

ESTIMATES COMMITTEE

**Twenty-Seventh Report
1955-56**

MINISTRY OF PRODUCTION

**(The Hindustan Antibiotics Ltd. and
The Hindustan Insecticides Ltd.)**



सत्यमेव जयते

**LOK SABHA SECRETARIAT
NEW DELHI
April, 1956.**

C O R R I G E N D U M

TWENTY-SEVENTH REPORT OF THE ESTABLISHMENT COMMITTEE, (1955-56)

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F.T.C.

: 2 :

Appendix VII for page '50' read '52'
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" XI for pages '56-61' read '58-63'
" XII for pages '62-66' read '64-69'

Page 2, para 8, line 2, for 'Bottling, Flan' read 'Bottling, Plant'.

page 8, para 28, line 1, for 'Flan' read 'Plant'.

page 9, para 28, line 21, for 'investigation', read 'investigating'.

page 12, para 39, line 3, for 'outtern' read 'outturn'.

page 13, para 44, line 3, for 'Export' read 'Expert'.

page 20, para 65, line 9, for 'has' read 'had'.

page 21, para 69, line 26, for '19155' read '1955'.

page 64, serial list, line 7, delete '£'.

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MEMBERS OF THE ESTIMATES COMMITTEE, 1955-56.

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3. Shri Amarnath Vidyalankar.
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SECRETARIAT

Shri S. L. Shakhder—*Joint Secretary*.

Shri M. Sundar Raj—*Deputy Secretary*.

Shri C. S. Swaminathan—*Under Secretary*.

*Elected Member with effect from the 7th December, 1955 *vice* Shri R. Venkataraman resigned.

INTRODUCTION

I the Chairman, Estimates Committee, having been authorised by the Committee to submit the Report on their behalf present this Twenty-Seventh Report on the Ministry of Production.

2. The Report embodies the conclusions of the Committee on the Hindustan Antibiotics Ltd., and the Hindustan Insecticides Ltd.

3. During the course of the examination of the estimates relating to the Hindustan Antibiotics Ltd., and other chemical industries under the Ministry of Production, such as the Hindustan Insecticides Ltd., the Committee observed that there is scope for effecting economy in these undertakings by reducing the number of posts which are at present somewhat excessive. The number of supervisory and clerical posts is more than what the work would seem to warrant. The Committee, therefore, suggest the early appointment of a Technical Committee consisting of Chemical Engineers, Cost Accountants and experienced Administrators to review the staff requirements of these undertakings.

4. The Committee wish to express their thanks to the Officers of the Ministry of Production for placing before them the material and information that they wanted in connection with the examination of the estimates.

BALVANTRAY G. MEHTA,

Chairman,

Estimates Committee.

NEW DELHI;

The 10th April, 1956.

THE HINDUSTAN ANTIBIOTICS LTD., PIMPRI.

I

INTRODUCTORY

In 1946, the Government of India took up the question of the manufacture of Penicillin, Antimalarial and Sulpha Drugs in India. Two technical teams headed by Major General S.S. Sokhey were deputed, once in 1946 and again in 1948, to visit the factories in the U.K., U.S.A., Canada and Europe. In their reports, they recommended that the manufacture of Penicillin, Paludrine and three Sulpha Drugs, viz., Sulphathiazole, Sulphamerazine and Sulphanilamide should be undertaken by the State in the following quantities initially:

Penicillin—3,600 billion units per annum.

Paludrine (Antimalaria)—1,00,000 lbs. per annum.

Sulpha Drugs—1,40,000 lbs. per annum.

2. In January, 1949, Government considered these recommendations and decided to set up a State concern for the manufacture of these drugs. Negotiations were accordingly begun with certain foreign firms and shortly after an agreement had been concluded with a Swedish firm, an offer of monetary and technical assistance for the setting up of a Penicillin Project in India was received from the World Health Organisation and the United Nations International Children's Emergency Fund. The offer was accepted and the Government of India ultimately decided to set up a Penicillin Factory in collaboration with these international organisations and an agreement for this purpose was concluded on the 24th July, 1951, between the three parties. A copy of the Agreement is placed at Appendix I.

3. A site for the factory was chosen at Pimpri near Poona and it was tentatively estimated that the plant and machinery would be installed and the production of Penicillin to begin in December, 1953.

4. Pending the construction and working of the Penicillin Factory and to meet the immediate requirements of penicillin in the country a Penicillin Bottling Plant with a capacity of 10,000 vials a day-bottling on an average 1.5 million mega units of penicillin per year, was set up in a new building in the Haffkine Institute in Bombay, and it started working on the 28th May, 1951. The plant was designed to pack into small packings imported penicillin purchased in bulk. It was expected that the plant would meet the Government's requirements and a part of the public requirement as well.

5. The Government also decided not to undertake the manufacture of Sulpha and Antimalarial drugs.

6. With effect from the 1st July, 1953, the United Nations Technical Assistance Administration have taken over from the W.H.O. the responsibilities undertaken by the latter Body under the agreement.

7. The control and management of the Penicillin Factory was transferred to a private limited Company under the name of

"Hindustan Antibiotics Ltd." with effect from the 1st June, 1954. The Company is a wholly Government-owned enterprise with an authorised capital of Rs. 4 crores.

8. The Hindustan Antibiotics Ltd., has also taken over the Penicillin Bottling Plant at Bombay on the 1st February, 1955 from the late Indian Penicillin Committee which has been managing the plant till then. The plant is, however, continued to be operated in Bombay and it is expected that it will not be transferred to Pimpri till the Filling and Packaging Section is ready there. The factory has been equipped with a Research Centre for antibiotics to solve day to day production problems and to conduct fundamental research on antibiotics. It is intended also that the Research Centre should ultimately exchange knowledge and personnel with other production centres and accept trainees from other countries.

II

PROJECT AGREEMENT WITH THE W.H.O. AND THE UNICEF AND PLAN OF OPERATIONS

9. Under the terms of agreement, the Government of India had to provide land and buildings required for the factory as also the administrative offices, laboratories, fittings, pilot plants, workshop and other services such as steam plant, electric sub-station, sewage disposal and water etc.

10. The factory was initially planned to produce 3.6 million mega units of penicillin per year to start with rising to 9 million mega units per year later on i.e., 750,000 mega units per month.

11. The total estimated expenditure on the project was Rs. 1,86,25,000, of which about Rs. 1,29,13,000 was expected to be contributed by the Government of India, and the cost of imported equipment contributed by the UNICEF and the technical assistance by UNTAA was expected to be Rs. 40,46,000 and Rs. 16,66,000 respectively. The break-up of broad details of this expenditure estimated at Rs. 1,86,25,000 under the main heads is as follows:—

Land and Buildings	Rs. 55,88,000
Services	Rs. 8,70,000
Erection costs	Rs. 20,00,000
Residences	Rs. 24,55,000
Working Capital (for raw materials operating expenses, say for four months).	Rs. 20,00,000
TOTAL.	Rs. 1,29,13,000

Plus cost of imported equipment contributed by UNICEF and technical assistance by UNTAA. Rs. 57,12,000

GRAND TOTAL Rs. 1,86,25,000

12. A time schedule of production has been prescribed under clause 5 of the agreement between the Government of India and the International Organisations. This target, however, has not been achieved.

and though production ought to have started by December 1st, 1953 actually, the first step, namely the "seeding" of penicillin was undertaken on the 14th December, 1954 and trial operations commenced only in March, 1955. Also according to the original target the plant ought to have achieved full production by December 31, 1954 (750,000 mega units per month) whereas a monthly production of 705,000 was reached only in November, 1955. Even the anticipation in this regard expressed from year to year since 1950-51 by the Ministry in their reports have unfortunately not been fulfilled. This aspect is dealt with in paragraph 18 of the report.

13. In regard to this agreement, the Committee would also refer to the equipment to be supplied by UNICEF under the agreement. The total value of this equipment was estimated at \$850,000 including equipment of the value of about \$1,49,077 for streptomycin manufacture. It appears, however, that the equipment for streptomycin is not now being supplied by the UNICEF who have supplied only the equipment necessary for penicillin manufacture, bottling etc. The Committee are given to understand that this has been occasioned by the total value of the equipment of penicillin alone amounting almost to \$8,50,000. The Committee are informed by the Ministry that the Plan of Operations constituted only the initial agreement between the Government of India and the United Nations which enabled both the parties to take further action including detailed planning. For facility, the Plan of Operations included both a tentative time schedule and a tentative list of costs but it was emphasised in the same agreement that there were uncertainties. Thus, the Ministry state, it was mentioned as follows regarding the time schedule: "While it is realised that uncertainties exist as to the time of availability of technical team, delivery of equipment and building programme on site, it has been tentatively agreed that target dates may be scheduled as follows". Regarding the list of equipment the recital begins with the statement "all imported equipment, machinery and fittings for the penicillin plant, including a pilot plant and laboratories and workshops of which the following list is not exhaustive and is subject to the finalisation by the technical officers of the W.H.O. and the Government of India." The estimates also conclude with the note, "These estimates were revised November, 1950, and short-checked April 1951. They are reasonably accurate but the entire list is subject to final approval by the engineering team." It is explained that the increase in the cost of the penicillin equipment by approximately 21 per cent is accounted for by the two factors, that whereas the estimates were made in 1950-51, the supplies were made in 1953-54 and that the original list of equipment which was not exhaustive was made complete by careful and detailed planning. The Committee are given to understand that accordingly, only the manufacture of penicillin has been taken up so far and that the manufacture of streptomycin has been kept for the second phase and initial steps for this are just being taken in hand, in accordance with the advice of UNTAA and the experts of the factory that the manufacture of streptomycin could be taken in hand when the manufacture of penicillin had been firmly established.

Although thus streptomycin was one of the antibiotics to be manufactured by the factory, as contemplated in the agreement, the

promised supply of equipment at 850,000 dollars has not included the supply of any equipment to start the production of streptomycin. The Committee would emphasise that the negotiations for getting equipment for the manufacture of streptomycin should be expedited.

III

BUDGET AND ACCOUNTS

14. The actual expenditure incurred on the factory during the years 1952-53, 1953-54 and 1954-55 is as follows:

1952-53	—	Rs. 7,67,323
1953-54	—	Rs. 48,23,726
1954-55	—	Rs. 68,58,657

A statement showing the Budget and Revised Estimates and the actuals for 1951-52, 1952-53, 1953-54 and 1954-55 is placed at Appendix II. This shows wide variations under these heads for each year, and indicates the failure to exercise care in the estimating and expedition in carrying out the work.

15. For the year 1955-56, the budget estimates were Rs. 86,47,000. The provision under Demand No. 131—Capital Outlay of the Ministry of Production—Major Head 72,-A.2(6)—Purchase of shares of Hindustan Antibiotics Ltd., was Rs. 46,47,000, and under Demand No. 120, Interest Bearing Advances A. 1(8)—Miscellaneous Loans and Advances—Loans to Hindustan Antibiotics Ltd., Rs. 40,00,000. The provision for Deduct Aid from UNICEF deducted from the total provision was Rs. 6,47,000.

16. Under the Articles of Association of the Company, the Directors should on some date, but not later than 18 months of incorporation of the Company, and subsequently once at least in every calendar year, lay before the Company, in general meeting, a balance sheet and profit and loss account. The Committee were informed in November, 1955 that the accounts for the period of 1st June, 1954 to 30th May, 1955 were not finalised. It is evident that the first accounts since the incorporation of the Company were not prepared and laid before the Company within the period of 18 months after the incorporation of the Company as required under the Articles of Association.

The Committee are informed that the Company had prepared its accounts which were available to the Directors of the Company and these accounts were also placed before the commercial auditors appointed under the Indian Companies Act to audit the accounts, Since the accounts for the first year included large sums of money for which a debit had been raised by the Government accounting authorities on account of reported expenditure by CPWD, DGSD, sums made available to the Collector of Poona for land acquisition and also sum in respect of equipment supplied by UNICEF, in respect of all of which generally vouchers were not expected to be available with the Company, but the Company auditors asked for a mass of information, the presentation of the duly audited accounts for the first year was delayed. This was due solely to special difficulties peculiar to the first year when the management passed from the

Government to the Company. The Committee consider nevertheless, that there has been a serious lapse and would like to emphasise that every effort should be made to bring out the accounts more expeditiously.

IV PROGRESS OF WORK

17. All the essential buildings required for the factory to start production have now been constructed and erection of plant and equipment has also been mostly completed. Certain items of buildings such as for Filling and the Clinical products section, extension to administration buildings etc. are still under way.

18. The first step for the production of penicillin, namely, the seeding of penicillin was undertaken on the 14th December, 1954. Trial operations commenced in March 1955, and regular production was commenced in the second half of the year. The production month by month has been as follows:

<i>Month</i>	<i>Year</i>	<i>Production</i>	
March	1955	66,910	mega units.
April	"	135,940	" "
May	"	180,290	" "
June	"	88,500	" "
July	"	614,760	" "
August	"	479,910	" "
September	"	482,170	" "
October	"	611,700	" "
November	"	705,000	" "
December	"	603,000	" "
January	1956	743,000	" "
February	"	889,000	" "
TOTAL . . .		5,600,180	mega units.

There has been a good deal of fluctuation in the initial period, but in January, 1956, the rate of production of approximately 750,000 mega units (9 million mega units per annum) was reached. The Committee are glad to note that the outturn in February, 1956 has shown substantial improvement.

19. The first consignment of penicillin produced in Pimpri and bottled in the Bottling Plant at Bombay, was sold on the 12th September, 1955. The Factory, though originally planned to produce 3.6 to 9 million mega units per year, is now expected to yield about 15 million mega units of penicillin per year, as a result of using better yielding strains and manufacturing methods evolved in the factory. It has also been decided to expand the installed capacity of the penicillin factory by 60 per cent at an estimated cost of Rs. 42,35,000. After expansion, the factory is expected to produce about 25 to 30 million mega units of penicillin per year. It is planned to produce streptomycin as well as bicillin in addition to expanding the production of penicillin.

20. In reviewing the progress of work in the factory in their report for the year 1952-53, the Ministry had stated that the construction of non-residential buildings was in progress and it was expected to be completed by the end of March, 1953. It was also expected that the construction of residential buildings would be taken in hand shortly thereafter and an agreement was under negotiation with the Tata-Hydro-Electric Company Limited, Bombay for the supply of power to the factory. It was also stated that orders had been placed by the UNICEF for a major portion of the plant and equipment and consignments were expected to start arriving from January, 1953. In their report for the year 1953-54, the Ministry reported that buildings for the workshop, boiler house, services buildings, canteen and stores had been completed and that the work of construction of the remaining non-residential buildings viz., fermentation, extraction and research laboratory would be completed only by the middle of 1954, and that the factory would go into production some time in the latter part of 1954. In their report for the year 1954-55, however, it was stated that the first step in the process of manufacture, namely, the seeding of penicillin was undertaken on the 14th December, 1954 and that successful commercial production would be established in the early months of 1955. The Committee observe from these instances that the anticipation held out in the annual reports do not indicate the reasons why the target set out in the previous report has not been reached. The Committee recommend that annual reports should also take cognisance of delays in the execution of projects and should give out reasons causing the delay.

The Committee are informed by the Ministry that the decisive factor has been the time taken for the construction of the buildings by the CPWD (through contractors whose work was supervised) and that the most serious cause of hold up was the lack of steel. It is also stated, that having regard to the fact that the essential non-residential buildings were completed only towards the end of 1954, i.e., nearly 2 years behind the original anticipation, the establishment of production at the rate of 8 or 9 million mega units per annum was very quickly reached, by November, 1955, i.e., only 8 or 9 months later than the tentative schedule prepared long before. It is also stated that a production of 4.8 million mega units of penicillin had been assumed as the target for the first Five Year Plan but this was exceeded even in the beginning of February 1956, so that the original delays have been largely overtaken.

V

ORGANISATION AND STAFF

21. A chart showing the organisation set up in the factory is placed at Appendix III. The particulars of staff sanctioned for various sections and the scales of pay of the posts are given in Appendix IV. The Committee were informed that the monthly expenditure on account of salaries and wages of the entire staff including all allowances for the month of August, 1955 was Rs. 67,992 as per booked expenditure. More than about 160 posts are vacant and the Sales Section is yet to be organised. But since recruitment is going ahead, it is expected that in a fairly short time, almost all the sanctioned posts will be filled up, whereafter, the monthly expenditure will be about Rs. 87,000 approximately, that is to say, the annual expenditure

would be in the order of about Rs. 10 lakhs on this factory alone, excluding the expenditure that is being at present incurred on the Bottling Plant at Bombay. The present production is about 10 million mega units per year and the plant is expected to yield 15 million mega units. The staff at present being recruited are apparently for the production of this amount of penicillin only and when the expansion programme are completed, perhaps additional staff will be recruited. In 1951, the price of bulk penicillin was Rs. 1/13/- per mega unit or Rs. 1,812/- per thousand mega units and there have been 12 price reductions in all since then. In 1954-55, the average rate of penicillin purchased in the Bottling Plant was as 7.28 pies per mega unit i.e., Rs. 450 per thousand mega units, indicating a drop of about 75%. Whereas, therefore, the selling price of 15 million mega units (estimated annual production) at the 1951 price would have been about Rs. 270 lakhs the value of 15 million mega units at the present selling price would be a quarter of that. The sale price of the penicillin in smaller vials in which the Pimpri factory would be packaging and marketing the penicillin would be higher than that of penicillin in bulk but considering only the latter for the purpose, at the present selling price of bulk penicillin, which is about Rs. 312 per thousand mega units, the value of 15 million mega units of penicillin in bulk would come to about Rs. 47 lakhs only, whereas the expenses on staff alone would amount to Rs. 10 lakhs. The Committee consider under these circumstances that this is a very high proportion of expenditure and steps ought to be taken to reduce the staff as far as possible. Some of the directions in which the Committee consider it should be possible for a reduction in the staff are mentioned below.

22. Amongst the supervisory staff, it is noticed that, though each Department has a head of the Department of a fairly high rank, there is in overall charge a General Superintendent working under the Managing Director. The Committee do not see the need for an official between the Managing Director and the Heads of the various Departments and Sections. They consider that it should be possible for the Managing Director to take up almost all the duties of the general supervision from the General Superintendent by additional delegation of powers, if necessary, to the heads of the Departments of the sections and branches. The duties of the Managing Director, apart from the supervision, in the factory cannot be so onerous as to make it impossible for him to dispense with the intermediary general supervisory post. There is, as far as the Administration Section is concerned, an Administrative Officer on the grade of Rs. 600—40—1,000 whose services could also be utilised by the Managing Director for general supervisory purposes.

23. Moreover, it is noticed that there is a Purchase Officer on the scale of pay of Rs. 600—40—1,000 in addition to Stores Officer on Rs. 275—25—500—30—650 for Stores matters. Since, for the latter purpose, there are also three Assistant Stores Keepers and one Assistant Purchase Superintendent, it should be possible for the Purchase Officer to take over charge of the Stores Section also, thus dispensing with the post of the Stores Officer. From a perusal of the list of the main raw materials required for the manufacture of penicillin, the Committee do not consider that this would constitute too heavy a task for the Purchase Officer. Moreover, the major items of purchase should ordinarily be based on bulk contracts which would come up for renewal only at long intervals.

24. In the Production Section, the ratio of the number of supervisory staff excluding the Superintendent Production to the total number of operators is 5:11. Clearly a ratio of one supervisory staff to two workers is too high. It has been explained to the Committee that one of the reasons for this is the continuous working of the factory in shifts. The Committee consider, however, that it should be possible to have the Operators trained to carry out many of the processes without excessive supervision and that a consequent reduction in the number of supervisory staff should be possible. This reduction may be effected not in the category of Chargemen, but in the higher grade supervisory staff of Section Supervisors and Foremen. The number of these could well be reduced to two in each shift, that is, six in all, effecting a saving of six posts in grades Rs. 260—500 and above.

25. The Engineering Section of the factory consists of a very large number of staff, namely, 1 Superintendent Engineering, 2 Assistant Superintendents, 10 Foremen, 12 Chargemen and 125 other categories as will be seen from the complete statement at Appendix IV. The Committee do not see the need for the 3 Officers, especially as there are separate officers for the Production and Clinical Sections. The Committee consider that one post of Superintendent Engineering could easily be dispensed with retaining only the two Assistant Superintendents, though even in this direction, the Committee cannot help feeling that reduction of one of these posts also should be possible. As regards the other staff in the Engineering Section the proportion of supervisory staff of Foremen and Chargemen to operators is 22 to 117, that is, 1 in 5. Clearly such a high ratio of supervision is wasteful and a reduction in the supervisory staff to at least about 12 so as to maintain a ratio 1 to 10 should be possible. This can be achieved by reducing the number of posts of Foremen to say, 5 and the Chargemen to about 7.

26. In the Clinical Product Section also, the subordinate supervisory staff are 9 against a total operative strength of about 56. This again shows a very high percentage of supervision and there is scope for reduction of one or two supervisory staff in this Branch also.

27. The Committee have indicated the directions in which economy in staff can be effected. But they desire that the whole question including the number of technical staff in the various branches required for the working of the factory during the course of and after expansion of production capacity, should be carefully examined without delay by a Technical Committee consisting of Chemical Engineers, Cost Accountants and trained Administrators, who should examine also the staff requirements of other chemical industries under the Ministry of Production, such as the D.D.T. Factory.

VI

RESEARCH

28. In regard to the Research and Plan laboratory, the Committee note that fair and liberal scales of pay have been provided for the senior officers and the number of Junior Scientific Officers'

posts are also large. While they do not propose to suggest any economy in this direction, the Committee desire that every effort should be made to maintain a high standard of research and to see that the results are of sufficient use to the factory in particular and to the manufacture and use of antibiotics in the country in general. The product of the factory faces a world-wide competition and unless intensive and original research is carried on, the factory may find itself overtaken by the progress made elsewhere. The Committee would in this connection draw attention to the following remarks made by the Pharmaceutical Enquiry Committee :

“The volume of research work done in these bigger units is not keeping pace with the growing needs of the Pharmaceutical industry. For example, there is no gain-saying the fact that some of the Indian firms which captured foreign markets during the War, lost them after the cessation of hostilities, because they could not achieve and maintain the same standards, and this was mainly because they could not improve the products to the same extent due to lack of research work.”

That Committee have also laid special emphasis on research for investigation new antibiotics from Indian sources. The Research Laboratory attached to the Pimpri Factory should at a very early date undertake such research of developmental nature also. The Committee hope that when the factory has been in production for sometime, satisfactory results will be achieved in this regard.

29. A statement showing the efforts made to replace the imported raw materials as far as possible by raw materials from indigenous sources is placed at Appendix V. It is also understood that a complete list of the materials now being imported has been furnished to the Development Wing of the Commerce and Industry Ministry for them also to consider how indigenous manufacture can be encouraged and assisted. The Committee desire that a determined effort should be made to reach self-sufficiency in this direction at a very early date.

30. The Committee are glad to note that some of the raw materials have now, thanks to the efforts made by the factory, been replaced by indigenous materials, but they notice that there is plenty of scope for further improvement in this direction. It appears, for example, that Lactose could easily be produced in the country. They desire therefore, that in this as well as in the case of other products, further effort should be undertaken for replacement of the imported articles by the indigenous materials. They feel that if efforts are made to publicise the requirements of the factory, the private industries may also undertake to help in the matter. For example, the requirements of Lactose could possibly be met by its manufacture some of the large milk producing centres and cooperative dairies etc., as well as from Government dairy farms if enquiries as to whether they would be in a position to supply the material were addressed to them.

VII

STAFF AMENITIES

31. A housing colony has been planned for the factory to accommodate almost all the essential staff. The work was phased in three stages and in all 201 quarters including one for the Managing Director, 20 for the officers, 24 for Foremen, 36 for Chargemen and the remainder for operators have been planned. The first two phases have been completed and the third phase of construction of about 100 quarters is on hand.

32. A community centre at a cost of Rs. 1,63,000 is under construction and various buildings required for the Posts and Telegraphs Office, Petrol Filling Station, Police Chowky, School etc., are being built.

33. The Committee are glad to note that provision has been made from the inception of the work for the construction of residential accommodation for the staff. In this connection, however, the Committee have noticed that the scale of accommodation provided in the quarters being built for the lower categories of staff is much lower than the recommendations of the Expert Committee in this regard as well as the C.P.W.D. standards. A statement showing the scales of accommodation prescribed and those that have been provided by the factory is attached at Appendix VI. It is noticed that while in most cases the scale of accommodation is less than that prescribed by the C.P.W.D. standards, and that it is much less in the case of some of the lower categories than in the higher categories. The Committee are not aware of the reasons for the reduction in the scale of accommodation, and would suggest that whatever the reasons be, where reduction is required, it should not be done at the expense of the lower categories of staff for whom the facilities provided are barely above the minimum necessary for ordinary living.

VIII

SALE AND DISTRIBUTION

34. The production of the factory is distributed through selling agents appointed for this purpose. Messrs. Parry & Co. and Messrs. Kemp & Co. have been the selling agents since the 1st June, 1952. Their contracts were last renewed by the Board of Directors for a further period of one year with effect from the 1st April, 1955 on the basis of their previous sales and performance. The Committee, however, note that the original advertisement inviting firms for appointment as 'Selling Agents' was issued in December, 1951 and was in the context of selling the imported penicillin bottled in the bottling plant. As four years have elapsed since then and as the penicillin produced in the factory is to be put on sale now, the Committee recommend that on expiry of the present contract, opportunity should be given to other firms to compete for selling the Company's products so that the best terms may be available to the Government and countrywide sales could be effected. The Committee desire that appointment of Selling Agents should be made by calling for open tenders. While selecting the Sales Agents,

It should be ensured that every State is covered and as far as possible agencies are given only to those firms which have extensive sales organisations within the State.

It appears that the retail selling prices of the agents are not subject to any agreement, and it is open to the selling agent to sell in retail market at any price they please subject only to the forces of competition. This does not provide against any undue profit being made by the selling agents, and the Committee would suggest that the terms of agreement with the agents should provide that no such cases of profiteering in the retail sales arise. This point may be borne in mind when inviting tenders for appointment of agents when the present contract expires next year.

35. Under the terms of agreement with the International Bodies, a certain quantity of penicillin has to be distributed free for the treatment of women and children and the arrangements now proposed for this purpose are that this quantity of penicillin would be set apart by the factory and would be handed over to the UNICEF who, in turn, would give it to the Health Ministry for distribution to the consuming centres. The full scheme is not yet ready, it appears, but there is at present a scheme for using it for anti-venereal purposes. The Committee would recommend that in working out the scheme for distribution to the consuming centres, care is taken that all parts of the country are served and that there is no loss of material by fraudulent or irregular use. It would perhaps be advisable to constitute a Committee consisting of non-officials to supervise the scheme of free distribution.

IX

COST OF PRODUCTION AND SALE PRICE

36. It appears that the Board of Directors approved the sale of a limited quantity of bulk penicillin to the trade at about Rs. 312/- per thousand mega units. The Committee have been informed that this price was based on the international price of penicillin which the purchasers agreed to pay and that it is a little less than the estimated cost of production. The Committee have further been informed that the cost of production is likely to go down in the near future when the production increases, especially as it is expected that the raw material for production will be available locally instead of being imported from abroad. The Committee consider that as the factory is liable to incur a loss if the anticipations in this regard do not materialise, care should be taken to see that the selling price is, as far as possible, not below the cost of production and that at any rate it includes a certain amount of return on capital etc.

37. The Ministry have stated that the successive reduction in price and the present sale price of bulk penicillin which is below the cost of production is entirely attributable to excessive world-wide competition and the dumping of foreign made penicillin at drastically cut rates. Thus it is stated that procaine penicillin (4 lakhs units) is being sold in USA at Rs. 2/2/- per bottle, in U.K. at 1/2/- per bottle whereas its sale price in India is only Rs. -/9/3. American and English made penicillin if purchased in any of the cities in the States or in the U.K. is 2 to 4 times the price of the same foreign penicillin when purchased in India after bearing

freight and other incidental costs. The Committee would like urgent examination to be made as to what steps should be taken against dumping if any.

X

BOTTLING PLANT

38. A statement showing the value of capital assets, total production total sales, value of purchases etc., in the Bottling Plant for the years 1951-52 to 1954-55 is placed at Appendix VII. It will be noticed that the Bottling Plant has incurred some loss in 1952-53 and that even in the year 1954-55 (upto January, 1955) proportionately the profit is very much less than in the previous years. It is noticed that in the 10 months of 1954-55 the total production was only about 13.6 lakhs vials which works out to about 16.3 lakhs vials for 12 months against the total production of 27.15 lakhs vials in the year 1953-54. The quantity of penicillin consumed for the production in the 10 months of 1954-55 is 9.38 lakhs M.U. (that is, about 13.2 M.U. for full 12 months) against 17.4 lakhs M.U. for the year 1953-54. It appears, therefore, that there has been a fall in out-turn during 1954-55. The reasons therefore require examination. The Committee are informed that after Hindustan Antibiotics Ltd., took over, the lost ground was more than recovered in that production in the first ten months of 1955-56 was 33.7 lakh vials and sales also went up proportionately.

XI

MISCELLANEOUS

39. To increase the out-turn both of the factory and of the Bottling Plant, the Committee would recommend that a system of payment of wages to staff based on outturn should be examined and introduced. This is the more necessary as the price of penicillin has been falling recently and is likely to fall further. It is essential that efficiency is maintained at a high figure, to make up for the loss in the value.

40. In respect of the recruitment of staff it appears that the Managing Director was appointed by the Appointments Committee and other high paid officers were recruited through the U.P.S.C. The junior officials were, however, recruited by the Selection Committee appointed by the Board of Directors. This Selection Committee is a purely official Body. The Estimates Committee would recommend that non-officials should also be associated in the Selection Committees for appointment of officials in the factory. This would enable people with outside experience to help the factory in recruiting their staff.

41. There is, it appears, a proposal before the authorities for the introduction of a course of practical training in the factory for students of the various Antibiotic Research Centres. It is also proposed to give diplomas and certificates on the completion of the practical training. A course of practical training for artisans also is proposed. The Committee would like to be furnished in due course with a fully worked out scheme of training.

42. The Committee were informed that samples of the sodium penicillin manufactured in the Pimpri Factory were tested by Drug testing laboratories in Washington and London. The Committee were also informed that the product was as good as any produced in the U.S.A. and that it was of a better standard than what the British pharmacopoeia prescribed. The Committee, however, feel that adequate publicity has not been given to the high standard of the product. In view of the fact that the product faces keen competition from manufacturers of world-wide reputation, very wide publicity should be given by advertisements and other means to the product manufactured in this factory to enable it to secure its proper place in the market.

43. There are at present on the Board of Directors, besides the Managing Director, representative of the Ministries of Finance and Production, the Drug Controller representing the Health Ministry, the Director of the Haffkine Institute and a representative of INTUC. The Committee would suggest that representative of the State Government should also be associated in the Board, as this would enable close touch being maintained with the State Government. The Committee would also suggest that members of the State Legislature, and of Parliament may be associated with the Board of Directors so as to represent the non-official view point.

44. The penicillin that is at present manufactured in the factory is utilised only in the form of injectibles and tablets. It appears that the Government of India acting on the report of the Export Committee on types of Penicillin, do not contemplate manufacturing penicillin ointments. The Committee would suggest that specialists in skin diseases may be consulted in regard to the therapeutic value of penicillin ointment, and if their reports are favourable, the manufacture of such ointments should also be undertaken in the factory.

45. Two important waste products in the factory, namely, "waste mycelium" and affluent water would, it appears, be useful for agricultural purposes after suitable treatment. The Committee would suggest that the examination of this matter may be conducted with expedition so that full use of these waste products is made, with profit to the factory. They would at the same time advise that before the waste products are put to agricultural or other use, it should be carefully examined that they do not contain substances defeterious to soil bacteria, plant or animal life.

46. The Committee were informed that after taking into consideration all the factors affecting the keeping qualities of penicillin, it was considered most desirable to use 'neutral' quality of glass corresponding to the specification of US Pharmacopoeia 13 and 14 type I, Pharmaceutical grade of glass. For bottling with high speed automatic fillers, it appears that high degree of accuracy of size and shape of bottles is required to be maintained and this is possible only if they are manufactured by fully automatic machines.

The Committee were informed that there was at the time no factory in India which manufactured neutral glass bottles by fully automatic machines for bottling penicillin. The Committee further learnt that the Board of Hindustan Antibiotics Limited had approved a plant to give facilities to a glass factory to set up a fully automatic

machine for making neutral glass vials, adjacent to the Penicillin Factory. The Committee would suggest that care should be taken that the arrangement with the glass factory does not result in any commitments by the Hindustan Antibiotics Ltd., to accept the product of the new glass factory regardless of its quality, price etc., and that the interests of the company are fully protected.

THE HINDUSTAN INSECTICIDES LTD.

XII

INTRODUCTORY

47. On the 19th July, 1952, a joint plan of operations was drawn up by the Government of India, W.H.O. and the UNICEF for establishing a D.D.T. Factory in the country. This was necessitated by the large quantities of D.D.T. required for combating malaria and the difficulties encountered in importing the same due to the foreign exchange position, etc.

48. Under the joint plan of operations the UNICEF was to supply all imported equipment involving an expenditure of about \$250,000, the W.H.O. was to arrange and provide for technical assistance to the factory at an expenditure of about \$100,000 and the Government of India was to arrange for the provision of land, building, steam water, electricity etc. at an estimated expenditure of Rs. 22,45,000. A site adjacent to Messrs. Delhi Cloth Mills and Chemical Works, Delhi was chosen for the factory.

49. The construction of the factory building was entrusted to the C.P.W.D. and was commenced on the 2nd November, 1953.

50. A Company with an authorised capital of Rs. 1 crore fully owned by the Government was registered on the 1st April 1954 for operating the factory and though the original intention was to have a capacity of about 700 tons of D.D.T. per year, the design was re-drawn so as to make the factory capable of accommodating an expanded plant with double the capacity, that is, about 1,400 tons of D.D.T. per annum.

51. Under the malarial control programme which had been launched by the Ministry of Health the setting up of numerous Malaria Units at the rate of one unit for a population of about 1 million residents in the malarious parts of the country was envisaged. It was the estimate of the Ministry of Health that during the 'operation' period of the programme, about 8,000 tons of insecticides would be required per annum, but that during the 'maintenance' period which would succeed the operation period, the requirements would fall to about 5,000 tons per annum. The annual requirements during the latter period would be met partially by 2,000 tons of BHC, leaving a balance of 3,000 tons to be made up by D.D.T.

52. Since the maximum capacity of the D.D.T. factory at Delhi even with the expanded plant would be only 1,400 tons per annum, Government have decided to establish a second plant with the production of about 1,400 tons per annum at another site.

XIII**CONSTRUCTION WORK**

53. In the report of the Ministry of Production for the year 1952-53, it was stated that the factory would go into production before the end of 1953, but as already stated, construction of the building commenced only in September, 1953. It was stated in the report of the Ministry for the year 1953-54 that the entire plant and equipment for the D.D.T. Factory supplied by UNICEF had arrived in Delhi and that it was expected that the factory would go into production by September, 1954.

54. In the Report of the Ministry for 1954-55, it was stated that production would commence by the end of March, 1955. It is this last mentioned schedule that was fulfilled. Actually the factory building and the installation of equipment and piping were completed only by the end of 1954. Initial operation and trial run of the plant started early in 1955 and the first output was available in March, 1955.

55. It is clear from the foregoing narration that the construction work on the factory did not proceed according to the time schedule in spite of the changes in the latter from time to time and there has been considerable delay in working to the targets. The main reasons for the delay appear to have been the protracted negotiations that had to be carried on with D.C.M., time taken for the preparation of estimates, for obtaining approval thereof by Government and for observing the formalities of inviting tenders etc. It has been also explained that non-availability of the requisite quantities of steel etc. added to the delay in the construction of the structures. All this indicates a failure to draw up a workable plan and to push the work through expeditiously.

As the UNICEF decided to divert some equipment that was intended for another country to India, the equipment also arrived ahead of schedule. Thus for one year the machinery had to be left idle. The Committee are pained to notice that the feature of delay in carrying out the works is being met with frequently in their examination of the estimates of State Undertakings and would emphasise the need for such work being better planned and carried out without unnecessary delay.

XIV**ESTIMATES OF COST**

56. Originally the estimate of expenditure to be incurred by Government on this project was placed at Rs. 22,45,000 but it has now been revised to Rs. 37,77,000. The excess is not entirely attributable to the subsequent changes in design so as to accommodate a plant with double the capacity originally contemplated. The estimate for equipment has been raised from Rs. 7,16,000 to Rs. 10,33,500 to provide for a cooling tower and accessories and pilot plant equipment etc. which, it appears, were not provided for in the earlier estimates due to an error. On the other hand, the original estimates provided for Rs. 2,70,000 for installation whereas the present estimate under this head is only Rs. 86,400. Also the original estimate provided for Rs. 4 lakhs for land and building but the present position is that land has not been purchased but has only been leased. It has been explained by the Ministry that this increase in estimate of costs is due to

inexperience in this matter as this is a new factory of its kind. The Committee are not satisfied with the explanation, as the provisions referred to by them are in respect of structural works and land etc., to which this explanation will not apply. The Committee desire therefore to bring to the notice of Government once again the need for careful estimating of costs as otherwise serious losses may occur.

57. Even after the machinery was set up production difficulties were experienced due to the lack of certain spare parts and the difficulty in obtaining them from abroad quickly. It appears, that while designing, even the minimum spares were not provided for and this was not noticed till production began.

XV

BUDGET AND ACCOUNTS

58. Excluding the expenditure of Rs. 16,63,000 being the cost of UNICEF equipment and the technical assistance rendered by the UNTAA which had taken over this work from the W.H.O., the actuals of expenditure incurred by the Government for the past three years and the Budget Estimates for the year 1955-56 on the factory are as follows:—

	Rs.
1952-53	5,858
1953-54	3,12,055
1954-55	16,00,000
1955-56	22,00,000
(Budget Estimate)	

The Company came into existence on the 1st April, 1954. The actual expenditure of the Company for the year 1954-55 and the Budget Estimate for the year 1955-56, are as shown below:—

1954-55	Rs. 12,76,683
1955-56	Rs. 14,82,000
(Budget Estimate).	

59. The Company has so far drawn Rs. 27,00,000 (Capital) for capital expenditure in the form of shares and in addition to this, Rs. 7,00,000 were proposed to be placed at their disposal for working expenses. The details of the company's estimates for 1955-56 are as follows:—

	Rs.
(1) Capital Cost	14,82,000
(2) Raw Materials	15,33,000
(3) Services (steam, water and power)	2,74,000
(4) Salaries and Wages	3,00,000
(5) Office expenses	1,14,000
(6) Maintenance of building & plant	78,000
TOTAL	37,81,000

60. The expenditure of Rs. 5,858 in the year 1952-53 represents the freight etc. of the equipment supplied by the UNICEF. In the year 1953-54, the expenditure was much less than was anticipated before the year began, as the construction works started very late. The bulk of the expenditure of Rs. 3,12,055 in that year represents the cost of construction work in progress. The actual expenditure of Rs. 12,76,683 of the company for 1954-55 represents the expenditure on buildings, plant, machinery, raw materials, office expenses etc. during the construction stage. The budget estimates for 1955-56 have been prepared to provide for the completion of the work in progress on factory buildings and plant, machinery as well as for residential accommodation for staff.

61. A statement comparing the Budget and Revised Estimates with the actual expenditure in 1952-53, 1953-54 and 1954-55 is placed at Appendix VIII. It will be seen therefrom that there has been considerable variation in each year.

XVI

TECHNICAL ADVICE

62. The factory has also had some difficulty in respect of the technical advice contemplated under the joint scheme of operation owing to the curtain of secrecy in which D.D.T. production is shrouded in Western countries, due to which the key technical staff could not be given an opportunity to gather a first-hand knowledge of the operation of such a plant. Some of the features of this plant were new even for the advisers made available to the factory by the UNTAA. It is surprising that this was not visualized when the agreement was entered into. The Committee would suggest that in future it may be ensured that the technical advisers appointed under any agreement, whatsoever it be, are aware of all the detailed technical matters connected with the agreement.

XVII

LAND FOR THE FACTORY

63. In regard to the location of the DDT plant at Delhi, it appears that difficulties have been experienced in acquiring the land on which the factory is at present situated. The Committee were given to understand that the present location was chosen because of the availability of the raw materials, namely sulphuric acid (oleum) chlorine and benzene. An agreement was entered into with the D.C.M. Chemical Works in Delhi for the supply of raw materials and thereafter construction of buildings commenced on 5 acres plot of land in the neighbourhood of the Chemical Works. It appears, however, that before undertaking the work, full examination of the ownership of the land was not made and the terms of agreement for the purchase or taking the land on lease were not finalised. It is surprising to note also that the exact location of the site should have been included as an item of the agreement between the Government and the International Organisations, even before the negotiations with the D.C.M. Chemical Works were concluded. This, apart from being unnecessary, could certainly not

have been of help to Government in its subsequent negotiations with the D.C.M. Chemical Works who were in a favourable position in that they were aware that Government was already bound to take up the site, and were depending on the Chemical Works for the raw materials for the factory. It has also been subsequently brought to the notice of the Committee that even while the ownership of the land has been in dispute and while attempts are being made by the Ministry of Health through the Delhi Improvement Trust to obtain the land for Government, a payment of Rs. 4,000 has been made to the D.C.M. Chemical Works as a part of the lease charges. The Committee do not see the need for this payment. The Committee have been assured that this will not stand in the way of the final decision regarding ownership and that there would be no difficulty in recovering the amount if it is subsequently found that the D.C.M. are not competent to give the lease. The Committee would suggest that this matter should be examined in detail to see whether the interim payment to the D.C.M. Chemical Works was necessary, especially when the matter was already engaging the attention of another Ministry. Steps should also be taken to finalise early the transaction for acquisition of land whether on purchase or on lease.

64. In regard to the location of the factory, a further point requires mention. When the original plan of operation was finalised and the estimates of cost drawn up, the question of providing residential quarters for the staff was not taken into consideration. Subsequently it has been decided to build quarters for the staff. But in view of the fact that the factory is located in a very highly industrialised area, considerable difficulties have been experienced in obtaining suitable land as near as possible to the factory for this purpose and the aid of the Delhi Improvement Trust has had to be sought. The matter has not yet been finalised but it appears that the Delhi Improvement Trust has recently made an offer of 5½ acres of land which the factory propose to accept for putting up quarters. The Committee would observe that care should be taken in future to see that such important factors in location of the site of a factory are given full consideration before a decision is taken.

XVIII

ORGANISATION AND STAFF

65. A statement of income and expenditure incurred during the period of construction and trial operations, that is, from 11-3-1954 to 31-3-1955, will be found in Appendix IX. It will be seen that out of the total expenditure of Rs. 3,31,846 incurred during this period, a sum of Rs. 1,52,156 was spent on establishment including house rent allowance but excluding wages and travelling allowances, which take up another Rs. 24,586. The proportion of establishment charges is nearly half the total charges for the year and it has been explained by the Ministry that this is on account of staff for supervision of the buildings and for being trained to take up production in the factory. The proportion that wages and salaries bear to the

total expenditure during 1954-55 and 1955-56 (upto January 1956) is as follows:

	1954-55	Percentage on total	1955-56	Percentage on total
	Rs.		Rs.	
Total expenditure	3,31,846		12,28,754	
Wages	19,958	6%	48,885	3.9%
Salaries	1,52,156	45.8%	1,87,159	15.23%

The Committee, however, consider that the percentage of salaries even during the year in which production has been undertaken, namely 1955-56, is rather high. They would suggest therefore that the Technical Committee which they have suggested in the case of the Hindustan Anti-biotics Ltd., consisting of Chemical Engineers, Cost Accountants and trained Administrators should be asked to examine the number of staff in the various categories in this factory and also to see that the number of supervisory and clerical posts is not excessive. A statement showing the various categories of staff in the Factory and their number will be found in Appendix X.

66. In this connection, the Committee would refer to the pay and allowances of the Managing Director which are at present as follows:—

Pay	Rs.	2,250	per month
Conveyance Allowance	Rs.	150	„ „
Entertainment Allowance	Rs.	150	„ „

The Committee have been informed that payment of the conveyance and entertainment allowance is a part of the contract with the Managing Director but they are not satisfied with the need for the payment of the same. In regard to the entertainment allowance, it has been explained that the Managing Director of the Factory has to incur some expenditure on the entertainment of important visitors to the factory etc. This, however, is an item of expenditure not peculiar to this factory alone and the Committee realise the need for some such expenditure being incurred. But such expenditure should be treated as an expense of the factory to the extent that it is actually incurred and there is no need for payment of a fixed amount of allowance to the Managing Director. The Committee would suggest that such allowances, wherever paid, may now be reviewed and, as far as possible, the payment withdrawn.

XIX

AGREEMENT WITH THE D. C. M. CHEMICAL WORKS

67. For the supply of the raw materials—Chlorine, Sulphuric Acid and Alcohol—to the D.D.T. Factory, an agreement has been entered into with the D.C.M. Chemical Works. Besides these raw materials, the D.C.M. Chemical Works are also to supply water and steam under the agreement. The agreement is to remain in force for a period of six years from the date of commencement of supply.

68. The Committee have examined the terms of the agreement and have noticed certain points to which they wish to draw attention. The Committee would have liked to have referred to certain details in the agreement in this connection; but it has been represented to them by the Ministry that it is not usual for business concerns to make public such details, including the prices at which the raw materials are purchased by them and the waste products are disposed of. Though the Committee do not accordingly give the details of this agreement in this report, they feel that such an argument should not be held to apply to nationalised industries. In such cases, the Committee consider that publication of such details would also have a salutary effect in that it may lead to correction of any unfortunate features that may appear in these agreements. The Committee would, therefore, recommend that Government should, as soon as practicable, place a copy of the agreement referred to in this Report on the Table of Lok Sabha and should also take steps to make public other such agreements as far as possible.

69. One of the important raw materials to be supplied under this agreement is chlorine which is obtained as a by-product in the manufacture of caustic soda by the electrolytic process. For every 10 tons of caustic soda produced by this process, nearly 9 tons of chlorine is obtained and as the latter is a substance difficult of disposal and has not much demand in the market, the production of caustic soda is, it is understood, limited by the extent to which chlorine could be disposed of. The Committee understand from the Ministry of Commerce and Industry that the current indigenous capacity for the production of caustic soda is 37,700 tons by the electrolytic process. In 1955 the production by this process is estimated to be only about 30,000 tons due to the difficulties arising from the disposal of the co-product chlorine. The present requirements of chlorine for various purposes in the country is of the order of 20,000 tons per year. Even with the production of only 30,000 tons of caustic soda, the amount of chlorine produced is about 26,000 tons. The full capacity of the electrolytic process of caustic soda plants in the country is, therefore, not utilised and very large quantities of caustic soda are still imported as may be seen from the following import figures:—

Year	Quantity in tons	Value in rupees
1953-54	49,361	2,82,97,379
1954-55	49,257	3,03,89,519
1955-56 (April 1955 to Sept. 9) 15—6 months)	29,919	1,72,60,127

Ordinarily, therefore, it is a matter of great advantage to the producers of caustic soda by the electrolytic process, if the chlorine produced as a co-product is taken off their hands and they are able to find purchasers for large quantities thereof.

70. In the light of these facts the Committee have examined the price at which chlorine is being purchased by the D.D.T. Factory from the D.C.M. Chemical Works. Under the terms of the agreement, variations in the price should be claimed if variations occur

in the price of the raw materials and other costs. It appears that the market price of chlorine has been registering a fall since 1953, as is noticed from the rates at which the substance has been disposed of by the D.C.M. Chemical Works to their other customers. Apparently also the production of caustic soda and consequently of liquid chlorine has been stepped up by the D.C.M. Chemical Works as a result of the agreement enabling them to dispose of large quantities of chlorine to the D.D.T. Factory since 1953. It appears, however, that due to the peculiar terms of the agreement, the D.D.T. Factory is unable to obtain the benefit of the fall in the market price and to effect a reduction in the rates at which chlorine is being purchased by them. This has been occasioned by the term of the agreement which permits variation in price only when variation occurs in cost of raw materials and in other costs. It is unfortunate that the provision for variation in prices has been made on this basis since the price of chlorine is determined not by the price of raw materials or other costs, but is determined by other factors. The agreement should have provided for a reduction in costs due to those factors which necessarily determine the price or should have at least provided that the rate charged to the D.D.T. Factory who are probably the largest single consumers of the chlorine produced by the D.C.M. Chemical Works should not exceed the rate charged to the other customers of the D.C.M. Chemical Works. The Committee have been assured that the relevant clause in the future contracts will be drawn up correctly.

71. The Committee are unable to understand why these factors were overlooked in fixing the price under the agreement, or in working out the formula for variation in prices. The Committee would suggest that this matter should be examined by Government as also the action to be taken against the officials responsible therefor. While, as stated earlier, the Committee do not wish to disclose the price at which chlorine is being purchased by the D.D.T. Factory, they have reasons to believe that at the current market prices at which chlorine could be obtained, the loss to the Factory on this account would be over rupees two to three lakhs annually.

72. It appears that one of the important factors which influenced the decision to locate the D.D.T. Factory at the present site was an understanding that the D.C.M. Chemical Works would take over the Hydrochloric Acid which is produced as a by-product in the manufacture of D.D.T. But this unfortunately was not made part of an agreement simultaneously with the agreement for the supply of raw materials before the work was undertaken. When the production commenced in the factory, the D.C.M. Chemical Works was asked to take over the waste Hydrochloric Acid, but they were reluctant to do so. After considerable persuasion, it appears that an agreement has now been reached whereby the D.C.M. Chemical Works are to take over all the Hydrochloric Acid produced in the D.D.T. Factory in the first six years. It has been represented to the Committee that it would not be in the public interest to make public the price at which the Acid is being disposed of, but the Committee would point out, nevertheless, that it is advantageous to the D.C.M. Chemical Works. The Committee understand that the sale to the D.C.M. Chemical Works has had to be arranged on such terms as otherwise

the disposal of Hydrochloric Acid would constitute a problem to the D.D.T. Factory. It appears also that the D.C.M. Chemical Works would be in a position to utilise the acid now supplied to them in the manufacture of Di-calcium phosphate which is a useful fertiliser and that the cost of supply of the acid is quite economic for this purpose. The Committee are of the view that had Government insisted upon the agreement for the disposal of Hydrochloric Acid forming part of the agreement for the supply of raw materials by the D.C.M. Chemical Works, they would have been in a position to obtain a more favourable rate for the acid. In that case Government would not have been placed in the unfortunate position of having to enter into negotiations with the D.C.M. Chemical Works, when the latter knew that the D.D.T. Factory had no other way of disposing of this material if the D.C.M. Chemical Works refused to take the material. The Committee would like this matter to be examined as also the action to be taken against the officers responsible for not having finalised this agreement for the disposal of waste product along with the agreement for the supply of raw materials.

73. In this connection the Committee would also refer to a statement made before them by a non-official witness who is a Chemical Engineer and has also a first hand knowledge of heavy chemical industry that by installing additional equipments worth about a lakh of rupees only in the D.D.T. Factory, it would be possible for Government itself to undertake the manufacture of Di-calcium phosphate, a useful non-nitrogenous fertilizer. The Committee are also informed by Government that the matter was considered but was dropped as the prospects were found unpromising. The Committee would, however, recommend that the matter may be examined *de novo*, in view of the expert opinion expressed before them.

XX

BOARD OF DIRECTORS

74. As at present constituted, the Board of Directors of the D.D.T. Factory includes a member who is at the same time Director of the Managing Agents of the D.C.M. Chemical Works Ltd. The latter firm is a supplier of raw materials to the D.D.T. Factory and is also a consumer of the waste products, etc. of the D.D.T. Factory. Moreover, the D.C.M. Chemical Works is an interested party in the matter of dispute about the ownership of the land on which the D.D.T. Factory is situated. The question has therefore been examined by the Committee as to how far it is proper to have on the Board of Directors of the D.D.T. Factory, a Director of the Managing Agents of the D.C.M. Chemical Works Ltd. The Committee have been informed that the appointment of the Director has not in any way affected the working of the factory and that when matters affecting the transactions between the factory and the D.C.M. Chemical Works Ltd. come up for discussion, the concerned Director is usually not present. The Committee have also been informed that this particular Director had been appointed with a view to providing to the Board of Directors the benefit of advice of a person with considerable experience in business especially in the matter of chemicals, etc. The Committee would observe that while they entirely agree with the need for appointing Directors with business experience,

etc. in this particular case, however, from a perusal of the minutes of the Board of Directors, they are not satisfied with the arrangements, as very important subjects connected with the supply of raw materials of the factory and the disposal of the waste products have come up frequently and there has been considerable difference of opinion between the non-official Directors and the other Directors in these matters. The Committee would suggest that this matter should be reconsidered by the Ministry.

BALVANTRAY G. MEHTA,
Chairman,
Estimates Committee.

NEW DELHI;
The 10th April, 1956.

APPENDIX I

(Vide para 2)

JOINT PLAN OF OPERATIONS BETWEEN THE GOVERNMENT OF INDIA, THE WORLD HEALTH ORGANIZATION AND THE UNITED NATIONS INTERNATIONAL CHILDREN'S EMERGENCY FUND.

FOR

AN ANTIBIOTICS PLANT IN INDIA

The Government of India (hereinafter referred to as "the Government") represented by C. C. Desai, Secretary to the Government of India in the Ministry of Works, Production and Supply and The World Health Organization (hereinafter referred to as "the Organization") represented by C. Mani, Regional Director for South-East Asia, and the United Nations International Children's Emergency Fund (hereinafter referred to as "UNICEF") represented by S. M. Kenny, Director, Far-Eastern Headquarters.

Desiring to obtain mutual agreement on a plan of action concerning an antibiotics project for India, particularly with reference to the objectives and scope of the project and the responsibilities which shall be assumed and the materials and services which shall be provided,

Declaring that these responsibilities shall be fulfilled in a spirit of friendly co-operation,

HAVE MUTUALLY AGREED TO A PLAN OF OPERATIONS as follows :—

PART I—OBJECTIVES

The W.H.O. and the U.N.I.C.E.F. having at the request of the Government of India, given careful consideration to the necessity and desirability of establishing a plant for the manufacture of penicillin and other antibiotics which have become potent weapons in combating infections of the human body by susceptible organisms have agreed to extend to the Government of India all cooperation necessary for achieving the objectives, which are :—

- (i) to produce penicillin most economically as a national enterprise on a sound business basis but entirely on a non-profit making basis ;
- (ii) to maintain a supply of penicillin and other antibiotics for purchase by state and municipal hospitals for free treatment of patients particularly women and children ;
- (iii) to produce for use in India, penicillin of the best quality ;
- (iv) to produce other antibiotics ;

- (v) to contribute to the long-range development of biological skills in India by establishing skill in the scientific field of antibiotics and thereby sustaining the production efficiency of the project plant, and to render the country eventually self-sufficient in this science without dependence on foreign help ;
- (vi) to collaborate with the international agencies from whom financial assistance has been obtained from for the project, viz., UNICEF and W.H.O. developing technical procedure mutually acceptable to the Government of India and WHO, maintaining a policy of free availability of technical information and training facilities for further projects and providing for free distribution to children in India under arrangements mutually satisfactory to the Government and UNICEF ; and
- (vii) to develop in India an important centre of research and training in the antibiotics field.

PART II

The Government shall set up the requisite machinery for the purposes of assuming administrative, organisational and financial responsibilities and shall own and control the project entirely. In setting up this machinery, the Government will give full consideration to any suggestions which WHO and UNICEF might take. In the event of any changes becoming necessary or desirable at any subsequent stage, the Government will give full information to WHO and UNICEF.

2. It has been estimated that the equipment provided by UNICEF and the technical assistance given by WHO will produce penicillin on a scale which will reach, through successive stages, the target of 750,000 mega units per month. In appendix III costs have, however, been estimated, for the present, on the basis of a production of 4,00,000 mega units per month, but this estimate will be revised with changed rates of production.

3. It has been agreed that the plant be set up near Dehu Road, District Poona, subject to technical examination.

4. Estimated Costs

(a) *Capital costs to Government of India*

The Government shall provide the land for the factory and other buildings necessary for running it. It shall also provide buildings and fittings, administrative offices, laboratories, pilot plants, workshop and other services, such as Steam Plant, Electric substation, sewage disposal, and water, etc. The estimate for providing these is Rs. 1,29,13,000/- or about U.S. \$2,750,000 plus capital investment to provide facilities for water. This estimate includes capital cost of residences which are, however, self-supporting, and do not enter into the cost of penicillin.

(b) *Capital costs to UNICEF*

UNICEF will supply all the imported equipment (subject to adjustment by engineering team) as shown in Appendix II of the value of U.S. \$850,000, subject to review by WHO/UNICEF technical team and Government.

(c) WHO will arrange and provide technical assistance as detailed in Appendix IV involving an expenditure of \$350,000 being the cost of expert technical personnel and training scheme, etc.

(d) Production Costs

Operating costs are the responsibility of the Government, which will furnish working capital. An estimated overall average production cost of about Annas two (2.58 U.S. Cents) per 100,000 units is shown in Appendix III. This figure is based on a production of 400,000 mega units monthly but may be higher or lower, as production varies. Production costs will be fixed inclusive of normal costing items on sound business procedure. In addition to charges indicated in Appendix III, those costs shall provide for depreciation, replacement reserved resulting from normal wear and tear and/or plant becoming obsolete.

(e) If the Project does not come up to expectations at any stage in the matter of quality, quantity or cost of production, the three parties shall meet together to review the position and shall devise ways and means to ensure the success of the Project.

5. Target Time Schedule

While it is realised that uncertainties exist as to the time of availability of technical team, delivery of equipment and building programme on site, it has been tentatively agreed that target dates may be scheduled as follows:—

Specifications completed and procurement begun	By October, 1951.
The last order to be placed	By December 31, 1951.
Delivery in U.S. completed by suppliers.	By December 31, 1951.
Building to be ready	By January 31, 1953.
Equipment delivered at plant site	By April 1, 1953.
Erection completed	By October 1, 1953.
Production started	By December 1, 1953.
Plant in full production	By December 31, 1954.

I. PART III—COMMITMENTS OF PARTIES

Commitments of the Organisation

1. In consultation with the Government of India the Organization will, in accordance with ECOSOC Resolution No. 222 (IX) and its staff rules, provide such of the following project personnel as may be found to be necessary:

- One production engineer.
- One design engineer.
- One construction engineer.
- One mechanical engineer.

2. The organisation will further provide such headquarters technical personnel for operating guidance on specific sections of the operating process as may be found necessary from time to time.

3. The Organisation will provide all necessary technical knowledge so as to ensure that the quality of the penicillin produced in the project is equal to the best quality anywhere produced.

4. The Organisation will arrange the training of persons selected by the Government of India at its expense. Such trainees would be in the service of the Government. The trainees will be selected by Government of India in consultation with the Organization.

5. The Organization will award fellowships in accordance with and subject to the rules and regulations governing the Organization's fellowship programme over the period of the Agreement to provide supplementary study and training of scientific personnel in connection with the operation of the plant.

6. The control of the project will rest entirely with the Government of India. The organization will collaborate with the Government on technical aspects of the project and will advise them on technical qualifications of the staff to be employed by Government for the project. Government will consult the Organization before appointing any technical members to the authority set up for administering the project.

7. The personnel furnished by the Organization will normally function in any advisory capacity, but may at the request of the Government undertake technical and operational direction on its behalf until transfer of responsibility is accomplished as provided below. Such personnel will be under the Administrative Control of the Government though they would continue to be on the pay rolls of the Organization, bearing in mind the technical responsibility of the Organization for the project.

8. If operational direction as indicated in paragraph 7 is undertaken, it will be with the understanding that gradual transfer of technical and operational direction will be made to the personnel assigned by the Government.

9. The Organization, from its Technical Assistance Funds will make available for the various technical aid items involved, project personnel (exclusive of headquarters personnel) Travel expenses, allowances and training costs a sum upto U.S. \$350,000. This sum of \$350,000 is a starting figure and WHO will, in the event of necessity, seek further allocation. This allocation will be used exclusively for personnel working on this project. Trainees from other countries would be financed separately.

II. COMMITMENTS OF THE GOVERNMENT

1. The Government will assume responsibility for the ownership and management of the project.

2. The Government will provide all necessary lands, buildings and all materials for the construction of the plant and its subsequent operation except those provided by UNICEF as specified in Part II, paragraph 4(b).

3. The Government will be responsible for the provision of appropriate offices, expendable office material and fixtures secretarial help and other facilities to be mutually agreed upon for the international personnel employed on the project.

4. The Government will consult the Organisation on technical aspects of the composition of the particular authority set up to administer the project as also on desirable qualifications for technical persons appointed to such authority.

5. The Government will agree to and work out with the Organization and UNICEF mutually satisfactory implementation of the conditions expressly stated by the Executive Board of UNICEF when allocating the financial help for the purchase of equipment and supplies. These conditions are recorded in paragraphs 55, 50 and 51 of the report of the Executive Board of UNICEF at its 70—73rd meetings held on 27-28 November, 1950. The paragraphs are reproduced as Appendix V to this document.

6. In conformity with the undertaking of paragraph 4, the Government will undertake to provide the total funds estimated in Appendix I as "Capital Costs to Government of India according to the following target schedule. Within 30 days of Signing Plan of Operations Rs. 5,00,000 as required by contracts as follows:

Within the period July 1951 to December 31, 1952 Rs. 45,00,000
 Within the period Nov. 1952 to March 30, 1953.

Erection of equipment	..	20,00,000
Working Capital	..	20,00,000
Residential buildings	..	24,00,000

It is not intended that the amounts would have to be placed at the disposal of the project authorities but that the Government of India will finance the project upto these limits, if required.

7. The three parties recognise the building and services costs in Appendix I as reasonable estimates and Government will undertake to provide funds to complete these items.

8. The Government will collaborate with the Organization on technical process methods, to exchange knowledge and personnel with other production centres and the International Research Group being developed by the Organization and to accept trainees from other countries.

9. The Government will undertake to issue necessary licences for construction and production for any or all materials requiring such licenses.

10. In accordance with the conditions set forth in the action of the Executive Board of UNICEF [see paragraph 55(e) Appendix V] the Government will undertake to provide, free for distribution without cost to children and pregnant and nursing mothers in India not less than \$850,000 of penicillin computed at the cost of production, to be made available in five equal annual instalments beginning one year after production reaches 400,000 mega units per month. Distribution will be made, as with other UNICEF supplies, on a Plan to be agreed between UNICEF and the Government.

11. Except for the provision stated in paragraph 10, the Government will undertake to sell the entire production of the plant at cost. Distribution will be made in the following order of priority.

- (1) to the Government of India and State Governments in India with first priority to institutions serving mothers and children;

- (2) to non-governmental hospitals and other agencies especially those serving mothers and children, and
- (3) to commercial channels with adequate provision for control of price paid by the consumer.

12. The Government will continue to operate the project at capacity and expand production of penicillin, and other antibiotics subject to considerations economical production costs and continued demand.

III. COMMITMENTS OF UNICEF

In consideration of the undertaking by the Government set forth in part III, paragraph II-5 of this document UNICEF undertakings.

- (1) to furnish essential imported equipment upto the value authorised by the Executive Board, of U.S. \$850,000 a tentative list of which is set forth in Appendix II, subject to review by the Organisation and Government. It is expected that the amount U.S. \$850,000 will be adequate to cover all necessary imported equipment. Procurement will be done by UNICEF and they will employ the usual safeguards for satisfactory quality of equipment;
- (2) to pay transportation of all such equipment to delivery on the wharf at the port of Bombay, and
- (3) to delivery this equipment as spedily as possible, subject to export permits and delivery schedules.

PART IV—PATENTS

WHO have made inquiries, have taken legal advice, and are assured that no royalty payments whatsoever are involved in the working of the project.

PART V—DURATION

I. This Joint Plan of Operations shall come into effect when signed by the three parties concerned. IN WITNESS whereof the undersigned, duly authorised for that purpose, have signed this Plan of Operations done in triplicate at New Delhi on the twentyfourth day of July, 1951.

For the Government of India

Sd/-C. C. Desai
Secretary to the Govt. of India
in the Ministry of Works,
Production and Supply.

For the World Health Organisation.

Sd/-C. Mani
Regional Director,
South East Asia.

For the United Nations International
Children's Emergency Fund.

Sd/-S. M. Kecnay,
Director of Far East
Headquarters.

APPENDICES

APPENDIX I

PENICILLIN PRODUCTION COSTS TO GOVERNMENT OF INDIA

1. CAPITAL COSTS

A. Plant

[All expenditure on lands, roads and buildings (factory and residential), inclusive of electrical, water supply and drainage installations as detailed below, but excluding imported machinery, equipment and fittings of a specialised character like air conditioners, and laboratory equipment].

	Rs.	Rs.
1. Land Development.		11,00,000
2. Buildings and Fittings—		
Penicillin Plant (area 33,000 sq. ft.)	23,48,000	
Stores (area 14,000 sq. ft.)	3,11,000	
Administrative (5,000 sq. ft.)	1,32,000	
Laboratories	6,69,400	
Pilot Plant	3,18,000	
Workshop	2,10,000	
Precautions for Black cotton	5,00,000	44,48,400
3. Services—		
Steam plant 3,000 lbs. per hour complete	3,50,000	
Electric 2500 K.W. substation	2,70,000	
Sewage disposal	2,50,000	
Water not estimated	8,70,000
4. Erection costs (Estimated)		20,00,000
		84,58,400
B. Residences (for 250 employees)		
'A', 'B', 'C', and 'H' Types (Indian Government)		24,55,000
II. WORKING CAPITAL (for raw materials, operating expenses, say for 4 months).		20,00,000
TOTAL CAPITAL COST		1,29,13,400
(US \$ approximately)		2,750,000

APPENDIX II

Penicillin Production Capital Costs to Unicef

(All imported equipment, machinery and fittings for the Penicillin Plant, including a Pilot Plant and Laboratories and Workshops of which the following list is not exhaustive and is subject to finalisation by the Technical officers of the WHO and the Government of India).

A. PLANT EQUIPMENT

Capacity :

3600 billion units to start with per year rising to 9000 billion units per year.

Air Supply :

		U.S. \$
Two	25 × 25 × 19 PRE Ingersoll-Rand single-stage double-acting, horizontal, duplex air-compressor with 5 stage clearance control to give full 3/4, 1/2, 1/4 and no load operation.	42,600
Four	3 PLH Air Filters	736
Two	G.E. 500 H. P. 214 RPM unity power factor 440 volt 3 phase 50 cycles, 50° rise, engine type synchronous motor with motor rotor mounted directly on Compressor shaft between frames.	12,102
Two	Motor generator sets to furnish excitation for synchronous motors.	1,724
Two	Semi automatic reduced voltage starting panels.	4,920
Two	282 PL 12 Aftercoolers, each with automatic moisture trap	5,124
Two	B 11 size 66" × 18' vertical ASME Air Receivers complete with safety valve, pressure gauge and drain valve	2,670
Twelve	Built-to-order Glass wool air filters	6,000
	Accessory piping for the air lines	10,000

Fermentation :

Six	9' × 15' Penicillin fermentation tanks approx. 5000 gallons capacity, 304 stainless steel, with cooling coils, complete according to standard design; with turpomixer, complete with drive and 15 H.P. Motor.	1,04,200
Six	3' 6" × 6' 6", intermediate tanks of standard design, 500 gallons capacity made of 304 stainless steel, complete with agitator and motor (5 H.P.)	32,000

Six	Fischer and Porter Fig. No. 4520 K size approx. No. 11 connection size 3" Magna Bond, Armoured Flowrator, suitable for clear air at 50 lbs. pressure, at approx. 70° F, and having max. flow rate of 500 c. f. m.	2,400
Six	Fischer and Porter Fig. No. 4520 flowrator as above described but with max. air flow of 50 c.f.m. and 50 lbs. pressure.	1,800
Twelve	No. JM 223 Taylor Two pen recording thermometer one having range 0—200° F, the other having range 130—350° F as per 24 hour chart No. OP. 3458 with 3/4" NPT union connection stainless steel bulbs 33" long, each tube system to have 10 ft. of S.S. actuating capillary, with 24 hour soring wound clock complete with 1000 charts each and ink sets.	13,396
Six	Recording thermometers as above described with range of 0—212° F with 24 hour chart with 3/4" NPT union connection ss. bulb 33" long and 20 ft. accuratus capillary with 24 hour clock with 500 charts each.	1,698
One	No. 4060 bar Nun Agitation machine with plain table app. 3'6"×6' complete with Roesov variable speed drive and 1 HP 440 volts. 3 phase 50 cycles motor (S. G. Bump Co., 431-437 S. Glinton St. Chicago)	840
One	2000 gallon single shell S.S. Kettle with agitator, cheating coil, complete with motor.	8,000
One	5000 gallon S.S. tank as above with motor and agitator complete	4,134
One	Centrifugal broth pump as in extraction unit	600
One	Centrifugal pump as cloudy filtrate pump	400
Two	500 gallons (3' 6" × 5' 6") oil sterilising tanks with heating coils and agitator	8,264
	Piping, valves etc.	12,000
<i>Filtration :</i>		
Two	4' dia.×2' face Bird-Young Universal Penicillin filters, according to the standard design, with the cylinder and end rings to be made of 304 stainless steel, filter media is to be 150×150 mesh type 316 stainless steel, the tank is to be of steel with 3" drawin, the filter is to be driven by Westing-house 1 H.P. 3 phase, 50 cycles 440 volts. variable speed-meter (splashproof), with rheostat and switch (packed for expert)	14,774

Two	Vacuum pumps each 14" x 5" to run at 400 RPM each driven by 15 HP, 440 volts, 3 phase, 50 cycles motor.	3,336
Two	Filtrate exhaust pumps No. 15 DPL Labour Self-priming pumps with 440 volts 3 phase 50 cycles all cast iron with R-55 impellor	1,158
One	Slurry Pump centrifugal pump No. 300 RVL Ingersoll-Rand all from with 3 HP, splashproof motor, for pumping slurry from the fermentor to the filter	418
	Spare for the above	344
Two	Type 304 stainless steel fixed tube sheet heat exchangers having 138 sq. ft. condensing surface model 1011 with polished tube sheet bonnets (Pfaudler)	3,630
Four	Glass-lined single shell storage tanks, 1500 gallons capacity (Pfaudler)	14,000
	Piping and valves	3,000
<i>Extraction :</i>		
Four	Paddielniak Counter-current Centrifugal extractors complete with broth pumps, solvent pumps, acid pumps, drive motors, broth, solvent, acid rotameters, piping and valves, HH recording (not controlling) back pressure regulators etc., with spares (see proposal for details)	91,000
One	Sharples Super Centrifuge with one separating and one clarifying bowl.	4,800
One	50 gallons type 304 stainless steel vessel with mill finish jacketted clamped top model 255 (max. int. pressure 20 psig; and max. jacket pressure of 45 psig) complete with impeller type agitator adjustable baffle, PD motor drive; 1/3 HP, 440 volts, 3 phase 50 cycles 1500 RPM explosion-proof motor ; 3" flanged gate valve for bottom outlet and spare pinions to give 60, 50 and 40 RPM of agitator	1,370
Four	500 gallons stainless steel tanks with conical bottom and sight glass valve, and with agitator and explosion-proof motor.	4,000
Two	200 gallon type 304 stainless steel jacketted clamped top model 359 vessel complete with impeller type agitator with 3 HP explosion-proof motor, bottom opening fitted with a gate valve, 3 spare pinions to give an agitator speed of 60, 50 and 40 RPM.	2,126

One	100 gallon type 304 stainless steel clamped top model 351 complete with impeller type agitator with 2 HP explosion-proof motor; 3" flanged gate valve for the bottom outlet, 3 spare pinions for 60, 50, 40 RPM of the agitator	2,092
One	Sparkler filter, ISD 6 with extra set of short tie rods, complete with pump and explosion proof-motor.	2,500
Four	5000 gallon mild steel closed tank for storage of organic solvent (8' x 14') with two manholes	2,800
One	1400 gallon mild steel closed tank for organic solvent storage (5' x 10') with 1" inlet and 1" bottom outlet	400
Two	750 gallon closed stainless steel wash tank with manhole and cover (4' x 8 1/2') with agitator and explosion-proof motors.	3,000
One	750 gallons glass-lined steel plain closed welded vessel 60" I.D. x 60" straight side having 18" man-hole with impeller agitator 6 HP motor with teflon gaskets.	1,000

Filling and Packaging:

One	Still of 100 gallons per hour capacity with 500 gallon tank	3,200
One	Bottle washing machine	6,000
Two	Sterilisers	20,000
Three	Aluminium Capping machines	6,000
Eight	Automatic Weighing Machines	8,000
Two	Labelling Machine	12,000
One	Stopper Washing Machine	1,000
300	Trays for bottles	8,000
One	Backing Machine	11,000

EXTRA EQUIPMENT FOR STREPTOMYCIN.

Four	100 gallons S.S. 32" x 36" type 304 steel with jacket designed for 25 psig. inside 90 psig. Jacket pressure, fitted with agitator (750 RPM)	8,360
Four	750 gallons, type 304 S.S. (48' x 8' 6") with 1" coils inside, 25 psig. pressure, with turbomixer (540 RPM) with 7.5 HP motor	33,000
Three	4000 gallons S.S. (7' x 15') 25 psig. tank with 2" coils inside complete with turbomixer and 15 HP motor	45,000
One	Oliver filter of S.S. 3' x 2' with accessories	25,000
Three	1500 gallons, glass-lined tanks with agitator	10,500

One	200 gallons, glass-lined elution tank with agitator	1,000
One	200 gallons, glass-lined elute storage tank	800
One	Vacuum still, with 200 gallon kettle, 200 gallons receiver and condensor, of all G. 1 complete	8,000
One	100 gallon S.S. precipitation tank, jacketted, with agitator	2,500
Four	Centrifugal transfer pumps	1,600
One	100 gallon, 304 stainless steel kettle as described above for streptomycin	3,092
One	750 gallon, type 304 stainless steel tank as described for streptomycin	5,725
One	Sparkler filter 18D6 complete	2,500
Two	500 gallon S.S. holding tanks with agitator	2,000
	TOTAL PLANT EQUIPMENT	667,000
	CONTINGENCIES	83,000
		<u>\$750,000</u>

B. CONTROL AND RESEARCH LABORATORIES

including mychology department, assay laboratories, chemical laboratories and biological testing laboratories with appropriate air conditioning of that part which contributes to preparation of plant inoculum \$100,000

ESTIMATED TOTAL COST TO UNICEF \$850,000

NOTE.—These estimates were revised November, 1950 and short checked April, 1951. They are reasonably accurate but the entire list is subject to final approval by engineering team.

APPENDIX III

PENICILLIN MONTHLY PRODUCTION COSTS

(Basis 400,000,000,000 units/months)

1. Materials*	\$52,500
35,7500 US gal. tanks at \$1,500 per tank including corn steep, lactose, calcium carbonate antifoam, precursor, and solvents for extraction.	
2. Supervision and Labour	7,500
3. Administrative	7,500
4. Maintenance	5,000
5. Services (Water, steam, electricity)	5,000
6. Laboratories	6,000
7. General (yard, stores)	1,000
<hr/>	
8. Fixed charges.	84,500
(a) Depreciation in building 5%	5,700
(b) Depreciation on heavy equipment 10%	6,000
(c) Interest on capital at 3.1/2%	6,500
(d) Interest on working capital 3.1/2%	1,200
	19,400
<hr/>	
	\$103,900

With production of 400,000,000,000 units, cost of bulk penicillin G per 100,000 units-2.58 cents.

Note: Higher or lower monthly production which is an ever present possibility without change of basis costs will markedly increase or decrease the cost per 100,000 units.

*Re Materials : Indian personnel may develop in view of more recent study of costs.

APPENDIX IV

TECHNICAL ASSISTANCE

For providing:

(1) Highly skilled technical personnel for designing, erecting and bringing into operation the penicillin production plant.

(2) Adequate facilities for extensive training of Indian technical personnel in antibiotic procedures and expenses of training.

Salaries and Expenses.

One operating engineer	One mechanical engineer
One design engineer	One chemical engineer
One construction engineer	

Incidental Design costs.

Training costs for Indian personnel

Estimated over two years \$350,000

APPENDIX V.

EXCERPT FROM REPORT OF THE EXECUTIVE BOARD OF UNICEF APPORTIONING \$ 850,000 TO THE INDIAN ANTI-BIOTICS PROJECT.

"55. The Executive Board approved an apportionment to India for \$850,000 for the provision of equipment and supplies for the production of antibiotics, subject to agreement between the Administration and the Government of India on the plan of operations which:

- (a) has the technical approval of the WHO.
- (b) conforms to the WHO criteria quoted in paragraphs 50-51 above, including availability of the plant for technical information and training of personnel for further projects.
- (c) in addition to normal distribution through state institutions, provides for the free distribution to children in India of not less than \$850,000 worth of production of penicillin, in accordance with a plan to be agreed with UNICEF.

50. The Executive Board had before it a communication from the Director-General of the World Health Organisation to the Executive Director of UNICEF, dated 30 October, 1950, enclosing a WHO plan for antibiotics production involving co-operation and financial aid from UNICEF (E/ICEF/R.116). This communication outlined a general approach in which both WHO and UNICEF would aid suitable projects. In brief, under this approach, WHO would provide necessary technical aid, UNICEF would provide essential imported equipment and supplies, and the Government would provide buildings, locally available materials, local staff, and would operate and maintain the production unit under conditions to be agreed with the international agencies. In this connection, the WHO suggested criteria under which production projects might qualify for international assistance, as follows:—

" In order to ensure completion of the plant and that it is brought into full production in the minimum of time, it is essential that countries should:

- (1) make a firm commitment of funds in national currencies to cover all necessary expenditures not included in the financial (i.e. international) aid.
- (2) make this commitment against an agreed time schedule.
- (3) accept process methods internationally agreed upon and also periodic visits of expert mutually agreed upon with WHO.

- (4) make satisfactory commitments regarding the use to be made of the products of the plant." (E/ICEF/R. 116).

51. The WHO also proposed that production plants receiving international assistance should be ready to exchange knowledge and personnel with other production centres and the International Research Group being developed by WHO. Stress was laid upon avoiding any situation which would lead to the production centre restricting information concerning any of its technical developments. Each production centre should essentially become a training ground for other plants.

APPENDIX II
(Vide Para 14)

Statement showing Budget and revised Estimates and the Actuals in respect of the Hindustan Antibiotics Ltd. for the years 1951-52, 1952-53, 1953-54 and 1954-55.

	1951-52		1952-53		1953-54		1954-55	
Budget Estimates	Revised Estimates	Actuals	Budget Estimates	Revised Estimates	Actuals	Budget Estimates	Revised Estimates	Actuals
25,00,000]	[17,74,000	2,08,327	60,00,000	[22,50,000	[7,67,323	64,00,000	53,91,000	48,23,726
						56,00,000	8,00,000	14,65,200
							48,00,000	53,93,457
							(Purchase of Stores)	

APPENDIX III

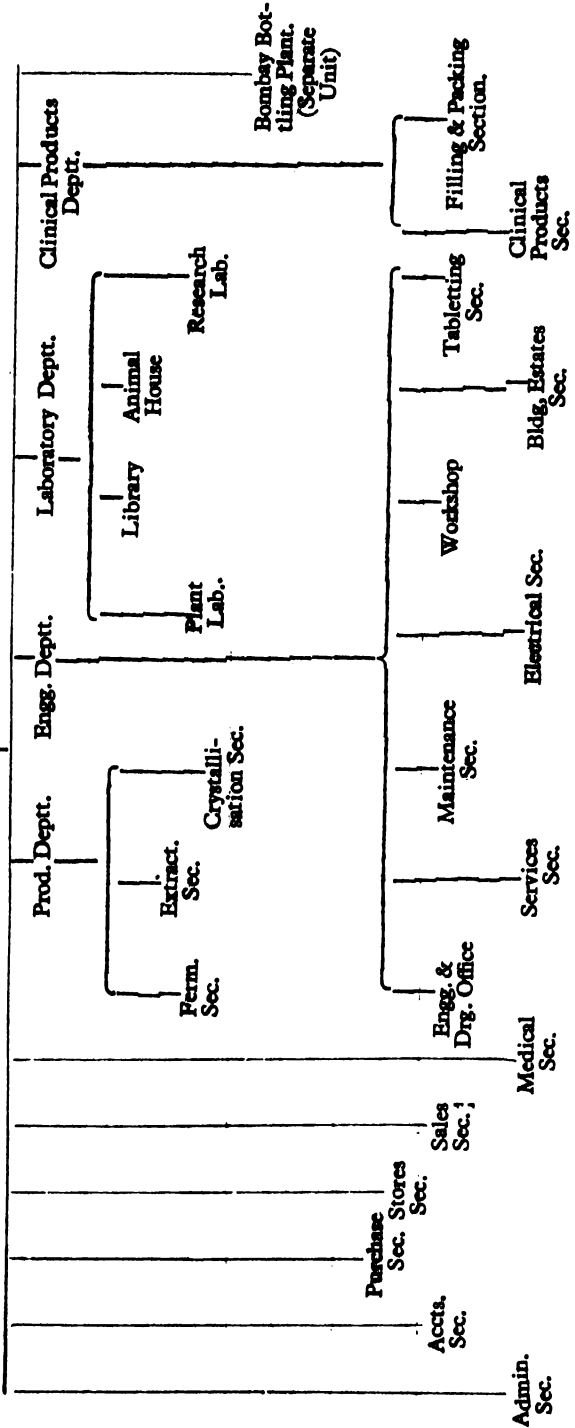
(Vide Para 24)

CHART OF ORGANISATION

MINISTRY OF PRODUCTION

BOARD OF DIRECTORS

MANAGING DIRECTOR—GENERAL SUPDT.—(MD's Office).



APPENDIX IV

(vide para 21)

**HINDUSTAN ANTIBIOTICS LIMITED, PIMPRI.
PARTICULARS OF STAFF SANCTIONED FOR VARIOUS
SECTIONS.**

Designation of the Post	No. of posts	Scale of pay
		Rs.
<i>Management Office</i>		
Managing Director	1	2000—125—2250
General Superintendent	1	1600—100—2000
Personnel Secretary to Mg. Director	1	250—15—400
Stenographer	1	80—5—120—EB— 8—200—10/2—220
Peons	2	30— $\frac{1}{2}$ —35
<i>Administration Section</i>		
Administrative Officer	1	600—40—1000
Office Superintendent	1	250—15—400
Assistant Office Supdt.	1	160—10—330
Upper Division Clerks	2	80—5—120—EB— 8—200—10/2— 220.
Stenographer	1	Do.
Lower Division Clerks	6	55—3—85—EB— 4—125—5—130
Typist clerk	1	Do.
Receptionist	1	Do.
Telephone Operators	3	60—4—120—EB— 5—170
Daftary	1	35—1—50
Peons	2	30— $\frac{1}{2}$ —35
Supervisor (Watch & Ward)	1	150—7—185—8— 225
Time Keepers (Junior)	4	100—5—125—6— 155
Watchmen	19	35—1—50
Malies	11	30— $\frac{1}{2}$ —35
Mukadam	1	35—1—50
Rest House Attendant	11	45—2—59—EB— 3—80
Motor Drivers	4	60—5/2—75
<i>Accounts Section</i>		
Accounts Officer	1	500—30—800
Superintendent Accounts	2	200—15—380—EB— 20—500
Upper Division Clerks	12	80—5—120—EB— 8—200—10/2—220

Designation of the Post	No. of posts	Scale of pay
		Rs.
Cashier	1	80—5—120—EB— 8—200—10/2—220 (plus Rs. 20/- cash handling allowance.
Steno-typist	1	55—3—85—EB— 4—125—5—130 (plus allowance Rs. 20/-)
Lower Division Clerks	2	55—3—85—EB— 4—125—5—130
Peons	2	30— $\frac{1}{2}$ —35
<i>Stores Section</i>		
Stores Officer	1	275—25—500— EB—30—650
Assistant Store Keepers	3	150—7—185—8— 225
Upper Division Clerk	1	80—5—120—EB— 8—220—10/2—220
Lower Division Clerks	6	55—3—85—EB— 4—125—5—130
Typist Clerk	1	Do.
Store-mate	1	35—1—50
Labourers	6	30— $\frac{1}{2}$ —35
Peons	2	30— $\frac{1}{2}$ —35
<i>Purchase Section</i>		
Purchase Officer	1	600—40—1000
Assistant Purchase Superintendent	1	160—10—330
Upper Division Clerks	3	80—5—120—EB— 8—220—10/2—220
Steno-typist	1	55—3—85—EB— 4—125—5—130 (plus allowance of Rs. 20/-)
<i>Production Section</i>		
Superintendent Production	1	1000—50—1400
Section Supervisors	2	
Assistant Section Supervisors	2	
Foreman	8	260—15—350—EB— 360—20—500
Chargeman	8	160—10—330
Operators	44	75—3—105—5—125— 6—155
Upper Division Clerks	3	80—5—120—EB— 8—200—10/2—220
Stenographer	1	Do.
Helpers	17	40—1—50—2—60
Peons	2	30— $\frac{1}{2}$ —35

Designation of the Post	No. of posts	Scale of pay
<i>Engineering Section</i>		Rs.
Superintendent Engineering	1	1000—50—1400
Assistant Superintendents	2	600—40—1000
Foremen	10	260—15—350—EB— 360—20—500
Chargemen	12	160—10—330
Operator Fitters	33	75—3—105—5—125— 6—155
Operators (Air Conditioning)	4	105—5—125—6—155
Junior Fitters	4	75—3—105
Boiler Operators	4	150—7—185—8—225
Boiler Assistants	4	75—3—105
Sub-Station Operators	4	75—3—105—5—125
Operators (Effluent and Disposal)	4	Do.
Electricians	6	105—5—125—6—155
Wiremen (Class I)	2	75—3—105—5— 125—6—155
Wiremen (Class II)	8	75—3—105—5—125
Blacksmith	1	Do.
Mason	1	Do.
Welders	2	75—3—105—5— 125—6—155
Carpenter	1	75—3—105—5—125
Mechanic	1	75—3—105—4— 125—6—155
Machinist	2	Do.
Turners	2	Do.
Helpers	34	40—1—50—2—60
Stenographer	1	80—5—120—EB— 8—200—10/2—220
Lower Division Clerks	2	55—3—85—EB— 4—125—5—130
Record and Tool Keeper	1	Do.
Draughtsman (Senior)	1	260—15—350
Draughtsman (Junior)	1	160—10—330
Drawing Office Attendant	1	45—2—59—EB— 3—80
Estate Assistant	1	100—8—140—EB— 150—10—300
Peons	2	
<i>Medical Department.</i>		
Medical Officer	1	350—30—560
Sanitary Inspector	1	80—5—120—EB— 8—200—10/2—220
Nursing Orderly	1	45—2—59—EB— 3—80
Jamadar Sweeper	1	30—1—35 (plus Rs. 10)

Designation of the Post	No. of posts	Scale of pay (Rs.)
Sweepers	9	30-1-35
Head-Cleaner	1	30-1-35(plus Rs 10)
Cleaners	6	30-1-35
<i>Clinical Product Section</i>		
Officer-in-Charge (Clinical Products)	1	600-40-1000
Foremen	3	260-15-350-EB- 380-20-500
Chargemen	6	160-10-330
Operators	14	75-3-105-5- 125-6-155
Helpers	42	40-1-50-2-60
Lower Division Clerks	54	55-3-85-EB-4- 125-5-130
<i>Research and Plant Laboratory</i>		
Superintendent Research	1	1300-60-1600
Chief Mycologist	1	1100-50-1400
Chief Biochemist	1	Do.
Chief Organic Chemist	1	Do.
Chief Bacteriologist	1	Do.
Junior Mycologist	1	350-360-380- 380-30-590- EB-30-770- 40-850.
Junior Bacteriologist	1	Do.
Junior Chemist	1	Do.
Librarian	1	275-25-500-EB- 30-650
Statistician	1	275-25-500-EB- 30-590
Junior Scientific Officers	7	Do.
Technical Assistants	14	160-10-330
Artist Photographer	1	160-10-330
Animal House Caretaker	1	100-8-140-10- 170-EB-10- 220
Laboratory Assistants	6	80-5-120-EB- 8-200-10/2- 220
Junior Technical Assistants	9	Do.
Upper Division Clerks	2	Do.
Stenographer	1	Do.
Lower Division Clerks (Typist)	3	55-3-85-EB- 4-125-5-130
Laboratory Attendant	25	45-2-59-EB-3- 80
Store-Attendant	2	Do.
Peons	3	30-1-35

Designation of the Post	No. of posts	Scale of pay (Rs.)
<i>Bombay Bottling Plant</i>		
Bacteriologist (Officer-in-Charge)	1	350—30—650— 45—1100 <i>plus</i> (Rs. 100 additional pay)
Accounts Officer	1	350—25—650
Assistant Accounts Superintendent	1	160—10—330
Assistant Store Keeper	1	160—10—330
Technician Chemist	3	120—8—200—10— 250
Senior Laboratory Assistant	3	100—5—140—6— 200
Laboratory Assistant	4	60—3—105
Junior Laboratory Assistant	4	50—2—80
Laboratory Attendant	39	35—1—40
Technician Maintenance	1	120—8—200—10— 250
Wiremen	2	60—3—105
Carpenter	1	60—3—105
Despatcher	1	50—2—80
Cleaners	8	30— $\frac{1}{2}$ —35
Upper Division Clerks	5*	80—5—120—EB—8— 200—10/2—220 Do.
Stenographer	1	Do.
Lower Division Clerks	4	55—3—85—E.B.— 4—125—5—130
Peons	2	30— $\frac{1}{2}$ —35
Mali	130	30— $\frac{1}{2}$ —35
Driver	1	60—5/2—75
Watchman	1	30— $\frac{1}{2}$ —35
Technician (Processing)	3	120—8—200—10— 250

*(One U.D.C. working as a Cashier is entitled to Cash handling Allowance of Rs. 20/-)

APPENDIX V

(Vide para 29)

Statement showing the efforts made to substitute the imported raw materials by raw materials from indigenous sources.

The main raw materials for the manufacture of penicillin which have been imported are:

(1) Corn Steep Liquor (2) Lactose (3) Glucose (4) Butylacetate (5) Phenylacetic acid (6) Lard Oil (7) Procaine Hydrochloride (8) Butyl alcohol (9) Octadecanol (10) Teepol (11) Calcium Carbonate and (12) Isopropyl alcohol.

The other raw materials are being procured from indigenous sources. The following efforts are made to procure imported raw materials from indigenous sources:—

1. *Corn Steep Liquor*.—The first step taken was that as a result of the researches carried out at Pimpri it was established that 75% of the Corn Steep Liquor that was proposed to be imported could be replaced by indigenous peanut cake. This has been a success of great value.

As for the remaining 25% Corn Steep Liquor, three local starch manufacturers were encouraged to produce this product in the country. They were all supplied with specifications, technical information and test procedures. The products manufactured locally are coming into the standard and it may be possible to get this even cheaper than the imported product. This commodity will not be imported in future.

2. *Lactose*.—This chemical is produced only from milk. The possibilities of manufacture of this from whey, the byproduct in the Casein or Cheese industry, in the country is being examined. The technique of production of lactose from whey is not complicated and can be undertaken in the country if sufficient quantity of whey is available in a particular locality.

3. *Glucose*.—This is being imported at present but some private manufacturers in India are putting up plants to manufacture this. In the plant, glucose has been replaced by cane sugar.

4. *Butylacetate and (8) Butylalcohol*.—The feasibility of manufacture of these items is being studied.

5. *Phenylacetic acid*.—The manufacture of this in the Factory is possible and this question is being examined.

6. *Lard Oil*.—This material has been replaced by pea nut oil.

7. *Procaine hydrochloride*.—The possibility of manufacture of this material in the Factory is being studied.

9. *Octadecanol*.—The quantity used per year is too small to think of manufacture locally. The use of this may even be dispensed with.

10. *Teepol*.—The quantity used per year is not sufficient to think of manufacture.

11. *Calcium Carbonate*.—This was imported to be sure of the production to start with. Indigenous material can be used and thereafter this chemical will not be imported.

12. *Isopropyl alcohol*.—This solvent was imported to try out a particular procedure of crystallisation of penicillin. We can do without it.

General.—Full information regarding the particular raw materials that are still imported whose replacement from indigenous sources is desirable, has been furnished to the Development Wing of the Commerce and Industry Ministry for reinforcement of the efforts being made by the factory.

APPENDIX VI
(Vide Para 33)

*Scales of Accommodation for Officers of various Pay Scales in the Hindustan Antibiotics Ltd. Compared with the C.P.W.D.
Scales and the Expert Committee's Recommendation*

S. No.	Types	Scale of Pay	Expert Committee's Recommendation	C.P.W.D. Standards.	Penicillin Factory
1	I	Upto Rs. 55/-	300 sq. Ft.	300 sq. Ft.	352 sq. Ft.
2	A	Rs. 55—160	625 sq. Ft.	600 sq. Ft.	480 sq. Ft.
3	III-A	Rs. 160—330	1000 sq. Ft.	796 sq. Ft.	696 sq. Ft.
4	III-B	Rs. 260—500	Between 1000 sq. Ft. & 1550 sq. Ft.	1100 sq. Ft.	1000 sq. Ft.
5	D	Rs. 350—850	1550 sq. Ft.	1770 sq. Ft.	1793 sq. Ft.
6	DI	Rs. 600—1000	2100 sq. Ft.	2184 sq. Ft.	2068 sq. Ft.
7	F1	Rs. 1000—1400	2750 sq. Ft.	2698 sq. Ft.	2589 sq. Ft.
8	F	Above Rs. 1400	2750 sq. Ft.	3003 sq. Ft.	2776 sq. Ft.

Statement showing the Particulars of Size and Cost of Foremen, Chargemen, Operators and Helpers-Quarters

Pay Scale	Foreman (III-B)	Chargeman (III-A)	Operator A-Type	Helpers Single Room
	Rs. 260 to 300	Rs. 160 to 330	Rs. 55 to 160	Up to Rs. 55
Living Rooms—with size	One (15' x 11')	One (15' x 9')	One (9'-3" x 10'-9")	
Bed Rooms—with size	Two (1) (9'-9" x 11'-6") (2) (10' x 11'-6")	One (12' x 9')	One (9'-3" x 10'-9")	One (10' x 12')
Kitchen—with size	One (7'-6" x 12')	One (7'-6" x 11')	One (6'-5" x 6')	One (8' x 10')
Verandah and Court-yard—with size	Front (12' x 7'-9") Back (6'-9" x 14'-9") No courtyard	Front (7'-6" x 10') Back (7' x 9'-9") Courtyard (28' x 27')	One (6' x 13") Courtyard— (20' x 18'-6")	Courtyard (10' x 17')
Bath—size	One (3'-6" x 6'-9")	One (4' x 3'-9")	One (4' x 4')	Combined for two (3'-6" x 5')
Plinth area	1000 Sq. Ft.	696 Sq. Ft.	480 Sq. Ft.	274.59 Sq. Ft.
Cost of Building including Sanitary & Electrical Fittings	Rs. 15,765/-	Rs. 11,324/-	Rs. 6000/-	Rs. 4000/-
Light Points	Eleven	Seven	Six	Four
Power Points	Two	One	Nil	Nil
Fans	Three	Two	One	Nil
Lighting Plugs	Three	Three	Three	Nil
Cost of Electrification	Rs. 1500/-	Rs. 1000/-	Rs. 500/-	Rs. 350/-

APPENDIX VII

(vide para 38)

Statement showing the value of capital assets, total production, total sales, value of purchases, etc. for 1951-52, 1952-53, 1953-54 and 1954-55.

	1951-52	1952-53	1953-54	1954-55 up to Jan. 1955.
1. Original value of Capital assets	Rs. 4,46,700	Rs. 5,04,455	Rs. 5,35,997	Rs. 5,38,991
2. Total Production	Rs. 22.28 lakhs vials.	Rs. 19,53,892 vials	Rs. 27,15,564 vials	Rs. 13,66,346 vials.
3. Total Sales (value)	Rs. 8,53,211	Rs. 30,79,561	Rs. 19,23,949	Rs. 14,37,331
4. Penicillin purchased (quantity)	Rs. 12.15 lakhs m.u.	Rs. 8,29,873 m. u.	Rs. 18,45,926 m.u.	Rs. 8,50,527 m. u.
5. Penicillin purchased (Value)	Rs. 19.04 lakhs	Rs. 10,60,963	Rs. 10,43,229	Rs. 3,84,409
6. Average rate of Penicillin purchased	Rs. 1-9-0.9 per m.u.	Rs. 1-4-6.8 per m. u.	Rs. 0-3-0 per m.u.	Rs. 0-7-2.8 per m.u.
7. Penicillin consumed (quantity)	Rs. 9.02 lakhs m.u.	Rs. 8,50,819 m.u.	Rs. 17,40,284 m.u.	Rs. 9,38,258 m.u.
8. Value of penicillin consumed	Rs. 16.34 lakhs	Rs. 12,50,028	Rs. 10,08,565	Rs. 4,46,395
9. Value of packing materials consumed (vials, plugs, cartons etc.)	Rs. 3.38 lakhs	Rs. 3,80,435	Rs. 3,66,062	Rs. 12,10,868
10. Value of Finished Stock and work-in-Progress on hand at the end of the year	Rs. 12,96,723	Rs. 1,27,243	Rs. 5,11,050	Rs. 2,04,152
11. Value of closing Stock of Bulk Penicillin and other Raw Materials	Rs. 7,55,382	Rs. 3,15,309	Rs. 2,60,829	Rs. 2,81,110
12. Net Profit to Government	Rs. 10,478	Rs. 1,50,729	Rs. 5,75,011	Rs. 1,73,205

APPENDIX VIII

(Vide para 61)

Major Head 72

The Hindustan Insecticides Ltd.

1952-53		1953-54		1954-55		1955-56	
Budget Estimates	Revised Estimates	Actuals	Budget Estimates	Revised Estimates	Actuals	Budget Estimates	Actuals
10,00,000	5,858	7,45,000	13,90,000	21,94,000	16,00,000	22,00,000	16,00,000
			*(-)11,90,000	1,50,000	†(+)1,88,168		†(+)1,88,168
			<u>2,00,000</u>	<u>23,44,000</u>	<u>17,88,168</u>		

*Deduct aid from UNICER.
 † Equivalent to funds paid to the Company by way of share capital.
 ‡ Represents amount booked in Sub-head A-1(S) D. D. T. Factory for adjustment. This is expected to be adjusted against the deposit made by the Company with the Central Public Works Department.

APPENDIX IX

(vide para 65)

M/S. HINDUSTAN INSECTICIDES, LTD. NEW DELHI

Statement of expenses during Construction and Trial from 11-3-1954 to 31-3-1955.

EXPENDITURE	INCOME			Rs. As. P
	Rs.	As.	P.	
To Wages	19,957	15	0	1 8 0
To Raw Material & Chemicals used in experiments	40,858	2	0	
To Establishment including House Rent allowances (Includes Rs. 28,717-13-0 paid to the Managing Director).	1,52,156	3	0	3,31,844 9 6
*To land lease Money from July 1953 to March 1955				
To Steam & Water	7,190	2	0	
To Rent, Rates & Taxes	3,241	6	0	
To Electrical & Lighting Charges	3,972	11	0	
To Expenses of U.N. technical experts	1,941	6	0	
To Printing and Stationery	25,210	14	0	
To Postage & Telegrams	4,091	6	3	
To Telephone charges	1,339	3	3	
To Directors Fee	2,340	9	0	
To Travelling & Conveyance (including Rs. 1030-3-0 paid to the Managing Director)	200	0	0	
To Advertisement	4,628	8	0	
To Works & Office Miscellaneous Expenses	2,216	12	0	
To Subscription to Journals & Periodicals	1,979	8	3	
To Repairs & Maintenance of vehicles	726	8	0	
	3,669	10	3	

*Provision and payment is on the basis of instruction from the Govt. of India, Ministry of Production while the lease is under finalisation.

EXPENDITURE

	Rs.	As.	P.
To Liveries	1,956	0	3
To Filing Fee	12	0	
To Medical Charges	659	5	
To Entertainment Expenses	374	11	
To Insurance	1,023	5	
To Audit Fee	1,000	0	0
To depreciation 2/100	51,099	15	3

TOTAL 3,31,846 1 6

INCOME

Rs. As. P.

TOTAL 3,31,846 1 6

NOTE : 1. Director's fee has been provided only for one non-official Director.

2. Rs. 16,392-11-6 expenses before Incorporation have been included in the revenue accounts as per statement enclosed.

(Sd.) P. N. GUPTA,
Accountant.

(Sd.) ATAM CHAND,
Accounts Officer-cum-Secretary.

(Sd.) S. S. JAGGIA,
Managing Director.

Directors :

1. (Sd.) S. JAGANATHAN,
2. (Sd.) A. NAGARAJA RAO,
3. (Sd.) M. K. MATHULLA,
4. (Sd.) JASWANT SINGH,

AUDITORS' REPORT TO THE SHAREHOLDERS

As per certificate appended to the Balance Sheet.

NEW DELHI :

(Sd.) S. P. CHOPRA & CO.
Chartered Accountants.

DATED.....

APPENDIX X

(vide para 65)

Statement showing the various categories of staff and their number, in the Hindustan Insecticides Ltd.

Serial No.	Designation of the Post	No. of Posts
<i>Technical Posts</i>		
1	Works Manager	1
2	Works Engineer	1
3	Superintendent Production	1
4	Assistant Superintendent Production	1
5	Shift Supervisor	4
6	Day Supervisors	1
7	Supervisor Mechanical	1
8	Supervisor Electrical	1
9	Technical Assistant	1
10	Technical Assistant (Chemical)	1
11	Technical Assistant (Mechanical)	1
12	Purchase Assistant	1
13	Draughtsmen	2
14	Store Keeper	1
15	Shift Analysts	4
16	Day Analysts	2
17	Senior Operators	12
18	Filter <i>cum</i> Mechinists	2
19	Welder <i>cum</i> Blacksmith	1
20	Welder	1
21	Fitter	1
22	Instrument Mechanist <i>cum</i> Machinist	1
23	Electrician <i>cum</i> Fitter	4
24	Electricians	2
25	Junior Operators	24
26	Helpers	25
27	Painter	1
28	Carpenters	2
29	Mason	1
30	Day Bagging Labourers	2
31	Greaser	1
32	Labourers	3
33	Drivers	3
34	Belders	6
35	Labourers	12
36	Attendants	4

Serial No.	Designation of the Post	No. of Posts
------------	-------------------------	--------------

Administrative Staff

1	Accounts Officer <i>cum</i> Secretary	1
2	Office Superintendent	1
3	Welfare Assistant	1
4	Security Inspector	1
5	Accountant	1
6	Personal Assistants	2
7	Stenographer	1
8	Upper Division Clerks	3
9	Senior Clerk	1*
10	Cashier	1
11	Lower Division Clerks	7
12	Junior Clerk	1
13	Accounts Clerk	1
14	Telephone Operator	1
15	First Aid Dispensers	2
16	Gate Keeper	1
17	Daftry	1
18	Peons	6
19	Shift Watchmen	8
20	Day Watchman	1
21	Head Watchman	1
22	Canteen Steward	1
23	Mali	1
24	Sweepers	3

*Appointment for 3 months only.

APPENDIX XI

*Statement showing the summary of conclusions/recommendations of the
Estimates Committee relating to the Ministry of Production—
Hindustan Antibiotics Ltd.*

Serial No.	Reference to para No. in the report	Summary of conclusions/recommendations
1	13	The Committee are given to understand that the manufacture of Penicillin only has been taken up so far and that the manufacture of Streptomycin has been held over for the second phase. Initial steps for this are just being taken in hand. Under the original agreement equipment of the value of \$850,000 was to be supplied and this was to include streptomycin equipment but as the cost of Penicillin equipment alone has taken up this full monetary provision the plant for streptomycin has not been supplied. The negotiations for getting equipment for the manufacture of streptomycin should be expedited.
2	16	The first accounts since the incorporation of the Company were not prepared and laid before the Company within the period of 18 months after the incorporation of the Company as required under the Articles of Association. The Committee are informed that this was solely due to special difficulties peculiar to the first year when the management passed from the Government to the Company. The Committee consider nevertheless that there has been a serious lapse and would like to emphasise that every effort should be made to bring out the accounts more expeditiously.
3	17—20	The Committee observe that the anticipation held out in the annual reports of the Ministry do not usually materialise and that subsequent reports do not indicate the reasons why the targets set out in the previous reports have not been reached. The Committee recommend that annual reports should also take cognisance of delays in the execution of projects and should give out the reasons causing the delay.
4	21	Against the sale price of the total products of the factory of about Rs. 47 lakhs the expenses on staff alone would amount to Rs. 10 lakhs which is a

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3

very high proportion of expenditure and steps ought to be taken to reduce the number of staff as far as possible.

✓5

22

~~The Committee do not see the need for an official between the Managing Director and the Heads of the various Departments and Sections. They consider that It should be possible for the Managing Director to take up almost all the duties of the general supervision from the General Superintendent by delegation of additional powers if necessary, to the heads of the Departments or the sections and branches.~~

✓6

23

It should be possible for the Purchase Officer to take over charge of the Stores Section also, thus dispensing with the post of the Stores Officer. The major items of purchase should ordinarily be based on bulk contracts which would come up for renewal only at long intervals.

✓7

24

In the Production Section, the ratio of the number of supervisory staff excluding the Superintendent Production to the total number of operators is 5 : 11. A ratio of one supervisory staff to two workers is too high. ~~The Committee consider that~~ It should be possible to have the operators trained to carry out many of the processes without excessive supervision and that a consequent reduction in the number of supervisory staff should be possible.

This reduction may be effected not in the category of Chargemen, but in the higher grade supervisory staff of Section Supervisors and Foremen. The number of these could well be reduced to two in each shift, that is six in all effecting a saving of six posts in grades Rs. 260—500 and above.

✓8

25

~~The Committee do not see the need for the 3 officers in the Engineering Section of the factory, especially as there are separate officers for the Production and Clinical Sections. The Committee consider that one post of Superintendent Engineering could easily be dispensed with retaining only the two Assistant Superintendents.~~

Regarding the other staff in the Engineering Section, the proportion of supervisory staff of Foremen and Chargemen to operators is 22 to 117 that is 1 in 5. Such a high ratio of supervision is wasteful and a reduction in the supervisory staff to at least about 12 so as to maintain a ratio of 1 to 10

- | 1 | 2 | 3 | 4 |
|------|----|---|---|
| | | should be possible. This can be achieved by reducing the number of posts of Foremen to, say, 5 and the Chargemen to about 7. | |
| 9 | 26 | There is also a high percentage of supervision in the Clinical Product Section and there is scope for reduction of one or two supervisory staff in this Branch. | |
| 10 | 27 | The Committee desire that the whole question including the number of technical staff in the various branches required for the working of the factory during the course of and after expansion of production capacity, should be carefully examined without delay by a Technical Committee consisting of Chemical Engineers, Cost Accountants and trained Administrators, who should examine also the staff requirements of other Chemical Industries under the Ministry of Production such as the D.D.T. Factory. | |
| ✓ 11 | 28 | The Committee desire that Every effort should be made to maintain a high standard of research and to see that the results of the research are also of sufficient use to the factory in particular and to the manufacture and use of antibiotic in the country in general. | |
| | | Apart from sampling and testing research of a developmental nature should also be undertaken. | |
| ✓ 12 | 29 | The Committee desire that A determined effort should be made to reach self-sufficiency in raw materials required for the manufacture of Penicillin. | |
| 13 | 30 | The Committee note that there is plenty of scope for further improvement in the replacement of raw materials by indigenous materials and desire that further effort should be undertaken for replacement of the imported articles by the indigenous materials. The Committee also feel, that publicity of the requirements of the factory may make the private industries help in the matter. | |
| 14 | 33 | The Committee notice that the scale of accommodation provided in the quarters being built for the lower categories of staff is much lower than the recommendations of the Expert Committee in this regard as well as the C.P.W.D. standards. There has been a reduction in the scale of accommodation in all categories of staff particularly in the lower categories. | |

1

2

3

Whatever may be the reasons for such reductions, the Committee suggest that this should not be done at the expense of the lower categories of staff for whom the facilities provided are barely above the minimum necessary for ordinary living.

✓ 15

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~~The Committee recommend that~~ On expiry of the present contract with the selling agents on the 31st March, 1956, opportunity should be given to other firms to compete for selling the Company's products so that the best terms may be available to the Government and country-wide sales could be effected.

~~The Committee desire that~~ appointment of Selling Agents should be made by calling for open tenders. While selecting the Sales Agents, it should be ensured that every State is covered and so far as possible agencies are given only to those firms which have extensive sales organisations within the State.

Production of the factory is distributed through selling agents but whose retail selling prices are not subject to any agreement. In order to avoid any undue profit being made by the selling agents ~~the Committee suggest that~~ the terms of agreement with the agents should provide that no such cases of profiteering in the retail sales arise. This point may be borne in mind when inviting tenders for appointment of agents when the present contract expires next year.

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~~The Committee recommend that~~ In working out the scheme for distribution of penicillin to the consuming centres, care is taken that all parts of the country are served and that there is no loss of material by fraudulent or irregular use. The constitution of a Committee consisting of non-officials to supervise the scheme of free distribution may be advisable.

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In order to avoid incurring any loss, care should be taken to see that the selling price is as far as possible not below the cost of production and that at any rate it includes a certain amount of return on capital etc.

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The Ministry have stated that the successive reduction in the selling price of bulk Penicillin which at present is below the cost of production is entirely attributable to excessive world-

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wide competition and the dumping of foreign made Penicillin in the country. The Committee would like urgent examination to be made as to what steps should be taken against dumping if any.

- 19 38 The reasons for the fall in the outturn in the Bottling Plant of the factory during 1954-55 require examination.
- 20 39 For increasing the outturn both of the factory and of the Bottling Plant, the Committee would recommend that a system of payment of wages to staff based on outturn should be examined and introduced. It is essential that efficiency is maintained at a high figure to make up for the loss in the value as a result of declining prices of penicillin.
- ✓ 21 40 Non-officials should also be associated in the Selection Committees for appointment of officials in the factory.
- 22 41 The details of the scheme worked out for imparting practical training to students, artisans etc., in the factory should be furnished to the Committee.
- 23 42 The Committee feel that adequate publicity has not been given to the high standard of the penicillin manufactured in the factory. In view of the fact that the product faces keen competition from manufacturers of world-wide reputation, very wide publicity should be given by advertisements and other means to the product manufactured in this factory to enable it to secure its proper place in the market.
- ✓ 24 43 A representative of the State Government should also be associated with the Board of Directors, as this would enable close touch, being maintained with the State Governments. ~~The Committee also suggest that~~ Members of the State Legislature and of Parliament may be associated with the Board of Directors so as to represent the non-official viewpoint.
- ✓ 25 44 With regard to manufacture of penicillin ointments specialists in skin disease may be consulted in regard to the therapeutic value of penicillin ointment and if their reports

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		are favourable, the manufacture of such ointments should also be undertaken in the factory.
26	45	<p data-bbox="391 326 971 458">The examination of the utility of "Waste mycelium" and affluent water for agricultural purposes after suitable treatment may be conducted with expedition so that full use of these waste products is made with profit.</p> <p data-bbox="391 475 971 579">Before the waste products are put to agricultural and other uses, it should be carefully examined that they do not contain substances deleterious to soil bacteria, plant or animal life.</p>
27	46	<p data-bbox="391 614 971 951">The Committee note that the Board of Hindustan Antibiotics Limited have approved a plan to give facilities to a glass factory to set up a fully automatic machine for making neutral glass vials, adjacent to the Penicillin Factory. The Committee suggest that care should be taken that the arrangement with the glass factory does not result in any commitments by the Hindustan Antibiotics Ltd., to accept the product of the new glass factory regardless of its quality, price etc., and that the interests of the Company are fully protected.</p>

APPENDIX XII

Summary of conclusions/recommendations of the Estimates Committee relating to the Hindustan Insecticides Ltd.

Serial No.	Reference to Para No. in the Report	Summary of conclusions/recommendations
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1	55	<p>The construction work on the factory did not proceed according to the time schedule in spite of the changes in the latter from time to time and there has been considerable delay in working to the targets. The reasons adduced for the delay indicate a failure to draw up a workable plan and to push the work through expeditiously. As the UNICEF decided to divert the equipment that was intended for another country to India, the equipment also arrived ahead of schedule. Thus for one year the machinery had to be left idle. The Committee are pained to notice that the feature of delay in carrying out the works is being met with frequently in their examination of the State Undertakings and would emphasise the need for such work being better planned and carried out without unnecessary delay.</p>
2	56-57	<p>It has been explained by the Ministry that the increase in estimate of costs is due to inexperience in this matter as this is a new factory of its kind. The Committee are not satisfied with the explanation, as the provisions referred to by them are in respect of structural works and land etc., to which this explanation will not apply. The Committee desire therefore to bring to the notice of Government once again the need for careful estimating of costs as otherwise serious losses may occur.</p> <p>A direct consequence of defective planning and estimates was that even after the machinery was set up, production difficulties had been experienced due to the lack of spare parts</p>

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and the difficulty in obtaining them from abroad quickly.

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There has been considerable variation between the Budget and Revised Estimates and the Actual Expenditure in 1952-53, 1953-54 and 1954-55.

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Some of the features of the D.D.T. Plant were new even for the advisers made available to the factory by the UNTAA. It is surprising that an opportunity to gather a first-hand knowledge of the operation of the plant was not visualized when the agreement was entered into. ~~The Committee would suggest~~ that in future it may be ensured that the technical advisers appointed under any agreement, are aware of all the detailed technical matters connected with the agreement.

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It appears that before undertaking the work, full examination of the ownership of the land was not made and the terms of agreement for the purchase or lease of the land were not finalised. It is surprising to note also that the exact location of the site should have been included as an item of the agreement between Government and the International organisations, even before the negotiations with the D.C.M. Chemical Works were concluded. This, apart from being unnecessary, could certainly not have been of help to Government in its subsequent negotiations with the D.C.M. Chemical Works who were in a favourable position in that they were aware that Government was already bound to take up the site, and were depending on the Chemical Works for the raw materials for the factory.

~~The Committee do not see the~~ ^{There is a need} need for payment of Rs. 4000 to D.C.M. Chemical Works as a part of the lease charges even while the ownership of the land has been in dispute and while attempts are being made to obtain the land for Government. ~~The Committee would suggest that~~ This matter should be examined in detail to see whether the interim payment to the Delhi Chemical Works was necessary, especially when the matter was engaging the attention of another Ministry. Steps

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should also be taken to finalise early the transaction for acquisition of land whether on purchase or on lease.

- ✓ 6 64 In view of the fact that the factory is situated in a very highly industrialised area, considerable difficulty has been experienced in obtaining suitable land as near the factory as possible for the purpose of providing residential quarters for the staff. The matter has not been finalised, but it appears that Delhi Improvement Trust has recently made an offer of 5½ acres of land which the factory propose to accept for putting up quarters. ~~The Committee would observe that~~ care should be taken in future to see that such important factors in location of the site of a factory are given full consideration before a decision is taken.
- ✓ 7 65 ~~The Committee consider that the~~ percentage of salaries even during the year in which production had been undertaken, namely 1955-56, is rather high. ~~They would suggest therefore that the~~ Technical Committee which ~~they have~~ suggested in the case of the Hindustan Antibiotics Ltd. consisting of Chemical Engineers, Cost Accountants and trained Administrators should be asked to examine the number of staff in the various categories in this factory and also to see that the number of supervisory and clerical posts is not excessive.
- ✓ 8 66 ~~The Committee are not satisfied with the~~ need for the payment of conveyance and entertainment allowances to the Managing Director. ~~The Committee realise the need for some expenditure being incurred on the~~ entertainment of important visitors to the Factory etc.,) but such expenditure should be treated as an expense of the factory to the extent that it is actually incurred and there is no need for payment of a fixed amount of allowance to the Managing Director. ~~The Committee would suggest that~~ such allowances wherever paid, may now be reviewed and as far as possible, the payments withdrawn.
- ✓ 9 68 ~~The Committee recommend that~~ Government should, as soon as practicable place a copy of

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the agreement with the D.C.M. Chemical Works on the Table of the Lok Sabha and should also take steps to make public other such agreements as far as possible.

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It appears, that due to the peculiar terms of the agreement the D.D.T. Factory is unable to obtain the benefits of the fall in the market price and to effect a reduction in the rates at which chlorine is being purchased by them. This has been occasioned by the terms of the agreement which permits variations in price only when variation occurs in cost and raw materials and any other costs. It is unfortunate that the provision of variations in prices has been made on this basis since the price of chlorine is determined not by the price of raw materials or other costs, but is determined by other factors. The agreement should have provided for a reduction in cost due to those factors which necessarily determine the price or should have at least provided that the rate charged to the D.D.T. Factory who are, probably, the largest single consumers of the chlorine produced by the D.C.M. Chemical Works should not exceed the rate charged to the other customers of the D.C.M. Chemical Works. The Committee have been assured that the relevant clause in the future contracts will be drawn up correctly. The Committee are unable to understand why these factors were overlooked in fixing the price of chlorine under the agreement or in working out the formula for variation in prices. The Committee would suggest that this matter should be examined by Government as also the action to be taken against the officials responsible therefor.

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It appears, that an agreement has now been reached whereby the D.C.M. Chemical Works are to take over all the Hydrochloric Acid produced in the D.D.T. Factory in the first six years. It has been represented to the Committee that it would not be in the public interest to make public, the price at which the acid is being disposed of, but the Committee would point out, nevertheless, that it is very advantageous to the D.C.M. Chemical Works. The Committee are of the view that had Government insisted upon the agree-

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ment for the disposal of hydrochloric acid forming part of the agreement for the supply of the raw materials by the D.C.M. Chemical Works, they would have been in a position to obtain a more favourable rate for the acid. In that case Government would not have been placed in the unfortunate position of having to enter into negotiations with the D.C.M. Chemical Works when the latter knew that the D.D.T. Factory have no other way of disposing of this material if the D.C.M. Chemical Works refused to take the material. The Committee would like this matter to be examined as also the action to be taken against the officers responsible for not having finalised the agreement for the disposal of waste product along with the agreement for the supply of raw materials.

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In this connection the Committee would also refer to a statement made before them by a non-official witness who is a Chemical Engineer and has also a first hand knowledge of heavy chemical industry that by installing additional equipments worth about a lakh of rupees only in D.D.T. Factory, it would be possible for Government itself to undertake the manufacture of Di-Calcium phosphate, a useful non-nitrogenous fertiliser. The Committee are also informed that the matter was considered by Government but was dropped as the prospects were unpromising. The Committee would recommend that the matter may be examined *de novo* in view of the expert opinion expressed before them.

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As at present constituted, the Board of Directors of the D.D.T. Factory includes a member who is at the same time Director of the Managing Agents of the D.C.M. Chemical Works Ltd., which supplies raw materials to the D.D.T. Factory, consumes the waste products and is an interested party in the matter of the dispute about the proprietorship of the land on which the D.D.T. Factory is situated. ~~The Committee would observe that~~ while they entirely agree with the need for appointing Directors with business experience etc., in this particular case, however, from a

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perusal of the minutes of the Board of Directors they are not satisfied with the arrangements, as very important matters connected with the supply of raw materials of the factory and the disposal of the waste products have come up frequently and have formed subjects of difference of opinion between the non-official Directors and the other Directors. ~~The Committee would suggest that~~ This matter should be reconsidered by the Ministry.
