

Comprehensive Survey

and

Summarized Version Of Events

Relating To The Proposals

And Efforts Of The

National Broadcasting Institute

To Improve Broadcast Coverage

Over Greece

Presented by:
The National Broadcasting Institute
Athens.

May 1951

INTRODUCTION

This report is presented for the purpose of stating in clear and precise terms the case of the National Broadcasting Institute for facilities to enable it to extend its network in accordance with plans already prepared and approved by Technical Experts well qualified in the field of Broadcast Propagation and Coverage.

The report is intended also to present a complete picture of the circumstances and conditions under which the Greek Broadcasting Service has been operating since its inception in 1938 and to draw attention to the many obstacles which have impeded its progress and development. Not the least of these obstacles has been an apparent misunderstanding of the situation by certain sections of the U.S. Mission to Greece and the resultant opposition of those sections to the N.B.I. proposals.

In surveying such an extensive period — necessary to present the facts of the case in their correct perspective and to remove all elements of misunderstanding — the report is lengthy and is supported by numerous Appendices. It is hoped, nevertheless, that this will not detract from the interest of the reader or from the urgency of the case. Indeed, the time factor is of vital importance because of recent developments referred to in Sections 14 and 15 of the Report.

The National Broadcasting Institute,

Athens

May 1951

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1. Historical Background: Broadcasting began in a very modest way in Greece in 1938. The system comprised a small orchestral studio and two talks studios in Athens with a 15 k.w. Medium Wave Transmitter located at Liossia some 15 k.m. from the centre of Athens. The technical equipment was supplied and installed by the Telefunken Company of Berlin. The service provided by this low power installation and its limited Studio facilities was, of necessity, very restricted. It was no more than the starting point of a National Broadcasting System intended ultimately to provide complete broadcast coverage over the entire Greek mainland and islands. Public response to the introduction of a Greek Broadcasting service was entirely favourable and there is little doubt that, had it not been for the intervention of World War II and enemy occupation, the expansion of the service would have kept pace with that in other Western countries.
2. The War Era: The war, and more particularly the enemy occupation of Greece, with its disastrous effect on national economy and personal incomes and its stifling effect on freedom of speech, was not conducive to the expansion of a National Broadcasting Service. The broadcasting organization, which had previously been modelled on the lines of a Public Utility Corporation, gave way to a Nazi inspired and dominated commercial undertaking backed financially by collaborationist Greeks and by the Telefunken Company. This company (A.E.R.E.) was, at least, sufficiently interested in the development of broadcasting in Greece to realize the total inadequacy of a 15 k.w. Transmitter. Accordingly, it made plans to bring to Greece the equipment necessary to increase the power of the Athens Transmitter to 70 k.w. But delivery of the equipment was slow and, in fact, not completed at the time of the Liberation of Greece in 1944.
3. The Immediate Post-Liberation Period: With the coming of the Nazis the Broadcasting Service was taken over by the Ministry of Press and Tourism and remained under direct Ministerial control until the formation of the National Broadcasting Institute (E.I.R.) in 1945. At this time Greece was still relying on the original 15 k.w. Transmitter the effective power of which was reduced to a bare 10 k.w. as the result of wartime neglect and damage. The assets of the Nazi inspired commercial company were confiscated and the equipment which had been supplied for the purpose of increasing the power of the Transmitter to 70 k.w. was later awarded to the National Broadcasting Institute. But, because a number of vital parts were missing and because the disruption and chaos then existing in Germany made it impossible to obtain either the missing parts or technical data concerning the design of the transmitter, the Broadcasting Institute was unable to implement the German wartime plans to increase the power of the Athens Transmitter to 70 k.w..

The only improvement to the Greek Broadcasting Service following the Liberation was that provided by the installation in Salonika of a 2 k.w. Medium Wave Transmitter, made available by the Anglo-Greek Information Service, together with power plant, studio equipment and gramophone disks. Thus, for the first time in its history, Greek Broadcasting was extended beyond the confines of the capital city and its nearby localities.

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With the formation of the National Broadcasting Institute in 1945 there was immediate recognition on the part of its Administrative and Technical Direction of the pressing need considerably to augment the meagre service provided by the Athens and Salonika low power Transmitters. In the almost complete absence of a network of suitably graded telephone circuits, extension of the broadcast service by means of a multiplicity of low power transmitters was incapable of application. This system of broadcast coverage, which might otherwise have been employed as an expedient, is not in any case suitable for providing National coverage, in a country of the peculiar geography and topography of Greece. Accordingly, the Technical Department of the N.B.I. carried out an extensive survey and produced valuable technical data and field strength contour maps on the basis of which the requirements of a system providing National coverage could be determined.

4. UNESCO Survey: One of the earliest activities of the United Nations Educational, Scientific and Cultural Organization was the appointment "as a first and pressing measure" of three Commissions to examine the "immediate technical needs" of Press Radio and Film in War Devastated Countries. Greece was, of course, included in this survey and the three Technical Commissions visited Greece in the Spring of 1947. In the UNESCO Report, Document 2/CS published in Paris, September, 1947, page 124, it is stated: "It is clear, therefore that of the 10 European countries covered by the UNESCO survey this year, Greece is much the most in need of assistance as regards broadcasting." Among the specific recommendations contained in the section of the report dealing with the urgent needs of Greek broadcasting are:-

- One complete 100 k.w. Transmitter with aeriels.
- One complete 50 k.w. Transmitter with aeriels.
- Steps to effect a considerable improvement in Recording equipment.
- Additional Studios should be built and equipped.
- Expert advice and assistance should be made available.
- Considerable enlargement of the Record Library.
- Several hundred thousands of receiving sets should be put on sale in Greece.

The total expenditure estimated by UNESCO in 1947 as necessary to meet the urgent technical needs of Greek Radio was \$2,500,000.

On page 144 of the Report, under the heading "Conclusions," appears the following:

"Speaking of Europe, as concerns transmitters, only Greece is still seriously short of the technical installations essential if broadcasting is to reach the whole population." This was written in August, 1947. It remains substantially unmodified and correct in April, 1951.

5. Copenhagen Convention: The Conference of European Broadcasting Organizations, held in Copenhagen in 1948, was, essentially, a committee of technical experts charged with the responsibility of evolving a plan designed to allocate medium and long wave European Broadcasting Channels on the basis of each country's minimum technical needs in terms of the power, location and aerial system of its transmitters. Thus, the "Copenhagen Convention, 1948," which resulted from the Conference, provides the framework within which each of the 27 signatory countries must develop or maintain its Home Broadcasting Services to satisfy its National needs. The simple fact that the total number of Medium and long wavelength channels available in Europe is many times less than the number required leaves no reason to suppose that any country was allocated channels, in terms both of wavelength and power, in excess of its minimum requirements. And Greece was certainly no exception to this assumption.

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The Greek Representatives, one a Senior Engineer of the P.T.T. and the other the Technical Director of the N.B.I., presented to the Technical Committee field strength contours and other technical data indicating the conditions to be satisfied in providing broadcast coverage over the Greek mainland and islands. This evidence was closely examined by the Technical Committee and correlated to the broader considerations of broadcast coverage in Europe such as the relative position and power of transmitters necessary to avoid mutual interference within the service areas of respective stations. On the basis of the technical data presented, and a close examination of all the factors involved, the following wavelength allocations were made to Greece:-

<u>Location</u>	<u>Operating Conditions</u>
Athens	728 kc/s, exclusive channel, 100 k.w. with provision for increase to 150 k.w.
Salonika	791 kc/s, shared channel, 50 k.w.
Kerkira	1196 kc/s, shared channel, 15 k.w.
Kalamata	1043 kc/s, shared channel, 5 k.w.
Rhodes	1394 kc/s, shared channel, 5 k.w.
Xenotini	1403 kc/s, shared channel, 5 k.w.
Canea	1511 kc/s, shared channel, 5 k.w.
Anywhere	1484 kc/s, international common channel, 3 k.w.
Anywhere	1594 kc/s, international common channel, 3 k.w.

It should be noted that, for a given power, the service area of a Transmitter working on a shared channel is considerably less than that which would apply if the Transmitter was operating on an exclusive channel. This should be taken into account by those who have suggested that the Copenhagen Plan for Greece is in excess of its requirements.

The areas within which reliable reception would have been provided by the installation of Transmitters in accordance with the provisions of the Copenhagen Convention are indicated on the attached Drawing No: 1. From this it will be apparent that the Copenhagen allocations, while not meeting entirely the basic requirements necessary to provide reliable radio reception over the whole of Greece, went a long way towards the achievement of that ideal — an ideal, may it be said, which every country strives earnestly to achieve.

6. V.O.A. Activities At Salonika: It became known early in 1948, i.e. some months before the signing of the Copenhagen Convention, that the U.S. State Department was making plans to build a 50 k.w. Medium Wave Transmitter at Salonika for the purpose of projecting V.O.A. programmes to the Balkan countries. It was the intention at that time that the VOA Salonika Transmitter would share with the B.B.C. the 804 kc/s channel and on which the NBI 3 k.w. Transmitter at Salonika was also operating.

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This would not seriously have embarrassed the N.B.I. because the N.B.I. Salonika Transmitter was providing only a local service and did not, at that time, figure prominently in the N.B.I.'s general distribution scheme. Therefore, it would have been a comparatively simple matter to transfer the N.B.I. Salonika Transmitter to another wavelength and so make way for the V.C.A. Salonika Transmitter. Under the Copenhagen Plan the 804 kc/s channel ceased to exist. Therefore, when the Plan was published in September 1948, the U.S. State Department negotiated with the Greek Government and was given the use of the 791 kc/s channel which had been allocated to Greece for a 50 K.W. Transmitter under the provisions of the Copenhagen Convention. This was, indeed, a severe blow to the N.B.I. and its plans to extend broadcast coverage over the entire country. The severity of the blow related essentially to the fact that, under the provisions of the Copenhagen Convention, the Salonika channel of 791 kc/s was an integral factor in the major scheme of broadcast coverage over Greece -- and not merely a local service channel for Salonika as in the case of the 804 kc/s channel. Inevitably, therefore, substantial modifications to the Copenhagen Plan for Greece had to be considered in order to fill the gap created by N.B.I.'s loss to V.C.A. of the 791 kc/s channel. And the gap, unfortunately, occurred in the extensive and important agricultural areas of Macedonia, Thessaly, Epirus and Western Thrace.

7. Modifications To Copenhagen Plan For Greece: The problem which arose from the loss of the 791 kc/s channel was to provide broadcast coverage over the affected areas by suitable adjustment of power on the channels remaining at the disposal of the N.B.I. but, without infringing the basic considerations of the Copenhagen Convention. In other words, without altering the location of stations and without altering their power and radiation pattern in a manner which would cause interference within the service area of stations outside Greece.

The first obvious move in this direction was for the N.B.I. to exercise its clearly established entitlement to employ an aerial power of 150 K.W. on its exclusive (Athens) channel of 728 kc/s. It might here be noted that the case for a 150 K.W., as opposed to a 100 K.W., Transmitter for Athens is the direct outcome of the loss of the 791 kc/s channel at Salonika. The next step was to determine by field strength measurements the most suitable location for the Transmitter within a radius of 50 k.m. of Athens in order to improve radiation to the North but without substantial loss of radiation in the Southerly direction. By these two processes it was found possible to improve radiation in the Northly direction to the extent that places as far North as Volos, and possibly Larissa, would be brought within the direct service area of a 150 K.W. Transmitter at Athens.

Measurements and calculations have shown that areas within an approximate radius of 50 k.m. from Salonika can be served by a 5 K.W. Transmitter employing an efficient aerial system. A 5 K.W. Transmitter at Salonika would be in place of the one provided for Kalamata under the Copenhagen Plan, the latter place receiving an adequate signal from Athens on 150 K.W.

Thus far, the gap created to the North, East and South of Salonika by the loss of the 791 kc/s channel has been substantially closed. But a large gap to the West and South West remains and more elaborate measures are required to provide adequate coverage for Epirus, Western Macedonia and the South West area of Thessaly. The method decided upon, and fully supported by valid technical argument and opinion, is to install a 50 K.W. Transmitter in Corfu and to employ a directive aerial system. The characteristics of the aerial system would be such as to provide maximum radiation in the South-easterly direction, thus covering Epirus, Western Macedonia and South West Thessaly, and minimum radiation in the North Westerly direction. The power permitted for Corfu (Kerkyra) under the Copenhagen Plan is 15 K.W. on

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an omni-directional aerial. Therefore, if, by the employment of a directional aerial system as proposed, the backward radiation is restricted, as it would be, to the equivalent of a 15 K.W. Transmitter on an omni-directional aerial, no infringement of the Copenhagen Plan or interference with broadcast stations in other countries would result.

The proposed modifications to the Copenhagen Plan for Greece, in their entirety, embrace the following Transmitters:-

<u>Location</u>	<u>Operating Conditions</u>
Athens	728 kc/s, exclusive channel, 150 K.W., omni-directional aerial.
Salonika	1043 kc/s, shared channel, 5 K.W., omni-directional aerial.
Korkyra	1196 kc/s, shared channel, 50 K.W., directional aerial providing protection in North-Westerly direction.
Komotini	1403 kc/s, shared channel, 5 K.W., omni-directional aerial.
Rhodes	1394 kc/s, shared channel, 5 K.W., omni-directional aerial.
Canon	1511 kc/s, shared channel, 5 K.W., omni-directional aerial.

The areas within which reliable reception will be provided by the adoption of this modified Plan are indicated on the attached Drawing No: 2 which should be compared with Drg. No: 1.

8. Adoption of Modified Plan: The modified plan, as described in the foregoing, was approved by competent technical authorities, notably the Technical Committee of the N.B.I., Mr. Wm. Brady, Chief Engineer of the V.O.A. Salonika Base Station, and Mr. H.P. Humphreys, British Technical Adviser to the N.B.I., as providing the only possible method by which the loss of the 791 kc/s channel could be compensated and the aim of providing improved broadcast coverage over Greece realized. The Executive Council of the N.B.I. likewise accepted the modified Plan which, henceforth, became the officially approved blue print for the development of Greek Broadcasting.

At this time (Spring 1949) approaches were made to the relevant Greek Ministries, and through them to the American Mission, for approval to invite international tenders for the equipment required and for the necessary foreign currency involved. These early approaches proved fruitless and it appeared either that there were deliberate intentions to impede the development of National Broadcasting in Greece or that the American Mission failed to appreciate the pressing need for a well developed Broadcasting Service in Greece and the valuable part it could play in the reconstruction of Greece and the rehabilitation of its people.

An article entitled "Greek Broadcasting - An Outline of its Needs and Aims" as expressed at that time accompanies this document as Appendix 1. The needs and aims, as expressed therein, apply with equal force today.

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9. Greek-Italian Reparations: On 11th May, 1950, when achievement of its aims seemed as remote as ever, the E.B.I. was notified by the Ministry of Coordination that the sum of \$367,000 had been allocated for the development of Greek Broadcasting under the Italian Reparations Programme for 1949/50 and that a further sum of \$875,000 would be made available for the same purpose under the O.E.E.C. 1950/51 programme for Greece (Item 8141). It was stipulated that orders placed against the \$367,000 Italian Reparations allotment should be with Italian firms and that draft contracts should be submitted by 30th June, 1950. Detailed technical specifications of the equipment required, together with exacting guarantees and forms of contract, had previously been prepared. These were promptly dispatched to the only two Italian firms manufacturing radio transmitters namely, Marconi Societa Industriale Per Azioni of Genoa and Magneti Marelli of Milan. Visits were made to Italy by the Technical Director of the E.B.I. and by the British Technical Adviser to the E.B.I. The products of the two firms and their production facilities were closely examined and points concerning design, performance and delivery of Transmitters were freely discussed. The British Technical Adviser reported back to Athens in letters dated 8th and 17th June as per Appendices 2 and 3 accompanying this document.

The tenders submitted by the two Italian firms were examined in detail by the Technical Committee of the E.B.I. The case for a 150 k.w., as opposed to a 100 k.w., Transmitter was debated at some length. Finally, the Technical Committee agreed the case for a 150 k.w. Transmitter and the recommendations of this Committee were passed to the Executive Council of the E.B.I. The Council, after careful examination of the two tenders and the recommendations of the Technical Committee, decided in favour of the Marconi S.I.A. offer of a 150 k.w. Transmitter, complete with Mast Radiator, and the Magneti Marelli offer of 4, 5 k.w. Transmitters and Masts.

Concerning the two Italian offers, there can be no doubt that these were on a strictly competitive basis. The two competing firms were each nearing completion of their existing contracts and were extremely anxious to secure the Greek contract and to keep their factories busy. Reliable information indicates that manufacturers of radio equipment outside Italy could not have offered a 150 k.w. Transmitter at so low a price or with such good dates for delivery and completion of installation and testing, namely, in the case of the Marconi S.I.A. offer, 12 months delivery and five months to complete installation and testing on site.

The total expenditure involved in the agreed transactions was \$665,000, approx., made up of these items:-

One 150 k.w. Marconi Transmitter, complete with all ancillary equipment, two sets of spare valves, spare components, test and measuring equipment, transmission line and Mast Radiator: \$416,840.

Four 5 k.w. Magneti Marelli Transmitters, complete with spares, instruments, Masts etc: \$250,000 approximately.

In a communication from the Ministry of Foreign Affairs to the Ministry of National Economy dated 27th June, 1950, it was confirmed that the sum available to Greek Broadcasting under the Italian Reparations Programme for the year ending 30th June, 1950 could be increased to \$665,000 to meet the cost of specified items, as above, on the understanding that the E.B.I. would deposit the drachme equivalent of this amount with the National Bank. On the strength of this statement the Greek

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Ministries concerned and the Foreign Trade Administration were notified of the H.B.I.'s acceptance of the Marconi S.I.A. and the Magneti Marcelli offers and of the intention of the H.B.I. to sign contracts with those companies forthwith on the understanding that Import-Licenses would be issued.

10. The Issue of Import Licenses: When, towards the end of June, formal application was made for the Import Licenses Mr. Libby of the F.T.A. raised objections concerning the procedure which had been followed in inviting offers for the equipment. It was explained, apparently to the satisfaction of Mr. Libby, that at the time of inviting offers no instructions had been received concerning the procedure to be followed. Also, that competition was, in any case, restricted to the two Italian firms. The H.B.I. was informed that Import Licenses would be prepared and would be ready for collection the next day. On replying for the Licenses Mr. Libby required evidence of the Ministry of Foreign Affairs authorization of the sum of \$665,000 and of the ability of the H.B.I. to deposit the equivalent drachmas. This evidence was produced. It was next requested that the H.B.I. would wait until the 2nd July for the Licenses as it was considered desirable that they should bear a date stamp falling within the fiscal year beginning 1st July, 1950. The H.B.I. was promised by Mr. Chatter that the Licenses would be signed and stamped and ready for collection on 2nd July. When making application on this day the Licenses were refused. A variety of reasons for the failure of the F.T.A. to honour its undertaking were advanced from different quarters but the true reason remains obscure. One of the reasons advanced at the time was that the American Mission required further evidence of the need for the expansion proposed by the H.B.I. and, particularly, the need for a 150 k.w. Transmitter. Accordingly, the H.B.I. set up a special, independent, ten member Technical Committee to adjudicate on the decisions of its Executive Council. This Committee was representative of the best technical opinion in Greece and included eminent scientists and engineers from the University and from the Armed Forces and Civil Service Departments of Greece. Mr. William Brady, the U.S. State Department Radio Projects Engineer who had been responsible for the installation of the VOA Salonika Station, was also a member of this Committee. This Special Committee met on three occasions and considered every aspect of the H.B.I. proposals. At its final meeting on 26th July 1950, it supported the case for a 150 k.w. Transmitter by a 4 to 1 majority and approved unanimously the remaining proposals. Mr. Brady supported the case for a 150 k.w. Transmitter and stated that in his opinion a 100 k.w. Transmitter was of insufficient power to provide the necessary coverage. The findings of this Special Committee were reported to the American Mission but the Import Licenses were still refused. Accordingly, in a final effort to remove any element of doubt concerning the wisdom of the H.B.I. proposals, it was agreed between Mr. Paul Jenkins and the Director-General of the H.B.I. that an independent technical expert should be invited to Greece to examine and adjudicate on the H.B.I.'s technical development plans. To remove any suggestion of vested interest on the part of American, British, German or Italian experts it was agreed that a French engineer should be selected and General Leschi, Technical Director of the French National Broadcasting Services, was invited. General Leschi came to Greece in September 1950. He made a careful examination of the H.B.I. proposals, studied and checked the H.B.I.'s technical data and made a comprehensive study of the Greek terrain during his 23 days visit. General Leschi endorsed absolutely and completely the H.B.I. proposals and his detailed report is forwarded herewith as Appendix 4. Notable extracts from General Leschi's report to the proposal to install a 150 k.w. Transmitter in the Athens area are-

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"We verify that the existing network of the Greek Broadcasting system lies far below the requirements and it is of the utmost importance that it shall be considerably reinforced."

"It is the minimum power (100 K.W.) which may and must reach the 150 K.W. without any prejudice on the international juridical scheme."

"A 100 K.W. transmitter would result in a reduction of the service area by more than 30% and a 70 K.W. transmitter by more than 50% which is inadmissible."

"That the Greek Broadcasting network on medium waves must have as a central distribution point a 150 K.W. Transmitter at Athens and this action is urgent."

At this point it is pertinent to observe that the technical opinion supporting the N.B.I.'s Development Plan, in all its aspects, is overwhelming. American, British, French and Greek engineers, well qualified in Radio Engineering and the applied sciences of Broadcast propagation and coverage, have approved the N.B.I. plans without reservation. In addition, the UNESCO Technical Commission, as far back as 1947, strongly recommended the provision of high power Transmitters for Greece. Therefore, it is reasonable to suppose that any further opposition that may be manifest is inspired by motives other than those of sound technical reasoning and the desire to assist in the development of National Broadcasting in Greece.

11. Treatment of the Loschi Report: The Loschi Report was passed by Mr. D.F. McCauley, Director of the ECA Construction Division, to the I.T. & T. Advisors, employed by the O.T.E., for their comments. And on the strength of the I.T. & T. Advisors Comments Mr. McCauley formulated his Memorandum of 6th November, 1950, to Mr. Paul Jenkins in which he advised against the granting of Import Licenses to the N.B.I. The comments of the I.T. & T. Advisors against the Loschi Report (see Appendix 5) display, unmistakably, their complete failure to understand (a) the basic principles of the Copenhagen Plan (b) the reasons and technical arguments supporting the N.B.I. Development Plan and (c) the conditions existing in the N.B.I. Therefore, the qualification of the I.T. & T. Advisors to pass fair and responsible comment on this issue must remain seriously in doubt. This element of doubt is not lessened by the fact that these Advisors twice contradicted their own arguments or by their recommendation that Greece should forthwith abandon medium wave broadcasting in favor of the F.M. system. The N.B.I.'s point by point replies to the I.T. & T. Advisors comments are contained in Appendix 6.

The distressing and alarming situation created by the I.T. & T. Advisors comments -- a situation which the N.B.I. is determined vigorously to contest -- is that Mr. McCauley's memorandum to Mr. Paul Jenkins advising against the granting of Import Licenses to the N.B.I. (see Appendix 7) is clearly based on inaccurate statements, demonstrably false premises and the highly distorted picture presented by the I.T. & T. Advisors comments. The N.B.I.'s comments, point by point against Mr. McCauley's Memorandum of 6th November, 1950, are contained in Appendix 8.

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12. Telafunkon: In the comments of the I.T. & T Advisors, and also in Mr. McCauley's Memorandum to Mr. Paul Jenkins, reference is made to the 70 K.W. Telafunkon Amplifier in packing cases in the N.B.I. Store. This is the equipment supplied by the Telafunkon Company during the Nazi occupation of Greece and already referred to in Section 2 of this document. It seems probable that, in making various suggestions concerning the use of this equipment, the I.T. & T Advisors are again unaware of the facts of the case. They are as follows:-

- (1) Vital components are missing from the equipment and efforts to obtain them either from the Telafunkon Company or elsewhere have so far proved fruitless.
- (2) From the time of the Liberation until July 1950 the equipment was impounded as ex Enemy property. It was in a sealed store and the N.B.I. was not permitted even to examine the equipment.
- (3) In August last, immediately after the equipment was awarded to the N.B.I. by decree, the N.B.I. sent its British Technical Advisor to Germany to discuss with the Telafunkon Company ways and means of putting this equipment into service. The N.B.I. proposals, submitted to the Telafunkon Co., in a letter dated 2nd August, 1950, are forwarded herewith as Appendix 9.
- (4) Following discussions with Technical Directors of the Telafunkon Co., in Hamburg and Frankfurt the British Technical Advisor submitted his report to the N.B.I. This report accompanies this document as Appendix 10.
- (5) The N.B.I. wrote to the Telafunkon Co. on 25th September (as per Appendix 11) and a Telafunkon Engineer visited Athens in November and carried out an inspection of the equipment. At the conclusion of his visit he gave an assurance that the Telafunkon Co. would submit concrete proposals and firm prices for the work involved within four weeks. Despite this assurance no communication had been received from the Telafunkon Co. up to March 1951, i.e. four months after the visit of the Telafunkon Expert. Accordingly, the N.B.I. cabled Telafunkon for information. A cabled reply stated only that all problems concerning Greek Broadcasting were being examined by Voulpiotis (the Director of the Nazi-Greek Collaborationist Company which took over Greek Broadcasting during the occupation) who would submit proposals (see Appendix 12).
- (6) Shortly after receipt of the Telafunkon cable it became known that A.E.R.E., working in close conjunction with the Telafunkon Company, had made an approach to the Greek Government with the object of re-establishing the company formed during the occupation and operating Greek Broadcasting as a private monopoly. In this connection the Prime Minister has recently announced publically that he will never agree to handing over Greek Broadcasting to a Commercial Company. It has also become known that, in a case pending with the High Court of Greece, A.E.R.E. is contesting the award of the 70 K.W. Amplifier to the N.B.I. and is claiming part ownership of those and other assets awarded to the N.B.I. under the ex enemy property decrees.

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This subject does not rightly fall within the scope of this document and must be treated as an entirely separate issue to that of making provision for the N.B.I. to execute, with the least possible delay, its plans to extend Broadcast coverage over the whole of Greece. The foregoing notes are included merely to indicate that the N.B.I., contrary to the opinion of the I.T. & T. Advisers, has not ignored the existence of the 70 K.W. Amplifier parts and has not, in fact, lost any opportunity to employ those parts in strengthening its network. It is now evident that, because of the non-cooperative attitude of the Telefunken Company (under pressure, presumably, from A.E.R.E.) and because of the pending litigation in the Courts, the existence of the incomplete parts for a 70 K.W. Amplifier cannot, seriously, be taken into consideration by the N.B.I. if its Development Plan is to be executed with the promptitude demanded by the present situation.

13. The 50 K.W. American Transmitter: The 50 K.W. Transmitter made available by the U.S. State Department and recently put into service in Athens is a valuable contribution to the extension of the network. But it would be very wrong to consider this transmitter as anything more than a palliative in the major operation of providing broadcast coverage over the entire country. It makes negligible contribution to the areas which would have been served by Transmitters of 100 K.W. at Athens and 50 K.W. at Salonika in accordance with the original Copenhagen Plan for Greece. Its service area for reliable reception is at least 70% less than that which would be covered by a 150 K.W. Transmitter at Athens. It is noteworthy that, since the 50 K.W. Transmitter was put into service, numerous complaints and letters expressing disappointment with the service have been received from districts just outside a radius of 40-50 miles of Athens. This is because listeners, in their ignorance of the technical considerations involved, had wrongly supposed that a 50 K.W. Transmitter would provide them with the signal they have expected for so long a time.
14. The Present Situation: The N.B.I. has recently been informed by the Minister of Finance that the sum of \$3,000,000 stands to the credit of the 1950/51 Italian Reparations Program because of the non-execution of certain contracts. Therefore, the N.B.I. has been urged to pursue the question of the issue of an Import License in respect of its contract signed with Marconi S.I.A. in August, 1950. At the same time the Italian Foreign Office has pursued this question with E.C.A. Italy and with E.C.A. Greece. The Commercial Attache of the Italian Embassy is informed that P.T.A. refusal to issue an Import License relates entirely to the objections raised by the American Mission on the grounds that the N.B.I. (a) has failed to produce evidence supporting its case for a 150 K.W. Transmitter, (b) has failed to use to advantage the equipment already in its possession and (c) has not demonstrated the ability of its personnel to operate, maintain or program a 150 K.W. Transmitter. If, indeed, these are the views held by the American Mission the statements contained in the foregoing sections of this document, and the arguments advanced should, it is submitted, go some way towards modifying the views of the American Mission. If this is not the case then the N.B.I. asks only that the American Mission objections to the N.B.I. Development Plan should be stated in specific terms and that the N.B.I. should be given the opportunity to answer them. The N.B.I. claims that it has been generous in its invitations to E.C.A. and U.S.I.S. officials to examine the inner workings of the N.B.I. and many Americans have responded. If doubts still exist or if further enquiry and investigation is considered necessary the administrative offices, studios and Transmitting Stations of the N.B.I. are always open to American investigators.

(continued)

15. Proficiency of N.B.I. Technical Staff: It has been hinted in some quarters, and notably by the I.T. & T. Advisers, that the N.B.I. Technical Staff are incapable of installing, operating and maintaining a 150 K.W. Transmitter. Such statements only betray a basic lack of understanding. The facts of the case, as expressed by the British Technical Advisor to the N.B.I., who is an Engineer with more than 25 years experience in senior positions of the Engineering Division of the B.B.C., are as follows:

1. The operating and maintenance personnel have done remarkably well in maintaining equipment in a serviceable condition under extremely difficult circumstances. They have been and still are seriously handicapped by the almost complete absence of test equipment, appliances and spare components but they display masterly skill in improvisation and in keeping in service equipment which would long since have been discarded by other broadcasting organisations.
2. The programming staff display commendable skill in handling complex productions with the most meagre technical facilities. In many cases the lack of technical facilities restricts the scope of a production and its artistic presentation but this is not the fault of the studio staff.
3. The senior technical staff are well qualified in the purely academic sense and display a high standard of proficiency in the handling of theoretical problems. Because of their ten years' isolation from the fields of progressive broadcasting they are sometimes lacking in the art of practical application or "know how". Never the less, this defect where it exists is rapidly being eliminated and will undoubtedly disappear as the opportunity for closer contact with modern equipment and methods increases. And, equally, when the means of conducting practical experiments becomes available by the provision of a suitably equipped Test Laboratory.
4. The Installation Section of the Technical Department carried out, practically unaided, the installation and wiring of the 50 K.W. Transmitter. This work was carried out with commendable skill and precision and the British Technical Advisor places on record that in his experience he has never seen a transmitter of this size, taken over for the final setting up of circuits and tuning, where wiring and installation faults, either mechanical or electrical, have been less in evidence.
5. The organization of the Technical Department is rapidly taking shape on approved lines. With the recruitment of new and well trained engineers, and with experience gained by engineers sent for training overseas, it has become possible more effectively to delegate responsibility for a particular sphere of technical activity and so to insure more effective supervision and direction.

(continued)

16. The Marconi S.I.A. Contract: Confirmation has been received that the original contract price of \$416,840 for the 150 K.W. Transmitter, complete with Mast Radiator, spares, and test instruments, and including installation and testing on site, still holds. This is an exceedingly attractive offer having regard to the increase in world prices for this type of equipment since the contract was signed in August 1950. Indeed, it is doubtful if manufacturers of radio equipment in any other country would be in a position to offer a high power Broadcast Transmitter at anything like the price or at anything remotely approaching twelve months delivery. The N.B.I. submits that the immediate acceptance of this offer is clearly indicated on all possible considerations. It provides, almost certainly, the only means of substantially improving broadcast coverage over Greece in eighteen months time. The time factor, by any other process, would be at least doubled.

This contract can be included in the 1950/51 Italian Reparations Program under the \$3,000,000 still available, and as notified by the Minister of Finance, if the Import License, promised a year ago by the F.T.A., is issued by the 30th June, 1951.

17. Conclusion: The National Broadcasting Institute has stated its case in plain words and simple facts. It is convinced of the justice of its case and is at a loss to understand the reasoning of those who oppose its well intentioned plans. The N.B.I. is not influenced by self seeking motives in any shape or form. It is inspired only by a sense of public duty and the firm conviction that it can contribute effectively in developing that unity of thought and purpose so essential to the country and the well being of its people.

The N.B.I. is encouraged by the belief that there are many within the frame work of the U.S. Mission to Greece who share, wholeheartedly, the views of the N.B.I. and who are in full sympathy with its plans and objectives. The N.B.I. asks, only, that those who may still not be convinced of the merits of its case, and who may be disposed to continue to hinder the consummation of these plans, shall express their case in specific terms and with the same sincerity of purpose as that with which the N.B.I. has expressed its case.

Appendix 1

GREEK BROADCASTING

AN OUTLINE OF ITS NEEDS AND AIMS

The National Broadcasting Institute, as the constitutionally established authority for broadcasting in Greece, is persistent in its demand to be granted those facilities necessary to enable it to provide the people of Greece with a well organized and efficiently conducted broadcasting service.

If granted the facilities and assistance it so urgently requires the National Broadcasting Institute is confident of its ability to raise the standard of Greek Broadcasting to those befitting an essential National Service which would play a part in the life of the Greek Nation no less effective and no less beneficial than that played by broadcasting in other progressive countries. The N.B.I. is equally confident of its ability to contribute, as no other medium can contribute, to the rehabilitation, educational advancement and moral, social and political stability of the Greek people.

The basic requirements which, in our submission, must be satisfied to enable broadcasting to play its proper part in the life of the Nation, may be summarized as follows:

- (1) The N.B.I. must be given facilities to purchase in the best market, and as expeditiously as possible, technical equipment of proved efficiency and of a design and type known to meet its particular requirements in improving broadcasting coverage over Greece, and in providing Programme Producers with the modern Studio and Recording equipment they so urgently require. This implies a large measure of freedom from the complicated, time wasting and pointless procedure of inviting international tenders when it is known that only one or two Manufacturers are able to supply the particular design and type of equipment required for a specific purpose. It implies, also, that Greek Broadcasting shall receive due recognition in the Greek Reconstruction Scheme and that foreign currency shall be made available to satisfy its most urgent requirements.
- (2) The N.B.I. must enjoy clearly recognized freedom to devise programmes and present news bulletins and commentaries within the framework of a general policy laid down by its Board of Governors. The Board must comprise persons of judgment and independence, free from political commitments and inspiring confidence by having no other interests to promote than those of public service and the welfare of the State. This implies complete freedom from narrow party interests, divorcement from Ministerial control outside the limits of National Security, and freedom to serve all sections of the community by the presentation, in their correct perspective, of the views of all recognized political interests.
- (3) Adequate provision must be made for the infusion of new ideas and methods in exploiting to the greatest advantage the manifold applications of the broadcast medium. This can be satisfied (a) by bringing to Greece technical, production and presentation experts skilled in the art of broadcasting, and (b) by sending Greek technicians, producers and script writers to organizations of international renown to gain first hand, on the spot, experience of the methods employed by these organizations. Undoubtedly, there are in Greece today many people who possess the basic qualifications of the producer, script writer and radio engineer but who, because of Greece's isolation of the last ten years, lack practical experience in the art of modern broadcasting and who are unable, therefore, to apply their purely academic knowledge to the best advantage.

(continued)

- (4) The Government must adopt a liberal and far sighted policy towards the importation of Radio Receivers. There are available today specially designed, low priced, receivers falling within the purchasing power of the lowest paid workers of the world. It requires only that the Government shall reduce to a nominal figure the import duty on such receivers and make available foreign currency for their importation. By this process the radio receiver will find its place in the homes of all sections of the community and Greek Broadcasting will cease to be the privilege of the more prosperous classes.

Having set out the four basic requirements of Greek Broadcasting, it is pertinent to consider in more precise terms what Greek Broadcasting has to offer in return and the manner in which it intends to justify its claim for recognition as an essential National service.

First, it can annihilate the distances which separate mountain and island dwellers from the towns and cities and the centres of education and enlightenment. The enormous advantages to be derived from such a condition, particularly in the case of Greece, needs no emphasis. A well organized Broadcasting Service can speak to all Greeks with the Voice of Greece and can bring about a unity of thought, purpose and action seldom achieved in the history of Greece.

Second, it can bring much needed entertainment and wholesome amusement into the homes of all the people. The latest dance tunes from the Athens Tavernas, the serious music and drama of the capital city and the jokes which are provoking merriment among Athenians will cease to be exclusively Athenian. The remote mountain dweller will listen and laugh with his town dwelling brother and will be happier and more contented with his lot. He will be less disposed to forsake his plough for the already overcrowded work benches of the cities.

Thirdly, by the objective reporting of home and world news and by commentaries and debates on current affairs, free from political bias but fairly expressing the views of all parties, Greeks, young and old, in town and in country, will be better able to base their opinions on sound reasoning. They will be less vulnerable to the evils of baseless rumour and the malicious distortion of facts. It is our submission that, by this process alone, a greater measure of social and political stability will ultimately be achieved.

Fourth, an efficient broadcasting service would play a vitally important part in furthering Government and other officially inspired schemes for improving the health of the nation; for aiding agriculture and for maintaining price stability. Thus, it is intended that talks on health, hygiene and sanitation shall be regular features in the proposed new service and that adequate provision shall be made to insure the much wider distribution of the reports and recommendations of the several Health Organizations at present operating in Greece. Agricultural Bulletins would figure prominently in the new service providing much needed advice to agricultural workers on land fertilization, re-afforestation the prevention of land erosion and the rotation of crops. Furthermore, by the much wider distribution of reports on crop tendencies in different districts, and on current market prices for agricultural produce and cattle, a greater measure of price stability would be achieved to the advantage of both producer and consumer. By bringing the agricultural worker into closer and more intimate contact with the promoters of agricultural development schemes a more co-operative spirit would, we submit, be developed. The Greek Ministry of Agriculture and the Agricultural Division of E.C.A. Mission to Greece are both anxious to employ the Broadcast medium in aiding and publicizing their schemes to aid Agricultural Development in Greece. The full cooperation of the M.B.I. is assured if it is given the means to reach the listeners in the country districts. Equally, the proposed new service will insure the wide and instantaneous distribution of Government announcements dealing with any crisis or emergency situation that may arise. The advantage of the Broadcast medium in creating a sense of confidence and security, and so curbing any tendency towards panic or unjustifiable distress in cases of national emergency, has been amply demonstrated on many occasions and needs no further emphasis.

(continued)

Fifth, by close co-operation with the educational authorities in Greece, including those in ECA Mission, the National Broadcasting Institute intends to build up a comprehensive series of educational broadcasts. In augmenting, through the medium of the classroom loudspeaker, the meagre educational resources in the village schools an infinitely higher standard of education can be made available to village children. In the field of adult education talks on such diverse subjects as science, economics, art and music have already been introduced and it is intended to develop this side of educational broadcasting in the light of experience now being gained. The response has been encouraging and it is clear that, by the careful selection of speakers and by suitably adapting scripts for microphone presentation, a well developed broadcasting service can be of immeasurable value in contributing to the educational and cultural advancement of the remote and isolated sections of the Greek community.

Lastly, a well developed broadcasting service can play its part in Greece, as in other countries, by strengthening the ties between the Church and the people. By bringing the Gospel into the homes of the people it can provide consolation, hope and encouragement to the sick and infirm who are unable to make their devotions at Church. It can be equally effective in catching the ear of those who, by neglect of their early training, or by other circumstances, have lost touch with the teachings of Christ. Theological opinion throughout the Christian world is unanimous in the belief that, in strengthening the bonds of religious belief and in combatting the evils which face the world today, Broadcasting has a vital part to play.

In conclusion, the National Broadcasting Institute is fully conscious of its responsibility to the Greek people. It is equally confident of its ability to play a beneficial part in the life of the Nation if given the assistance it claims to deserve. It asks only that its claims shall be given just consideration in the light of the motives with which they are inspired. It seeks the help, goodwill and encouragement of those who, by their certain knowledge of the part played by well developed broadcasting services in other countries, cannot fail to recognize the justice of its demands in the interests of Greece.

C. Gigantes
Director General,
National Broadcasting Institute

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The basic requirements which, in our submission, must be satisfied to enable broadcasting to play its proper part in the life of the Nation, may be summarized as follows:

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Fourth, an efficient broadcasting service would play a vitally important part in furthering Government and other officially inspired schemes for improving the health of the nation; for aiding agriculture and for maintaining price stability. Thus, it is intended that talks on health, hygiene and sanitation shall be regular features in the proposed new service and that adequate provision shall be made to insure the much wider distribution of the reports and recommendations of the several Health Organizations at present operating in Greece. Agricultural Bulletins would figure prominently in the new service providing much needed advice to agricultural workers on land fertilisation, re-afforestation, the prevention of land erosion and the rotation of crops. Furthermore, by the much wider distribution of reports on crop tendencies in different districts, and on current market prices for agricultural produce and cattle, a greater measure of price stability would be achieved to the advantage of both producer and consumer. By bringing the agricultural worker into closer and more intimate contact with the promoters of agricultural development schemes a more co-operative spirit would, we submit, be developed. The Greek Ministry of Agriculture and the Agricultural Division of E.O.A. Mission to Greece are both anxious to employ the Broadcast medium in aiding and publicising their schemes to aid Agricultural Development in Greece. The full cooperation of the M.B.I. is assured if it is given the means to reach the listeners in the country districts. Equally, the proposed new service will insure the wide and instantaneous distribution of Government announcements dealing with any crisis or emergency situation that may arise. The advantage of the Broadcast medium in creating a sense of confidence and security, and so curbing any tendency towards panic or unjustifiable distress in cases of national emergency, has been amply demonstrated on many occasions and needs no further emphasis.

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C. Gigantes
Director General,
National Broadcasting Institute

Appendix 2

London

8th June, 1950

Dear General Gigantes,

This is in the nature of an interim report covering my contact with radio manufacturers in Italy.

Firstly, I would advise you that there are only two firms in Italy who manufacture radio transmitters namely, Magneti Marelli Fabbrica Italiana and Marconi Societa Industriale. Other Italian firms who previously manufactured radio transmitters are now out of business.

The two firms mentioned above each received me with courtesy and displayed considerable interest in my enquiries on your behalf. Both firms are very anxious to receive orders for radio equipment for Greece, and there is no doubt whatsoever that their offers will be on a strictly competitive basis. Also, they understand fully that the firm which is able to offer the best delivery dates will be in the most favourable position to secure orders.

From my conversation with these two firms it seemed likely that Marconi Societa Industriale would be able to offer the best delivery of a high-power transmitter and they expressed the hope, subject to confirmation, that they would be able to offer a 150 KW Transmitter for delivery to Greece docks in ten months from the date of placing the order.

Both of these Italian firms are building 150 KW medium wave transmitters, and will offer transmitters of this power complete with masts, aerials and power generating plant. They will also offer 5 KW transmitters complete with masts, aerials and power generating equipment.

In order to ensure that both competing firms will submit their offers on the same basis of tendering, I prepared and presented to each firm a statement indicating the form in which the offers should be submitted. A copy of this statement is enclosed herewith, and it will be soon that it subdivides the complete installation under separate headings and calls for separate offers for the different parts of the installation. Each firm has promised to submit its offers, quoting prices within a fixed margin and guaranteed delivery dates, not later than 15th June. This should make possible the placing of an order by 1st July on the basis of the provisional offer. The final price would then be adjusted at a later date within the limits of the margin stated in the offer and after close examination of the detailed specification. This would appear to me to be a safe and reasonable procedure which would make possible the placing of an order by 1st July without first following the complicated and lengthy process of preparing and examining detailed specifications.

Having had a few days rest at the end of my journey, I am now about to open discussions with the B.B.C. relative to the supply of studio equipment and low power transmitters, and also to make arrangements to visit the Telefunken people in Berlin.

With my kind regards,

Yours sincerely,
(H.F. Humphreys)

General Gigantes C.B.E., D.S.O.,
Ethinikon Idryma Radiofonias,
Odos Righillis 4,
Athens, Greece.

Appendix 3

London, W.1

17th June 1950

Dear General Gigantes,

I have now received copies of the Marconi-S.I.A. and the Magneti Marelli offers, and I understand that the originals have already been sent direct to you.

It is noted that the Magneti Marelli Co. offer a 100 KW. transmitter and a 150 KW. transmitter, whereas the Marconi-S.I.A. offer a 150 KW. transmitter only.

As you know, I have always strongly supported the argument in favor of a 150 KW transmitter for Athens and am firmly of the opinion that a transmitter of this power would represent the most valuable contribution to the development of the Greek Broadcasting Service. It would, undoubtedly, provide that factor of safety and ensure a reliable service to many parts of Greece, which could not be guaranteed with a transmitter of less than 150 KW.

In considering the cost of a 150 KW. transmitter by comparison with one of 100 KW. I would urge that the cost of buildings and other services be taken into account. Although the cost of a 100 KW. transmitter and associated equipment is somewhat lower than that of 150 KW. it will be found that when the cost of buildings, land and other services is taken into account the difference in total cost is much less than would at first appear and that the 150 KW. transmitter becomes the more attractive proposition in terms of overall cost and greater service area. In considering all the factors involved, including that of interference from transmitters operating in other countries, I have no hesitation in recommending that every endeavor should be made to secure the financial approval and assistance necessary to provide for a 150 KW. transmitter at this stage of development.

I have carefully examined the two offers for a 150 KW. transmitter and I enclose herewith a statement comparing the Marconi-S.I.A. offer with that of Magneti-Marelli. From this comparison it is evident that the Marconi-S.I.A. offer is the more attractive, and is nearly \$10,000 lower than the Magneti Marelli offer. Furthermore, the power plant offered by Marconi-S.I.A. is much more suited to our requirements than is that offered by Magneti Marelli. Added to this advantage in favor of the Marconi-S.I.A. offer it must be said that Marconi-S.I.A. transmitters display many features of design, manufacture, reliability and simplicity of operation which give them a higher merit index by comparison with transmitters manufactured by Magneti Marelli. This is the opinion shared by Mr. Aslanidis and myself after inspecting transmitters of Marconi-S.I.A. and Magneti Marelli manufacture actually in service, and in course of construction, in Italy. The superiority of the Marconi-S.I.A. transmitter is, of course, easily explained by the vastly greater technical resources and the much longer experience of this Company in the design and construction of radio transmitters by comparison with the Magneti Marelli Company.

With kind regards,

Yours sincerely
(H.F. Humphreys)

General C. Gigantes, C.B.E., D.S.O.
Ethnikon Idryma Radiofonias
Odos Righillis 4
Athens, Greece.

COMPARISON OF PRICES

for

150 k.w. TRANSMITTERS AND ASSOCIATED EQUIPMENT

as offered by

MARCONI-S.I.A. AND MAGNETI MARELLI

(1) 150 k.w. Transmitters:

The Marconi Transmitter is priced at \$244,838 and is thus \$29,162 cheaper than the Magneti Marcelli Transmitter at \$274,000. From the specifications submitted, and also from the writer's recent inspection of transmitters manufactured by these two companies, the Transmitter offered by the Marconi-S.I.A. would appear to be the superior product. This opinion is shared by Mr. Aslanidis who has also recently inspected Marconi-S.I.A. and Magneti Marcelli Transmitters in Italy.

(2) Two sets of Spare Valves:

The Marconi offer of two complete sets of spare valves at \$31,161 is \$3,591 lower than the Magneti Marcelli offer at \$34,752. The Marconi-S.I.A. valve guarantee and credit system conforms to generally accepted practice. The Magneti Marcelli valve guarantee and credit system has not been notified to the writer.

(3) Spare Parts for Transmitter:

The spare parts listed in Section 10 of the Marconi-S.I.A. offer are on a generous scale and the price quoted, namely, \$34,355 appears reasonable. Nevertheless, this price is considerably in excess of the Magneti-Marcelli offer of one set of spare parts for \$9,100, but a direct comparison cannot be made because the Magneti Marcelli Company has not listed its spares in its communication to the writer.

(4) Test and Measuring Equipment:

The test and measuring equipment offered by Marconi-S.I.A., and as detailed in Section 11 of their offer, is considered to be low-priced at \$7,258. The Magneti Marcelli Company has not offered similar equipment and therefore no comparison of prices can be made.

(5) Power Plant and Switchgear:

The Power Plant offered by Marconi-S.I.A. at \$134,475 is more highly priced than that offered by Magneti Marcelli at \$97,430. Nevertheless it is important to note that the Marconi-S.I.A. offer is for four 192 KW sets totalling 768 KW whereas the Magneti Marcelli offer is for one 700 KW set. Clearly, the provision of four 192 KW sets represents a considerable advantage in terms of flexibility, maintenance and overall reliability as compared with one 700 KW set. In fact, it must be said that one 700 KW set is totally unsuitable for the purpose in question, having regard to the load and the normal hours of running. On the other hand, the Marconi-S.I.A. offer of four 192 KW sets represents an ideal arrangement in the sense that it makes adequate provision for maintenance and increased reliability by always having one set in reserve. This is essential if it is intended to rely entirely on local diesel generators for a power supply.

(continued)

(6) Mast Radiator and Earth System:

These two items as offered by Marconi-S.I.A. total \$46,693. Similar items offered by Magneti Marelli total \$51,520. While the Marconi-S.I.A. offer does not provide for aircraft warning lights, this omission does not account for the difference of \$4,827 in the two offers.

(7) Unbalanced Feeder, Matching Circuits and Test Load:

The Marconi-S.I.A. offers these three items for a total of \$30,484. The Magneti Marelli Company offers the unbalanced feeder and the matching circuits only, i.e. without the test load for \$8,800. Therefore the Marconi-S.I.A. offer is by far the most attractive, as the provision of a test load is most desirable.

(8) Installation Charges:

Marconi-S.I.A. quote a man-day rate for erection and supervision, and estimate that the total charge for the installation of Transmitter, Mast Radiator, Transmission Line and Power Plant will amount to approximately \$49,322. The Magneti Marelli Company quote fixed prices for installation, namely, Transmitter = \$32,000; Aerial etc. = \$14,000 and Power Plant = \$3,400, which totals \$49,400. Thus, on the basis of the Marconi-S.I.A. estimate, this Company's installation charges are \$9,078 lower than those of the Magneti Marelli Co.

(9) Delivery to Docks:

The Magneti Marelli Co. offer delivery to Docks within 18 months, whereas Marconi-S.I.A. offer delivery to docks within 12 months.

Installation and Erection:

Marconi-S.I.A. allow "nearly five months" to complete installation and erection on site whereas Magneti Marelli specify 160 days or just over five months.

Overall Comparison of Offers:

In making an overall comparison of the two offers it is fair to delete the items for Spare Parts and for Test and Measuring Equipment. The former because the Marconi-S.I.A. suggested list of spares is obviously on a much more generous scale than that of Magneti Marelli. The latter because the Magneti Marelli do not include Test and Measuring Equipment in their offer. Therefore an overall comparison can fairly be made on the following basis, although it should be remembered that the Magneti Marelli power plant, as specified, does not in fact meet the requirements of the scheme due to reasons previously explained.

<u>Item</u>	<u>Marconi price</u>	<u>Magneti Marelli price</u>
150 KW Transmitter	244,838	274,000
Spare valves	31,161	34,752
Power Plant and Switchgear	134,475	97,430
Mast Radiator and Earth	46,693	51,520
Feeder, Matching Circuits and Test Load ϕ	10,484	8,800
Installation charges	40,322	49,400
Athens Agents' fees 3%	507,973	515,902
Athens Agents' fees 3%	-	1,547
	<u>\$507,973</u>	<u>\$517,449</u>

ϕ Test Load not included in Magneti Marelli offer.

Appendix 4

Report of General Leschi, Director of the French Technical Broadcasting and Television Services, Concerning the equipment of Greece with Broad- cast-wave plants.

I came to Athens, at the request of General Gigantes, General Director of the Hellenic Broadcasting. I proceeded to make a number of verifications with reference to the present state of the Hellenic Broadcasting network and the proposals for its improvement.

I proceeded afterwards to a general study, the results of which are recorded below:

1. Actual state of network.

A. Transmitters. The present network of Broadcast Transmitters in Greece is absolutely insufficient. The transmitters, four in number, with a total power of slightly above 17 kws, are the following:

ATHENS	15 Kws	728 Kcs	(412 n.)
SALONIKA	2 "	1043 "	(287,9 n.)
PATRAS	0,2 "	1511 "	(198 n.)
VOLOS	0,1 "	1484 "	(202 n.)

This network must be compared with that authorized for Greece by the Copenhagen Scheme (total power 185 Kws), as follows:

ATHENS	100 Kws	728 Kcs
SALONIKA	30 "	791 "
KALAMATA	5 "	1043 "
CORFU	15 "	1196 "
HEROES	5 "	1394 "
KONSTANTIN	5 "	1403 "
CANEA	5 "	1511 "

To the above transmitters may be added the transmitters of low power operating on one of the two international common waves provided by the Scheme i.e. 1484 Kcs and 1594 kcs. After taking into account the fact that the Salonika transmitter, 791 Kcs, is permanently operated as a radio relay of "The Voice of America", we verify that the existing network of the Hellenic Broadcasting on Medium waves is far below the requirements and it is of the utmost urgency that it should be considerably reinforced.

B. Short wave transmitters. We shall not comment on this item, which exceeds the scope of the present report.

C. Studios: means of production. We visited the low-frequency plants at Athens, Salonika and Patras and we were struck by their extreme scantiness.

a) At Athens the studios are accommodated in a building unfit for this purpose. On account of this fact and in spite of a certain amount of basic acoustic treatment these studios do not possess the required characteristics of a modern studio to be utilized for the broadcasting of light music, symphonic music, chamber music etc., in accordance with the scientific requirements of modern architectural acoustic treatment.

The disc reproducing equipment is old and very few recording facilities exist. One ventures to say that the broadcasting installation of Athens is twenty years behind in providing the technical facilities required today.

(continued)

There exists at Athens one magnetophone (EMI) (which is on loan to the Broadcasting Institute) but its use is as at present restricted, because there exists only seven magnetic tapes.

b) At Salonika the fittings are even more incomplete. A circular hall with no acoustic treatment serves as studio, capable of accommodating 20 musicians. The control cubicle, whose equipment is extremely poor, has no visual communication with the studio.

c) At Patras, the studio is better adapted to the productions there performed. As in the case of the other studios, technical equipment is urgently required. Those existing are old and obsolescent.

II. How to establish a coherent network of transmitters?

The problem to solve is to provide for the majority of the listeners of the Greek Country (Islands included) the correct standard of reception, both by day and by night, of the National Programme.

The Greek country is extremely mountainous and the ground is generally of a very low conductivity. It is therefore necessary to erect transmitters of maximum power, and on the lowest possible frequency, at carefully selected locations. This requirement was well understood by the conference at Copenhagen, which provided for this country in particular:

The excellent exclusive frequency (clear channel) of 726 Kcs. for the Athens Transmitter

The frequency (shared with Rennes-France) of 791 Kcs. for Salonika Transmitter.

This last frequency, being permanently employed by the radio relay "The Voice of America", constitutes a serious handicap to the development of a Greek Radio network and must be replaced at Salonika by a higher frequency and lower power with consequently lesser efficiency and a much shorter range.

A. Athens. The scheme provides a 100 Kw Station operating on the exclusive frequency of 726 Kcs. It is the minimum power, which may and must be increased to the 150 Kw. without any prejudice to the international Juridical Scheme.

Indeed, although article 2 of the Copenhagen Agreement indicates that the power of the Stations designated is the maximum power of the Broadcasting Station in the European area for the period of the validity of the Scheme, the same article indicates that the power specified in the Scheme may be modified after a previous agreement between the interested Administrations and under the condition that evidence based on measurements shows that this modification is useful and necessary.

In the above mentioned case this power increase is useful and necessary. On account of the central geographical location of Athens we cannot consider increasing radiated power in a particular direction by using directional antenna arrays, as in the case of V.O.I. Salonika for example, where the apparent power of the transmitter is sensibly multiplied by 4 in the favoured direction, while in the opposite direction it is simultaneously divided by 4.

As in this case we are concerned with an exclusive frequency the only interested administrations are those whose transmitters are working on the adjacent channels of 719 Kcs and 737 Kcs. These Administrations are noted as follows:

(continued)

- a) Channel 719 Kcs. Portugal (Lisbon National: 120 Kws.)
(Syria Damascus: 50 Kws.)
- b) Channel 737 Kcs. Spain (Sevilla: 50 Kcs.)
Palestine (Jerusalem: 20 Kws.)
Poland (Gliwice: 50 Kws.)

Among the above countries, Syria, Spain and Palestine have not adopted the Copenhagen Plan. It is therefore sufficient for the legal increase in power of the Athens transmitter to the 150 Kws. to notify and obtain the agreement of the Administrations of Portugal and Poland according to the procedure provided by Article 8 of the Copenhagen Agreement.

As a matter of fact this Agreement presents no difficulty because the possible interference areas lie outside the national soils of the interested countries.

The area served at day-time by a transmitter of 150 Kws erected in the neighborhood of Athens (Minimum field 2mV/m) and operating on the 728 Kcs. frequency, is roughly indicated on the joint map (red line). This line is determined on one hand by calculation and on the other hand by the extrapolation of a certain number of measurements performed on the ground by the Greek Technical Broadcasting Service. It shows that the whole of the Hellenic territory is far from being conveniently covered by only one transmitter of 150 Kws. erected in Athens. A 100 Kws. transmitter would result in a reduced diagram by more than 30% in surface and a 70 Kws transmitter by a reduced diagram of more than 50% in surface, which is inadmissible.

B. Salamina. On account of the utilization by the radio relay "The Voice of America" of the frequency 791 Kcs. on a 50 Kws. transmitter, the Greek Broadcasting network must be provisionally content with a 5 Kws transmitter on 1403 Kcs. the frequency provided for Kalamata. It is, indeed, needless to serve this last town by a special transmitter if the Athens transmitter radiates with a power of 150 Kws.

Later, if the 791 Kcs. frequency is returned together with the 50 Kws. Transmitter to the Hellenic Broadcasting, this transmitter will provide a valuable contribution to the programme service in the north of the country and will augment the Athens Service in those areas within the night fading zone of the Athens transmitter.

C. Konotini. A 5 Kws. transmitter (provided in the Copenhagen Scheme) operating on the 1403 Kcs. frequency is suitable for this area.

D. Karlyra (Corfu). The Copenhagen Scheme provides a 15 Kws. station operating on the 1196 Kcs. frequency shared with a 70 Kws. transmitter of West Germany (French zone) and a synchronized 60 Kws. network operating in Morocco.

By means of the erection of a directional antenna-array, keeping the apparent power (at a value not exceeding 15 Kws in the two directions where it is necessary to provide protection) the minimal power of this transmitter may be increased to 50 Kws, which will provide a suitable service for the Ionian Islands and the West of Greece.

E. Rhodes. A Kws. transmitter (provided in the Copenhagen Scheme) operating on the 1394 Kcs. frequency is suitable for this region both for technical reasons and for political-sentimental reasons.

(continued)

G. Cazen. A 5 Kws. transmitter (provided in the Copenhagen Scheme) operating on the 1511 Kcs. frequency is barely necessary for technical reasons but it seems that sentimental reasons demand its creation.

H. Eventual Broadcasting of a second program at Athens and Regional Broadcasting.

The above denoted network (A to G) embraces the transmitters:

	150 Kws.	728 Kcs.
ATHENS		
SALONIKA	5 "	1043 "
KONOTINI	5 "	1403 "
KERKYRA	50 "	(directional antenna) 1196 Kcs.
RHODES	5 "	1394 Kcs.
CANEA	5 "	1511 "

To these are to be eventually added transmitters of low power on common waves, allocated for Broadcasting over the Hellenic territory transmitting a second program originating at Athens. The above transmitters should be connected with the studio at Athens by means of radiocircuits (special telephonic cables with large bandwidth) to be provided in the telephonic equipment schemes for Greece. These circuits as in the other countries, should be routed by the Broadcasting Service from the Administration of P.T.T.

If the question subsequently arises of a second program at Athens with a local character, this service could be provided by means of the existing 15 Kws. transmitter. As for this purpose no frequency is available operation could be on 1403 Kcs., this frequency being obtained, by synchronizing the Salonika and Konotini transmitters on 1043 Kcs.

But this solution is not an orthodox one, indeed if Athens II operated on 1403 Kcs. with a power of 15 Kws. instead of 5 Kws. as provided for Konotini by the Copenhagen Scheme, it would cause interference with the French synchronized network and with the Russian station Boranovitchi (Bielorussia) using the same frequency. Moreover, by the synchronization of the stations Salonika and Konotini their range would be diminished.

A better solution will consist in Broadcasting this second program by means of a weak power transmitter, installed in the centre of the City, and operating on an international common wave.

As regards the regional broadcasting in the other towns this may be achieved during certain hours by detaching the transmitters from the Athens network.

I. Eventual employment of an existing 70 Kws. amplifier made by Telefunken

The existence of this 70 Kws amplifier was made known to me and at the same time the general characteristics were indicated.

I shall avoid to recommend the use of this amplifier at Athens for the following reasons:

- 1) It constitutes an out of date stock fabricated by the Germans at the beginning of the war and is still in cases. It would require coupling with the existing 15 Kws transmitter. Also, it is of old design and now becoming obsolescent. The assembly would form a transmitter of inefficient power, and of low efficiency with high working expenses.

(continued)

2) On account of the urgency to equip Athens with a powerful transmitter, it would be senseless to subordinate this requirement to the solution of technical and juridical complicated problems relating to the 70 Kws. amplifier.

3) This transmitter would provide a very insufficient service. If it is proved that the parts in stock are still technically suitable I would advise to the Hellenic Broadcasting Service:

- a) to put the transmitter into operation by obtaining the necessary driving stages, thus completing the transmitter.
- b) to install it as auxiliary transmitter at one of the stations Athens, Corfu or, later, at Salonika. In this function the transmitter in question will not work not so often or so long. Its bad efficiency and its higher working expenses would be of lesser importance. It is better, indeed, to possess a bad auxiliary transmitter than to be deprived of it altogether.

II. Low-frequency installations: Studios

While the transmitters are to be located in a way to secure to the whole of the listeners the best possible distribution of the electromagnetic field, the studios must be established in the towns, where it is easy to find rooms of production (artists, orchestras, folklore etc.).

These towns will be essentially: Athens and Salonika, where "Broadcasting Houses" must be provided. Also in other towns to be determined in relation to their local needs.

All these studios must be connected with the "Broadcasting House" of Athens by means of radio-circuits similar to those referred to above for the transmitters.

A demand will develop for the greatly extended application of the recording technique (discs or preferably, magnetophones) which are almost non-existing at the present time.

In anticipation of the development of premises and studios, it is very urgent to provide the Hellenic Broadcasting with some recording devices (magnetophones) fixed and portable.

III. Personal

An important question, to be taken always into account, is the quality of the technical personnel (engineers, transmitter technicians; studio technicians, sound engineers) necessary for the establishment and maintenance of a modern broadcasting system. It is very urgent that the Hellenic Broadcasting Service begin the recruitment of suitably qualified technical personnel and for their practical training by attachment to foreign broadcasting organizations with modern equipment.

IV. Conclusions

Reaching the end of my report (which concentrates on the need for transmitters and will be understood by the reader), I close it in asserting:

1) that an Hellenic Broadcasting quality network for medium waves must have as a central distribution point the erection of a 150 Kws transmitter at Athens. And this erection is urgent.

(continued)

2) that the network must include a transmitter of 50 Kws nominal power at Corfu with directional antenna-array protecting West Germany and Morocco. This transmitter can be the Western 50 Kws transmitter, now being erected at Athens, which can be transferred to Corfu when the 150 Kws transmitter is in service.

3) besides that, it will eventually embrace a 50 Kws transmitter at Salonika. But as this is utilized at present for the radio relay "the Voice of America" it is important to replace it provisionally by a 5 Kws transmitter.

4) it must also embrace 5 Kws transmitters at Komotini, Rhodes and Casan. Thus the 5 Kws transmitters will be four in number. When the entire system is in service it will probably be found that some principal towns have had reception. It will then be necessary to install in these towns transmitter of low power operating on an international common wave.

5) the existing 70 Kws Telefunken amplifier may be utilized only as an auxiliary transmitter, provided it can be completed and put in working order.

6) an urgent need is the construction of buildings and studios at least at Athens and Salonika. In the other towns the installations will be more simple but with modern equipment.

7) the studios and the transmitters must be connected together by means of a program distribution telephone exchange located in the Radio Building at Athens, employing circuits to be provided when the telephonic system of the country is completed.

8) in anticipation of all these developments, which must be suitably timed by giving priority to the transmitters, it is urgent to provide the Hellenic Broadcasting Service with studio-equipment, and particularly recording facilities (fixed and portable) which will enable the Service to improve immediately its production. The recruitment of technical personnel and their practical training is urgently recommended.

The project which is covered by the present report can be carried out in stages over a period which should not exceed eight years. It will provide Greece with a broadcasting system suitable for the education and instruction of the people of this wonderful country for their greatest benefit and that of humanity.

Athens, October 15th 1950

APPENDIX 3

THE I.T.U.T. ADVISERS COMMENTS ON
THE LESCHI REPORT

Primarily we agree with General Leschi that the network in Greece is insufficient and we agree that in order to perform a national service, it will require expansion. We do not agree however that the required expansion is a 150KW transmitter in Athens nor the 50KW transmitter in Corfu.

Taking the report, section by section we comment as follows:

- Section I.A. The Copenhagen plan is more than adequate. You will note that the General's recommendations in Section II.A. and II.H. exceed the Copenhagen Plan.
- " I.C. We agree that the audio studio equipment is scanty and inadequate.
- " II.A. The recommended increase from the 100KW (Copenhagen Plan) to the proposed 150KW will have very little effect on the received signal in most locations. The received power at a given distance is not in direct proportion to the power radiated from the transmitter and an increase of 50% (from 100KW to 150KW) results only in a very negligible increase at the receiver. This technical consideration is apart from the economic considerations referred to later in these Remarks.
- " II.B. The 50KW VOA transmitter in Salonika is eventually, according to our understanding, to be turned over to the Greek Government. So we agree that 50KW would be adequate provisionally. In any event the VOA station furnishes the Salonika area with programs equal to if not better than the NEI efforts.
- " II.C. We agree.
- " II.D. The Copenhagen Plan of 15KW is adequate. The proposal to increase this to 50KW with suppressed radiation to the areas operating on the same frequency is expensive and not good technique.
- " II.E. We agree See G. below.
- " II.F. (Missing paragraph)
- " II.G. We agree with the Copenhagen Plan but have other suggestions for the problem of E and G.
- " II.H. A second program is not necessary. With the Greek Army Welfare stations operating their own service Athens is adequately covered. A second service can be considered if ever the Army releases its stations or the Greek economy can stand it.
- " We definitely agree that the network should be tied together with broad band telephone circuits and that all national programs, except special out-of-town events, should originate in the Athens studios, also that regional stations could be detached from the network for local programs.

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Section II. I. The whole basis of the program of NBI is that they want new equipment. If the present 15KW transmitter and the studio equipment had been maintained in any kind of reasonable condition there would be no need to replace it. Station WJZ in New York WGY Schenectady WJZ, WOR and many others in the U.S. are much older than the Athens station and are still in good condition. The Athens equipment was installed about 12 years ago and should have a useful life of another 8 years. The amplifier equipment mentioned is still in its original unused condition and should be used before any consideration is given to new equipment.

Second Section II. Studios. We agree that modern studios and transcription equipment is necessary to complete the national network.

Section III. Personnel. We agree that the Personnel needs a deal of training. It should not be necessary, however, to send them abroad for training in work they claimed to be able to do when they were hired. There is nothing new in AM Broadcasting technique and the advisers that have been at NBI for the last five years should have been able to do something about education. Even the art of programming can be studied in Greece. Let the Program staff listen to some foreign broadcasts for a while and they should quickly learn what to do and what not to do. Many good books have been written in many languages on these subjects.

General:

Apart from the technical consideration involved and the argument pro and con regarding the needs of the broadcasting service and how they should be met, we are faced with the inexorable fact that Greece needs many many things more than she needs high power radio broadcast equipment. If it is 'Aid' money that is involved we feel the Mission would not be justified in approving such a program. If it is funds of the NBI or of the Government the same reasoning applies, namely conservation of foreign exchange to permit the acquisition of the more necessary things first.

The amount of money involved in this proposed program is tremendous, not only the first cost of the equipment must be considered (about 2 million dollars) but acquisition and clearing of sites, erection of buildings and facilities for housing the stations and studios, the construction of new power lines, (in Athens alone, granting the erection of the 15KW station at Megara as proposed by NBI, about 20 kilometers of 300 KVA power line would be required.) Add to this the payroll cost of personnel that would be needed; studio and station technicians, program staff, administration staff, security staff etc. and the maintenance costs which would be terrific based on present conditions of non-maintenance, and we have a situation in which ten million dollars in foreign exchange and drachmas equivalent would only be a drop in the bucket.

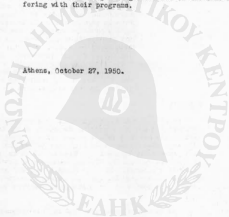
We repeat that the NBI should show its ability to maintain its present equipment, restore it to proper condition and efficiency, determine positively the condition of the so far unpacked components of the 70KW amplifier and, if advisable, install it and connect it to the existing 15KW driver unit, install the new gift 50KW at Corfu or Heraklion with reflectors to serve the

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Dodecanese, Aegean Islands and Southern Peloponese, and then demonstrate its ability to program before submitting such expensive proposals as the one under comment here.

A more reasonable solution and one more in line with modern technique, provided however, and only if, sufficient funds are available and not required elsewhere, would be to take approximately a million dollars and erect about 30 Frequency Modulation stations, judiciously located through the country and tied through the national telephone network to the Athens and Salonika studios and standard frequency stations. Another few hundred thousand dollars used to subsidize the importation of FM receiver components to start an assembly business (until it could stand alone) would make the total cost much less than the proposed plan and would give Greece a real modern efficient system and one in which they would not worry about neighboring countries on the same frequencies interfering with their programs.

Athens, October 27, 1950.



APPENDIX C

N.B.I. COMMENTS AGAINST

the

MEMORANDUM FROM THE I.T. & T. ADVISERS

The following comments are made point by point against the itemised remarks contained in the copy of the I.T. & T. Advisers Memorandum forwarded with Mr. McCauley's Memorandum of 6th November 1950.

Section 1.A. The expressed opinion that the Copenhagen Plan is "more than adequate" to meet the requirements of Greek Broadcasting, conflicts with the opinions of the technical experts of the 27 European Countries who were signatories to the Copenhagen Convention. It is submitted that these experts, with their intimate knowledge of the problems of European broadcasting, are better qualified to determine the minimum requirements of Greece than are the I.T. & T. Advisers and would be strongly disinclined to agree facilities in excess of the minimum requirements. The I.T. & T. Advisers statement that General Leschi's recommendations exceed the Copenhagen Plan is not strictly accurate. The Copenhagen Convention makes adequate provision for modifications in power and location of transmitters, of the kind visualized by the N.B.I., within the framework of the original Plan. On the other hand, the I.T. & T. proposal to install a 50 kw Transmitter at Crete ~~does~~ exceed the provisions of the Copenhagen Plan. Therefore the I.T. & T. Advisers are contradicting their own argument.

Section 1.C. It is gratifying to note that the I.T. & T. Advisers agree that the existing Studio equipment is scanty and inadequate.

Section 11.A. The Technical Staff of the National Broadcasting Institute and its Technical Advisers, are fully conversant with the principles of radio propagation and are well qualified to calculate with accuracy the signal strength from a 150 kw Transmitter by comparison with that from a 100 kw Transmitter. The technical considerations which establish the case for a 150 kw National Transmitter for Greece are precisely the same as those which establish the case for 150 kw Transmitters (and higher powers) for other European countries and for the W.G.A. Transmitter in Germany. The so-called "negligible" increase at the receiver resulting from a 50% increase in radiated power is of considerable value when the receiver is on the fringe of the ground wave service area. In such cases the 50% increase in radiated power can be fully justified on both technical and economic arguments. It is not unusual for American radio technicians to criticize the employment of high power transmitters in Europe. This is because the problems of medium wave broadcasting in America are totally different to those in Europe and can be satisfied by transmitters of a power not exceeding 50 kw. American technicians who have studied the European problem fully recognize the need for high power transmitters in Europe.

Section 11.B. In the absence of any assurance that the 50 kw VOA transmitter at Salonika will be handed over to the Greek government at some predetermined date, the N.B.I. is obviously unable to take this transmitter seriously into account in either its short or long term planning. The I.T. & T. Advisers are obviously misinformed and deluded when they assert that the VOA transmitter furnishes the Salonika area with programmes equal to, if not better than, the N.B.I. programmes. This downright distortion of facts on the part of supposedly responsible persons is deplorable. Unless, of course, the I.T. & T. Advisers really believe that a medley of Balkan languages broadcasts between the peak listening hours of 7 to 11 p.m. amuse or interest the Salonika listeners!

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Section 11.C. Agreement noted.

Section 11.D. In disagreeing the proposal to install a 50 kw Transmitter and directional aerial at Kerkyra, the I.T. & T. Advisers have obviously failed to appreciate the essential requirements of the case or the technical arguments on which the proposal is based. In brief, the requirement is to extend as far as possible in a South-Easterly direction the service area of the Kerkyra Transmitter in order to compensate, as far as possible, for the loss to Greek Broadcasting of the channel (791 kc/s - 50 kw) used by the VOA Transmitter at Salonika. Clearly, a 15 kw Transmitter and omni-directional aerial at Kerkyra could not meet this requirement. To describe as "not good technique" the employment of a directional aerial, to provide both forward gain and backward protection, is to condemn a practice used extensively and successfully by the leading broadcasting organizations in the world, including those of the U.S.A. It is, in fact, the system employed at the VOA transmitter at Salonika. This harmful and irresponsible criticism by the I.T. & T. Advisers of proved and accepted scientific methods, can only reflect grave discredit on their professional ability or on their impartiality. It is agreed that a directional aerial system is more expensive than an omni-directional aerial, but the proposal is essentially the product of a policy which has been forced on the N.B.I. as a direct result of the use by the VOA Transmitter at Salonika of a valuable channel allocated to Greek Broadcasting.

Section 11.E. Noted

Section 11.F. Noted

Section 11.G. Noted

Section 11.H. The I.T. & T. Advisers statement that a second programme is not necessary "because of the existence of Army Welfare stations operating their own service in Athens", betrays a poor sense of programme values and of programme organization. The programmes transmitted by the Army stations are specially adapted to the taste of Services personnel and cannot be regarded as providing a satisfactory alternative to the N.B.I. programme. Furthermore, the range of the Army Stations is very restricted and the technical quality of their transmissions is exceedingly low. The N.B.I. conception of an alternative programme is one which is co-related and suitably balanced with respect to the main programme. This can be achieved only by bringing programme organization and planning under one unified direction. In general, the balance would be between a National programme based on a more serious National appeal and including talks, news bulletins, educational broadcasts and other items of National interest, and a Regional or local programme in lighter and more topical vein, including items which provide suitable contrast with those in the National programme. No one with any sense of programme value would attempt to argue that the service provided by the Army Welfare stations fulfills this requirement.

The N.B.I. is glad to note Agreement that its network of stations should be tied together by broad band telephone circuits, but is not aware of any C.T.E. scheme which provides for early realization of this requirement. On the contrary, the C.T.E. scheme, as understood, falls far short of meeting this requirement and fails to conform to internationally accepted standards in this respect.

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Section 11.1 Once again the N.B.I. would be more readily disposed to take serious note of the I.T. & T. Advisers comments if they were based on plain facts instead of on irresponsible chatter. The childlike comparisons between stations WEAF, WGY, WJZ and WOR on the one hand, and Radio Athens on the other, would be of some small value if stations WEAF, WGY, WJZ and WOR had been subjected to the ravages and neglect imposed by enemy occupation, and if they had been isolated from world technical resources, for the same number of years as has Radio Athens. Certainly, we agree that the Radio Athens equipment (apart from that which, because of its design, fails to provide the facilities or performance demanded in present day broadcasting) should have a useful life of another eight years, or even longer. But this presupposes the supply of spare parts, replacement components and instruments which have undoubtedly been available to stations WEAF, WGY, WJZ and WOR but which, because of E.T.A. policy, have been denied to Radio Athens. Our comments concerning the use of the 70 kw Amplifier have already been given in detail in document No. 1 (Appendix 9.)

Second Section 11. Studios: Noted.

Section 11.1. Personnel: There would seem to be no doubt that the I.T. & T. Advisers criticism of the N.B.I. proposals to send certain selected staff for training with foreign broadcasting organizations conflicts with the general policy of the American Mission in regard to the need for overseas training for Greeks in certain categories. In fact, the N.B.I. has already been asked by the Director of U.S.I.E., who displays a more sympathetic and intelligent interest in Greek Broadcasting than do his I.T. & T. compatriots, to nominate two members of its staff for training in the U.S.A. Clearly, the case for sending abroad for training certain selected Greek Radio Engineers, Producers and Script writers does not differ from that for Greek Constructional Engineers, Doctors, Journalists and Administrators. In Greece all professional workers receive a good academic training, but this does not lessen the need for practical experience and personal contact with the methods and techniques employed by the more advanced countries and which cannot be gained in Greece. Professional workers engaged in Greek Broadcasting are no exception to this rule. The contention that Greek Programme staff can learn the art of broadcasting by listening to foreign stations is tantamount to saying that a student can learn to cook by tasting the dishes of a qualified chef or that an art student can learn to paint by looking at the works of a master. The I.T. & T. Advisers reference to "the advisers who have been at the N.B.I. for the last five years" again bears no relation to the truth. The N.B.I. has had only one adviser who has spent a total of twenty months in Greece.

General.

Paragraph 1. To the argument that Greece needs many many things more than she needs high power radio broadcasting equipment, we would reply that Greece needs an efficient broadcasting service, providing National coverage, much much more than she needs the large volume of essentially luxury goods and domestic appliances in evidence in Athens today. The notable difference is that broadcasting enters for the needs of all the people while luxury goods and luxury flats satisfy only the selfish instincts of the privileged few. The concept that there are more urgent requirements than a well conducted broadcasting service holds true only if it is conceded that the more urgent requirement can be satisfied and utilized to the greatest advantage without the aid of broadcasting. The National Broadcasting Institute does not hold this view. It believes that before Greece can enjoy the full benefits of foreign aid, and achieve full recovery, it must achieve a unity of thought, purpose and action among its widely scattered and isolated communities. Today, this unity is sadly lacking, but the N.B.I.

(continued)

believes it can be achieved through the medium of a well conducted National broadcasting service providing healthy entertainment, education and social and political enlightenment for all the people. This is the sole motive which inspires the N.B.I. in its persistent demands for facilities to enable it to improve its services by repairing the neglect and damage of the past eleven years.

Paragraph 2. The cost estimating ability of the I.T. & T. Advisers would appear to be no higher than their ability to ornament fairly and accurately on the technical considerations of Greek Broadcasting. Their estimate of ten million dollars in foreign exchange and drachmas equivalent as "only a drop in the bucket" towards the cost of carrying out the proposed programme of expansion is, of course, a gross exaggeration and distortion of facts. In any case, the I.T. & T. Advisers reference to drachmas expenditure for site clearance, buildings, personnel etc., etc., is irrelevant to the discussion, as these items would be financed from the N.B.I. capital reserves and revenue and are, therefore, a matter of N.B.I. domestic policy. We do not know the I.T. & T. Advisers source of information when they refer to Megara as the proposed site for the 150 kw Transmitter. We can only say that in this case, as in many others, their source of information is totally unreliable and out of date. It is true that Megara was once considered, among several other places, as a site for the Athens Transmitter, but the idea was abandoned many months ago. The site which is now favoured, provides for easy connection to an electric power supply and easy transport and communication with Athens.

Paragraph 3. We have previously commented against most of the points raised in this paragraph, but we would draw attention to the inconsistency of the I.T. & T. Advisers in recommending the use of a reflector at Crete while condemning the N.B.I. proposal to use one at Kerkira. The technical considerations of the two cases are strictly comparable. Therefore, the I.T. & T. Advisers cannot logically maintain their objection to the N.B.I. proposal in the face of their recommending the use of a directional aerial at Crete. This is the second time they have contradicted their own arguments.

Paragraph 4. Once again, the N.B.I. is strongly inclined to doubt the sincerity of purpose of the I.T. & T. Advisers in recommending as "a more reasonable solution" to the immediate problems of Greek Broadcasting a "network of about 20 F.M. Stations. Certainly, F.M. has strong claims to consideration as a system providing subsidiary coverage but, it is rejected as suitable for the main system of distribution for the following reasons:-

1. The suitability of the F.M. system as a means of providing complete broadcast coverage over a country such as Greece, has yet to be demonstrated. The balance of technical opinion at the present time is strongly against the suitability of the system for complete national coverage other than in small compact countries where the topography and population distribution conforms to a particular pattern. Commercial radio interests in the U.S.A. have attempted to impose the F.M. system on the listening public, but the results have been discouraging and F.M. stations are, in fact, being withdrawn from service. Great Britain and France have been experimenting with FM for a number of years, but propagation difficulties inherent in the system and revealed by extensive measurements in the field have caused those countries to hesitate before embarking on major F.M. distribution scheme. Germany has been compelled, with reluctance, to take more than a usual interest in F.M. as a main distribution system only because of its lack of medium wave facilities under the Copenhagen Plan.

(continued)

2. The topography of Greece, i.e., a mountainous mainland and mountainous islands separated by large distances, presents special difficulties in the way of providing complete broadcast coverage (as opposed to point to point communication) over the country. Considerations relating to topography, distribution of population, visual distance laws, screening and tropospheric reflections indicate that a network of 20 F.M. stations would fall a long way short of providing complete broadcast coverage over Greece. It is clear that in Greece, as in many other countries, medium wave distribution will remain for many years the most practical and the most economical method of providing complete broadcast coverage.
3. A network of 20 F.M. Stations or, according to our calculations, many more than this number would require an equally extensive network of broad band telephone links. At present these links do not exist and, according to our information, no provision has been made for such an extensive network under the G.T.E. Development Scheme.
4. The subsidization of a local industry to assemble imported F.M. receiver components may have its attractions from the purely commercial aspect, but it is clear that many years would elapse before F.M. receivers could be offered at a price within the purchasing power of the Greek workers. The cost of a F.M. receiver is at least double that of the popular medium wave receiver and this factor is considered as an added deterrent to the adoption of F.M. even in countries where the purchasing power of the workers exceeds by a fair margin that of the Greek workers. Furthermore, the large majority of the estimated 300,000 medium and short wave receivers at present in use in Greece would be totally unsuitable for modification for F.M. reception. In point of fact, a satisfactory "F.M. Adapter" for use with existing receivers has not yet been produced. Therefore, the bulk of the estimated 300,000 receivers in Greece would be useless for the reception of Greek Broadcasting if F.M. was adopted as the main system of distribution. The aim of the National Broadcasting Institute is to bring Greek Broadcasting into the homes of all the people -- not the privileged few.

In conclusion, the National Broadcasting Institute wishes again to express its profound dissatisfaction and indignation at the unwarranted criticism, irresponsible and distorted statements and complete lack of impartiality and understanding displayed in the I.T. & T. Advisers report. The accusations against the efficiency and ability of the E.B.I. technical personnel can be discounted for what they are worth, but the I.T. & T. Advisers unjustified criticism or almost complete disregard of the recommendations of a clearly recognised expert on broadcasting, in the person of General Leschi is inexcusable. The I.T. & T. Advisers have betrayed, beyond doubt, their complete lack of qualification to comment accurately and with impartiality on the technical needs of Greek Broadcasting. If the American Mission is compelled to rely on such unqualified and irresponsible comment in determining its attitude towards the legitimate claims of the Greek Broadcasting, the outlook is black indeed.

C. Gigantes
Director General
National Broadcasting Institute
Athens.

Appendix 7

Mr. McCaulley's Memorandum to Mr. Paul Jenkins

MEMORANDUM

To: Mr. Paul A. Jenkins, Deputy Chief of Mission
From: D.F. McCaulley, Construction Advisor, ECA.

1. SUBJECT: Report furnished by General Loschi, Director of Technical Services of French Broadcasting and Television for Additional Radio Broadcasting Equipment for the Greek National Broadcasting Institute.
2. SUMMARY STATEMENT OF THE PROBLEM.

The Greek National Broadcasting Institute has been attempting to expand its services to the Greek Nation for several years. The presentation of the expansion requested was made by the Minister of P.T.T. to the High Reconstruction Board under date of 11 April 1950. Additional facilities for the Institute have not been a part of the past Greek Government program and as far as can be ascertained are not a part of the present program. Requests for import licenses for additional equipment have been disapproved several times in the past by the Foreign Trade Administration, the latest disapproval being some time in August at which time it appears a contract had been signed by the N.B.I. for additional equipment prior to request for import licenses for foreign exchange. Facts relative to this are given in an exchange of cables between OGR and the Mission in September. It is my understanding that the import license was disapproved by the F.T.A. since it is not a specific item in the current import schedule or reconstruction program. It was believed that before any extensive additions were made to the present broadcasting facilities the opinion of an impartial expert relative to the proposed program should be obtained. The above report was submitted as a result of this advice.

3. RECOMMENDATIONS:

- (a) That the Mission encourage the Greek Government to maintain its previous stand as outlined in this memorandum consistent with its economic ability and that the following steps be taken by the N.B.I.
 1. Restore to proper condition and efficiency and show its ability to maintain the present equipment.
 2. Determine the condition of the 70 KW amplifier which has never been unpacked and if advisable connect it with the present broadcasting unit.
 3. Install the gift 50 KW unit on Crete to serve the Dodecanese and Aegean Islands and the Southern Peloponnese.
- (b) That foreign exchange funds be made available to N.B.I. for required maintenance parts and the necessary studio and transcription equipment.

(continued)

4. DISCUSSION:

In general it is agreed that the broadcasting facilities of Greece are insufficient and that in order to perform a national service expansion is required. However, the program proposed in the report is quite elaborate and is in excess of that permitted by the Copenhagen plan. Much can be done with the present equipment which has not been done in the past, and it is believed that this should be used to its maximum capacity prior to embarking on any elaborate expenditures.

The program proposed requires the expenditure of a very large sum of money. A rough estimate indicates that the first cost of equipment will be about \$2,000,000. Additional costs include the acquisition of land, clearing of the acquired sites, erection of building for housing the studios and stations, construction of new power lines, additional studio and station technicians, additional programming staff, administration staff, and a security staff, all of which involve the expenditure of millions of dollars. In addition the lack of maintenance, evident with the present equipment, would inevitably lead to high maintenance costs.

Attached is a copy of a memorandum from the I.T. & T. Advisors employed by the O.T.E. which has been concurred in by Colonel J.V. Mills, JUSMAG, Technical Advisor to the Mission, which takes issue in several important cases with General Lenczi's report. In the last paragraph is an interesting alternative solution to Greece's problem.

Appendix B

N.B.I. COMMENTS AGAINST THE

MEMORANDUM DATED 6TH NOVEMBER, 1950

FROM MR. D.F. MCCAULEY TO MR. PAUL A. JENKINS

The following comments are made point by point against the numbered sub-headings contained in the Memorandum referred to above.

1. Subject: No comment.

2. Summary Statement of Problem:

In its attempts to expend its services to the Greek Nation the National Broadcasting Institute has been inspired by the belief that a well conducted broadcasting service, providing complete coverage over the Greek Mainland and Islands, would, with the help of Foreign Missions and Advisors, contribute substantially to the reconstruction of Greece by bringing about a unity of thought, purpose and action unattainable by any other medium or process. Therefore, the N.B.I. considers as both regrettable and short-sighted the fact that additional facilities for the Institute have not been a part of the Greek Reconstruction Programme in the past and are not a part of the present programme.

In its refusal to issue import licenses for additional equipment, including vital spare parts, the F.T.A. has not only made it impossible for the Institute to expand and improve its services but, of equally serious consequence, has made it impossible for the Institute to maintain its existing restricted services in a reasonable state of efficiency and reliability.

This non-co-operative attitude towards the legitimate claims of Greek Broadcasting, and the callous disregard of the urgent requirements of a service which in other countries enjoys high priorities, can only strengthen the belief that selfish interests, known to be hostile to the N.B.I., have the support of commercially inspired agents in their attempt to destroy the present system of broadcasting in Greece.

3. Recommendations.

(a) By encouraging the F.T.A. to maintain its previous non-co-operative attitude towards the N.B.I. the Mission would be ignoring the just and reasonable claims of a democratically constituted National Institution and aiding the forces which are intent only on its downfall. Furthermore, the Mission would be ignoring the recommendations of a highly qualified radio engineer of international repute in the person of General Leschi.

1. Restoration to so called "proper condition and efficiency" of the existing equipment is, within limits, dependant upon the supply of testing instruments, material and components. In the past these have been unobtainable because of the F.T.A. policy towards N.B.I. applications. The limits within which this so called restoration can be applied are determined by technical and economic factors. Worn out equipment of obsolete design cannot be "restored to proper condition" at an economic cost and it certainly cannot be made to embrace the performance characteristics of more modern equipment. There is no doubt of the ability of the technical staff of the N.B.I. to maintain the equipment if the necessary tools, appliances and components are made available. They have amply demonstrated their ability in this respect not only in the N.B.I. but, also, in the Technical Branches of the Greek Forces and in A.M.A.G.

(continued)

2. Merely to determine the condition of the 70 k.w. amplifier does not provide a solution to this problem although, in fact, arrangements have been made for this to be done. Those who complain that the amplifier has never been unpacked would be well advised to enquire the reason before jumping to conclusions. What is certain is that several vital parts of the amplifier are missing and that some of the missing parts are not now being produced by the manufacturers. Furthermore, the drawings and other technical data essential for the installation of this amplifier are not available in Athens and recent enquiries have revealed that those previously in Berlin were destroyed during the war. The advisability of connecting this amplifier to the present transmitter has been carefully examined by a number of competent radio engineers. The proposal has been rejected for both technical and economic reasons. Had it been possible to make use of this amplifier the M.B.I. would have done so several years ago -- and without awaiting the suggestion from the I.T. & T. Advisers.
3. The recommendation to install the 'gift' 50 k.w. transmitter in Crete to serve the Dodecanese and Aegean Islands and the Southern Peloponnese is rejected on basic and universally accepted principles relating to medium wave propagation. For further enlightenment the I.T. & T. Advisers are advised to study F.C.C. propagation curves and the several I.R.E. papers and formulae on medium wave propagation and night effect, in conjunction with a good map of Greece.

In making this recommendation the I.T. & T. Advisers appear conveniently to have lost their sensitiveness concerning the Copenhagen Plan. Not only is there no provision for a 50 k.w. Transmitter at Crete but, more important, with unexpressed radiation in a north westerly direction, permission for such a transmitter would never be granted.

The lack of sound engineering reasoning behind this recommendation renders further comment superfluous but it is noteworthy that no indication is given as to the means by which National programs would be fed to a 50 k.w. Transmitter at Crete. So far as the M.B.I. is aware no provision has been made in the Telecommunications Development Scheme for broad band circuits of the requisite number and fidelity between Athens and Crete.

- (b) The recommendation to make available foreign exchange funds for the purchase of required maintenance parts and for the necessary studio and transcription equipment is noted with pleasure. This will satisfy a long outstanding need but will not, of course, contribute to the equally urgent need to extend the broadcasting service to the remote island and rural dwellers.

4. Discussions.

If, as is stated, it is agreed that the broadcasting facilities of Greece are insufficient and that expansion is necessary, why does the Mission recommend that the F.T.A. should maintain its previous stand against the granting of import licenses? The answer would appear to be that the Mission has been influenced by persons not qualified to express opinions in this matter and who, one may suppose, are themselves influenced by other motives. If it is agreed that "in order to perform a national service expansion is necessary" then the only logical course is to accept the recommendations made by the fully qualified impartial expert, General Leschi who came to Greece at the suggestion of the F.T.A. and Mr. Paul Jenkins.

The programme proposed in General Leschi's Report is elaborate only so far as it is essential to make good the stagnation in Greek Broadcasting of the past eleven years and to remedy the damage and neglect resulting from enemy occupation.

(continued)

It is not agreed that the E.B.I. proposals are in excess of that permitted by the Copenhagen Plan and those who have given this impression would do well to study the "Copenhagen Convention - 1948." The Copenhagen Convention makes adequate provision for the adjustment of the power and location of transmitters within the framework of the original plan. From calculations already made, the E.B.I. is confident that no objections would be made by countries who were signatories to the Copenhagen Convention to the E.B.I. proposals. Moreover, as Greece enjoys the exclusive use of the 728 kc-a channel for its Athens Transmitter, the proposed increase in power to 150 k.w. calls for no more than a formal notification of the intention. The other proposals calling for agreement within the framework of the Copenhagen Plan affect only one country which was a signatory to the Convention, namely, France. The Technical Director of French Broadcasting has already indicated that he would raise no objections to the E.B.I. proposals. Therefore, those persons who have advised the Mission that the E.B.I. proposals exceed the provision of the Copenhagen Plan have done so without studying either the proposals or the provisions of the Copenhagen Convention in sufficient detail.

The argument that "much can be done with the present equipment which has not been done in the past," is untenable and cannot be justified or supported on any basis of sound technical reasoning. All that can be done, if the necessary test instruments, material and components are made available, is to improve the reliability of the existing equipment. The existing equipment is not merely already used to its maximum capacity - it is grossly overloaded. It fails markedly to provide the necessary production facilities for programme planners and producers or to provide the minimum standard of service for the bulk of the Greek population.

The rough estimate of \$ 2,000,000 as the cost of the equipment necessary to bring the Greek broadcasting services up to a reasonable standard of efficiency is not disputed. The estimate is, in fact, \$500,000 less than the sum recommended by the UNESCO Commission which surveyed the urgent technical needs of broadcasting in Greece as far back as July, 1947. It is noteworthy that, although the sum of \$2,500,000 recommended for Greece by the UNESCO Commission was substantially less than the amounts recommended for several other countries, Greece is the only country which has failed to implement the recommendations of the Commission. This is all the more remarkable when one considers the prominence of Greece in the European Recovery Programme. It is inexplicable if examined in relation to the enormous volume of essentially luxury goods in Athens, all of which have, presumably, been bought with foreign exchange through the F.T.A. machinery. There can be no doubt about the injustice of this state of affairs and neither can it be overlooked that, in failing to provide facilities for the improvement and expansion of the Greek Broadcasting Service, the opportunity of developing a greater measure of unity and goodwill among the Greek people is ruthlessly being thrown away. Almost every country in the world recognises the enormous benefits to be derived, at comparatively small cost, from a well developed broadcasting service. Why then is Greece an exception?

The basis on which the accusation of lack of maintenance is made is not clear. The only lack of maintenance in evidence is that due to the existing inability to procure replacement materials and components. Any suggestion of lack of maintenance as the result of negligence or inefficiency on the part of technical personnel is entirely without foundation and is repudiated. This suggestion, if intended, can only be regarded as wilful misrepresentation on the part of its authors.

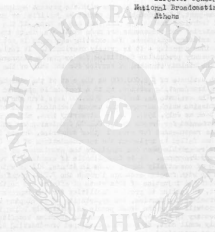
Comments against the points raised in the memorandum submitted by the I.T. & T. Advisers are made in the attached document No. 2. Nevertheless, it is appropriate to observe at this point that the competency of the I.T. & T. Advisers to pass fair and reliable comment on the present condition and future requirements of Greek Broadcasting is not clearly established. Therefore, the National Broadcasting Institute would like to be informed of the status of these gentlemen in relation both to Greek Broadcasting and to the Mission. It would like also to be informed of the technical qualifications and experience of these gentlemen in so far as it relates to the technical direction of medium wave broadcasting services.

(continued)

The "alternative solution," due to the I.T. & T. Advisers, is considered to be devoid of any realistic approach to the immediate problems of Greek Broadcasting. As a commercial proposition it would undoubtedly appeal to the commercial instincts of its authors but, as a means of enabling the National Broadcasting Institute to proceed immediately with its plans to make Greek Broadcasting available to all the people of Greece, it is valueless.

C. Gigantes

Director General
National Broadcasting Institute
Athens



Appendix 9

London, W.1

2nd August, 1950

Dear Sir,

Mr. W. J. Chalk has kindly informed you of my intention to visit the Telefunken Company as the accredited representative of General Gigantes, Commissioner of the Greek National Broadcasting Institute. Mr. Chalk has also given me your name as the official of the Telefunken Company with whom I can discuss to the best advantage certain matters relating to Greek Broadcasting.

You are, of course, well aware of the original intention to increase the power of the Athens Transmitter from 15 to 70 KW by the addition of a suitably rated power amplifier and the incorporation of Class 'B' modulation. You are also doubtless aware that, while the bulk of the components needed for this conversion were received in Athens, certain vital components failed to reach their destination. As a result of this, and other factors, it has so far not been possible to proceed with the conversion as originally planned.

The purpose of my visit is to discuss ways and means of resolving these difficulties and to recover, by one process or another, the loss represented by the large number of conversion components at present lying idle in our Athens storerooms.

The various proposals which I would like to discuss with you may be summarized as follows:

- 1) The terms under which you could undertake to replace the missing items as detailed on the attached list, and to proceed to complete the conversion as originally planned, i.e. by using the existing 15 KW stages as the driver stages of the 70 KW stage.
- 2) The terms under which you could proceed as in (1) above but, in addition, to supply and install a R.F. Driver stage preceding stage 6 of the 70 KW Transmitter, thus leaving the existing 15 KW Transmitter available for continued use as a complete and self-contained Transmitter.
- 3) As a modification to (2) the terms under which you could proceed as in (2) but, in addition, to increase the carrier output to 100 KW by providing certain higher rated components and valves in place of certain components already supplied for the 70 KW conversion.

(continued)

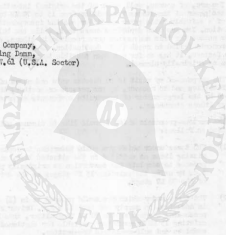
- 4) As an alternative to the three foregoing proposals, I would like to know the best credit terms you could offer for the return of all the 70 KW components at present in our Athens storehouse, it being understood that the credit so offered would be devoted entirely to the purchase of broadcasting equipment of your manufacture, notably low-power transmitters and studio and recording equipment, at current factory prices.

With pleasure anticipation of our meeting in the near future.

Yours sincerely,

(H.P. Rumpfroy)

Dr. Pohl,
Telefunken Company,
32/34 Mohring Dam,
Berlin, S.W.61 (U.S.A. Sector)
Germany.



LIST OF MISSING COMPONENTS

Stage 4.

Position 1. - Mautrodyn Condenser 5-15 pF

Stage 5.

Position 3. - One valve type RS.260. (Spare)
 " 4. - One valve type RS.260 "
 " 66a - One fan "
 " 68 - One condenser 760 pF, 12 KV 200 KVA
 " 69 - " " " " "

Stage 6.

Position 3. - One valve type R5 366 (Spare)
 " 4. - " " " " "
 " 22 - One three phase voltmeter 0-20V.
 " 43 - One ammeter 0-15A.

Secondary Circuit

Position 60 - One condenser, 550 pF, 5.5 KV, 40 KVA
 " 60 - " " " 220 pF, 5.5 KV, 40 KVA
 " 15 - Three condensers each of 5000 pF
 connected in parallel.

Aerial Circuit

Position 1 - Inductance of 13 turns
 " 50 - One condenser, 1900 pF, 7 KV
 " 5f - " " " "
 " 5g - " " 2750 pF, 3.5 KV
 " 5h - " " " "

Modulator Amplifier

Position 18 - One knife switch
 " 27 - One bank of condensers, 100 mfd, 6 KV
 " 28 - " " " "
 " 33 - One valve type RS 266. (Spare)
 " 34 - " " " "
 " 52 - Knife switch, 10 KV
 " 53 - " " 10 KV
 " 57 - " " 10 KV
 " 60 - " " 1 KV
 " 70 - Resistance 800 ohms.
 " 71 - " " "
 " 72 - " " "
 " 73 - " " "
 " 76 - One valve type RS.217 (Spare)
 " 77 - " " " "
 " 87 - One bank of condensers, 30 mfd, 6 KV
 " 88 - " " " "

Water Cooling System

Position 1 - Two cooling jackets for valves RS.266
 " 3 - Four double cooling fins
 " 6 - Two water-electric relays
 " 9 - Four electrolysis protection tubes.
 " 11 - Four double cooling fins
 " 14 - Two water-electric relays
 " 28 - Four electrolysis protection tubes
 " 30 - Four double cooling fins.
 " 33 - Two water-electric relays.
 " 35 - Five water resistances
 " 36 - Two water-electric relays
 " 37 - Four single cooling fins.
 " 40 - One water-electric relay.
 " 42 - One single cooling fin.

Secondary Water Cooling System

It is not clear from the schematic whether or not all the items necessary for the installation are available but it has been definitely established that the spares are missing.

12 KV Rectifier

Again, it is not clear from the schematic if all the parts have been received but it is certain that the following items are missing:

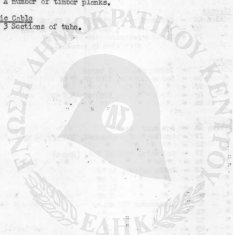
- Position 4 - One ammeter
- " 15 - " "
- " 16 - " Voltmeter
- " 1 - Protective covers for switches.
- " Four valves.

Water Cooling Tower

A number of timber planks.

Concentric Cable

3 Sections of tube.



DISCUSSIONS WITH TELEFUNKEN COMPANY

Submitted by:-
H.F. Humphreys.

September, 1950

1. Introduction: This report sets out the result of the writers visit to Germany for the purpose of discussing with officials of the Telefunken Company various proposals relative to the original intention to increase the power of the Athens Transmitter from 15 k.w. to 70 k.w. The writer met Herr Bornhardt in Hamburg on the 25th August, and Herr Direktor Look in Frankfurt on 28th August. Both these gentlemen expressed, on behalf of the Telefunken Company, a keen desire to cooperate fully with H.M.S. Airyna Radiophones and to assist to the best of their ability in reaching a satisfactory conclusion concerning the use of the 70 k.w. conversion components, at present in store at Liosia. It was apparent from the conversations, that the Telefunken Company attaches considerable "prestige value" to the prospect of E.I.P. putting into service a high power transmitter of Telefunken design and manufacture. Therefore, in order to secure the advantage of such prestige, it can be assumed that the Telefunken Company will be prepared to offer favourable terms to secure a contract to carry out the installation of this transmitter.
2. Missing Parts: The Telefunken Company are not in possession of an accurate list of the components already supplied. Therefore they cannot accept as valid the list of missing parts submitted by E.I.P. Furthermore, some doubt exists as to the condition of the parts in store at Liosia. To resolve these uncertainties the Telefunken Company propose to send an expert to Athens to examine and test the parts in store and to ascertain precisely which parts are missing.
3. Quotations: On the basis of the report submitted by the expert the Telefunken Company would make offers within four weeks of the experts return to Berlin for the following works:-
 - (a) To increase the power of the existing 15 k.w. Transmitter to 70 k.w. as originally planned, i.e. by using the existing 15 k.w. Transmitter as the driving stages of the 70 k.w. Transmitter.
 - (b) To increase the power of the existing 15 k.w. Transmitter to 100 k.w. and using the 15 k.w. Transmitter as the driving stages for the 100 k.w. Transmitter.
 - (c) To increase the power to 70 k.w. and to supply new driving stages thus leaving the existing 15 k.w. transmitter intact.
 - (d) To increase the power to 100 k.w. and to supply new driving stages thus leaving the existing 15 k.w. transmitter intact.
4. Increase in Power To 100 k.w. The Telefunken Company confirms that the proposal to increase the power to 100 k.w. can be considered only after the expert has submitted his report. The increase to 100 k.w. is technically possible, but the practical application can be determined only after an inspection by the Telefunken expert of the parts in store at Liosia.

(continued)

5. Time to Complete Work. If the missing parts do not exceed those listed by E.I.P. and if the parts in store are found to be in good condition, then the Telefunken Co., would undertake to complete installation as follows:-
 - (a) In three months if the existing 15 k.w. Transmitter is used as the driving stages of the 70 k.w. transmitter.
 - (b) In six to eight months if new driving stages are supplied.
6. Credit For Existing Parts In Store At Liossia: The Telefunken Company are unable to consider offering credit to E.I.P. for the return of the 70 k.w. conversion parts in store at Liossia, because of the impossibility of using these parts elsewhere due to the out of date design of the Transmitter. Herr Bernhardt was emphatic on this point.
7. Cost of Experts Visit: When this was first discussed, Herr Bernhardt said that their expert would have to remain in Athens approximately three weeks and that the cost of his visit, estimated at 5,000 Marks (Mk50), would have to be paid by E.I.P. The writer pointed out to Herr Bernhardt that E.I.P. might have some difficulty in obtaining currency to meet this charge in consequence of which the experts visit would be delayed. The writer also suggested that it would be reasonable, for the Telefunken Company to pay the cost of their experts visit if they are anxious to secure a contract with E.I.P. Herr Bernhardt agreed to consult his Directors on this point and arranged for the writer to meet Herr Director Lock in Frankfurt. At the meeting with Herr Director Lock the writer was informed that the Telefunken Company would send an expert to Athens at their own expense in the expectation of securing an order to install the transmitter Therefore no charge will be made for the experts visit.
8. Instruction To Telefunken Company: Herr Bernhardt emphasized that in order to facilitate the visit of their expert to Athens, and to secure the necessary travel permits and visas, it is essential that General Gigantes shall write to the Telefunken Company as soon as possible, making a formal request for the expert to visit Athens. The Telefunken Company are unable to act without a letter from General Gigantes.
9. Conclusion: In the writers opinion the Telefunken Company's offer to send one of their experts to Athens should be accepted without delay. The 70 k.w. conversion parts have laid idle in store long enough. Their potential value as a transmitter in service is considerable and E.I.P. cannot afford to ignore this fact. The sooner the Telefunken expert visits Athens and makes his inspection and report the sooner will it be possible for E.I.P. to determine the manner in which this transmitter can be employed in the E.I.P. development scheme. By this process it will be possible for E.I.P. to finalize its plans and to proceed with the big task ahead.

(H.P. Humphreys)
14th September, 1950

Appendix 11

25th September, 1950

Telefunken Company,
32/34, Mohring Dam,
Berlin, S.W.61. (U.S. Sector).

For the attention of Dr. Pohl.

Dear Sirs,

At the meeting between Herr Bernhardt and Mr. Humphreys in Hamburg on 25th August, you were informed of my desire to utilize to good effect the 70 k.w. conversion equipment supplied by your Company and at present in store in Athens.

Mr. Humphreys informed you of the various proposals concerning the power of the Transmitter we wish to erect and the utilization, or otherwise, of the existing 15 k.w. Transmitter as the exciter stages of the new Transmitter. Herr Bernhardt agreed to consider those proposals and to submit quotations for installation and the supply of additional parts that may be necessary on the basis of a report to be submitted by your expert following his examination of the parts at present in store in Athens.

I am pleased to inform you that my Council is anxious to proceed in this matter and I shall be glad, therefore, if you will arrange to send your expert to Athens at the earliest convenient date. It is understood that, in the reasonable expectation of your company securing a contract with the National Broadcasting Institute, you will defray all charges incurred in connection with your experts visit to Athens. This gesture on your part is appreciated by my Council, and will greatly assist in the process of reaching a speedy conclusion in this long outstanding project.

Please inform us when we may expect the arrival of your expert so that I may make suitable arrangements for the unpacking and inspection of the parts in store.

Thanking you for your prompt attention to my enquiry and for the arrangements you made in meeting Mr. Humphreys in Hamburg and Frankfurt.

Yours sincerely,

(C. Gigantes)
Commissioner for Greek Broadcasting.

Appendix 12

TELEGRAM

A 26 BERLIN 39 5 1305

CIGANTES GENERAL DIRECTOR
NATIONAL BROADCASTING INSTITUTE
ATHENS

VOULPIOTIS DIRECTOR OUR FIRM
GREECE EXPECTED HERE TO DISCUSS
ALL PROBLEMS REGARDING GREEK
BROADCASTING STOP IN A WEEK APPROX.
YOU WILL RECEIVE THROUGH GREEK
TELEFUNKEN PROPOSALS OUR FIRM *
TELEFUNKEN BERLIN BERNHARD