

**ESTIMATES COMMITTEE
(1967-68)**

TWENTY-EIGHTH REPORT

(FOURTH LOK SABHA)

MINISTRY OF DEFENCE

Action taken by Government on the recommendations contained in the Ninety-fifth Report of the Estimates Committee (Third Lok Sabha) on the Ministry of Defence (Defence Research and Development Organisation)-Electronics and Radar Development Establishment and Defence Electronics Research Laboratory.



**LOK SABHA SECRETARIAT
NEW DELHI**

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CORRIGENDA

to

Twenty-Eighth Report of the Estimates Committee
(Fourth Lok Sabha) on the Ministry of Defence
(Defence Research and Development Organisation) -
Electronics and Radar Development Establishment
and Defence Electronics Research Laboratory.

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(1967-68)

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STUDY GROUP 'E' OF ESTIMATES COMMITTEE
(1967-68)

CONVENER

Shri J. M. Lobo Prabhu

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10. Shri Dhireswar Kalita
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12. Shrimati Sangam Laxmi Bai
13. Shri Inder J. Malhotra
14. Shri Chintamani Panigrahi
15. Shri Rajdeo Singh.

INTRODUCTION

I, the Chairman, Estimates Committee, having been authorised by the Committee to submit the Report on their behalf, present this Twenty-Eighth Report of the Estimates Committee on action taken by Government on the recommendations contained in the Ninety-Fifth Report of the Estimates Committee (Third Lok Sabha) on the Ministry of Defence (Defence Research and Development Organisation)—Electronics and Radar Development Establishment, Bangalore and Defence Electronics Research Laboratory, Hyderabad.

2. The Ninety-Fifth Report of the Estimates Committee was presented to the Lok Sabha on 24th March, 1966. Government furnished replies indicating action taken on the recommendations on 29th August, 1966, 12th September, 1966 to 31st October, 1966. Government's replies were considered by Study Group 'E' of the Estimates Committee on 28th July, 1967. The draft Report was considered by Study Group 'E' of the Estimates Committee on 29th November, 1967 and adopted by the Committee on 7th December, 1967.

3. The Report has been divided into the following Chapters:—

I. Report.

II. Recommendations which have been accepted by Government.

III. Recommendations which the Committee do not want to pursue in view of Government's reply.

4. An analysis of the Action taken by Government on the recommendations contained in the Ninety-Fifth Report of the Estimates Committee (Third Lok Sabha) is given in the Appendix. It would be observed therefrom that out of 36 recommendations made

in the Report, 35 recommendations, i.e. 97 per cent have been accepted by Government and the Committee do not desire to pursue one recommendation i.e., 3 per cent in view of Government's reply.

P. VENKATASUBBAIAH,
Chairman,
Estimates Committee.

NEW DELHI;
The 26th December, 1967/Pausa 5, 1889 (Saka).

CHAPTER I

REPORT

The Committee are glad to observe that the recommendations contained in their Ninety-fifth Report (Third Lok Sabha) on the Ministry of Defence—(Defence Research and Development Organisation)—Electronics and Radar Development Establishment, Bangalore and Defence Electronics Research Laboratory, Hyderabad, have been replied to by Government in time and generally to the Committee's satisfaction.

While noting the action taken by Government on certain recommendations, the Committee desire that further information on the progress made in the implementation of some of the recommendations (included in Chapter II), may be furnished to the Committee before the end of the current financial year.

CHAPTER II

RECOMMENDATIONS WHICH HAVE BEEN ACCEPTED BY GOVERNMENT

Recommendation (Serial No. 1, Paragraph No. 8)

The Committee hope that in view of the vital importance of electronics in modern life, industry and defence, Government would make an immediate examination of the recommendations made by the Electronics Committee and initiate energetic measures to implement them. This is essential if the country is to have by the end of the next ten years a self-sufficient and self-reliant electronics industry capable of keeping pace with developments in the other technologically advanced countries of the world.

REPLY OF GOVERNMENT

Noted. Action is in hand for the implementation of the Bhabha Committee's recommendations broadly as recommended and for the establishment of an electronics industry.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dated 29-8-1966].

Recommendation (Serial No. 2, Paragraph No. 16)

The Committee feel that it would be useful to have on the Electronics Development Panel eminent scientists and experts from the Universities, technological institutes and the private sector industry in order that fresh mind and expert knowledge of the outside scientists and technologists may be brought to bear on the defence electronics research and development projects.

REPLY OF GOVERNMENT

We agree with the recommendations of the Estimates Committee and action is in hand to include representatives from Universities, Technological Institutes and private sector industries in the composition of the Electronics Development Panel.

2. However, it will have to be ensured that all non-service representatives are cleared from the security point of view, before admission to the Panel.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dated 29-8-1966].

Recommendation (Serial No. 3, Paragraph No. 17)

The Committee note that out of 8 years since the inception of the Electronics Development Panel in 1958 in as many as 5 years only one meeting of the Panel has been held each year.

The Committee further note with regret that out of the 11 items on the agenda for the meeting of the Electronics Development Panel held on the 2nd April, 1965, as many as 5 items were not considered at all.

The Committee feel that if only one meeting of the Panel is held in a year and more than 45 per cent of the items on the agenda are not considered at any of the meetings, this is bound to affect adversely research and development work of the Electronics and Radar Development Establishment.

The Committee cannot but regard this position as very unsatisfactory. They consider that the Electronics Development Panel should meet at least twice a year and complete consideration of all the items on the agenda even if a meeting has to be held for more than one day at a time.

REPLY OF GOVERNMENT

In addition to the full panel meetings of the Electronics Development Panel since it was set up, during 1958—65 17 Special Study/Working Group had also been formed, each of which held meetings over a period of time. Besides, working level meetings of the members of the Electronics Development Panel were also held to resolve various issues arising out of the meetings of the Panel. However, it is agreed that meetings should be held more frequently than has been done in the past.

It has been decided that at least two meetings of the Electronics Development Panel would be held every year with manageable agenda and, if necessary, the meetings will be carried over for more than one day.

[Ministry of Defence O.M. No. 15(22)/66/D(R&D), dated 29-8-1966].

Recommendation (Serial No. 4, Paragraph No. 18)

The Committee cannot over-emphasise the importance of developing radar technology in the country rapidly and suggest that vigorous efforts should be made to recruit suitable manpower for the purpose.

REPLY OF GOVERNMENT

Noted. All apprentices who attended the first course under the Apprenticeship Training Scheme, have since been absorbed against available vacancies. The second batch of Apprentices is expected to be available for absorption towards the beginning of 1967. Action is also being taken to fill up vacancies both by direct recruitment through the UPSC, as well as by departmental promotions.

[Ministry of Defence O.M. No. 15/22 (66)/D (R&D), dated 12th September, 1966].

Recommendation (Serial No. 5, Paragraph No. 19)

The Committee would like to stress that the presence of too much administrative staff in a R & D Laboratory/Establishment is undesirable as it spoils the atmosphere for research and development. They would, therefore, recommend that the position of administrative staff in the Electronics and Radar Development Establishment may be urgently reviewed.

REPLY OF GOVERNMENT

As suggested by the Estimates Committee, the position of administrative and misc. staff in LRDE was reviewed by a Committee consisting of Director of Electronics and Director of Administration (R&D) at R. & D. Headquarters. It was found that the total staff of 466 about whom a mention was made to the Estimates Committee did not include the industrial staff. Taking into account this industrial staff, the overall strength as on 1.1.1966 to be administered in L.R.D.E. was about 900, out of which, about 240 were the admin. and misc. staff. Thus the percentage of admin. and misc. staff comes to about 27% of the total strength. This percentage came down to 24%, when the PEs of Radar and Mobile Establishment Groups were sanctioned. Up-to-date, out of a total strength of 1247, 305 are in the admin. and misc. categories. This represents the same proportion of administrative and misc. as exists in other laboratories.

[Ministry of Defence O.M. No. 15/22 (66)/D (R&D), dated 12th September, 1966].

Recommendation (Serial No. 6, Paragraph No. 20)

The Committee feel that if the Director of an Establishment is provided with an Administrative Officer to assist him in administrative duties, it is only desirable and appropriate that the Adminis-

trative Officer is delegated powers to enable him to be really useful to the Director and to relieve him of the administrative work; otherwise the Administrative officer will be practically of little use to the Director.

REPLY OF GOVERNMENT

The Government accepts the recommendation. Administrative powers, which could be formally delegated by the Heads of the establishments to their Administrative Officers within the framework of the orders regarding delegation of powers as contained in Financial Regulations have already been delegated.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dated 29-8-1966].

Recommendation (Serial No. 7, Paragraph No. 21)

The Committee have noted several disquieting features in the case relating to the appointment of Assistant Surgeon in Electronics and Radar Development Establishment. They cannot but deplore the manner in which a particular lady doctor was sought to be appointed in the Electronics and Radar Development Establishment. They deprecate the inordinate delay in filling the post of Assistant Surgeon in that Establishment.

The Committee consider that for the posts to be filled through the UPSC, the Commission should invariably be requested to approve a panel of at least three candidates for one vacancy as against one candidate as is the practice at present so that if the first person on the approved panel declines the offer, the appointment can be offered to the second person and so on.

This would obviate the need for going through the entire process of selecting a candidate, all over again and consequently reduce the delay to a large extent.

REPLY OF GOVERNMENT

Noted.

A doctor has already been posted to the Electronics and Radar Development Establishment, Bangalore.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dated 29-8-1966].

Recommendation (Serial No. 8, Paragraph No. 27)

The Committee are greatly concerned at the cumbersome and dilatory procedures which impede the progress of defence research

and development projects and the production of the developed prototypes. They suggest that the procedures, which do not correspond to the needs of the present situation should be comprehensively reviewed and modified as necessary without delay so that the time-lag in the various stages between the assignment of a project to a scientist and the establishment of mass production of the item developed, is reduced to the barest minimum.

REPLY OF GOVERNMENT

Noted. Certain specific proposals in this regard are under consideration.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dated 29-8-1966].

COMMENTS OF THE COMMITTEE

Progress report in implementation of the proposal made by the Government for elimination of cumbersome and dilatory procedure which impedes the progress of Defence Research and Development Organisation, may be furnished to the Committee before the end of the financial year 1967-68.

Recommendation (Serial No. 9, Paragraph No. 28)

The Committee consider that it would be desirable if the five-year plans of R & D Establishments/Laboratories synchronise with the National Five Year Plans so that the resources for the R & D Establishments/Laboratories could be planned in a realistic manner. They hope that necessary adjustment of years will be made to facilitate better allocation of funds on the basis of Plan period.

REPLY OF GOVERNMENT

Noted.

Action in this regard has been initiated.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dated 29-8-1966].

Recommendation (Serial No. 10, Paragraph No 29)

The Committee suggest that the five-year plan of the Defence Electronics Group of Establishments may be reviewed urgently in the light of the report of Electronics Committee.

REPLY OF GOVERNMENT

The decisions of Government on the recommendations of the Electronics Committee will be duly taken into account in revising the Five Year Plan of the Defence Electronics Group.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dated 29-8-1966].

Recommendation (Serial No. 11, Paragraph No. 33)

The Committee consider that in view of the special importance of radar to the Defence Services, every step should be taken to sustain and encourage the confidence of the two units, viz., LRDE and DLRL in the development of radar according to modern standard and for that, all procedural delays should be scrupulously avoided and administrative machinery properly geared up. The Electronics and Radar Development Establishment and the Defence Electronics Research Laboratory should, on their part, take urgent and concerted steps to implement the plan for reinforcement of radar development activity, according to up-to-date standard of effectiveness.

REPLY OF GOVERNMENT

Noted.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dated 29-8-1966].

Recommendation (Serial No. 12, Paragraph No. 34)

The Committee note that the Wireless Set 'P' Mk 1, which is an important communication set, has taken as long as 10 years for development and to go into bulk production. The Committee consider the delay in the development of this set as unfortunate. They feel that with proper planning and sustained action, it should have been possible to reduce the time taken in development.

REPLY OF GOVERNMENT

The development of WS 'P' was the first major electronics project undertaken for the Defence Services at a time when Bharat Electronics Ltd., was in the process of being set up and when expertise in the field of Defence Electronic equipments was almost non-existent in India.

2. Lessons learnt while progressing this project have been useful in reducing the time period of completion of similar development projects.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dt. 29-8-1966]

Recommendation (Serial No. 13, Paragraph No. 35)

The Committee consider the time of seven years taken in the development of Apparatus Carrier Telephone (1 + 4)2A as too long and feel that it should have been possible to reduce it by special efforts. The Committee hope that in future, there should be energetic efforts to reduce the time taken in the development of weapons of strategic importance.

REPLY OF GOVERNMENT

Out of the 7 years mentioned by the Committee, the actual development period has been about 4 years. The collaboration arrangements were finalised with Messrs Indian Telephone Industries, Bangalore, in October 1959, and prototypes were fabricated in December 1960 for engineering evaluation by the Electronics Research and Development Establishment. These were offered for user trials in February 1961 which were completed in May 1962, and the bulk production orders were placed in October 1962.

2. Various measures have been initiated to reduce time lags, such as the creation of a components pool for imported equipment and streamlining of procedures.

[Ministry of Defence O.M. No. 15(22)/66/D(R&D), dt. 29-8-1966]

Recommendation (Serial No. 14, Paragraph No. 36)

The Committee consider that it would be useful to have a periodical evaluation conducted of the research and development work of the various R&D Establishments every five years by a Committee consisting of eminent scientists drawn both from the Defence Research and Development Organisation and from outside. They hope that the first evaluation will be undertaken at an early date.

REPLY OF GOVERNMENT

Noted.

The R&D Organisation is still in the building-up stage. An independent evaluation would be fruitful only after the R&D establishments have reached an adequate stage of development. In view of this, an evaluation by a Committee of experts, of the type recommended by the Committee can be undertaken after some more time has elapsed.

[Ministry of Defence O.M. No. 15(22)/66/D(R&D), dt. 29-8-1966]

COMMENTS OF THE COMMITTEE

A Committee for evaluation may be set up as soon as possible and its findings made available to the Committee.

Recommendation (Serial No. 15, Paragraph No. 38)

The Committee cannot too strongly emphasise the urgent and vital need for making concerted efforts by all concerned to meet the country's defence needs of electronic equipment in the overall national interest. They hope that the industry will rise equal to the task. In this context, the Committee would like to stress that there is an absolute necessity of urgent establishment of powerful design and development groups both in Government organisations like Atomic Energy Establishment, the Council of Scientific and Industrial Research and the Defence Research and Development Organisation and in large undertakings in the electronics industry in the private and public sectors as recommended by Bhabha Committee. They would urge that effective and concrete measures should be initiated in this direction without delay.

REPLY OF GOVERNMENT

Noted.

2. The urgent and vital necessity for establishing adequate research and development base in the country to meet the requirements of Services for Electronic Equipments has been examined in detail. Based on this examination, a number of development projects have been assigned to Defence R&D Establishment and other Technical Establishments, such as, the Atomic Energy Establishment, Trombay and Central Electronic Engineering Research Institute, Pilani.

3. The implementation of the Report on Electronics under the Chairmanship of late Dr. Bhabha has also been considered. It has been decided that—

- (a) Adequate research, development and designing facilities will be attached to every production unit right from the start.
- (b) In addition to the facilities being attached to every production unit, such research should also be carried out in laboratories of Scientific Organisation concerned and Universities.

For the implementation of these decisions, the Government has constituted an Electronics Committee at the level of Secretaries in

the Central Government and eminent Scientists and has directed that the Committee should take an account of the most urgent needs, keep track of the research being done in design and development and give guidance and directions where necessary, identify the sectors where indigenous production could be built up and promote speedy building of such capacity. It has also been decided to allot special funds to the Department of Defence Supplies for utilisation by the Committee, from time to time.

[Ministry of Defence U.O. No. 15/22/(66)/D(R&D), dated 31.10.66]

Recommendation (Serial No. 16, Paragraph No. 40)

The Committee suggest that greater efforts should be made by the Electronics and Radar Development Establishment to educate and assist the industry in the fabrication of reliable prototype equipment in view of the stringent requirements and strict specifications for defence.

REPLY OF GOVERNMENT

Noted.

The Engineering Wing of the Establishment is making special efforts to educate and assist the industry in the fabrication of reliable prototypes. The industry is also becoming increasingly alive to the advantages of setting-up strong R&D Cells of their own.

[Ministry of Defence O.M. No. 15(22)/66/D(R&D), dt. 29-8-1966]

Recommendation (Serial No. 17, Paragraph No. 42)

The Committee would like to stress the importance of maintaining the closest possible links between the different agencies concerned with research and development work in the field of electronics so that there may be no scope for any unnecessary duplication of effort and wasteful expenditure.

REPLY OF GOVERNMENT

Noted.

The close links which at present exist between different agencies concerned with research and development work in the field of electronics will continue to be maintained, and efforts will be made to further strengthen the liaison between various agencies.

[Ministry of Defence O.M. No. 15(22)/66/D(R&D), dt. 29-8-1966]

Recommendation (Serial No. 18, Paragraph No. 43)

The Committee feel that there is urgent need for augmenting the facilities for training in electronics and suggest that special and sustained efforts should be made at appropriate level to secure training facilities in the field of electronics for defence scientists and technologists working in the Electronics and Radar Development Establishment and Defence Electronics Research Laboratory.

REPLY OF GOVERNMENT

Action is in hand to prepare a forward plan for training of defence scientists and technologists in various fields of electronics, such as radar, data processing, etc., including the creation of necessary facilities, where they do not exist in collaboration with selected technological/industrial institutes, and at Defence R&D Establishments.

2. Whenever opportunity presents itself, it is planned to send our scientists/technologists abroad to gain experience in selected fields.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dt. 29-8-1966]

Recommendation (Serial No. 19, Paragraph No. 44)

The Committee consider that provision of facilities in the Electronics and Radar Development Establishment for practical training for Engineering/Science students from various institutions/universities is of great advantage to the progress of scientific research in the country and will result in fruitful coordination and cooperation between the two sectors, University and non-University. The Committee feel that since our sources in Finance and technical personnel are limited, unless they are utilized most advantageously it will be impossible to obtain the best results.

REPLY OF GOVERNMENT

Noted.

The Establishment would continue to provide facilities for practical training for engineering/science students to the maximum possible extent, with due regard to security and without jeopardising normal project activity.

[Ministry of Defence O.M. No. 15 (22) /66/D (R&D), dt. 29-8-1966]

Recommendation (Serial No. 20, Paragraph No. 48)

In view of the vital importance of electronics in defence, atomic energy, communication and industrial production, the Committee feel that there is urgent need for devising a systematic way of collecting

information about the researches and developments in electronics and would therefore suggest that the desirability of setting up a suitable machinery for this purpose may be examined by the Defence Organisation in consultation with the Council of Scientific and Industrial Research and the Atomic Energy Establishment.

The Committee need hardly stress that there should be free communication of results of research and development between the R&D Establishments under the Defence R&D Organisation and the Civil Laboratories, Universities, Institutes of Technology etc. consistent with considerations of security so that there is close coordination of national effort and resources, and all necessary duplication is avoided.

REPLY OF GOVERNMENT

Noted. The question of devising a suitable machinery or systematic collection and dissemination of information regarding the results of research and development in electronics is under consideration by the Defence Research and Development Organisation, in consultation with the appropriate agencies.

[Ministry of Defence O.M. No. 15(22)/66/D(R&D), dt. 29-8-1966]

COMMENTS OF THE COMMITTEE

The machinery proposed to be devised for systematic collection and dissemination of information regarding results of research in electronics may be communicated.

Recommendation (Serial No. 21, Paragraph No. 51)

In view of the vital importance and urgency on the development projects of the Electronics and Radar Development Establishment, the Committee hope that the foreign exchange requirement, of the Establishment would be met to the maximum extent possible.

REPLY OF GOVERNMENT

Noted.

[Ministry of Defence O.M. No. 15(22)/66/D(R&D), dt. 29-8-1966]

Recommendation (Serial No. 22, Paragraph No. 52)

The Committee suggest that sustained and concerted efforts may be made by the Electronics and Radar Development Establishment in conjunction with the Atomic Energy Department, Indian Telephone Industries, Central Electronics Engineering Research Institute

and other Organisation concerned to develop and produce electronic test equipment as expeditiously as possible so that valuable foreign exchange could be saved and dependence on foreign assistance eliminated.

REPLY OF GOVERNMENT

Noted. As already reported to the Estimates Committee, considerable progress has been made in establishing indigenous manufacture of test equipments in conjunction with the Atomic Energy Establishment, TROMBAY, Central Electronic Engineering Research Institute, PILANI, Bharat Electronics Limited, Bangalore, Indian Telephone Industries, Bangalore, and private industry for a range of test equipments, on which they have a degree of expertise. It is expected that these efforts will result in our acquiring competence to develop and produce more sophisticated range of test equipments in the country.

The Laboratories of the Electronics Group have also undertaken fabrication of test equipments and components. Examples of this are solar cells, varactor diodes, ionospheric recorders and a range of microwave devices.

[Ministry of Defence O.M. No. 15(22)/66/D(R&D), dt. 29-8-1966]

Recommendation (Serial No. 23, Paragraph No. 53)

The Committee suggest that whenever any new technique and know-how is developed by the Electronics and Radar Development Establishment or by any other Laboratory/Establishment of Defence R & D Organisation, the question of taking patents on national and international scale for such new technical processes or products should be considered comprehensively.

REPLY OF GOVERNMENT

This is already being done. As an example, a patent has been applied for in respect of Field Artillery Radar developed at the Electronics and Radar Development Establishment.

[Ministry of Defence O.M. No. 15(22)/66/D(R&D), dt. 29-8-1966]

Recommendation (Serial No. 24, Paragraph No. 54)

The Committee consider that the Ministries of Defence and Education should examine the desirability of helping the less developed countries, particularly in Asia and Africa, with whatever know-how and trained personnel they can afford to give them as this will improve the image of India in those countries as also in international scientific world.

REPLY OF GOVERNMENT

The desirability of helping the less developed countries, particularly in Asia and Africa with whatever know-how and trained personnel we can afford to give them, has been examined in consultation with the Ministry of Education. The Education Ministry is already helping them by operating a scheme of scholarships, known as General Scholarships Scheme, under which scholarships are awarded to students from as many as 50 under-developed countries for post-Matriculation studies in India. They also help the Ministry of Home Affairs in selecting Secondary School teachers for these countries. A list showing the distribution of scholarships country-wise under 1966-67 is enclosed at Annexure A. These countries are also assisted by Indian Sports coaches to train their sportsmen and in some cases with Sport equipment.

2. The various organisations of the Education Ministry, viz. the Surveyor General, Botanical, Zoological and Anthropological Surveys and National Archives of India and National Atlas Organisation etc. would be able to extend and do already extend their technical know-how and training facilities to these countries.

3. The same applies to Council of Scientific & Industrial Research, which have already set up an International Scientific Collaboration Bureau for initiating and establishing bilateral collaboration between CSIR and equivalent Scientific/research institutions abroad. Nevertheless the recommendations of the Estimates Committee together with the facilities available in the organisations under the Ministry of Education have been brought to the notice of the Ministry of External Affairs for further necessary action.

4. So far as the Ministry of Defence is concerned, since 1947 we have been giving training facilities to a large number of friendly Afro-Asian countries for training their Armed Forces personnel in our various Defence Training Institutions. As many as 19 countries have availed themselves of these facilities in varying degree from our bearing all the charges including cost of transportation to the training institutions and back home in the case of Nepal to countries such as Nigeria, Malaysia, Ghana, which bear the full cost. Our training institutions which provide such facilities include, National Defence Academy, Indian Military Academy, Defence Services Staff College, Artillery School, Army School of Military Transport, Army School of Physical Training, Infantry School, Army Educational Corps and Centre, College of Military Engineering, School of Sig-

nals.: Intelligence Training Centre and Depot No. 1 Signals Training Centre, Remount Veterinary Corps and Centre, Army/Air Transport Support School, Armoured Corps Centre and School No. 2 Signals Training Centre, Electrical and Mechanical Engineering Schools and Centres, Army Ordnance Corps Schools and Centre, Army Supply Corps School, Corps of Military Police Centre and School, Bengal Engineering Group and Centre Auxiliary Cadet Corps, etc. A list of countries which have so far availed themselves of these facilities and the number of Armed Forces personnel trained so far from 1947 to 1966 is at Annexure B.

5. So far as the admission of foreigners in the Defence R & D establishments is concerned, this will have to be examined not only from the political angle but also from the point of view of security. For the present, on considerations of security, it would not be possible to implement this recommendation so far as R & D establishments are concerned.

[Ministry of Defence U.O. No. 15/22/(66)/D(R&D), dated 31.10.66].

ANNEXURE 'A'

Statement showing the allocation of the scholarships for the year 1966-67 to different countries covered under the General Scholarships Scheme 1966-67.

No.	Country	Number of scholarships recommended		Total
		Indigenous students	Students of Indian origin having local citizenship	
1	2	3	4	5
1	Aden	1	..	1
2	Afghanistan	6		6
3	Burma	2		2
4	Cambodia	1		1
5	Cameroon	1		1
6	Ceylon	5	2	7
7	Congo	1	..	1
8	Ethiopia	4	..	4
9	Dahomey	1	..	1
10	Fiji	1	1	2
11	Gambia	1	..	1
12	Ghana	1		1
13	Iraq	1	..	1
14	Japan	1	..	1
15	Kenya	4	2	6
16	Kuwait	1	..	1
17	Lebanon	1	..	1

1	2	3	4	5
18	Liberia	1	..	1
19	Madagascar	1	..	1
20	Maladive	1	..	1
21	Malawi	3		3
22	Mali			
23	Malaysia	5	2	7
24	Mauritius	2	..	2
25	Nepal	7	..	7
26	Nigeria	4		4
27	Zambia	3		3
28	North Vietnam	1	..	1
29	Phillipines	1		1
30	Portuguese territories in Africa	3	..	3
31	Sierra Leone	1	..	1
32	Somalia	1		1
33	South Africa	1	4	5
34	South Rhodesia (including nationalists)	1	..	1
35	South Vietnam	1	..	1
36	South West Africa	3	..	3
37	Sudan	1	..	1
38	Syria	1	..	1
39	Republic of Tanganyika & Zambia (including for Zanzibar)	2	1	3
40	Thailand	1	1	2
41	Togo	1	..	1
42	Uganda	4	2	6
43	U.A.R.	1	..	1
44	Vientiane (Laos)	1	..	1

1	2	3	4	5
45	West Indies (including Jamiaca Br. Guiana, Barahaboas, Anti- guç, Grodada, Dominca, St. Kitts, St. Lucia, St. Vincent and Montserrat)	2	2
46	Singapore	2		2
47	Iran	2	..	2
48	Palestine (Refugees)	2	..	2
49	Jordan	2	..	2

Recommendation (Serial No. 25, Paragraph No. 61)

The Committee think that co-ordination between the defence and civilian electronic research merely through common membership of the Committees is not adequate and that some more effective liaison should be established.

REPLY OF GOVERNMENT

Apart from common membership of various Committees, there is also the system of frequent visits by Directors of Defence Research and Development Laboratories to institutions like the Indian Institute of Technology, Atomic Energy Establishment and the CSIR Laboratories. A procedure has also been devised for periodical visits by scientists from Defence Electronics Research Laboratory to academic and other institutions which have potential, or are engaged on projects of defence interests. The Director of Electronics at Headquarters, R&D Organisation, is also a member of various Working Groups set up by the Scientific Advisory Committee of the Cabinet, and is in intimate touch with the Atomic Energy Establishment and CSIR.

[Ministry of Defence O.M. No. 15/22 (66) /D (R&D), dated 29-8-1966]

Recommendation (Serial No. 26, Paragraph No. 62)

The Committee feel that the Defence Electronics Research Committee should meet more often than once a year as at present and should also consider and review the progress of the electronics research and development programmes and the facilities available and required therefor.

REPLY OF GOVERNMENT

Noted. The Committee will now meet at least twice a year.

[Ministry of Defence O.M. No. 15/22 (66) /D (R&D), dated 29-8-1966]

Recommendation (Serial No. 27, Paragraph No.64)

The Committee are glad to note that as many as seven members of Defence Electronics Research Laboratory won cash awards for meritorious work during 1965-66. They hope that this will encourage others also to put in greater efforts.

REPLY OF GOVERNMENT

Noted.

[Ministry of Defence O.M. No. 15 (22) /66 /D (R&D), dated 29-8-1966]

Recommendation (Serial No. 28, Paragraph No. 70)

The Committee hope that in view of the vital importance of the equipment referred to in para 70, to the defence services, energetic steps would be taken by the Defence Electronics Research Laboratory to establish production of the equipment on a pilot plant scale without any avoidable delay.

REPLY OF GOVERNMENT

Noted. Action is in hand in this regard.

[Ministry of Defence O.M. No. 15/22 (66) /D (R&D), dated 29-8-1966]

COMMENTS OF THE COMMITTEE

Further progress for establishing production of the equipment on a pilot plant scale may be furnished to the Committee.

Recommendation (Serial No. 30, Paragraph No. 72)

The Committee suggest that the development work with regard to the techniques evolved by the Defence Electronics Research Laboratory for detecting non-metallic mines should be completed as early as possible.

REPLY OF GOVERNMENT

Based on a technique developed at Defence Electronics Research Laboratory, a model of a non-metallic mine detector has been fabricated and is at present being technically evaluated. This evaluation and subsequent user trial will reveal the capability of the equipment for employment under field conditions. The project has top priority.

[Ministry of Defence O.M. No. 15/22 (66) /D (R&D), dated 29-8-1966]

Recommendation (Serial No. 31, Paragraph No. 75)

The Committee suggest that in all the researches referred to in para 75, a priority should be fixed and that research may be intensified on the basis of priority fixed so that investigation may become effective and purposeful in a short time.

REPLY OF GOVERNMENT

Noted.

All research programmes at the Defence Electronics Research Laboratory are approved by the Defence Electronics Research Com-

mittee. The objectives are defined and suitable priorities are allotted.

[Ministry of Defence O.M. No. 15/22(66)/D(R&D), dated 29-8-1966]

Recommendation (Serial No. 32, Paragraph No. 76)

The Committee suggest that efforts may be intensified to develop techniques for Battlefield Surveillance Radar to meet future Services requirements.

REPLY OF GOVERNMENT

Noted. This project already has high priority.

[Ministry of Defence O.M. No. 15/22(66)/D(R&D), dated 29-8-1966]

Recommendation (Serial No. 33, Paragraph No. 79)

(a) *In view of the great potentialities of electronics in defence and industry, the Committee cannot over-emphasise the importance of associating universities, higher institutes of technology and other academic institutions in the country with defence electronics research.*

(b) *According to the assessment made by the Electronics Committee, the electronics industry of the size envisaged in 1975 would need 3,00,000 engineers, scientists and skilled workers. Considering the urgent need for trained manpower for the electronics industry, it is essential that the universities and other academic institutions are adequately equipped to enable them to supply properly qualified personnel. The Committee, therefore, suggest that Government and the University Grants Commission should give this matter, their most careful and urgent consideration and provide the necessary facilities to the universities and other academic institutions to train up adequate number of efficient scientists who will be able to undertake the necessary research schemes and projects in electronics.*

(c) *The Committee feel that there is enough of unnecessary secretiveness in defence research units and a general tendency of avoiding close collaboration with civil scientific research units. They suggest that, as in the UK and the USA, the Defence Research and Development Organisation should maintain maximum contact and collaboration with the Universities, National Laboratories and other academic and scientific research institutions in the country and make a wider use of these institutions for undertaking research projects.*

(d) *The Committee recommend that the Defence Research and Development Organisation should adopt the method of breaking up a*

problem into components so that they no longer remain highly sensitive and confidential. Sub-problems may then be 'farmed out' to various laboratories in the country, both defence and non-defence.

REPLY OF GOVERNMENT

The recommendations of the Estimates Committee are noted. A number of defence research and development tasks have already been 'farmed out' or referred to various institutions under the Department of Atomic Energy, Council of Scientific and Industrial Research, and Undertakings like Bharat Electronics Ltd. and Indian Telephone Industries, as well as academic institutions. With the increasing tempo of activities in the electronics field, endeavour will be made in conjunction with the University Grants Commission and the Ministry of Education, to utilise increasingly the talents and facilities available in suitable academic and scientific research institutions, and to have these facilities suitably strengthened.

[Ministry of Defence O.M. No. 15/22 (66) /D (R&D), dated 29-8-1966]

COMMENTS OF THE COMMITTEE

The progress report about the utilisation of the talents and facilities available in suitable academic and scientific institutions and the further strengthening of the facilities may be furnished to the Committee.

Recommendation (Serial No. 34, Paragraph No. 80)

The Committee feel that in view of the very difficult foreign exchange position at present, the Defence Electronics Research Laboratory and other units under the Defence R and D Organisation should make an earnest effort to avoid imports, by finding or developing local substitutes; and at the same time, Government should not make any delay in sanctioning the required and assessed foreign exchange after being satisfied that there cannot be any further reduction in the foreign exchange requirement in the interest of useful and necessary research.

REPLY OF GOVERNMENT

The Defence Electronics Research Laboratory and other establishments in the Electronics Group have fabricated a number of components and test equipments thus saving considerable foreign exchange. However, until a suitable components base is established in the country the import of minimum essential components and materials and equipment is unavoidable. Where required the necessary foreign exchange is made available.

[Ministry of Defence O.M. No. 15 (22) /66 /D (R&D), dt. 29-8-1966]

Recommendation (Serial No. 35, Paragraph No. 84)

The Committee have already pointed out in para 52 the desirability of developing and manufacturing all the electronic test equipment indigenously so that dependence on foreign assistance may be eliminated. They hope that concerted efforts will be made by the scientific organisations and the industry in this direction with a sense of urgency.

REPLY OF GOVERNMENT

Noted. As indicated in the comments on the recommendation at Serial No. 22, considerable progress has already been made in establishing indigenous manufacture of test equipment in the country, at public sector undertakings/national institutions. It is expected that these efforts will result in our gaining competence in the field of electronic test instrumentation, and help to produce more sophisticated range of test equipments in the country, with the assistance of scientific organisation and of the industry.

[Ministry of Defence O.M. No. 15/22 (66)/D (R&D) dated 29-8-1966]

Recommendation (Serial No. 36, Paragraph No. 85)

The Committee suggest that it should be ensured that the target dates for the completion of the construction of building required by the Defence Electronics Research Laboratory are adhered to.

REPLY OF GOVERNMENT

Noted.

Two works projects have been sanctioned for Defence Electronics Research Laboratory, Hyderabad. The Communication Division building is expected to be completed by October 1966 and the building for the Radar Division would be ready in about 2-1/2 years' time.

[Ministry of Defence O.M. No. 15/22 (66)/D (R&D) dated 29-8-1966]

CHAPTER III

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

Recommendation (Serial No. 29, Paragraph No. 71)

The Committee suggest that steps should be taken to encourage indigenous manufacture of the ionospheric equipment developed by the Defence Electronics Research Laboratory. They also suggest that the desirability of taking a patent for this equipment may be considered.

REPLY OF GOVERNMENT

Steps have been taken to fabricate a limited number of ionospheric recorders at the Defence Electronics Research Laboratory to meet the requirements of defence and other users such as INCOSPAR.

This has resulted in appreciable saving in foreign exchange (about 2.5 lakhs per equipment). A patent cannot be taken out since, basically, the circuitry and ideas are similar to those utilised in the known ranges of imported equipment.

[*Ministry of Defence O.M. No. 15/22 (66) /D (R&D), dated 29-8-1966*]

NEW DELHI;
December 26, 1967.

Pausa 5, 1889 (Saka).

P. VENKATASUBBAIAH,
Chairman,
Estimates Committee.

APPENDIX

Analysis of the action taken by Government on the recommendations contained in the Ninety-Fifth Report of the Estimates Committee (Third Lok Sabha)

1. Total number of recommendations	36
2. Recommendations accepted by Government Nos. 1-28 and 30-36	
Number	35
Percentage to total	97%
3. Recommendations which the Committee do not want to pursue in view of Government's reply. No.29	
Number	1
Percentage to the total	3%

**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. Lakshmipathy Chetty and Sons, General Merchants and News Agents, Newpet, Chandragiri, Chittoor District.	94	13.	Deccan Book Stall, Ferguson College Road, Poona-4.	
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 Akkur 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			
10.	The International Book Service, Deccan Gymkhana, Poona-4.	26			

Sl. No.	Name of Agent	Agency No.	Sl. No.	Name of Agent	Agency No.
DELHI— <i>contd.</i>					
21.	Sat Narain & Sons, 3141, Mohd. Ali Bazar, Mori Gate, Delhi.	3	30.	People's Publishing House, Rani Jhansi Road, New Delhi.	76
22.	Atma Ram & Sons, Kashmir Gate, Delhi-6.	9	31.	The United Book Agency, 48, Amrit Kaur Market, Pahar Ganj, New Delhi.	88
23.	J. M. Jaina & Brothers, Mori Gate, Delhi.	11	32.	Hind Book House, 82, Janpath, New Delhi.	95
24.	The Central News Agency, 23/90, Connaught Place, New Delhi.	15	33.	Bookwell, 4 Sant Narakari Colony, Kingsway Camp, Delhi-9.	96
25.	The English Book Store, 7-L, Connaught Circus, New Delhi.	20			
26.	Lakshmi Book Store, 42, Municipal Market, Janpath, New Delhi.	23	MANIPUR		
27.	Bahree Brothers, 188, Lajpatrai Market, Delhi-6.	27	34.	Shri N. Chaoba Singh, News Agent, Ramlal Paul High School Annex, Imphal.	77
28.	Jayana Book Depot, Chapparwala Kuan, Karol Bagh, New Delhi.	66	AGENTS IN FOREIGN COUNTRIES		
29.	Oxford Book & Stationery Company, Scindia House, Connaught Place, New Delhi-1.	68	35.	The Secretary, Establishment Department, The High Commission of India, India House, Aldwych, LONDON, W.C.-2.	

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