

**ESTIMATES COMMITTEE
(1967-68)**

FOURTEENTH REPORT

(FOURTH LOK SABHA)

MINISTRY OF EDUCATION

Action taken by Government on the recommendations contained in the Hundred and Fourth Report of the Estimates Committee (Third Lok Sabha) on Central Electronics Engineering Research Institute, Pilani.



**LOK SABHA SECRETARIAT
NEW DELHI**

August, 1967/Sravana, 1889 (Saka)

Price : Re. 0.65.

. 395R

**LIST OF AUTHORISED AGENTS FOR THE SALE OF LOK SABHA
SECRETARIAT PUBLICATIONS**

Sl. No.	Name of Agent	Agency No.	Sl. No.	Name of Agent	Agency No.
ANDHRA PRADESH			11.	Charles Lambert & Company, 101, Mahatma Gandhi Road, Opposite Clock Tower, Fort, Bombay.	30
1.	Andhra University General Cooperative Stores Ltd., Waltair (Visakhapatnam).	8	12.	The Current Book House, Maruti Lane, Raghunath Dadaji Street, Bombay-1.	60
2.	G. R. Lakshminpathy Chetty and Sons, General Merchants and News Agents, Newpet, Chandragiri, Chittoor District.	94	13.	Deccan Book Stall, Ferguson College Road, Poona-4.	65
ASSAM			RAJASTHAN		
3.	Western Book Depot, Pan Bazar, Gauhati.	7	14.	Information Centre, Government of Rajasthan, Tripolia, Jaipur City.	38
BIHAR			UTTAR PRADESH		
4.	Amar Kitab Ghar, Post Box 78, Diagonal Road, Jamshedpur.	37	15.	Swastik Industrial Works, 59, Holi Street, Meerut City.	2
GUJARAT			16.	Law Book Company, Sardar Patel Marg, Allahabad-1.	48
5.	Vijay Stores, Station Road, Anand	35	WEST BENGAL		
6.	The New Order Book Company, Ellis Bridge, Ahmedabad-6.	63	17.	Granthaloka, 5/1, Ambica Mookherjee Road, Belgharia, 24 Parganas.	10
MADHYA PRADESH			18.	W. Newman & Company Ltd., 3, Old Court House Street, Calcutta	44
7.	Modern Book House, Shiv Vilas Palace, Indore City.	13	19.	Firma K. L. Mukhopadhyay, 6/1A, Banchharam Akur Lane, Calcutta-12.	82
MAHARASHTRA			DELHI		
8.	M/s Sunderdas Gianchand, 601, Girgaum Road, Near Princess Street, Bombay-2.	6	20.	Jain Book Agency, Connaught Place, New Delhi.	1
9.	The International Book House (Private) Limited, 9, Ash Lane, Mahatma Gandhi Road, Bombay-1.	22			
20.	The International Book Service, Deccan Gymkhana, Poona-4.	26			

CONTENTS

	PAGE
COMPOSITION OF THE COMMITTEE	(iii)
INTRODUCTION	(v)
CHAPTER I Report	1
CHAPTER II Recommendations that have been accepted by the Government.	2
CHAPTER III Recommendations which the Committee do not desire to pursue in view of the Government's reply.	30
APPENDICES	
I. Copy of Ministry of Defence (Department of Defense Supplies) O.M. No. 28 (22)/66/DS dated 2nd May, 1967.	31
II. Executive Council—Central Electronics Engineering Research Institute, Pilani.	33
III. Analysis of the Action taken by Government on the recommendations contained in the 104th Report of the Estimates Committee (Third Lok Sabha).	35

ESTIMATES COMMITTEE

(1967-68)

CHAIRMAN

Shri P. Venkatasubbaiah

MEMBERS

2. Shri Panna Lal Barupal
3. Shri Onkar Lal Berwa
4. Shri Maharaj Singh Bharti
5. Shri Bibhuti Mishra
6. Shri R. K. Birla
7. Shri Jyotirmoy Bosu
8. Shri Tridib Kumar Chaudhuri
9. Shri Hardayal Devgun
10. Shri Y. Gadilingana Goud
11. Shri J. N. Hazarika
12. Shri J. M. Imam
13. Shri Tulshidas Jadhav
14. Shri Dhireswar Kalita
15. Shri S. Kandappan
16. Shri Baij Nath Kureel
17. Shri Yashwant Singh Kushwah
18. Shri K. Lakkappa
19. Shrimati Sangam Laxmi Bai
20. Shri J. M. Lobo Prabhu
21. Shri Inder J. Malhotra
22. Shri Yamuna Prasad Mandal
23. Shri Dhuleshwar Meena
24. Shri F. H. Mohsin
25. Shri Chintamani Panigrahi
26. Shri Rajdeo Singh
27. Shri Gajraj Singh Rao
28. Shrimati Jayaben Shah
29. Shri Shantilal Shah
30. Shri P. Sivasankaran

SECRETARIAT

Shri B. B. Tewari—*Deputy Secretary.*

Shri G. D. Sharma—*Under Secretary.*

(iii)

INTRODUCTION

1. The Chairman of the Estimates Committee, having been authorised by the Committee, present this Fourteenth Report of the Estimates Committee on the action taken by Government on the recommendations contained in the Hundred and Fourth Report of the Estimates Committee (Third Lok Sabha) on the Ministry of Education—C.S.I.R.—Central Electronics Engineering Research Institute, Pilani.

2. The Hundred and Fourth Report of the Estimates Committee was presented to the Lok Sabha on the 22nd April, 1966. Government furnished their replies indicating the action taken on the recommendations contained in the Report on the 27th December, 1966. Further information in respect of 11 recommendations called for from Government was received on the 6th and 31st March, 26th May and 2nd June, 1967. Replies were considered by the Study Group 'F' of the Estimates Committee on the 12th July, 1967.

3. The Report has been divided into the following three chapters:

- I. Report.
- II. Recommendations that have been accepted by Government.
- III. Recommendations which the Committee do not desire to pursue in view of the Government's reply.

The Report was considered and adopted by the Committee on the 14th August, 1967.

4. An analysis of the action taken by Government on the recommendations contained in the Hundred and Fourth Report of the Estimates Committee (Third Lok Sabha) is given in Appendix III. It would be observed therefrom that out of 33 recommendations made in the Report, 32 recommendations *i.e.* 97 per cent have been accepted by Government and the Committee do not desire to pursue 1 recommendation *i.e.* 3 per cent in view of the Government's reply.

NEW DELHI;
September 2, 1967.

Bhadra 11, 1889 (Saka).

P. VENKATASUBBIAH,
Chairman,
Estimates Committee.

CHAPTER I

REPORT

The Estimates Committee are glad to observe that the recommendations contained in their Hundred and Fourth Report (Third Lok Sabha) on the Ministry of Education—C.S.I.R.—Central Electronics Engineering Research Institute, Pilani have been generally accepted by Government.

CHAPTER II

RECOMMENDATIONS THAT HAVE BEEN ACCEPTED BY THE GOVERNMENT

Recommendation (Serial No. 1, Para 6)

The Committee commend for implementation the comprehensive report on the subject of development of electronics during the next ten years which has been produced by the Electronics Committee (1966) under the distinguished Chairmanship of late Dr. H. J. Bhabha.

The Committee would like Government to take integrated action to develop the electronics industry. In particular, they would like that the research programme should be intensified and related to the production programme as set out by the Electronics Committee. The Committee share the faith of the Electronics Committee that "the very backwardness of the country in electronics and smallness in size of the present electronics industry could be turned into an asset, if early stages in the development of the industry in other countries are by-passed and the industry planned on the basis of the latest ideas and techniques".

The Committee also agree with the recommendations of the Electronics Committee that "the industry should be planned and organised from the very beginning in such a way as to build into it the capacity to keep abreast of progress in the rest of the world without continuing dependence on foreign assistance. India should indeed be able to make its own contribution to the rapid advance of electronics. Thus, the importance of building into the industry from the very beginning powerful design and development groups and of supporting fundamental and applied research cannot be over-emphasised. This will not only save large sums of foreign exchange in the course of the next ten years, but is the only method of establishing a self-sufficient and self-reliant electronics industry capable of keeping pace with developments in the rest of the world".

The Committee would like the research in the country to be forward looking so as to design, develop and produce the next generation of equipment indigenously.

The Committee note that the Electronics Committee has assessed the requirement of 3,00,000 engineers, scientists and skilled workers for electronics industry by 1975. The Committee would like Government to draw up and implement an integrated programme for training adequate number of personnel to meet the requirements of the electronics industry.

REPLY OF THE GOVERNMENT

The recommendation of the Estimates Committee has been brought to the notice of the Ministries and organisations connected with the development of electronics.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 2, Para 13)

The Study Group of the Estimates Committee which visited C.E.E. R.I. in December, 1965 were impressed with the organisational set-up of the Institute and close cooperation and coordination between various divisions in furthering research on projects.

The Committee realise that in spite of the fact that Pilani is situated far away from the centres of research and manufacture of electronic equipment and suffers from lack of rail connection, the Research Institute has been located there because of its proximity to the Birla Institute of Technology and Science and the munificent donation given by a Trust. The Committee hope that the drawbacks of location as mentioned above will be compensated by the quiet and calm atmosphere of the place which should make for concentrated research. They also hope that Government would try to improve the rail and road communications to Pilani.

REPLY OF THE GOVERNMENT

Observations of the Estimates Committee with regard to the organisational set-up of the Institute have been gratefully noted.

As regards improvement of the rail and road communications to Pilani, the observations of the Committee have been brought to the notice of the Ministries concerned; namely, Ministry of Railways and the Ministry of Transport and Aviation.

(CSIR U. O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 3, Para 14)

The Committee are glad to note that research projects at C.E.E.R.I. are selected with reference to the needs of the industry and Government departments and that discussions are also held with user departments regarding modifications in time schedules, specifications etc. In this connection the Committee would, however, like to refer to the recommendation made by them in para 24 of their Hundred and Third Report on National Physical Laboratory regarding the principles to be observed in the selection of individual projects.

REPLY OF THE GOVERNMENT

The recommendation of the Estimates Committee made in para 24 of their Hundred and Third Report on National Physical Laboratory regarding the principles to be observed in the selection of individual projects have been brought to the notice of the National Laboratories/Institutes of the CSIR for their information and guidance.

(CSIR U. O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 4, Para 15)

While the Committee appreciate the initiative taken by the C.E.E.R.I. to introduce the project concept and a proforma for planning the projects, they feel that full benefits from this scientific approach would accrue only if estimated expenditure on individual projects is also assessed in the very beginning and the progress is also watched with reference thereto. They hope that this would be done forthwith.

REPLY OF THE GOVERNMENT

The CEERI, Pilani has introduced the project concept and a proforma for planning the projects. Management techniques like programme evaluation and review technique are being applied to a few selected projects. It is intended to extend these techniques to other projects also.

The question of planning of research and cost analysis was one of the items considered at the 16th Directors' Conference of the Heads of National Laboratories and Research Associations held on July 4-5, 1966 at Bangalore. The Conference reiterated the view that detailed cost analysis should be carried out only in respect of large pilot plant projects since costing is neither practicable nor economical in the case of small projects.

It was ultimately decided that costing pattern may be evolved in some of the laboratories on an experimental basis and results studied to evolve a general pattern for being introduced in all the Laboratories.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the result of experiment and the progress made in evolving a general pattern of costing of projects for introduction in all the Laboratories.

REPLY OF THE GOVERNMENT

Some laboratories as Central Electronics Engineering Research Institute, Pilani, National Physical Laboratory, New Delhi, Indian Institute of Petroleum, Dhera Dun, National Aeronautical Laboratory, Bangalore, Central Leather Research Institute, Madras, and National Chemical Laboratory, Poona have been using their own project proforma, on the basis of a draft project proforma circulated to all the national laboratories/institutes.

Taking into consideration the various facets of the problems, a generalized project proforma which could be utilised by all the laboratories is being formulated.

(CSIR D.O. No. 2/5/66-PU dated 31st March, 1967).

Recommendation (Serial No. 5, Para 21)

The Committee consider that in addition to indicating the importance of the proposed research projects, the national laboratories and research institute should also show in each of their Plan proposals, a broad estimate of the money and time required for completion of individual project so as to enable the Central planners to assess the requirements with reference to outlays and time factor and to take decisions accordingly. The Committee recommend that C.E.E.R.I. should incorporate the necessary data in respect of all research projects included in the Fourth Plan proposals.

The Committee would further suggest that Fourth Plan proposals of C.E.E.R.I. should be given wide publicity among the scientists, user industries/Government departments, universities and related institutions so as to invite their suggestions.

REPLY OF THE GOVERNMENT

The recommendation of the Estimates Committee has been noted and the National Laboratories/Institutes including C.E.E.R.I., Pilani have been advised to take necessary action.

The C.E.E.R.I., Pilani has also been asked to give wide publicity to their Fourth Plan proposals when finalised.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

COMMENTS OF THE COMMITTEE

The Committee hope that the Government will give wide publicity to their Plan proposals before finalisation.

Recommendation (Serial No. 6, Para 22)

The Committee are glad to note that C.E.E.R.I. has formulated a tentative Fifteen Year Perspective Plan. They agree that such a long term plan in the field of research, particularly in a subject like electronics, which is a fast developing subject, should be flexible. The Committee recommend that the perspective plan of C.E.E.R.I. should be given wide publicity among the scientists, industry, user departments, universities and research institutions for inviting their suggestions so as to make improvements in the proposals and avoid unnecessary duplication. The Committee would further suggest that the perspective plan should be reviewed periodically in the light of developments and advances made in electronics research within the country and abroad.

REPLY OF THE GOVERNMENT

The perspective plan of the C.E.E.R.I., Pilani is being continuously reviewed. In fact the Fourth Five Year Plan proposals of the Institute, which is a part of the perspective plan, was modified in the light of the recommendations of the Electronics Committee. This would also apply to the remaining parts of the perspective plan.

(CSIR U.O. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 7, Para 27)

The Committee would like Government to take a firm decision about the Bands which would be used for TV transmissions so that the design of TV receiver may be suited to it.

The Committee would like to stress the need for continuous improvement of the TV receiver designed by CEERI so that it meets, not only the performance requirements laid down by the Research Department of All India Radio but proves competitive both in quality and cost with the imported sets. In particular, they would like alignments of the TV receiver to be so optimised as not to require any running adjustments of critical nature which lay public cannot be expected to handle.

REPLY OF THE GOVERNMENT

With reference to para 1 of the recommendation, the Department of Communications (WPC Wing) has intimated that "Standing Advisory Committee

on Radio Frequency Allocation in their second meeting held on 15th April, 1966 accepted the recommendations of the Working Group on T.V. whose main recommendations are as under :—

- (1) It has recommended that the channel 61-68 Mc/s should be set apart exclusively for Television and used in as many of the stations proposed as possible.

The Working Group was also of the view that no other channel in Band I should be considered for Television.

- (2) Three channels *viz.* 174-181 Mc/s, 181-188 Mc/s and 188-195 Mc/s in Band III were also recommended for use of All India Radio on its various Television Stations.
- (3) It was also felt that this would satisfactorily cover the TV requirements of A.I.R. upto 1975.

The above decisions are already communicated to All India Radio”.

Para 2 of the recommendations of the Estimates Committee seems to be based on the correspondence exchanged between the Director, CEERI, Pilani and the All India Radio in February, 1965. The observations of the Committee: “In particular, they would like alignments of the TV receiver to be so optimised as not to require any running adjustments of critical nature which lay public cannot be expected to handle” seems to be on the basis of demonstration of a laboratory-model of the CEERI television set in December, 1964. Since then the models have been industrially engineered and many improvements incorporated. Secondly the performance requirements laid down by the Research Department of AIR and forwarded to the Institute were not minimal but related to a particular imported model. The Indian Standards Institution is already engaged in drawing up a standard for television receivers and the CEERI receiver would have the performance meeting the ISI standards or better.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 8, Para 33)

The Committee are not able to appreciate the inordinate delay of nine months in completing various formalities to import components worth Rs. 1.90 lakhs which were required for starting the production programme of 1,000 TV receivers at the Pilot Plant of the CEERI. They are particularly disturbed to note that while the import of these components has been delayed, Government have arranged for import of 5,000 T.V. receivers.

REPLY OF THE GOVERNMENT

The views of the Estimates Committee that there has been inordinate delay in the release of foreign exchange for import of components for starting the butch production of TV receivers at the CEERI, Pilani, have been brought to the notice of all concerned.

Regarding the import of 5,000 T.V. sets, the Ministry of Information and Broadcasting have already furnished the information to the Estimates Committee (*vide* para 38, pp. 27-29 of the 104th Report).

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 9, Para 34)

The Committee do not feel happy at the delay in the manufacture of TV sets in the country after having given the patent rights to two firms on payment of royalty and thereby creating the necessity of importing TV sets from abroad. They hope that an early decision on the question raised at a late stage of private or public sector manufacturing TV sets will be decided without any further delay so that the indigenous manufacture may start soon and obviate the necessity of any further import. The Committee deprecate this tendency of importing things from abroad while these can be manufactured within reasonable time in the country.

REPLY OF THE GOVERNMENT

Letters of Intent have since been issued by the Ministry of Industry to two parties, namely; M/s. J. K. Rayon, Kanpur and M/s. Telerad Private Ltd., Bombay for manufacturing 10,000 T.V. sets per annum each.

The CEERI, Pilani has also set up a Batch Production Unit for manufacturing 1000 television receivers per annum.

It has also been decided to bring up for consideration another application from the Consortium of Small Scale manufacturers of Radio sets for consideration of the Licensing Committee for the grant of a similar letter of intent as early as possible.

(CSIR U.O No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please furnish information about the progress made by the two parties to whom Letters of Intent have been issued in the matter of setting up units for the manufacture of T.V. Sets.

REPLY OF THE GOVERNMENT

The Ministry of Industry have intimated that both Messrs. J. K. Rayon & Co. Ltd., Kanpur and Messrs. Telerad (Private) Ltd., Bombay who have been issued with letters of intent for the manufacture of 10,000 television sets per annum, have submitted applications for the import of capital goods for the manufacture of television sets. Certain aspects of their import applications were discussed in a meeting held on 27th February, 1967. Further action to process the import applications will be taken in the light of the decision arrived at the meeting.

(CSIR U.O. No. 2/5/66-PU dated 6th March, 1967).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please indicate the latest position regarding processing of import applications etc. in the light of the decision arrived at the meeting held on the 27th February, 1967.

REPLY OF THE GOVERNMENT

The Ministry of Industrial Development and Company Affairs have intimated that the proposals for the import of capital goods submitted by M/s. Telerad Private Ltd., Bombay and M/s. J. K. Rayon Ltd., Kanpur were considered by the Capital Goods Committee at the meeting held on 1st May, 1967. It was decided that the availability of foreign exchange resources from Holland being rather uncertain, the parties should ascertain the possibilities of importing the capital goods from Austria, Italy or France under the Suppliers' Credit or from U.S.A. and West Germany. The Companies have also been informed that in case they wish to import the equipment from West Germany, they would have to negotiate a foreign exchange loan with the I.C.I.C.I./I.F.C. The case would be processed further in the light of the information received from the Companies.

(CSIR U.O. No. 2/5/66-PU dated 26th May, 1967).

Recommendation (Serial No. 10, Para 35)

The Committee consider it extremely unfortunate that in the beginning when Master Plan for TV was being drawn up by All India Radio in 1962/64, they did not take the research organisation (CEERI) into confidence. The Committee feel that while preparing schemes which might entail import of equipments or foreign collaboration, the Departments concerned should contact the research institutes whether the know-how is available with them or can be developed within reasonable time. The Committee have no doubt that had there been close coordination between A.I.R. and CEERI right from inception, it should have been possible to accelerate research on TV receiver and perfect a TV receiver model meeting all the requirements. The Committee, however, note that since 1965 there has been closer coordination between CEERI and A.I.R. and would stress that research and user departments which are both in the public sector should work in hand in the interest of improving television services for the country.

REPLY OF THE GOVERNMENT

The recommendation of the Committee has been noted and also been brought to the notice of the Ministries/Departments concerned of the Government of India for their information and guidance.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 11, Para 39)

The Committee would like Government to take an early decision on the conclusions of the Committee of Secretaries regarding the manufacture of TV receivers, keeping in view their declared policy of encouraging the exploitation of indigenous know-how to find substitutes both for imported products.

The Committee are concerned at the import of 5000 TV sets which may well have the effect of flooding the market with the imported receivers.

In view of the present stringency of external finance and in consonance with the declared policy of encouraging indigenous know-how the Committee are opposed to any scheme of importing TV receivers from abroad. The Committee further feel that the multiplicity of sources of imported TV sets would give rise to the problems of procuring spare parts and servicing of receivers of diverse origins.

The Committee would like to draw attention to the assessment made by the Bhagvantam Committee that there may not be a demand for more than 5000 receivers during the next two years. The Committee are of the view that indigenous production of TV receivers should be encouraged right from the initial stages. The Committee would like Government to make full use of this opportunity for development of TV industry in the country with indigenous know-how so that it can provide suitable base for development and manufacture of radar and other electronic equipments.

REPLY OF THE GOVERNMENT

It has since been decided by the Government to encourage the exploitation of indigenous know-how developed by the CEERI, Pilani for the Manufacture of T.V. sets in India. In this connection, kind attention is invited to the reply of the Government to the Estimates Committee recommendations at Serial No. 9 (Para 34).

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 12, Para 42)

The Committee would like Government to take an early decision about the development/manufacture of picture tubes which constitute 70 per cent of the value of imported components required for manufacture of TV receivers. The Committee feel that the CEERI should be encouraged to develop them and should be given the required help and time for the purpose. In case CEERI is not able to develop the picture tubes at an early date, Government should consider in consultation with CSIR the question of purchase of know-how for manufacture of picture tubes in B.E.L.

The Committee are concerned at the high estimated cost of TV receiver to be produced with indigenous know-how as compared to the cost of imported receiver which has been explained by Government as being due to the high cost of imported components and raw materials as well as high costs of indigenous components manufactured with foreign collaboration. The Committee stress that reasons for the high price of these components should be gone into by a small committee of experts in order to devise measures to bring down the price of electronic components by encouraging standardisation, mass production and effecting other economies.

REPLY OF THE GOVERNMENT

The Bharat Electronics Ltd. have invited project reports from various parties for collaboration for the manufacture of T.V. picture tubes. Th

project proposals would be placed before the Board of Directors of the Company and Government for consideration shortly. It may be remarked that development work on the picture tubes has also been undertaken in BEL but in view of the fact that considerable amount of automatic equipment that would be required, it is considered essential to proceed with collaboration arrangements.

With regard to other Receiving type tubes required for T.V. receivers, BEL will undertake production of such tubes as and when sufficient demand materialises.

With regard to the high estimated cost of T.V. receiver to be produced with indigenous know-how at Pilani as compared to the cost of imported receiver, it is stated that the television sets exported to this country are often highly subsidised by the exporting countries and are not a good index for evaluating production costs. For instance, 23" screen-size television sets exported by Hungary to this country at a rate (pre-devaluation) of Rs. 600/- c.i.f. are sold approximately for 7,500 Forint in Hungary, the equivalent of which in India is Rs. 1,600/- (pre-devaluation) and Rs. 2,500 (post-devaluation).

The recommendation of the Committee that reasons for high price of electronic components should be gone into by a small committee of experts has been referred to the Ministries of Industry/Commerce for necessary action.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the concrete action taken regarding the setting up of a small Committee of experts to go into the high price of electronic components in the country.

REPLY OF THE GOVERNMENT

The recommendation of the Estimates Committee that reasons for high prices of electronic components should be gone into by a small committee of experts was referred to the Ministry of Industry. The Ministry of Industry have intimated that the Ministry of Defence (Department of Defence Supplies) are looking after the development of electronics in the country. The matter has since been taken up with the Ministry of Defence whose reply is still awaited.

(CSIR U. O. No. 2/5/66-PU dated 6th March, 1967.)

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the result of reference made to the Ministry of Defence.

REPLY OF THE GOVERNMENT

The Ministry of Defence *vide* their office Memorandum No. 28 (22)/66/DS dated the 2nd May, 1967 (Appendix I) have constituted a Committee of Experts for advising the Government on measures necessary to bring down the prices of electronic components used in T. V. receivers to be manufactured

indigenously. The Committee will submit its report within a period of six months from the date of issue of these orders.

The C. S. I. R. has nominated the following officers on the Committee—

1. Dr. Amarjit Singh, Director, Central Electronics engineering Research Instt., Pilani. Principal Member.
2. Dr. B. S. Rao, Scientist 'E', Central Electronics Engineering Research Institute, Pilani. Alternate Member

(CSIR U.O. No. 2/5/66-PU dated 26th May, 1967).

Recommendation (Serial No. 14, Para 44)

The Committee note that while CEERI has been able to provide a solution to the problems referred to them by the industry during the last four years their number is only five. The Committee suggest that CEERI should intensify its liaison arrangement with the industry so as to inspire greater confidence in them and to invite more problems for solution at the Institute. The Committee would like CEERI, in particular, to help the industry in meeting the problem of import substitution and effect reduction in cost of production.

REPLY OF THE GOVERNMENT

The recommendation of the Committee that the CEERI should intensify its liaison arrangement with industry is being followed by the Institute and their contracts with the industry are growing day by day. The main objective of the research and development effort of the CEERI is to create indigenous know-how for electronic devices and instruments which at present are being imported and to maximise use of indigenous components and materials so as to reduce the cost of production. This will not only reduce dependence upon foreign know-how but will also give a fillip to the development of electronics industry in the country.

(CSIR U. O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 15, Para 45)

The Committee note that many small scale industries have undertaken the manufacture of electronic and radio components. The Committee feel that CEERI can be of great help to small scale industries which have largely to depend upon indigenous know-how for their future development. In view of the intended expansion of TV Services in India, CEERI can advise small scale industries to take up manufacture of components required in production of TV receivers. The Committee recommend that Central Small Industries Organisation should help to formulate the requirements of Small Scale Industries in the field of electronics and forward them to CEERI who should try to furnish the solution on priority basis.

REPLY OF THE GOVERNMENT

The Director, CEERI, Pilani has since been appointed Chairman of Small Scale Industries Panel on electronics which reviews the progress of this industry and promotes the growth of small industries in the field of Electronics by recommending appropriate measures. Since the Chairman of this Panel, responsible mainly for the growth of small scale industries in the

field of electronics, is himself the Director of CEERI, Pilani, the recommendation made by the Estimates Committee is being fully implemented.

(CSIR U. O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 16, Para 46)

Considering the great demand for transistor radios in the country, the Committee are concerned that CEERI has taken more than two years in developing a table model transistor radio. The Committee would like the work to be intensified in transistor radio sets with a view to its commercial exploitation. They also feel that the cost of the transistor set (Rs. 350—ex-factory) is on the high side. The Committee urge that efforts should be made to bring down the cost of the transistor radio so as to place it within the reach of general public.

REPLY OF THE GOVERNMENT

The Director, CEERI, Pilani has intimated that with the experience gained in the design and development of 4-Band Table Model Transistor Radio Receiver, the Institute has developed an optimum circuit for a single-band low-cost transistor radio receiver. This project was undertaken at the request of the Federation of Associations of Small Scale Industries, who supplied the components for the radio receiver. The know-how would be transferred to the Federation for commercial manufacture of these receivers.

In the meantime efforts are being made to release the design of 4-Band Radio Receiver to the industry for commercial manufacture.

(CSIR U. O. No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the cost of the single band low cost Transistor Receiver as well as the progress made in transferring the know-how of 4-Band Radio Receiver to small scale industries.

REPLY OF THE GOVERNMENT

The cost of the single band low-cost transistor radio receiver developed at CEERI, Pilani is approximately Rs. 85. The project was undertaken at the instance of the Federation of Associations of Small Scale Industries. The National Research Development Corporation of India are negotiating with the Federation for release of know-how. Negotiations are also in progress regarding know-how on Four Band Table Model Transistor Radio Receiver.

(CSIR U. O. No. 2/5/66-PU dated 6th March, 1967).

Recommendation (Serial No. 17, Para 47)

The Committee note that many of the research projects were initiated by CEERI on its own and later the Ministry of Defence have expressed interest in them. The Committee would stress the need for closer collaboration between the Ministry of Defence Electronics and Radar Development Establishment and Defence Electronics Research Laboratory and CSIR/CEERI. The Committee would also urge that the progress of research

projects for defence should not be allowed to suffer for want of foreign exchange for procuring raw materials and equipments which are absolutely essential and are not available in the country.

The Committee suggest that Government should also examine the question of Defence Research and Development Organisation bearing the expenditure incurred in progressing research projects meant for their use.

REPLY OF THE GOVERNMENT

Collaboration between Ministry of Defence & CEERI, Pilani

During the last 13 years of its existence the CEERI, Pilani initiated and undertook research and development on many problems dealing with electronics which were of defence interest. Prior to the declaration of national emergency in 1962 there was no systematic effort to assess the requirements of defence in the field of electronics though sometimes Defence expressed interest in one or more projects which were on the regular research programme of the Institute. After the declaration of emergency, active interest was shown by Defence in a number of projects. A defence Co-ordination Unit was set up in the CSIR Headquarters for proper co-ordination between the CSIR laboratories (including the CEERI, Pilani) and various Defence Technical Departments and Defence Research and Development Organisation. The Unit is guided by a Steering Committee consisting of Defence Personnel and the Heads of National Laboratories/Institutes and the Committee is assisted in its work by 10 Sub-Committees, one of which is Electronics. The Director of Electronics, Defence Research and Development Organisation is the Chairman of the Sub-Committee on Electronics and the representatives of Defence Electronic Research and Development Establishments and of civilian scientific institutions including CEERI, Pilani are members of the Sub-Committee. Problems of defence interest are considered by the Electronics Sub-Committee which after scrutiny recommends them to the Steering Committee. The problems after approval by the Steering Committee are passed on to the laboratory concerned. Later follow up action is taken by arranging meetings between the research workers and the user organisations concerned so that problems can be identified and the exact requirements of users assessed.

Collaboration with the Defence Research and Development Organisation is also being maintained by nomination of representatives of the Defence Research and Development Organisation on the Executive Councils of the National Laboratories/Institutes concerned and *vice-versa*. For instance, the following two representatives of the Defence Research and Development Organisation have been nominated on the Executive Council of the Central Electronics Engineering Research Institute, Pilani :—

1. Brig. K. K. Mehta, Director of Electronics Research & Development Organisation.
2. Dr. N. B. Bhart, Director, Solid State Physics Laboratory, Ministry of Defence, Delhi.

Similarly the Director, C.E.E.R.I. Pilani is represented on the Defence Electronics Panel.

Provision of funds for Defence Projects

Till very recently, the CSIR laboratories did not ask funds for defence projects. Due to progressive increase in the number of defence projects and cuts on the budget of the CSIR, the CSIR had perforce to approach the Ministry of Defence for providing funds for projects which required heavy financial outlay for purchase of equipment and components including the necessary foreign exchange and this has since been agreed to.

(CSIR U.O. No. 215/66-PU dated 27th December, 1966)

Recommendation (Serial No. 18, Para 48)

(i) The Committee note that research work on acoustics is done by Central Electronics Engineering Research Institute, National Physical Laboratory and the Central Building Research Institute, all working under Council of Scientific and Industrial Research. They apprehend that there may be unnecessary duplication of research and recommend that there should be close coordination between these three institutions as regards their work on acoustics.

(ii) The Committee recommend that consultancy work on acoustics for outside parties may be undertaken by one of the institutions to be specified in this behalf, which may take the assistance as necessary of the other two institutions.

(iii) The Committee would like consultancy fee to be charged from outside parties for rendering advice in acoustics.

REPLY OF THE GOVERNMENT

(i) The subject of Acoustics covers a wide area representing various aspects of the science, technology and engineering of sound, vibration and ultrasonics and their practical application in various fields. Some of these are : propagation of elastic waves, wave analysis, vibration studies, acoustical standards, acoustical measurements, calibration techniques, auditorium acoustics, noise analysis and criteria acoustical instruments of various types sound systems, ultrasonic studies, use of ultrasonics in technology, industry and medicine.

In view of the wide scope of the subject, more than one laboratory can work on acoustical problems of varied nature, which fit generally into the scope of work of the laboratory concerned. The problem is not unique to acoustics only but similar situation prevails in such fields as spectroscopy, electronics, electron microscopy, micro-waves, infrared etc.

At the time of establishing the Audio Engineering & Acoustics Division at the C.E.E.R.I. Pilani in July, 1957 informal discussions were held with the Head of the Division of Acoustics, N.P.L. regarding the programme of work in their Acoustics Division. Based on these discussions and taking into consideration the facilities by way of equipment and personnel, the following areas of work were selected in the Audio Engineering and Acoustics Division at this Institute :

(a) Acoustic Transducers . . . design and development of acoustic transducers such as

moving coil and condenser microphones for providing technical know-how to Indian Industry; setting up calibration methods; etc.

- (b) Acoustical Materials . . . application of acoustical materials for reverberation control, noise reduction, etc.
- (c) Audio Instruments and Equipment . design and development of audio instruments such as sound level meters for providing technical know-how to Indian Industry.
- (d) Speech Communication . . . analysis of speech; design of bandwidth compression systems for speech transmission; etc.

However in the last one year the programme of Audio Engineering and Acoustics Division of the Institute has been reorganised with emphasis towards electronics and electro-acoustics. The present programme of work in the Division is confined to :—

- (i) Sound Systems
- (ii) Magnetic Recording Reproduction
- (iii) Speech Communication.

The Institute has stated that the work relating to acoustical materials and their applications such as design of auditoria, noise reduction etc. which were done previously, has been stopped.

At present work relating to problems of acoustics and design of auditoria, is handled by the National Physical Laboratory whereas the Central Building Research Institute, Roorkee is working mainly on material testing from the acoustics point of view.

(ii) The CEERI, Pilani has intimated that henceforth they will not be undertaking any consultancy work in this area. Considering the large number of consultation work done by the N.P.L., this work will continue to be done by that Laboratory and to a limited extent by the C.B.R.I., Roorkee in respect of acoustic materials.

(iii) Consultancy fee will be charged by the Laboratory/Institute as recommended by the Estimates Committee.

(iv) Every effort will be made to avoid duplication of effort between the three Laboratories.

(CSIR U. O. No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate which institute has been specified for rendering consultancy service regarding acoustics for auditoria.

REPLY OF THE GOVERNMENT

The National Physical Laboratory, New Delhi has been specified for doing consultancy work on auditorium acoustics.

(CSIR D.O. No. 2/5/66-PU dated 31st March, 1967).

Recommendation (Serial No. 19, Para 49)

The Committee feel that industrial research can best be carried out in collaboration between the scientists and the users. The formation of cooperative research associations is an effective method of bringing about such collaboration. Apart from other benefits, the Cooperative Research Associations which are mainly user biased, generate research potential within the industry for future development and improvement. The Committee commend the efforts made by Central Electronics Engineering Research Institute in setting up a Cooperative Research Association of Radio and Electronics industry which will greatly benefit the industry. They hope that this Research Association will soon begin to function effectively. The Committee would urge Government to encourage the formation of Cooperative Research Associations in industries where they do not already exist.

REPLY TO THE GOVERNMENT

The recommendation of the Committee has been noted.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate whether Cooperative Research Association has since been set up and started functioning.

REPLY OF THE GOVERNMENT

A Cooperative Electronic Research Association was registered in Bombay April, 1966.

The Association members at Bombay and Delhi have held a series of discussions and have agreed to establish laboratories, one at Delhi and the other at Bombay. The Association has initiated action to procure accommodation for setting up the Laboratory at Delhi at the Okhla Industrial Estate. Action is being taken by the Association to get accommodation in Bombay for housing the Maharashtra Centre at the Sardar Patel College of Engineering at Andheri. Action is also being taken by the Association to appoint a Scientist to formulate the requirements and to plan the initial phase of work.

(CSIR U.O. No. 2/5/66-PU dated 6th March, 1967).

Recommendation (Serial No. 20, Para 50)

The Committee note that 18 products/processes have been successfully developed so far by the CEERI for commercial exploitation. Out of these, only four products have so far been released for commercial exploitation but have not actually gone into production. Negotiations have been concluded in respect of two more products. For three more products.

negotiations are in progress for their commercial exploitation. Three products were developed at the Institute at the instance of private companies which are now using them exclusively. About six products of the Institute still remain to be industrially engineered.

The Committee feel that the time gap in the Commercial exploitation of the processes developed by the Institute, should be reduced to the minimum. They have already made suggestions in this regard in para 44 of their Hundred and Third Report on National Physical Laboratory. The Committee would also urge that the successful processes of CEERI should be widely publicised to stimulate interest of industrialists and users.

REPLY OF THE GOVERNMENT

Research work done at the National Laboratories/Institutes of the CSIR is disseminated to industry by means of—

- (i) Publication of reports, brochures, pamphlets, research papers and press releases on new processes;
- (ii) seminars, symposia and practical demonstration of processes in which technical personnel from industry participate;
- (iii) consultancy service;
- (iv) association of representatives of industries on the Executive Councils, Panels and Committees of the Institutes; and
- (v) Directors and senior scientists of the Institutes meeting industrialists.

After completion of the project in the National laboratory/institute the process is handed over to the N.R.D.C. who takes the following steps to ensure its commercial exploitation :—

In India

The following are approached :—

- (i) Prospective entrepreneurs;
- (ii) Director of Industries of all States;
- (iii) Small Industries Service Institutes;
- (iv) Technical and Scientific Journals;
- (v) Federation of Indian Chambers of Commerce and Industry; and
- (vi) Press Information Bureau.

Abroad

In cases where corresponding patents have been obtained in foreign countries, N. R. D. C. of India invariably contacts its counterparts in those countries for exploring commercial possibilities of such patents.

Utilisation of research is a continuing process and depends upon a number of factors such as the state of industrial development, policy of Government regarding foreign collaboration and several other economic, technological and other factors including willingness of private entrepreneurs to utilise the results of research.

(CSIR U.O No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the specific action taken to reduce the time gap in the commercial exploitation of the processes developed by the Institute, to the minimum.

REPLY OF THE GOVERNMENT

In addition to the steps mentioned earlier, representatives of industry are familiarised with the product being developed at various stages of the work.

(CSIR U.O. No. 2/5/66-PU dated 6th March, 1967).

Recommendation (Serial No. 21, Para 51)

The Committee hope that CEERI will make vigorous efforts to successfully complete their research work on tape recorders and record players as these products are of common utility. They would like that the know-how developed would be got patented and farmed out for commercial exploitation without delay.

REPLY OF THE GOVERNMENT

The work on the research and development of tape recorders and record players is being vigorously pursued at the CEERI, Pilani. The know-how, when developed, will be released to the industry for commercial exploitation.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966)

Recommendation (Serial No. 22, Para 52)

The Committee are happy to note that considerable expertise has been developed in microwave technology in the CEERI, the Tata Institute of Fundamental Research, Bombay and the Telecommunication Research Centre, Delhi. The Committee would like close coordination between the research efforts of these institutes in order to develop radar equipment for the use of defence services as early as possible.

REPLY OF THE GOVERNMENT

The recommendation has been brought to the notice of departments concerned.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the concrete steps taken to bring about coordination between the various institutes for the development of radar equipment.

REPLY OF THE GOVERNMENT

Coordinated allocation of tasks relating to Radar development among various research institutions is done by the Ministry of Defence (Department of Defence Supply). The matter has been taken up with the Ministry of Defence whose reply is awaited.

(CSIR U.O. No. 2/5/66-PU dated 6th March, 1967).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the concrete steps taken by the Ministry of Defence in regard to coordinated allocation of tasks relating to Radar development among various research institutions.

REPLY OF THE GOVERNMENT

An extract from the Ministry of Defence (Department of Defence Supplies) D. O. letter No. 28(2a)/66/DS dated 27th May, 1967, in this connection is reproduced below:—

“The matter has been discussed by JS (Supplies) with Shri C. P. Vasudevan of P&T Board and Scientific Adviser to the Minister of Defence and the position as emerged is given below:—

- (i) The entire range of microwave equipment required for communication links has been developed in the Tele-communication Research Centre (TRC) and at present this equipment is in production in the Indian Telephone Industries. The requirement of microwave equipment for communication purposes would thus be manufactured with know-how developed by TRC and that import of know-how for this purpose is not necessary. As this thing is being done exclusively by TRC and Indian Telephone Industries, no coordination with any other Research Organisation is necessary in this case.
- (ii) As regards coordination required for development of radar equipment for use of Defence Services, the Directorate of Electronics in the Research & Development Organisation of the Deptt. of Defence Production are engaged at present in coordination of the efforts of research in this regard. The present status report is being obtained from them.
- (iii) Bharat Electronics are manufacturing the radar Equipment required for Meteorological purposes. Information in regard to the development work is being collected.

Besides the above, the Electronics Committee headed by Dr. Vikram A. Sarabhai has approved three Developmental Projects for the development of microwave technology. The Committee is keeping in view the task of coordination of work being done by various establishments in regard to the manufacture of radar equipment.”

(CSIR U.O. No.2/5/66-PU dated 2nd June, 1967).

FURTHER INFORMATION RECEIVED FROM THE GOVERNMENT

Further information received from the Ministry of Defence, in so far as parts (ii) and (iii) of the 2nd para of the information already communicated is concerned, is reproduced below:—

Copy of U. O. No. 95709/RD-9 dated 24th June, 1967, from the Ministry of Defence (R&D Organisation).

“In house” operations on research and development for the radar and microwave equipments in the Defence Research and Development Or-

ganisation are performed by Electronics and Radar Development Establishment (LRDE) Bangalore and Defence Electronics Research Laboratory (DLRL) Hyderabad. Within the facilities available, these two establishments have made some progress in the development of a number of radar and microwave equipments; notably amongst these include, field artillery radar, local warning radar system, battle-field surveillance equipment, radar simulator for fire control radar and a number of microwave devices and components.

2. In addition to research and developmental activities within the Electronics Group of laboratories, a number of tasks have been 'farmed out' to outside institutions, in areas of their particular specialisation. These institutions include R & D Cells in BEL and ITI, CEERI, Pilani, Atomic Energy Establishment, Tata Instt. of Fundamental Research and Physical Research Laboratory, Ahmedabad. Tasks 'Farmed out' in the area of radar and microwave to these outside agencies include development of special purpose microwave tubes (at CEERI, Pilani); special purpose microwave components (TERIF BOMBAY); and classified secondary radar equipment at Physical Research Laboratory, Ahmedabad. The reconstituted Electronics Committee has approved undertaking of these tasks at these institutions. The technical progression of these tasks with various agencies is being done by this Directorate.

Copy of U. O. No. 94435/113/EPC dated 16th June, 1967 from the Ministry of Defence (DP) Dte. of Planning and Coord. (Electronics Division).

Messrs. Bharat Electronics Limited are currently manufacturing Storm Warning Radars in technical collaboration with Messrs. C.S.F. France, against the requirement of the Meteorological Department and two numbers are due to be supplied shortly. M/s. BEL have also been supplying "Belwin" Transmitters developed by them for meteorological purposes to the I. Met. Dept.

BEL have also planned for the indigenous manufacture of Meteorological Radar (Radio Theodolites) along with associated Radio Sondes in technical collaboration with Messrs. Bendix Corporation, U. S. A. against the combined requirements of the Defence Services and the I Met. Dept. Manufacture of these will be taken up when Government sanction for the procurement of the equipment is received from the Departments concerned and firm orders placed on BEL.

(G.S.I.R. U.O. No. 2/5/65-PU dated 3rd August, 1967)

Recommendation (Serial No. 23, Para 53)

The Committee note that while foreign exchange worth Rs. 5,000 was not sanctioned for the development of gas type laser by the CEERI, many laboratories were allowed to import the instrument. This is yet another instance of lack of coordination where foreign exchange has been expended to import instruments which could have been developed within the country by spending small amount of foreign exchange to intensify research. The Committee feel that important projects which require only a small amount of

foreign exchange should receive greater attention of CSIR while processing the demand of its various laboratories. The Committee also recommend that Government may examine early the suggestion of CSIR that foreign exchange allocation between two or three lakhs be made by Govt. for the purchase of UNESCO coupons which will ensure speedy procurement of small stores.

REPLY OF THE GOVERNMENT

The recommendation of the Estimates Committee that important projects which require small amount of foreign exchange should receive greater attention has been noted.

Allotment of UNESCO Coupons to the CSIR to the tune of Rs. 2 to 3 lakhs (pre-devaluation) for the purchase of small items of Scientific Stores has been taken up with the Ministry of Education.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the final decision taken by the Ministry of Education in regard to allotment of UNESCO Coupons to CSIR.

REPLY OF THE GOVERNMENT

The Council of Scientific and Industrial Research has been allotted UNESCO Coupons worth Rs. 3,29,214/- so far during the year 1966-67.

(CSIR U.O. No. 2/5/66-PU dated 6th March, 1967).

Recommendation (Serial No. 24, Para 54)

The Committee consider that the existing arrangements of coordination between the various research organisations doing work on electronics in the country are not quite satisfactory as they are mostly based on *ad hoc* membership of Government Committees or informal exchange of visits and literature.

The Committee consider that as the strategy of research in electronics has been broadly laid down by the Electronics Committee it should be easier to effect closer liaison between leading research organisations so as to avoid duplication of research work as well as to derive mutual benefit from others experience.

The Committee recommend that there should be inter-locking of membership into the management committees (i.e. Executive Council, Board of Directors etc.) of the various research organisations working in the same field. They would further suggest that the Director of CEERI may be represented on the Board of Directors of B.E.L. which is the premier unit manufacturing electronics equipment in the country.

REPLY OF THE GOVERNMENT

The recommendation of the Estimates Committee for effective liaison and co-ordination between different institutions doing work on electronics has been communicated to the Ministries/Departments concerned.

So far as the CSIR is concerned, apart from the research work done in its own National Laboratories/Institutes, it has been the policy of the CSIR to develop research extramurally in Universities and other research institutions

through a number of Research Committees representing various disciplines in science and technology. Considering the important role of electronics in the Industrial development of the country, appointment of an Electronics Research Committee similar to the Research Committees mentioned above is under consideration of the CSIR.

Revised list of the Executive Council of CEERI, Pilani (Appendix II) will show that various Departments and Organisations concerned with Electronics Research in the country have already been included. However, it may be stated with regret that the Ministry of Defence have since decided that there was no need for the nomination of the Director, CEERI, Pilani on the Board of Directors of Bharat Electronics Limited.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the action taken to bring about effective coordination between different institutes doing research in electronics.

REPLY OF THE GOVERNMENT

The original recommendation of the Estimates Committee related to inter-locking of membership in management committees. As far as the Central Electronics Engineering Research Institute is concerned, this has already been done (Reference : list of new Executive Council members submitted earlier.)

The Ministry of Defence who is concerned with the development of electronics have intimated that close liaison and coordination already exists between the Defence Establishments/Laboratories including B.E.L. dealing with Electronics on the one hand and the various Electronic Research Organisations on the other, by way of representation of Defence Scientists/Officers on the Executive Councils and Panels of the Council of Scientific and Industrial Research etc. and by representation of other Organisations on Defence. R & D Panels/Committees.

Since the Director, CEERI, is also a member of the Electronics Development Panel and the Defence Electronics Research Committee, the Defence Ministry is of the opinion that there is no need for his representation on the Board of Directors of Bharat Electronics Ltd.

(CSIR U.O. No. 2/5/66-PU dated 6th March, 1967).

Recommendation (Serial No. 25, Para 55)

The Committee welcome the agreements, entered into by CEERI with two institutions (viz. B.I.T.S. Pilani and I.I.T. New Delhi) as they consider that closer associations provided by those agreements between the two organisations will prove beneficial to both. They would like C.E.E.R.I. to establish, in due course, institutional links with other Universities and technical institutes, interested in advanced research in electronics for their mutual benefit.

REPLY OF THE GOVERNMENT

The above recommendation has been noted by the Director, C.E.E.R.I., Pilani.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 26, Para 56)

CEERI is a premier institute in electronics and has a large programme of expansion during the ensuing Plan period. The Committee would like the training facilities in the Institute to be put to effective use keeping in view the overall requirements of electronic industry.

REPLY OF THE GOVERNMENT

Para 56 of the report which contains the particulars of training courses conducted at the CEERI, Pilani and the recommendation of the Estimates Committee thereon has been communicated to the Ministries/Departments concerned of the Government of India for information and guidance.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 27, Para 59)

The Committee are inclined to agree with the views of the Electronics Committee in regard to the testing facilities to be provided as far as electronics industry is concerned. They feel that CEERI also requires some testing facilities for various products being developed by it. The Committee would like Government to take a decision about the scale of facilities to be provided at Pilani keeping in view the observations of the Electronics Committee and the fact that Pilani is situated far away from manufacturing centres like Calcutta, Bombay, Bangalore, Delhi, etc.

REPLY OF THE GOVERNMENT

The proposal for setting up Facilities for Evaluation of Performance of Developmental Electronic Equipment at the CEERI, Pilani was considered by the BSIR and the Governing Body of the CSIR at their meetings held on 18th & 19th November, 1966 respectively. It was noted that the question relating to the evaluation of performance of electronics equipment had been considered at National level by a high powered "Electronics Committee" and that this Committee was considering proposals for the establishment of testing facilities at various places in the country, namely, Bangalore, Delhi, Bombay, etc.

The Governing Body recognised the need for the CEERI, Pilani, to have some testing and evaluation facilities for its own purposes and decided that the DGSIR should discuss the proposals with the Directors of the C.E.E.R.I. and the N.P.L. and such other experts as he may consider necessary and then take it up with the Electronics Committee.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 28, Para 60)

The Committee hope that careful consideration will be given to locate the extension centres of the CEERI so that these can render maximum assistance to the electronics industry. The Committee endorse the Reviewing Committee's views that attempts should be made to invite the local industry to share in the financial participation and control of extension centres.

REPLY OF THE GOVERNMENT

The recommendation of the Committee has been noted.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 29, Para 62)

The Committee regret to observe that the meetings of the Executive Council of CEERI were not held even twice a year before 1965, which is a violation of the Rules and that also without even amending the rules. They feel that the CSIR should see that the Executive Council is being properly convened and utilised. In this connection the Committee will like to refer to their recommendation contained in para 137 of the Report on National Physical Laboratory.

REPLY OF THE GOVERNMENT

Though the Executive Council of the Institute had not been meeting regularly in the initial stages of its development as required in the Rules and Regulations of the CSIR, it is stated that the last five meetings of the Executive Council of the Institute were held at intervals of six months. It is proposed to continue this practice and adhere to the Rules in future.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 30, Para 63)

The Committee have pointed out the non-observance of Rules as regards Scientific Advisory Committee by the National Physical Laboratory also. They are unhappy at the indifference shown by the authorities concerned in observing the provisions of the Rules. In para 138 of their Report on National Physical Laboratory, the Committee have already recommended for the appointment of Scientific Advisory Committee in all the National laboratories where they have not been formed so far. They hope that urgent action would be taken to appoint the Scientific Advisory Committee for CEERI also.

REPLY OF THE GOVERNMENT

Under Rule 75 of the CSIR's Rules & Regulations, the Governing Body of the C.S.I.R. at its meeting held on 22-3-1956 approved the constitution of the Executive Councils and the Scientific Advisory Committees for the various laboratories/Institutes of the C.S.I.R. which were in existence at the time.

Accordingly an Executive Council and a Scientific Advisory Committee were constituted for the CEERI.

A fair trial to the working of the Executive Councils and the Scientific Advisory Committees was given for about 18 months. The experience gained in the working of those bodies was discussed at the Directors' Conference held in December, 1956 and it was considered desirable to have one Committee instead of two. The subject was considered by the Governing Body of the C.S.I.R. at its meeting held on 22nd March, 1957. It was agreed at the meeting that the Executive Councils and the Scientific Advisory Committees might continue for the present and the DGSIR might examine the matter further and submit a note to the Governing Body for consideration at the next meeting.

A detailed note explaining the following difficulties was placed for consideration of the Governing Body of the CSIR:

1. Attendance at meetings of the Executive Councils and Scientific Advisory Committees was not as good as was expected, as Chairman and members of the Executive Councils and Scientific Advisory Committees were generally important persons and often leading men from industry, Government organisations and scientific institutions and Universities and they found it difficult to attend all meetings without detriment to their normal work. Some of them were members of both the Executive Councils and Scientific Advisory Committees and it was difficult for them to attend four to six meetings in a year as was envisaged.
2. The functions of the Executive Councils and the Scientific Advisory Committees were such that the Scientific Advisory Committee dealt primarily with the scientific and technical aspects of work of the laboratory especially the programme of research work, while the Executive Council dealt mainly with administrative matters. Experience had shown that it was neither desirable nor useful to separate these two functions. The working of a research organisation could be best considered as an organic whole and in an integrated manner. In a word, for effective and efficient working of the laboratory, both aspects should be considered together and decisions taken on the overall view.
3. The holding of the meetings of these two Committees not less than two times in a year in each case entailed considerable expenditure of time and energy on the part of the Director and other Scientific Officers of the Laboratory.
4. Owing to all round industrial and technological developments in the country and the consequent general shortage of mature scientists, experts and others, it is our experience that the limited number of available experts could profitably be utilised for the two Committees only to the detriment of their own duties.
5. The consensus of opinion of the Directors of the National Laboratories/Institutes, was that there should be one Committee instead of two.

Taking the above facts into consideration, the Governing Body of the C.S.I.R. at its meeting held on 24th of September, 1957 resolved as under :

“After a general discussion in which members expressed various views, the Governing Body decided to merge the Executive Councils and the Scientific Advisory Committees attached to each national laboratory/Institute and that such Executive Councils should constitute sub-committees, for example, building Sub-Committee, Scientific Sub-Committee, as may be found necessary with powers to co-opt members to attend meetings who in the opinion of the Chairman of the Executive Council and the Director could assist in the scientific programme and work of the laboratory”.

In view of the above decision of the Governing Body, no Scientific Advisory Committees have been constituted separately since then in terms of the provision of Rule 75 of the Rules and Regulations of the C.S.I.R. and the Executive Councils now themselves form Sub-Committees like the Building and Finance Sub-Committee, Scientific Sub-Committee, etc. as considered necessary from time to time.

The functions in Bye-law 49 are carried out by the Scientific Sub-Committees which are appointed by the Executive Councils as mentioned above, and, wherever no scientific sub-committees have been appointed, by the Executive Councils themselves.

The competent authority in deciding such matters is the Governing Body of the Council. The Governing Body was aware of the provisions of Rule 75 under which the Scientific Advisory Committee appointed by the Governing Body shall assist an Executive Council of a National Laboratory. For reasons recorded above, the Governing Body decided that the assistance envisaged under Rule 75, could be given by a Scientific Sub-Committee of the Executive Council.

The emphasis in Rule 75 is on the Executive Council having the assistance of scientific advisers rather than the actual designation of the Committee as a Scientific Advisory Committee. Indeed, the advisers appointed to the Executive Council and the Scientific Sub-Committee are carrying out functions assigned in the Bye-laws to the Scientific Advisory Committee.

The Governing Body was, therefore, acting in consonance with the spirit of Rule 75 in merging the functions of the Scientific Advisory Committee with that of the Executive Council especially as it had also provided for the constitution of Scientific Sub-committees to assist them in their scientific programme.

It is, therefore, felt that non-observance of Rule 75, if any, could only be a technical one. The Council is, however, having the matter legally examined and, if necessary, would take steps to bring the Bye-laws in consonance with the existing practice.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966)

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please intimate the result of examination of the matter, legally, relating to non-observance of Rule 75.

REPLY OF THE GOVERNMENT

As a result of further examination of the matter, necessary steps are being taken to bring the Bye-laws in consonance with the existing practice.

(CSIR D.O. No. 2/5/66-PU dated 31st March, 1967).

Recommendation (Serial No. 31, Para 64)

The Committee hope that all out efforts will be made to give wider publicity to the activities of the Central Electronics Engineering Research Institute so that the results of the research being done at the Institute reach the parties concerned quickly and they derive benefit out of it in time. They would further suggest that exchange arrangements may be made by CEERI to obtain information and publicity material brought out by other institutes doing work in Electronics.

REPLY OF THE GOVERNMENT

The recommendation of the Committee that all out efforts should be made to give wide publicity to the activities of the CEERI, Pilani, has been noted. A Quarterly Newsletter highlighting the activities of the institute is circulated to the industry and user departments. Also, whenever a certain project reaches the stage of completion, publicity to this effect is given in CSIR News. In the case of projects of public importance like television receiver, publicity media such as press, radio and film have been used.

As regards the second part of the recommendation, it is stated that the Institute is receiving annual reports, publicity material etc. from various research institutions doing work in electronics on reciprocal basis.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

Recommendation (Serial No. 32, Para 65)

The Committee consider that in an out-of-the-way place like Pilani it is necessary to provide basic amenities of housing, medical, marketing etc. to the staff to attract and retain promising scientists. They would like Government to examine early the question of providing a Community Centre at moderate costs at Pilani for the use of the staff of CEERI and their families. The Committee note that medical and marketing facilities exist at Pilani for the staff of Birla Institute of Technology and Science. They suggest that the same may be made available to the staff of CEERI by mutual agreement with the Birla Education Trust, Pilani.

REPLY OF THE GOVERNMENT

In the year 1965-66, proposals for the construction of the following buildings at the CEERI, Pilani were made :—

(1) Staff Quarters	.	57 Nos.
(2) Hostel for 30 persons	.	1 No.
(3) Shopping Centre	.	1 No.
(4) Community Centre	.	1 No.

It was estimated that the above buildings would cost Rs. 10,81,784 only. In view of the need for economy in the expenditure, Ministry of Finance, Concurred in the proposals for the construction of staff quarters and a hostel only at an estimated cost of Rs. 7,50,852.90 and advised postponement of the construction of Community and Shopping Centres.

The question of providing amenities (Community Centre, Dispensary, Nursing School etc.) to the staff of the Institute and their families come up for reconsideration before the Executive Council of the Institute at its meeting held on 23-8-66. The Executive Council of the Institute recommended as follows :—

“ While appreciating the need for a Community Centre, the Executive Council recommended that the construction of the Community Centre should be postponed for a year or so in view of the present economic conditions in the country. Instead a quarter or some other premises should be used as a Community Centre for the present ”.

The above recommendation of the Executive Council is receiving consideration.

It may be mentioned that a Residential Medical Officer has been provided for the Institute to cater to the medical needs of staff. One Co-operative Store is also functioning at the Institute to meet the day-to-day needs of the staff and their families. For bulk purchases and medical attention (in the case of serious ailment) facilities for marketing in the BITS campus and the hospital set up by the Matri Sewa Sadan Trust are made use of.

(CSIR D.O. No. 2/5/66-PU dated 31st March, 1967).

Recommendation (Serial No. 33, Para 66)

The Committee have no doubt that with its reputation, the Institute will contribute greatly to the development of Electronics Industry in the Country which, according to the Electronics Committee, is expected to produce electronic equipments worth over Rs. 1600 crores during the next ten years. The Committee feel that with the coordinated efforts of all the electronic institutes in the country, it should be possible to build up indigenous know-how and import substitution in the field of electronics. The Committee would like CEERI to intensify research on transmission equipment for radio and television as also on television camera so as to develop indigenous know-how for these important equipments as early as possible. They would also like greater attention to be paid to the development of the recorders, record players, transistorized radio and television receivers etc. which are items of utility for the general public. The Committee see no reason why it should not be possible for India to build up an export market for electronic equipments in the Asian and African countries in this labour intensive industry. The Committee recommend that the programme of research in electronics in the country should be intensified as it is the nervous system of modern technology.

The Committee feel that the Institute should seriously apply itself in helping the industry to reduce the cost of production and improve the quality of the indigenous electronic components so as to bring them at par with the best available in the world.

REPLY OF THE GOVERNMENT

The recommendation of the Estimates Committee has been communicated to the Ministries/Departments concerned.

As regards the recommendation of the Committee for intensifying research work on transmission equipment for radio and television, as also on television camera, tape recorders, record players, transistorized radio and television receivers etc. it is stated that work on these projects will be taken up by the Institute subject to the availability of funds.

The Institute has also taken note of the recommendation of the Estimates Committee regarding the cost of production and for improving the quality of indigenous electronic components.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966).

CHAPTER III

RECOMMENDATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF GOVERNMENT'S REPLY

Recommendation (Serial No 13, Para 43)

The Committee would like CEERI to intensify research on television camera after settling the specifications with All India Radio so that the project developed is in accordance with the requirement of the user department. The Committee would also like CEERI to keep the Ministry of Industry and Directorate General of Technical Development informed of the progress made so that to foreign collaboration agreements in this behalf are entered into and negotiated in the meantime. The Committee hope that after the project is completed successfully, necessary patents would be taken immediately and no time would be lost in forming out the process for commercial exploitation through National Research Development Council.

REPLY OF THE GOVERNMENT

The Television Camera being developed at the CEERI, Pilani is meant for use in closed circuit television systems for industrial and educational applications. This is also a Defence requirement. The requirements of television cameras for these applications are different from the requirements for studio cameras which are of a sophisticated type and the development of which cannot be undertaken immediately due to the existing financial stringency. The working out of the specifications of the camera with the All India Radio, therefore, does not arise at this stage. Moreover the institute is at the moment giving high priority to the television receiver project, which is in the process of being batch produced. The work on the Industrial Television Camera now in hand, would be intensified subject to finances being made available; and is a logical stepping stone to the development of the more sophisticated studio cameras.

(CSIR U.O. No. 2/5/66-PU dated 27th December, 1966)

P. VENKATASUBBAIAH,
Chairman,
Estimates Committee.

NEW DELHI ;
September 2, 1967

Bhadra 11, 1889 (Saka)

APPENDIX I

No. 28(22) 66/DS

GOVERNMENT OF INDIA,

MINISTRY OF DEFENCE,

Deptt. of Def. Supplies,

New Delhi, the 2nd May, 1967

OFFICE MEMORANDUM

Apropos the recommendations contained in para 42 of the 104th Report of Estimates Committee on Central Electronics Engineering Research Institute, Pilani, the Government of India have decided to set up a Committee of Experts to advise on the measures necessary to bring down the prices of electronic components used in T. V. receivers to be manufactured indigenously.

2. Composition

The composition of the Committee will be as follows :—

- | | |
|--|----------|
| (1) Shri S. M. Aggarwal, Joint Secretary, Department of Defence Supplies, Ministry of Defence. | Chairman |
| (2) A representative of Council of Scientific and Industrial Research. | Member |
| (3) A representative of the Department of Defence Production, Ministry of Defence. | „ |
| (4) A representative of the Ministry of Industrial Development and Company Affairs. | „ |
| (5) The Cost Accounts Officer, Deptt. of Defence Supplies, Ministry of Defence. | „ |
| (6) Shri Malhotra, Deputy Secretary, Deptt. of Defence Supplies, Ministry of Defence. | „ |

Shri Malhotra will act as the convener. The Committee may coopt as and when required, any other officers and/or Experts.

3. Terms of Reference

To terms of reference of the Committee shall be :—

- (i) To examine the prices of various components, both imported and indigenious, used in the manufacture of T. V. receivers, and

- (ii) to advise on the steps necessary to reduce the cost of these components including measures like standardisation, mass production, etc.

4. The Committee will submit its report within a period of six months from the date of issue of these orders.

Sd/-.

(S. Malhotra),

Deputy Secretary to the Govt. of India.

To

- (i) CSIR
- (ii) Deptt. of Defence Production.
- (iii) Ministry of Industrial Development & Company Affairs.

Copy to:—PS to DM/MMD

PS to Secy. (DS)

JS (ALP)/JS (Sup)/DS (Sup-II).

Bharat Electronics Ltd., Bangalore.

Development Officer (Electronics)

(Shri P. N. Deobhakta).

Cost Accounts Officer /Min. of Fin. (Def./Supplies).

APPENDIX II

Central Electronics Engineering Research Institute, Pilani.

EXECUTIVE COUNCIL

1. Shri B. V. Baliga,
Managing Director,
Bharat Electronics Ltd.,
Jalahalli P. O., Bangalore-13 Chairman
2. Brig. K. K. Mehta,
Director of Electronics Research and
Development Organisation,
(Ministry of Defence) H. Q.,
C.E.E.R.I., Pilani. Member
3. Dr. A. S. Rao,
Director, Electronics Group,
Atomic Energy Establishment,
Trombay, Apollo Pier Road,
Bombay-1. ”
4. Shri C. P. Vasudevan,
Member, Research,
P. & T. Board, Parliament Street,
New Delhi-1. ”
5. Shri P. N. Deobhakta,
Development Officer (Electronics),
Directorate General of Technical
Development,
Ministry of Supply & Technical
Development, Udyog Bhavan,
New Delhi-11. ”
6. Shri C. R. Subramaniam,
Deputy General Manager,
(Components Division),
Bharat Electronics Ltd.,
Jalahalli P. O., Bangalore-13. ”
7. Shri S. S. Aiyar,
Chief Engineer,
Office of the Director General,
All India Radio, Broadcasting House,
Parliament Street, New Delhi-1. ”
8. Shri G. R. S. Rao,
5, Girishant, 351A, V. P. Road,
Khar, Bombay-52 As. ”

9. Dr. N. B. Bhatt,
Director,
Solid State Physics Laboratory,
Ministry of Defence,
Lucknow Road, Delhi-6. *Member*

10. Prof. S. Sampath,
Deputy Director,
Indian Institute of Technology,
I. I. T. P. O.,
Madras-36. ”

11. Director General,
Scientific and Industrial Research,
Rafi Marg, New Delhi. *Ex-officio
Member*

12. Financial Adviser to CSIR,
New Delhi. Do.

13. Director,
Central Electronics Engineering
Research Institute,
Pilani. Do.

APPENDIX III

(Vide Introduction)

Analysis of the Action taken by Government on the recommendations contained in the 104th Report of the Estimates Committee (Third Lok Sabha).

I. Total number of recommendations made	33
II. Recommendations that have been accepted by Government (Vide recommendations at S. Nos. 1 to 12 and 14 to 33 referred to in Chapter II)	
(i) Number	32
(ii) Percentage to total	97%
III. Recommendations which the Committee do not desire to pursue in view of Government's reply (Vide recommendation at S. No. 13 referred to in Chapter III)	
(i) Number	1
(ii) Percentage to total	3%

Sl. No.	Name of Agent	Agency No.	Sl. No.	Name of Agent	Agency No.
<i>DELHI—contd.</i>			30.	People's Publishing House, Rani Jhansi Road, New Delhi.	76
21.	Sat Narain & Sons, 3141 Mohd. Ali Bazar, Mori Gate, Delhi.	3	31.	The United Book Agency, 48, Amrit Kaur Market, Pahar Ganj, New Delhi.	88
22.	Atma Ram & Sons, Kashmir Gate, Delhi-6.	9	32.	Hind Book House, 83, Janpath, New Delhi.	95]
23.	J. M. Jaina & Brothers, Mori Gate, Delhi.	11	33.	Bookwell, 4 Sant Narakari Colony, Kingsway Camp, Delhi-9.	96
24.	The Central News Agency, 23/90, Connaught Place, New Delhi.	15	MANIPUR		
25.	The English Book Store, 7-L, Connaught Circus, New Delhi.	20	34.	Shri N. Chaoba Singh, News Agent, Ram Lal Paul High School Annex, Imphal.	77
26.	Lakshmi Book Store, 42 Municipal Market, Janpath, New Delhi.	23	AGENTS IN FOREIGN COUNTRIES		
27.	Bahree Brothers, 188, Lajpatrai Market, Delhi-6.	27	35.	The Secretary, Establishment Department, The High Commission of India, India House, Aldwych, LONDON, W.C.-2.	
28.	Jayana Book Depot, Chapparwala Kuan, Karol Bagh, New Delhi.	66			
29.	Oxford Book & Stationery Company, Scindia House, Connaught Place, New Delhi-1.	68			

© 1967 BY LOK SABHA SECRETARIAT

PUBLISHED UNDER RULE 382 OF THE RULES OF PROCEDURE AND CONDUCT OF
BUSINESS IN LOK SABHA (FIFTH EDITION) AND PRINTED BY THE GENERAL
MANAGER, GOVERNMENT OF INDIA PRESS, MINTO ROAD, NEW DELHI.
