodied in the Washington Convention of 1927. What a monument to have to one's credit! The conference has praised him for it. I sing his praises too, for he was the staunch and clever friend of the amateur and in large measure we owe what we got from the conference to his skill and perseverance. These three officers let no opportunity go by to stand up for us. If we did not get all we want, it only shows the difficulty of the task and how hopeless we would have been without their help. I want to tell you amateurs that our friendly bonds with the Army and Navy have paid the richest possible dividends!

But I must get on with the tea-cupping. It was a most difficult task. There were about twenty-five people present at most of the meetings, representing eight leading countries and a number of special interests. Six meetings were held, stretching over eight days. Gradually an agreement began to take form. There were endless arguments between mobile and point-to-point, conflicts with expensive beam stations, and what not. It was really very difficult and only a splendid effort to secure agreement by mutual compromise made the result possible. Amateurs were left out while the preliminary chopping between mobile and point-to-point was made, but with pointed insistence by the U. S. delegates that the meeting should return later and fit the amateur into the picture. I was on needles and pins for days, watching this part of the program in which I did not participate, inwardly pulling for a division which would put point-to-point bands at the places where I wanted to see amateur bands. The United States wanted the same thing, and eventually the division was made along lines that made that possible. In the meanwhile the upper amateur band, to be "in the vicinity of 150 meters", was located as from 150 to 175 meters. Higher territory seemed impossible; it had already been determined to give 175 to 200 to mobile exclusively, when the long waves were discussed; I didn't much care; that seemed ample for our needs in an upper band, even if it were non-exclusive (as indeed it already is in this country). Besides, I was holding my fire for the short waves.

At last they got thru the table, down to 13 meters. Then they started on some narrow bands for short-wave broadcasting but couldn't agree and decided to leave that for a still smaller group to discuss. At last the amateur question! I took another reef in my belt and prepared for action.

Mr. Shaughnessy led off. The table as agreed at that time provided certain exclusive bands for point-to-point, some more exclusive bands for mobile, and some narrow shared bands. His proposal was that the amateurs share a small part of the already shared bands. I had horrible visions of a senseless selection of amateur bands without harmonic relation and filled with mobile interference. Some days previous we had prepared and circulated a paper containing a suggestion for the amateur bands, proposing that they be centered at 20, 40, 80 and 160 meters as locations where our operations of the last several years had undoubtedly served to keep them clearer of established commercial services than any other locations; and, instead of "narrow" exclusive bands, urging moderately wide "N.G.P." bands, that is, bands reserved for stations not open to general public correspondence, such as government stations, amateurs, etc., from which bands amateur stations might be provided. The idea was that this would provide sufficient flexibility to make wider bands possible in countries having many amateurs, yet leaving a nation free to assign her amateurs but small bands if the number of amateurs was small or the administration hard-boiled. I countered Mr. Shaughnessy with this proposal, and Commander Craven backed me up with the request from the U. S. Delegation for more definite amateur bands. But nobody else liked the N.G.P. idea, it seemed. The situation instantly was serious, for with this idea of flexibility lost we would be confronted with fixed bands which would inevitably be narrow—the maximum to which international assent could be got. Then Captain Gino Montefinale, of the Royal Italian Navy, the commandant at IDO, proposed a counter scheme, suggesting amateur bands centered at my figures and of variable width, as each administration desired, but not exceeding certain maxima, and these maxima were the same as the proposed widths of my N.G.P. bands. Captain Montefinale was a fine friend of the amateurs thruout these meetings, and in fact absolutely the only one we had outside of the American delegation, for even Canada worked steadfastly against us for all her delegate was worth. The amateurs of Rome should give Captain Montefinale a dinner—his assistance was most appreciated. But nearly everybody objected to his scheme the same as they had to mine, and the battle waged on thru anxious moments. France would accept if the bands avoided the mobile waves. Mr. Shaughnessy objected that our proposed waves would hit into the center of the point-to-point bands and again demanded that amateurs be in the shared bands, with talk of 800 kc. total for us, in which he was supported by Germany. I objected again,

backed this time by all the mobile people, including the U. S. and Japanese navies. And finally we sold them on 20-40-80! I thot that tremendously important, not because those were our American waves but because our occupancy of them had made them much less likely to conflict with established commercial services than any other locations one might have named—and future events showed I was dead right in that. Mr. Shaughnessy would agree if the amateur bands were narrow as the sub-sub-committee had recommended, and came from the edges of those point-to-point bands, and he proposed 400 kc. near 18¾ meters, 200 kc. near 37½, and 100 kc. near 75. This was a tremendous concession for him, but fixed bands of those widths were hopeless and I said so, again urging my flexible scheme. A vote was taken and the KBW-Montefinale scheme was lost, and the general idea of the Shaughnessy proposal voted. France, be it said, voted against both, thinking my plan too ambitious and Mr. Shaughnessy's too restrictive. Only Italy and the United States supported us at this juncture. Then abruptly it was found that no agreement could be reached readily on the width of the amateur bands—this meeting was still too large—and so this subject was referred to the same small group, more or less voluntary, which was going to meet that afternoon to recommend some narrow bands for short-wave broadcasting, and the meeting adjourned.

We took stock of the situation that noon. We had established the location of our bands where we wanted them. The flexible N.G.P. plan had been discarded, and rigid amateur bands of small dimensions were proposed. In the certainty that we were going to get clipped badly on the international waves, it became more important than ever to work for wider territory in the national waves than would be afforded by a rigid family of harmonicly-related bands. At once we determined to abandon this idea and to negotiate for each band separately, as we found conditions, and to ask for wider non-exclusive territory in the 80-band rather than the paltry 100 kc. that would be afforded by any true harmonic plan.

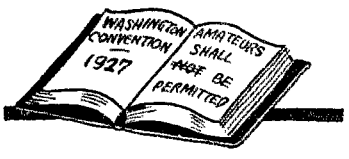
It was an odd assembly which met that afternoon to decide upon the broadcasting and amateur bands. "Sub-teacuppers" is the proper term for us, I suppose. There were seven of us: Col. Mauborgne, Commander Craven, Major W. Arthur Steel of Canada, Dr. Van der Pol, of the Netherlands, representing the European broadcasters, Mr. Charles E. Rickard, representing the Marconi beam stations, Capt. H. Abraham, of Germany, representing Telefunken, and I. Major Steel was the only actual government delegate present and, aside from Col. Mauborgne and Commander Craven, the rest of us didn't even represent a government. But this group was constituted for this purpose, and away we went. I kept out while the broadcast bands were being settled, and Dr. Van der Pol laid off when we got to the amateur matter. At last the moment had arrived! Now or never! But what an odd group to say what the amateur should have! It was a good enough group to decide the broadcasting question but it was only by chance that it was given the additional job of recommending the amateur bands.

I had explained to Commander Craven my idea for wider non-exclusive territory in the 80-band, to which he readily assented, and in short order he personally sold the meeting on 3500 to 4000 kc. non-exclusively for amateurs, our present American assignment. This was immensely better than I had hoped for; it assured us "a place to live", from which to sally forth to narrow international bands if we got short-changed below, as seemed unavoidable. Non-exclusive was quite all right, for we have always shared that band with army mobile, naval aircraft and naval vessels working naval aircraft, without trouble. Then we tackled 20, for which the proposal was 400 kc. There wasn't a chance to get any more. It really seemed about sufficient for the rather limited amount of day-light work which we amateurs do. We have had 2000 kc. there not because we needed it but because that width was dictated as the harmonic of our 40-band in defiance of the inverse economic value of the respective bands. I also found amateur occupancy of the 20-band entirely insufficient to justify a demand for any more, to say nothing of needing to hold my steam for the 40-band. The 20-band was located between 14,000 and 14,400 kc., those figures escaping the established services of the gentlemen present. And then we tackled 40, the real rub. That was our international night band, the place where we all assemble from every nation for our international communications. Next to our national bands, territory there was our most important need. I was asking for 800 kc. there and our own government was quite in agreement, as they had planned 7000-8000 kc. for us on the N.G.P. basis. But there was never a chance for it—it was too much more than the British idea of 100 kc. or Mr. Shaughnessy's generous 200 kc. The meeting attempted to find a place in the 7000-region where no commercial services were already in existence, as indicated by lists available. A start was made at 7000 kc. but only 200 kc. were available before a snag was encountered in the form of an existing German station. I didn't know, and don't know to this day, just what that had to do with it, but the idea was to get unanimous agreement of all the other interests to what was given us amateurs, and here the Telefunken representative couldn't agree because he had a station there! He might

have been out-voted here but the main teacuppers would have supported him the next day. Another location was tried but Major Steel objected, claiming that Canada had a large number of stations established in that 7000-8000 band which has been assigned to amateurs in Canada for four years. In fact Major Steel steadfastly refused to give his agreement to any large amateur assignment in that area, and he hurt us a great deal. He had been appointed by his delegation to represent them thru all the allocation matters. In these matters he sided most of the time with the European viewpoint, particularly the British, and but rarely with the American. It seems so strange, for surely Canada's radio destiny is the same as that of the United States, not Europe's—and that has been Canada's policy for years. But the Major's idea on amateurs was at least as bad as that of any European and he worked against us steadily. It will be a disappointment to Canadian amateurs to know that their representative did not uphold any of the usual policies of their government respecting amateurs, but instead was quite of the opinion that amateurs should not be permitted to occupy useful communicating waves, and that he did all he could to keep us out of them. He joined the Telefunken agent in refusing to agree to anything as rash as 400 kc. for amateurs in the 40-band. Eventually Capt. Abraham agreed to move one of his stations and a 225 kc. band from 7000 to 7225 kc. was determined upon. It is interesting to note that this band was clear of any established commercial or government stations, and that its limits are defined by the maximum width to which Capt. Abraham and Major Steel would agree in consideration of their established stations! Our band was no more than the Telefunken agent would agree to! Nor could it be widened or moved because of Major Steel. It seems so odd that such considerations as these should have entered into the making of the recommendations of this meeting, yet this little group had been appointed to make a recommendation and of course this was what they were going to hold out for, and the best efforts of our American people were unable to change it. I couldn't assent to these figures, and didn't, but that didn't alter the maximum to which the meeting could get agreement. Then the 10- and 5-meter bands were easily fitted into the picture, and we adjourned.

The next morning the sub-teacuppers reported to the teacuppers and, strange to relate, the only objection was from me! I was then holding out for 400 kc. at 40 instead of 225. By then I was prepared to recommend that we agree to the rest of the table but I thot we needed and rated more at 40 and I could see no good reason why it couldn't be spared to us. Capt. Hooper, as chairman, supported me, but the British claimed that they had important services there and that it was out of the question. Capt. Abraham then said that the preceding day it had seemed too difficult to shift existing stations but that he would now compromise with 300 kc.—7000 to 7300. Mr. Shaughnessy would shift his stations too and agree. It meant 75 kc. more and it became apparent that it was the very maximum to which agreement could be got. But the fireworks weren't quite over, for Mr. Shaughnessy objected to our 10-meter and 5-meter bands being marked exclusively amateur, saying that we might succeed in developing the 10-meter band into useful communicating waves and that in that event we shouldn't be permitted any such exclusive possession of valuable waves. It was at length determined to compromise by opening them to "amateur and experimental". Altho a small point, it illustrates the determination with which the British pursued us at every stage of the game. And finally everybody agreed upon these figures for us amateurs and the whole report was accepted.

From that time on there was never a chance for any alteration in the figures. These meetings were strictly informal and not officially binding upon a soul present, much less upon the interests they represented. But it was considered that an agreement had been reached and there was an unspoken pledge to stand by the agreements. This pledge was at once the weakness and the strength of our position for, altho it made impossible any attempts to increase our 40-band allocation, it insured strong backing for the preservation of the table against any who might attack it. It



shortly became apparent that it was considered that our United States delegation, by having participated in the negotiations, was bound to support these allocations for amateurs, and in fact it was considered that we had accepted them too and for the same reason. Careful sifting of the situation showed that there wasn't a chance to get any agreement on anything greater. Besides, these figures really weren't half bad.

To make a very long story decently short, the tea-cuppers laid their work before Prof. Kennelly's sub-committee on allocations as a basis for discussion. It was hopped upon by various people, particularly folks who wanted to question the great width of the amateur assignments. Here Prof. Kennelly roundly defended us, and the very fact that it was considered that an agreement

had been reached amongst the major powers caused them all to stand their ground and defend the whole short-wave table against attacks. As a result, it was easily adopted in the sub-committee without alteration and similarly adopted a few days later by the Technical Committee. At length it reached the Plenary Session and there it was adopted just as easily, amidst great applause, for it was realized that a perfectly mountainous piece of work had been accomplished and that it was really a rather good job. This was the largest international conference ever held in the history of the world, with nearly eighty nations represented, and they had unanimously agreed upon the partition of wavelengths from 30,000 meters to zero.

This is the true story of the determination of the amateur wavelengths in the convention of 1927. Our wave-bands are shown in the accompanying table. If the reader feels that we got a satisfactory deal, give the credit to our United States Delegation. If they do not seem enough, they were the best that could be got in the face of united opposition. But I feel that we must consider that we have been most successful. We have received a great deal more than most of the world wanted us to have. With the single exception of our 40-meter band I believe we have all that we shall need. For our international night work in that band we shall have to devise new methods, perhaps new apparatus, and certainly we shall have to employ a greater measure of international coöperation than ever before. But all of these things are possible to us and we have always gloried in the necessity for licking a new job.

There will be time in succeeding months to analyze the new problems confronting us and to arrange for their solution. The convention does not go into effect until the first of 1929, so there will be time to adjust ourselves to the new situations. These new amateur wave-bands should be considered gorgeously ample for every country but ours, and we in this country will find a way. It should be emphasized, tho, that no nation is obligating itself to permit the existence of amateurs—that is strictly its own business—and unfortunately the conference offered no opportunity to insure the existence of amateurs in every country. Nor is any nation obligated to put the entire width of these bands at the disposal of her amateurs—in fact few of them will; the bands are merely those which nations have internationally agreed are to be used for amateurs in countries which so wish. We may feel sure, though, that we have gone a long way towards selling the amateur to the administrations of the different countries, and now that there is international agreement on amateur territory and a nation may know that it is not stepping on the toes of another in giving certain waves to its amateurs, we may hope that there will be a much greater disposition in foreign countries to treat the amateur liberally. Believe us, they have certainly heard about the amateur at Washington!

And now, rapidly, some other amateur matters. Each administration will fix the maximum power of its amateur stations. The stations must be licensed and the administrations must assure themselves of the proficiency of the operators. The stations must comply with all the general requirements of the regulations, particularly as to observance of wave-length, stability of wave and freedom from harmonics. They must sign their calls at frequent intervals. The calls are to be assigned from the same "national blocks" as the calls of commercial stations, consisting of the one or two initial letters that indicate nationality in such calls, a single figure, and not more than three letters. These calls will be used in connection with the intermediate "de". Thus the governments do away with the necessity for our international intermediates—beginning in 1929. The other important amateur question was the nature of our communications, and that I have reported previously.

In the near future, probably the next issue, *QST* will print pertinent extracts from the Washington Convention applying to the amateur. We shall advise where and how the document may be obtained as soon as it is available. The coming year undoubtedly will see in *QST* much discussion and much new material and many new decisions based upon our new conditions, as we analyze them and learn their possibilities.

It has been a great two months, the hardest but the most interesting in my life. It has been a wonderful experience. I am proud that we may call it successful. The unyielding world has yielded, and we amateurs are safely written up in the greatest communications document of the age, the Washington Convention of 1927.