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ICI and the Kanpur Fertiliser Project

A Case Study of Foreign Investment*

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In October 1964 the Government of India set up a Committee, under the chairmanship of Shri B.Sivaraman, "to examine the long-term and short-term problems connected with distribution of all chemical fertilisers, nitrogenous, phosphatic, potassic and to recommend measures for evolving an effective system of distribution of fertilisers with a view to bringing about a rapid increase in their use for increased agricultural production". In the Committee's report which was completed in September 1965, it was pointed out that soil tests had indicated that almost all soils in India needed additional nitrogen, 85% needed additional phosphorous and 63% required additional potash if crop yields were to be increased by the 50-100% necessary to meet India's food requirements over the Fourth Year Plan period. Accordingly whereas the total availability of fertilisers in India amounted to 0.473 (m.tons.) of Nitrogen (N),¹ 0.138 (m.tons) of Phosphorous (P₂O₅) and 0.051 (m.tons) of Potash (K₂O) in 1964-5, the Committee estimated that a 'realistic' figure for fertiliser needs at the end of the Fourth Plan (1970-71) would be 2.41 m.tons of N, 1.02 m. tons of P₂O₅, and 0.7 m.tons of K₂O. The estimates were of the same order of magnitude as those made by the Working Group of the Indian Dept. of Agriculture, by US AID and by the Stanford Research Institute which for the year 1970-71 were respectively for N, P₂O₅ and K₂O, (2.00, 1.00, 0.35); (2.65, 1.34, 0.68) and (2.08, 1.29, and 0.67). These were enormous demands from an industry which was only producing half of the fertiliser available in 1964-5 (0.238 N, 0.126 P₂O₅, and virtually no K₂O), and from a country which was at that very time going through a severe Balance of Payments crisis.

Significant fertiliser production in India dates from the second world war. The Japanese invasion of Burma in 1942 cut off India from its traditional supplier of rice, and increased the urgency of improving domestic rice yields by using

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1. This figure is for nitrogen from the Central Fertiliser Pool supplies - total nitrogen consumed in India in 1964-5 was 550,000 tons.

chemical fertiliser. The first factory was initiated in one of the worst hit states, Travancore (now part of Kerala) at a site called Udyogmandal. It started commercial production in 1948, with an annual capacity of 50,000 tons of ammonium sulphate. Similarly the Bengal famine of 1943 although caused by the structure of food distribution more than by a serious food shortage, was one of the factors in the construction of an ammonium sulphate plant with an annual capacity of 355,000 metric tons at Sindri near the Bihar/Bengal border. Commercial production began in February 1952.

Udyogmandal and Sindri originated in experiences of food shortages in the 2nd world war. They were both based on old technologies. The second set of fertiliser plants was connected with the 2nd plan and used more advanced processes. Mangal (with an annual capacity of 388,000 metric tons of calcium ammonium nitrate) was decided on in 1955 and started full production in 1962. Trombay, 15 miles north of Bombay, originated in recommendations by the Indian Fertiliser Production Committee in 1955, though the plants (with an annual capacity of 99,000 metric tons of urea and 330,000 metric tons of nitrophosphates) were not completed until 1965. The production of urea at Nevelvi was proposed in 1954, and received government sanction in 1957: again however there was a long gestation lag; the plant (with an annual capacity of 153,000 tons of urea) did not start commercial production until March 1966. Finally, the 52,000 metric tons p.a. ammonium phosphate plant at Emnore, owned and operated by E.I.D. Parry Pit, a private sector concern, was initiated in 1963. A Map of the major factories of the Indian Nitrogen Fertiliser Industry is reproduced as Exhibit I.,

In spite of the severe hold-ups in the implementation of many of these projects, and difficulties of capacity utilisation experienced once plants came on-stream (the Savaraman Committee estimated that capacity utilisation during 1965-6 would be 61% for nitrogen plants and 65% for phosphates), the growth rate of Indian fertiliser production over this period was remarkable. Stephen Merrett of the Higher Education Research Unit, LSE, gives estimates of annual rates of growth of actual and capacity output of 28.8% and 22.4% respectively for the period 1949-50 - 1965-6, compared to 6½% for aggregate industrial production in India.

The great majority of this growth came from public sector plants. In 1965 the four public sector fertiliser plants produced 90% of total output (see Exhibit II). There were two reasons for this emphasis. First successive Indian governments had pursued a policy aimed at keeping the chemical fertiliser industry under public control. Second, although consumption was increasing rapidly in the 50's, the market was still too small to be attractive to foreign fertiliser producers.

In the early 1960's, however, the situation changed. To begin with, there were significant technological changes in the production process. Figure I gives the elements and processes involved in nitrogenous fertiliser production. The main process involves producing nitrogen and hydrogen, then synthesising them in the ratio 1:3 to form ammonia and finally converting the ammonia into an agriculturally effective substance.

Technological changes have taken place in most parts of this process, but in particular one can single out those concerned with hydrogen production and those related to the synthesising of ammonia. The production of hydrogen involved the breaking down of solid, liquid, or gaseous hydrocarbons. The hydrocarbon molecule is cracked (decomposed by great heat) into its constituent parts, one of which is hydrogen, and the free hydrogen in the process gas is then isolated in the gas purification plants. The usual method of decomposition was known as partial oxidation, when the temperature was raised by mixing the primary reactants with oxygen. An alternative method known as the tubular process consisted of raising the temperature from a continually operating furnace through which tubes containing the reactants run, but the drawback of this method was that at high pressures the reaction tube tended to get blocked by carbon deposits. At the beginning of the 1960's ICI introduced a new nickel catalyst which both activates the steam-naptha reaction and inhibits the degradation of naptha molecules into carbon. While this so-called naptha-steam reforming process limited the raw material hydrocarbon input to naptha and natural gas, it nevertheless offered considerable savings in comparison to the heavy capital and current costs of the tonnage oxygen plant required by the partial oxidation process.

At about the same time a US firm, Kellogs, developed an innovation in ammonia synthesis. This stage in the fertiliser production process consists of passing nitrogen and hydrogen in their pure states over a promoted iron oxide catalyst. Under great heat and pressure part of the mixture synthesises to ammonia and is bled off, while the unreacted gases are re-circulated to join the fresh feedstock. The pressure may be set anywhere between 150 and 600 atmospheres, and was conventionally achieved by electric-motor driven reciprocal compressors. Kellogs introduced a large-scale, single train, steam-turbine driven centrifugal compressor which had the advantages of requiring a lower capital cost on the synthesising plant, a sharp reduction in bought-in power, and an increase in on-stream time by about one week a year because of its inherent simplicity and reliability. On the other hand it implied a high minimum economic size of about 600 tons of ammonia per day, and was inefficient in synthesising the process gases at the relatively low pressure of 150 atmospheres at which centrifugals must operate. A considerable controversy has surrounded the centrifugal compressors, but to quote Stephen Merrett again, "in the Indian context, where power cuts have been a major cause of poor performance, the great reduction in bought-in electricity requirements of the centrifugal compressor may well prove to be a conclusive advantage".

The important point about both these innovations is that, taken together with an increased rate of growth of fertiliser consumption in India from 1962, as well as the fact that in a number of areas demand had reached a threshold which allowed the realisation of economies of scale, foreign chemical firms began to show a greater interest in developing fertiliser production in India.

From the point of view of the Indian government, we have already touched on the estimates for fertiliser requirements until the end of the decade, on the difficulties faced in bringing planned fertiliser plants on stream, and on the balance of payments crisis. The gap between total fertiliser availability and target fertiliser consumption was progressively widening. Imports still constituted half of nitrogenous fertiliser availability in 1963-4, and 1964-5, and almost all the potash. There were clearly difficulties in meeting the increased demand either

from imports, or from Indian financed production if the new plants were to be built with imported modern technology.

Certainly the World Bank and the U.S. government thought the Indian situation was such as to make the continuation of the public sector policy for India inadvisable. They argued that the foreign exchange requirements of new fertiliser plants could be made available from private sources without eating into aid from the Aid India Consortium. Between 1963-5 continued aid from the Consortium was made conditional on the opening up of the fertiliser industry to private capital.

It is against this background that the Indian government decided to involve private indigenous and foreign capital in the production of chemical fertilisers. The changing balance as it had developed by 1965 is apparent from Exhibit II. Yet it was clearly one thing to announce a willingness to accept private capital, and another to change particular parts of government fertiliser policies to the degree necessary for private firms (particularly those from abroad) to be encouraged to invest.

We may isolate the following aspects of government policy which were to be the cause of conflict between foreign fertiliser firms and the Indian government: (a) the marketing of fertilisers was predominantly in the hands of co-operative agencies. (See Exhibit III.) That co-operatives should play such a leading role had been emphasised by successive official bodies, the Famine Enquiry Commission for Bengal (1945), the Second Foodgrains Policy Committee (1947), the first Five Year Plan, the National Co-operative and Warehouse Board (1957), the National Development Council (1958), the Malagarh Committee (1958) and the Working Group on Co-operative Policy (1959). It was hoped that fertiliser distribution would give monetary benefits to co-operative agencies, that the co-operative sector would provide credit for all needy farmers (and fertiliser consumption was heavily dependent on credit), and that in remote areas co-operatives formed to provide agricultural services would be the only channel for fertiliser distribution. In practise the co-operatives had not made substantial profits from fertiliser distribution, the volume of co-operative credit had not been large enough to serve farmers outside the co-operative fold, and their small scale and the

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limitation of their activities to fertiliser distribution meant that they did not enjoy economies of scale attributed to distribution fertiliser agencies in developed countries (employment of full-time salesmen, co-ordination of marketing and processing of agricultural produce, supply of key inputs). Nevertheless the fact that the co-operatives were still the sole agency for institutional rural credit gave them a singular advantage: the number of co-operative fertiliser depots had risen from 23,548 in 1959, to 60,725 in 1964; and as for the limitations of scale the Savaraman Committee concluded that this was not a reason for restricting co-operatives but expanding them, "If the Co-operative System is to play its rightful part in fertiliser distribution, it should take a more active part in the marketing and processing ventures and also meet the needs of the farmers for requisites like seeds, pesticides, agricultural implements and other necessities." (Report p.50). Thus although firms selling complex fertilisers were allowed to market directly, and although the Savaraman Committee doubted whether the co-operative system could manage, let alone want, to deal with the distribution of the full increase of fertiliser production, the policy favouring co-operative distribution of fertilisers was deeply entrenched in principle and in practise.

(b) the centralisation of nitrogenous fertilisers in the Central Fertiliser Pool, operated by the Ministry of Food and Agriculture. The scheme was set up in 1943-4, and it developed to ensure first that imports did not undercut home production (which was for the most part higher cost production than imports,) second to even out prices through India, offsetting the spatial disadvantage of those areas far from ports of import or indigenous production plants. The pool controlled all imports of complex and nitrogenous fertilisers, buying nitrogenous fertilisers from the principal manufacturers, and allocating throughout the country. The spread of import, ex-factory, and pool prices is given in Exhibit IV.

(c) foreign control and joint ventures. Where foreign capital entered India as part of a joint venture with private Indian capital the government had attempted to restrict foreign companies to a minority holding. Where the joint venture was with the government itself, a policy was clearly laid down (after negotiations with Esso over a lubricating oil plant in May 1963) that the Government should

hold at least 51% of the equity. With smaller companies, and with some companies establishing themselves for the first time in India, the policy had some success, but in general the need for foreign exchange did lead to a softening of the provisions. Not only did the companies themselves often insist on majority control to secure control of the management of the business, in production, marketing, finance, and information, but foreign majority control was also required by foreign bankers providing loan funds and by USAID in cases where it was arranging for investment guarantees to the private U.S. investor. Nevertheless, even in the cases where the government did concede the majority to the foreign investor they did still try and ensure that (i) the debt-equity ratio was not too high, and (ii) that the Indian shareholders did hold a substantial part, even though a minority, of the shares.

(d) high proportion of local inputs, both capital goods and labour.

(e) general view on the relationship of private capital and the state. The Indian government, in as much as it had a coherent view, appeared to see its function as carefully screening private projects through a system of licensing, and capital and personnel requirements, and so on, but that firms who successfully passed through this screening should be allowed freedom to operate, with all that this freedom implies (i.e. freedom to make losses as well as freedom to repatriate earnings for example). In particular the Indian government was most reluctant to guarantee tax rates, security of import supplies and so on. Profits were in part a payment for risk-taking, and the government was most unwilling to reduce these risks particularly where this bound the government's or some future government's economic sovereignty.

The Bechtel negotiations

The first major negotiations under the new Indian policy towards foreign participation in fertiliser production took place with a U.S. consortium led by Bechtel. One of the companies involved was Kellogs, the developers of the centrifugal compressor system, and the project under discussion proposed to use the new system to produce 600 tons of fertiliser per day. As a consequence of this Bechtel argued that all plant would have to be imported: though the Indian

government claimed that not all plants consisted of compressors and that significant portions could be provided by Indian suppliers who had developed as the result of the purchasing policy of the public sector fertiliser plants. Eventually, however, the Indians accepted that the great majority of the Bechtel plants would be imported.

A second source of disagreement concerned marketing. Bechtel wanted complete freedom to market their products at their own prices. This conflicted directly with the system of co-operative distribution discussed above. Yet as we have seen there already existed doubts as to the capability of the co-operatives to manage a greatly increased scale of fertiliser distribution, and the principle of free marketing had been one emphasised by the World Bank and USAID. In the course of the negotiations the Indians compromised on this point as they had on the first. Bechtel's payback period was five years. They accordingly offered Bechtel complete freedom for 7 years to market their product at an uncontrolled price. If, after 7 years, the decontrol worked, it could be maintained.

The negotiations finally broke down, however, on the questions of guarantees. Bechtel sought a commitment from the Indian government that tax rates would not be altered for 7 years. They also sought a guaranteed off-take, the Indian government buying any unsold balance at a price which would have assured Bechtel a minimum of 20% profit post tax. In both these cases the government felt the demands unreasonable enough to make the whole project unviable from the Indian point of view.

ICI and the Kanpur Project

The Bechtel negotiations were succeeded by those with I.C.I.. I.C.I. had already had considerable experience in India. Since 1954 it had been involved in a joint venture with the government of India called Indian Explosives Limited which was set up to manufacture commercial blasting explosives and their accessories. By 1965 IEL had an annual turnover of 80.2m.Rs, a pre-tax profit of 19.3 m Rs, paid taxes of 11.0m.Rs, and controlled fixed assets of 62.4m.Rs. Besides manufacturing explosives (18,765 tons in 1964/5) safety fuse (9.04 m.coils) and gun powders, it was currently engaged on an export drive and the construction of a new detonator

In the field of fertilisers ICI had supplied the leader and one other member of a three-man technical mission commissioned by the Indian government in 1944 which had recommended establishing sulphate of ammonia production at, among other places, Sindri. The main contractors for the Sindri plant were an American firm, Chemical Construction Corporation (CCC), to whom ICI acted as consultants on the design of the sulphate plant, as well as helping in the commissioning of this section. ICI had also built up an export market of complex and phosphatic fertilisers to India, marketing the products directly. In 1960 the value of all ICI exports to India was £ 100,000 f.o.b..

In 1964 I.E.L. and the ICI Agricultural Division made a preliminary assessment of fertiliser manufacture, followed by a market investigation in Uttar Pradesh and Punjab where demand for nitrogenous fertiliser had been growing rapidly, (see Exhibit V). In December 1964 they formally advised the Indian government of their interest in fertiliser manufacture, and followed this up with a detailed analysis of the Kanpur site in Uttar Pradesh. (Exhibit VI).

The Plan put up by ICI to the Indian government involved an expenditure (after the devaluation of the rupee) of 61.86 crores. (This was the figure given in the share prospectus - later estimates of the capital cost gave a figure of 59.30 crores, £34 m.) Ammonia was to be provided by an 830 tons per day plant arranged in two streams, using ICI's naphtha/steam reforming process and ICI's ammonia synthesis (see Figure 2). The urea plant was also organised in two streams to produce 1,400 tons a day, or 450,000 tons per year, using the urea process known as Toyo Koatsu.

The Indian government were not immediately convinced of the efficacy of the technical proposals given that they involved using the conventional method of ammonia synthesis rather than the new centrifugal compressors proposed by Bechtel. ICI for their part argued that the market was not as yet large enough to allow the compressor economies to be enjoyed, and that the conventional system was in fact cheaper because it could work with fewer breakdowns (thus more effective days per year and lower repair bills). Compressors were not in fact being produced in the U.K., and ICI's first use of the centrifugal system in the U.K. had had considerable teething problems. To manage the difficulties of a new technology in England rather

than in India (where maintenance was always somewhat of a problem) was clearly preferable for ICI. In the event the Indian accepted ICI's arguments, and Kanpur ammonia is produced in a two stream 830 tons per day plant.

Pricing and Distribution

The other matters which had caused difficulty in the Bechtel negotiations, led to fewer problems in the case of ICI. The Indian government extended the 7 year formula for freedom of pricing and distribution to ICI, and also agreed to allow ICI to undertake a 'seeding' programme. This seeding programme consisted of building up a distribution and marketing network using imported urea from the Government pool prior to the Kanpur project beginning production. The programme was in fact launched in the winter of 1967 and its aim was to set up distributors (wholesalers) and selling points in each district of Uttar Pradesh, Haryana, and Punjab by 1969-70 before the first urea came from Kanpur. By September 1970 IEL had established 200 Indian distributors, over 3000 selling points, 4 Area Sales Offices, 30 Buffer Stocks and a programme that had carried out over 5000 demonstrations to farmers on the benefit of urea as a fertiliser.

Taxes and Profits

For their part, ICI accepted both the absence of a profit guarantee, (or sales off-take), as well as the lack of any commitment on stable tax rates. They were offered and accepted pioneer relief (i.e. tax concessions over the early lifetime of the project), and the government gave conditional assurances, subject to availability of foreign exchange, the continuing availability of imported raw materials and spare parts.

Domestic Inputs

As far as purchasing of domestic inputs were concerned, the technological decision to use ICI's ammonia synthesising process allowed a greater proportion of inputs to be made locally. In fact over 50% of the equipment was procured from Indian sources. On the labour side, a core of 60 ICI technical personnel together with 40 ICI Indian staff trained in England in ICI Ammonia and Urea plants, supervised the project. Most of the work was carried out by Indian contractors (45 in all) employing 3,500 men, almost all of whom were Indian, and while the Toyo Engineering Corporation was contracted for the urea plant, their erection work was sub-contracted

to an Indian firm. In July 1970 Indian staff took over direct operational responsibility for all the Kanpur plants. The Board of Directors and the Organisation Chart of the Fertiliser Division is reproduced in Exhibit VII. The total manpower requirement for the running of the factory numbered 1030, including 113 Management Staff, and for Marketing/Distribution 550, including 62 management staff.

Organisational Form

On the question of the form and control of the company there were some differences. ICI wanted to incorporate the fertiliser project into IEL's operations rather than form a new company: IEL had substantial accumulated reserves for expansion (capital reserves totalled 5.2 m Rs in September 1966); they had an established management staff; capital allowances on new expenditure could be immediately used; and for an existing company with a good record it was thought that borrowings would be easier to arrange; finally IEL needed ammonia for explosives manufacture and there were economies in internal supplies. The Indian government who had at first wanted a new company, accepted these arguments, and acknowledged the difficulties that an IEL contribution to a new company would cause because of double taxation of dividends within India.

They were still concerned about ICI's dominance in the equity of the project. In IEL as of July 1966, ICI had 70% of the paid up capital, the President of India 17.5%, and the Indian public 12.5%. As we have seen Indian policy was against allowing foreign majority holding, particularly where the government was involved: it was also against accepting foreign equity holdings to a value greater than that of the import content of the project. The position was further complicated by the participation in the equity of IFC Washington, since it was not clear whether their share (10%) should be counted in the capital structure for the purposes of control.

For their part ICI insisted on a majority equity holding. As they put it: "It is ICI's policy to have a controlling interest in any major investment within its most important fields of technology. The basic reason for this is that the pace of technological development and hence the value of the Group's capability as an investor and manager is increased if there can be free and rapid interchange

private" sources, i.e. without the backing of public or semi-public financial institutions.

Technological fees

One of the most difficult areas of a foreign investment such as that of ICI's in Kanpur is the valuation of the technology brought in with the investment. Details of the charges agreed upon are given in Exhibit 9. The Indian government had some experience in this field. The state fertiliser companies had bought know-how from abroad. They also sold know-how themselves and had their own scale of consultants' fees. The final set of fees came to £ 2,194,000, which, according to ICI, covered the estimated costs of design and training, but only made a negligible contribution to the company's total costs of research and development on the processes it was contributing. We have already noted that the level of this lump was used by ICI as a major argument in favour of a large equity holding in IEL.

Naphtha

The principle raw material for hydrogen production at Kanpur was naphtha. This was to be supplied from Indian refineries from which it was a by-product - the main output of refining being kerosene and diesel. Naphtha therefore had a low marginal cost. It was priced on a basing point system, of ports plus carriage, but when the carriage was a pipeline (and it was proposed that Kanpur would be served through the Barauni-Kanpur white oils pipeline), and when the product might come from a number of refineries (the nearest being Barauni, then Ganhatti, then Calcutta - which was in the process of construction - or even from Goodjerati by rail) it was clearly difficult to settle a stable price. There was little argument with the government of India over the basic cost of naphtha, but with the Indian Oil Corporation two problems arose. First ICI wanted a fixed point of supply, whereas the IOC clearly had an interest in preserving the flexibility of supplying Kanpur from a number of refineries. Second, ICI wanted to buy solely straight run naphtha (which is the first off drawn in the refinery process) and not be subject to supplies of catalytic naphtha (which comes off later during refining). A changing mix of these two types of naphtha involved technical difficulties from the point of view of the Kanpur operations, though from IOC's point of view the ability to change the

agreed to supply IEL with straight run naphtha only, but from any refinery - all gas to be priced at cost plus railway freight from Barauni.

This then was the main character of the package agreed by ICI and the Government of India. The factory was inaugurated by the Prime Minister herself on December 6th 1969, and by September 1970 overall production totalled just under 148,000 tons. ICI estimated that when in full production (by 1974) the plant would enable an additional 2 million tons of foodgrains to be produced annually, enough to feed 20 million people and save foreign exchange of approximately Rs 30 crores. From ICI's point of view, it was reported by Maurice Corina in the Times of London in January 1970 that ICI's Indian operations were consistently topping the group's international profits league table as well as providing the company with valuable experience in operating in the politically sensitive sub-continent. He added, "The persistence of ICI in assisting against all sorts of problems that would have made lesser companies withdraw long ago does not represent good works. It looks like good business too, and this will be more evident as the solution of food problems leads on to the establishment of Indian industry on a firmer base so opening a huge market for ICI products of all kinds."

How would you assess the outcome of the negotiations from the point of view of the Indian government?

R.M.

January 1971.

APPENDIX 1.

Costs of the Kanpur Project.

Capital costs are given in Exhibit VIII. These would normally be phased over the four years of construction in the proportion, 15%, 30%, 40%, 15%.

Estimates of operating costs are given in Exhibit X.

In their original calculations ICI used a depreciation rate of 8% on plant and 4% on buildings.

Technical fees were incorporated into the fixed capital estimates and treated as a cash outflow in the project evaluation.

ICI's discount rate is not known.

I.E.L.'s Balance Sheet and Profit and Loss Account for 1970 are attached as Exhibit XI.

Note:

18 rupees	=	£1
1 lac	=	100,000 rupees
1 crore	=	100 lacs.

PROCESS OF NITROGENOUS FERTILISER PRODUCTION

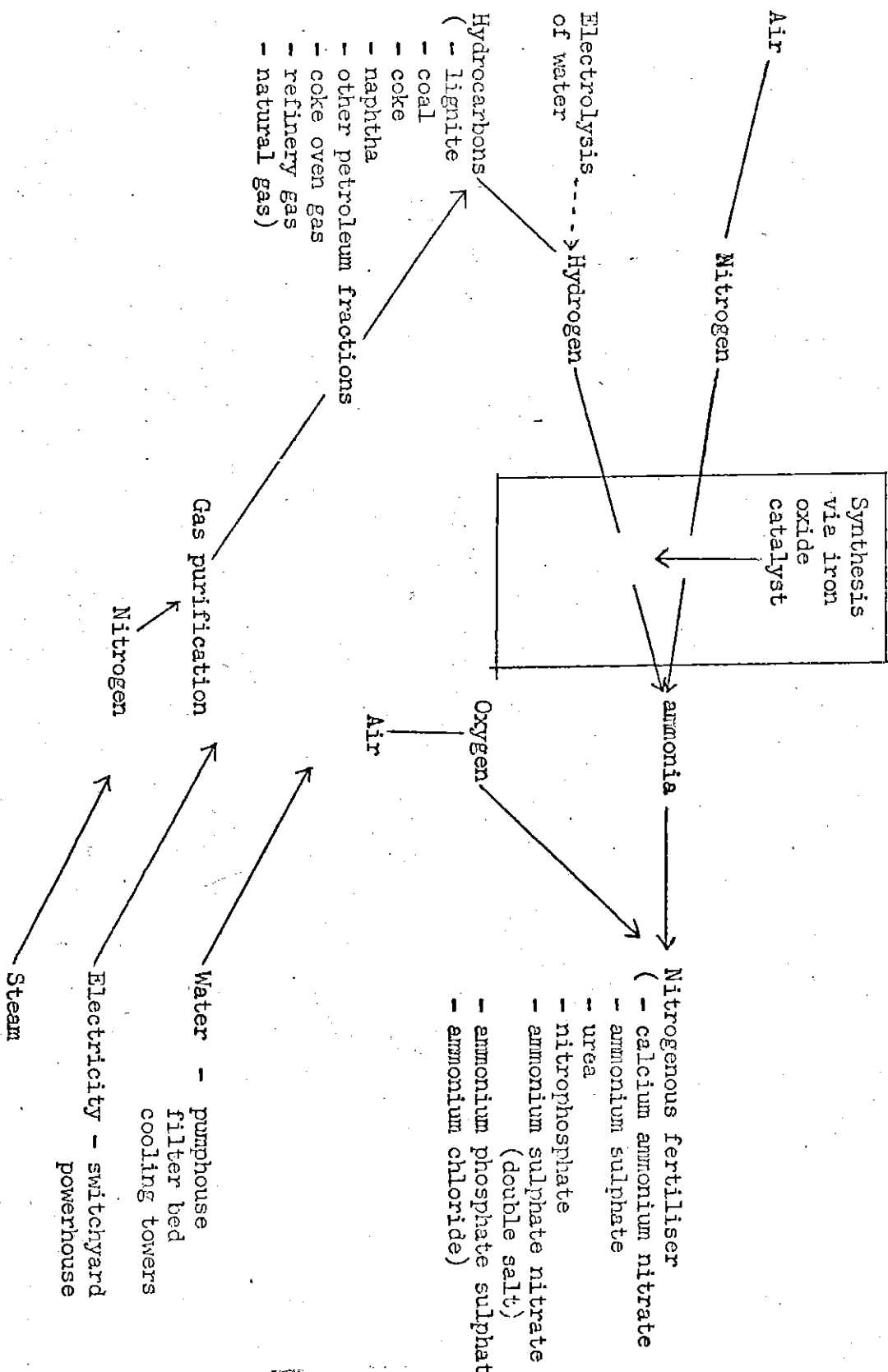


Figure 1

I.C.I.'s KANPUR UREA PRODUCTION

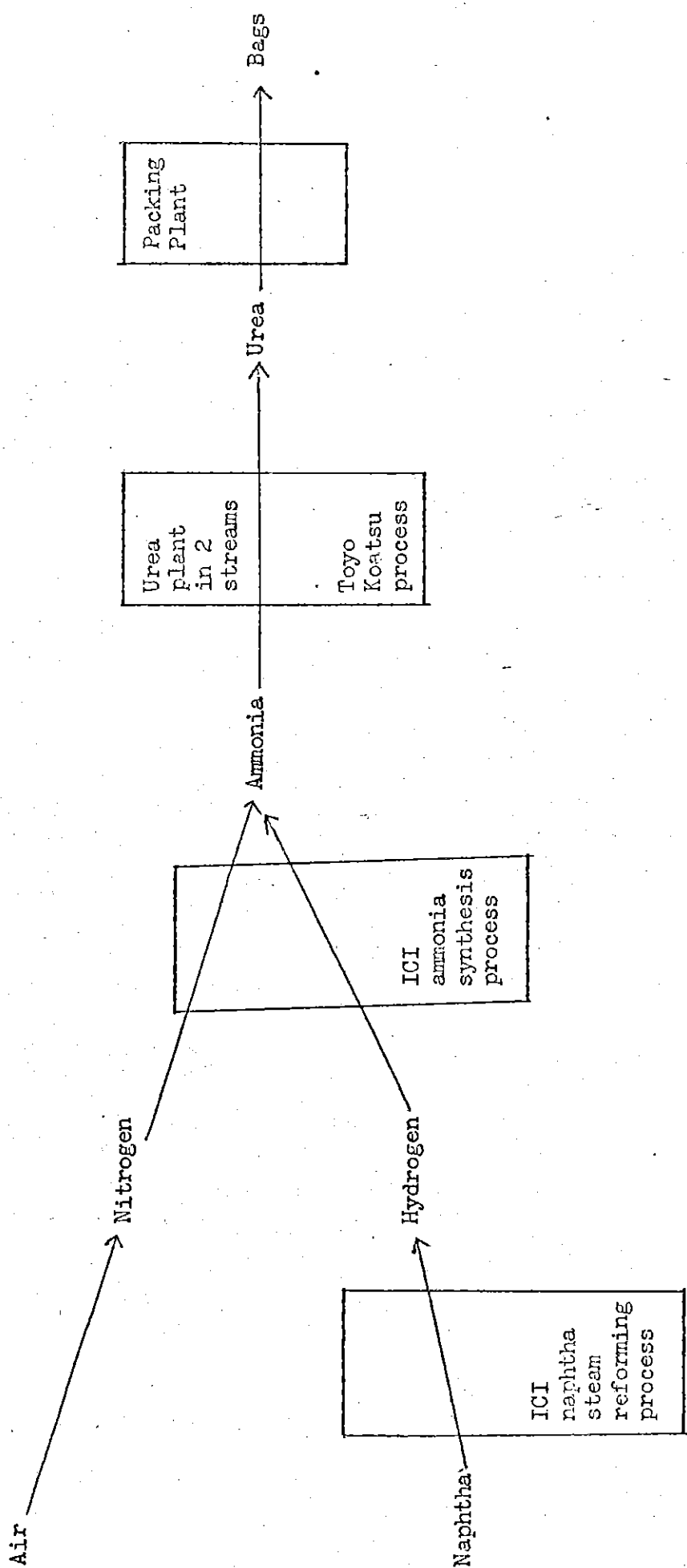
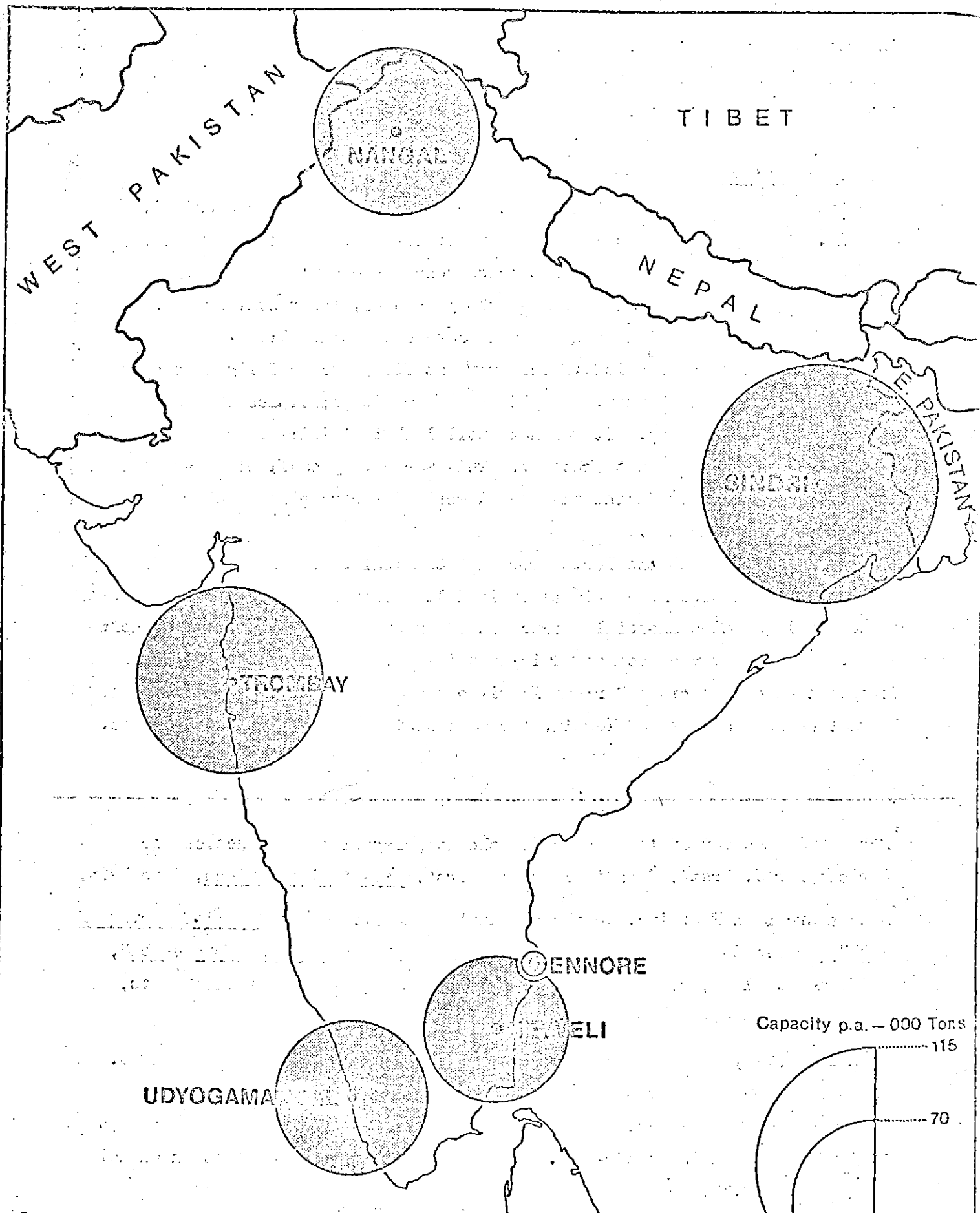


Figure II

Location of Major Factories of the Indian Nitrogen Fertiliser Industry, 1966



3rd Plan Target of Production 800,000 tonnes of Nitrogen.
4th Plan Target of Production 2,000,000 tonnes of Nitrogen.

A. FACTORIES IN PRODUCTION:

1. Public Sector

Name of the factory.	Capacity in terms of Nitrogen (tonnes)	End product and capacity (tonnes)	Raw material.
1. Sindi	117,000	Amn. Sulphate Double Salt Urea	355,500 121,920 23,470
2. Nangal	80,000	Calcium Amm. Nitrate Do.	388,000 Power
3. Roukela	120,000	Do.	594,780
4. FACT, Always	30,000	Amn. Sulphate Amn. Phosphate Amn. Chloride.	100,000 35,000 8,000
347,000*			
2. Private Sector.			
(1) Ennore	8,250	Amn. Phosphate	53,830
(2) Varanasi	10,000	Amn. Chloride	40,640
18,250			
3. By-Product from Coke Oven Plant (Public/Private)			
By product from coke oven plant	20,000	Amn. Sulphate	100,000
TOTAL(A) 385,250			

B. PROJECT UNDER IMPLEMENTATION:

1. Public Sector.

Name of the factory.	Capacity in terms of Nitrogen (tonnes)	End product and capacity (tonnes)	Raw material.	Likely date of completion
1. Neyveli	70,000	Urea	154,000	Lignite December, 1965.
2. Trombay	90,000	Urea	99,000	Fuel Oil September, 1965.
		Nitro-Phos.	330,000	Refinery Gas/ Naphtha.
3. Namrup	45,000	Urea	55,000	Natural Gas March, 1967.
4. Gorakhpur	80,000	Amn. Sulphate Urea	100,000 179,320	Naphtha -do-
5. Durgapur	125,000	Amn. Sulphate Phosphate Urea	560,000 55,000 100,000	Naphtha March, 1968.
6. FACT expansion	40,000	Amn. Sulphate Amn. Phos. Amn. Chloride	100,000 100,000 17,000	July, 1965.
450,000				

Name of the factory Capacity in terms of Nitrogen (tonnes) End product and capacity (tonnes) Raw material Likely date of completion

2. Private Sector

1. Visakhapatnam	80,000	Amn. Phosphate Urea	365,000 16,500	Naphtha December, 1966.
2. Kothagudem	80,000	Urea	182,390	Coal 1968-69.
3. Gujarat (Baroda)	96,000	Urea Amn. Sulphate Phosphate	100,000 256,000	Naphtha March, 1967. Refinery. Gas.
TOTAL				256,000
TOTAL(B)				706,000
TOTAL A+B				1,091,250
C. PROJECTS APPROVED IN PRINCIPLE:				
1. Public Sector				
Korba				
1. Korba (Jalan)	100,000	Urea	217,800	Coal 1968-69.
2. Goa	160,000	Amn. Phosphate Urea	400,000 165,000	Naphtha Do.
3. Ennore Exp.	8,000	Amn. Sulphate Phosphate	38,610	Naphtha Do.
4. Talcher Complex	40,000	Urea*	86,000	Coal 1970-71
TOTAL C				308,000
TOTAL				408,000
*State Govt. of Orissa Undertaking				
D. PROJECTS PROPOSED FOR IMPLEMENTATION:				
1. Public Sector				
1. Madras	200,000	To be decided.		Naphtha 1968-69
2. Kaldia	200,000	Do.		Naphtha 1969-70
3. Cochin	132,000	Amn. Phosphate Urea	520,000 60,000	Do. 1968-69
4. FACT IV Stage	10,000	Change in composition of Ammonium Phosphate from 16: 20 to 20: 20.		September, 1968.
2. Private Sector				
1. Kora (DCM)	40,000	Urea		Naphtha 1968-69
2. Kanpur	200,000	To be decided.		Naphtha 1968-69
TOTAL D				782,000
GRAND TOTAL				2,281,250

*This does not include the Bhabha factory having a capacity of 1,200 tonnes of Nitrogen.

Number of depots run by the Government, Cooperatives and other agencies in States

State	No. of retail depots			Total
	Government	Cooperatives	Other agencies viz. private etc.	
1. Assam	1,000	67	133	1,200
2. Andhra Pradesh	767	3,721	2,119	6,607
3. Bihar	..	4,099	55	4,154
4. Gujarat	..	2,306	[1,010	[3,316
5. Kerala	..	1,201	607	1,808
6. Madhya Pradesh	..	4,210	301	4,511
7. Madras	..	3,310	637	3,947
8. Maharashtra	..	5,000(a)	..	5,000(a)
9. Mysore	..	2,976	..	2,976
10. Orissa	..	2,393	..	2,393
11. Punjab	..	4,500	..	4,500
12. Rajasthan	..	26	307	2,855
13. Uttar Pradesh	..	875	11,547	568
14. West Bengal	700	2,871
15. Himachal Pradesh	..	2	314	339
16. Pondicherry	84	9
17. Goa, Daman & Diu	..	6	128	15
18. Delhi
19. Jammu & Kashmir
20. Manipur
21. Tripura
22. Nagaland
				60,725

N.R.—Reply not received.

(a)—Approximate.

Procurement prices of indigenous fertiliser as compared to C & F import prices, Pool Prices and no-profit no-loss prices.

(Rs./tonne - import prices are C & F)

S. No.	Fertilizer	Source	1961-62	1962-63	1963-64	1964-65	1965-66	Remarks
1	2	3	4	5	6	7	8	9
1	Sulphate of Ammonia	Sindri	295.20	295.20	307.20	316.00	316.00	
		FACT	336.00	365.00	335.00	316.00	316.00	
		By-product	246.00	246.00	246.00	246.00	246.00	
		IMPORT	219.65	210.36	201.05	284.48	307.73	*Ex-Burrakur. Provisional Re-duced to Rs. 264.
		Pool price (excluding inland Rly. freight)	315.50 (upto 30-11-61) 301.00 (from 1-12-61)	302.08	302.40	302.00	299.20	
	No-profit no-loss price (excluding inland Rly freight)	272.68	259.61	261.98	311.04	325.08	(provisional)	
2	Urea	Sindri	646.00	646.00	672.00	582.00	582.00	
		IMPORT	470.40	438.45		411.14	504.64	
		Pool price (excluding inland Rly. freight)	605.53 (upto 30-11-61) 591.40 (from 1-12-61)	640.00	640.00 (upto 30-12-63) 540.00 (from 1-1-64)	540.00	537.00	
		No-profit no-loss price (excluding inland Rly. freight)	513.83	484.10	412.89	449.40	544.99	(provisional)
3	Calcium Ammonium Nitrate	Nangal & Rourkela	275.00	275.00 (upto 22-4-62) 280.00 (from 23-4-62)	280.00(N)	256.00	256.00*	*Rourkela commenced production in 1962-
		IMPORTS	211.29 291.35 (upto 30-11-61) 276.55 (from 1-12-61)	239.00	No Imports.	239.00	239.00	239.00 (upto 7-8-65) 271.00 (from 8-8-65)
		Pool price (excluding inland Rly. freight)	270.65	309.00	282.45	260.00	267.68	Provisional
		No-profit no-loss price (excluding inland Rly. freight)	270.65	309.00	282.45	260.00	267.68	Provisional
4	Ammonium Sulphate Nitrate	Sindri	394.00	394.00	405.00	426.00	426.00	
		IMPORTS	265.46 372.42 (upto 30-11-61) 363.92 (from 1-12-61)	370.00	No Imports.	370.00	372.00	369.20
		Pool price (excluding inland Rly freight)	363.92	405.88	417.10	438.52	438.52	Provisional
		No-profit no-loss price (excluding inland Rly. freight)	363.92	405.88	417.10	438.52	438.52	Provisional
5	Ammonium Phosphate &	IMPORTS (20-20-0)	461.90	461.90	449.06	488.09	500.89	
		Pool price (excluding inland Rly freight)	565.90	565.90	535.00	535.00	535.00	
		No-profit no-loss price (excluding inland Rly. freight)	491.26	491.26	477.83	519.05	532.17	
		No Indigenous Production	491.26	491.26	477.83	519.05	532.17	
6	Nitro-phosphate	IMPORTS	485.12 (20-20)	485.12 (20-20)	358.33 (12-9-12-9)	395.75 (12-9-12-9)	No import	
		Pool price (excluding inland Rly. freight)	535.90	535.90	345.00	345.00	345.00	
		No-profit no-loss price (excluding inland Rly freight)	515.25	515.25	384.25	423.49	No import.	
		No Indigenous Production	515.25	515.25	384.25	423.49	No import.	

NOTE:—Price revised as under in 1964-65:—
(Per metric ton)

1962-63

1963-64

Rs. P.

Rs. P.

Consumption of Nitrogen during Third Five Year Plan

(Figs. in tonnes)

State/Allottee	1961-62	1962-63	1963-64	1964-65
<i>South Zone</i>				
1. Andhra Pradesh	45,592	66,583	75,238	98,253
2. Kerala	3,607	4,843	14,322	9,309
3. Madras	30,361	34,942	66,111	67,751
4. Mysore	7,667	15,180	26,487	40,211
5. Pondicherry	469	672	809	673
6. Laccadive Islands	2
7. U.P.A.S.I.	9,921	4,296	7,820	6,826
8. Coffee Board	11,221	8,806	6,647	6,347
9. Rubber Board	1,038	1,643	1,327	1,579
Total South Zone	1,09,878	1,36,965	1,98,761	2,30,835
<i>West Zone</i>				
10. Gujarat	9,517	10,657	18,327	19,827
11. Madhya Pradesh	7,478	10,500	4,721	22,183
12. Maharashtra	33,069	33,386	44,391	45,053
13. Goa	..	409	520	521
Total West Zone	50,064	54,952	67,959	87,584
<i>North Zone</i>				
14. Punjab	12,706	18,624	32,842	59,404
15. Rajasthan	1,898	3,789	4,030	11,940
16. U. P.	26,302	68,915	12,271	89,469
17. J & K.	482	1,224	..	1,402
18. Delhi	207	165	272	327
19. Himachal Pradesh	42	493	731	714
Total North Zone	41,637	93,210	50,146	1,63,285
<i>East Zone</i>				
20. Assam	366	192	741	1,000
21. Bihar	13,243	15,100	15,479	24,210
22. Orissa	4,926	6,905	551	8,754
23. West Bengal	11,856	10,019	17,371	17,619
24. Manipur	3	..	109	142
25. Tripura	6	10	20	157
26. Nagaland
27. Tea (N.E. India)	15,879	13,877	22,427	17,500
Total East Zone	46,279	46,103	56,698	69,500
Miscellaneous	966(a)	805(b)	2,263(c)	2,900(d)
Add N in Nitrate of Soda (Chilean Nitrate)	1,000	1,000	1,000	1,000
Grand Total	2,49,824	3,33,035	3,76,827	5,55,244

includes exports to Nepal (94 tonnes) & Industrial users (872) tonnes.

b) Includes exports to Nepal (131 tonnes) & Industrial users (674) tonnes.

(c) Includes exports to Nepal (106 tonnes) & Industrial users (1,812 tonnes) others (336 tonnes).

(d) Includes Nepal (156 tonnes), industrial users (1,757 tonnes) & others (2,900 tonnes).

N.B.—1. Nitrogenous fertilisers are made available mainly through the Central Fertilisers Pool. Ammonium Phosphate Sulphate (16-20) and Ammonium Chloride manufactured in the country are, however, outside the Central Pool. Nitrate of Soda (imported from Chile—about 1,000 tonnes N per annum) is also outside the Pool. The consumption figures have been arrived at by adding—

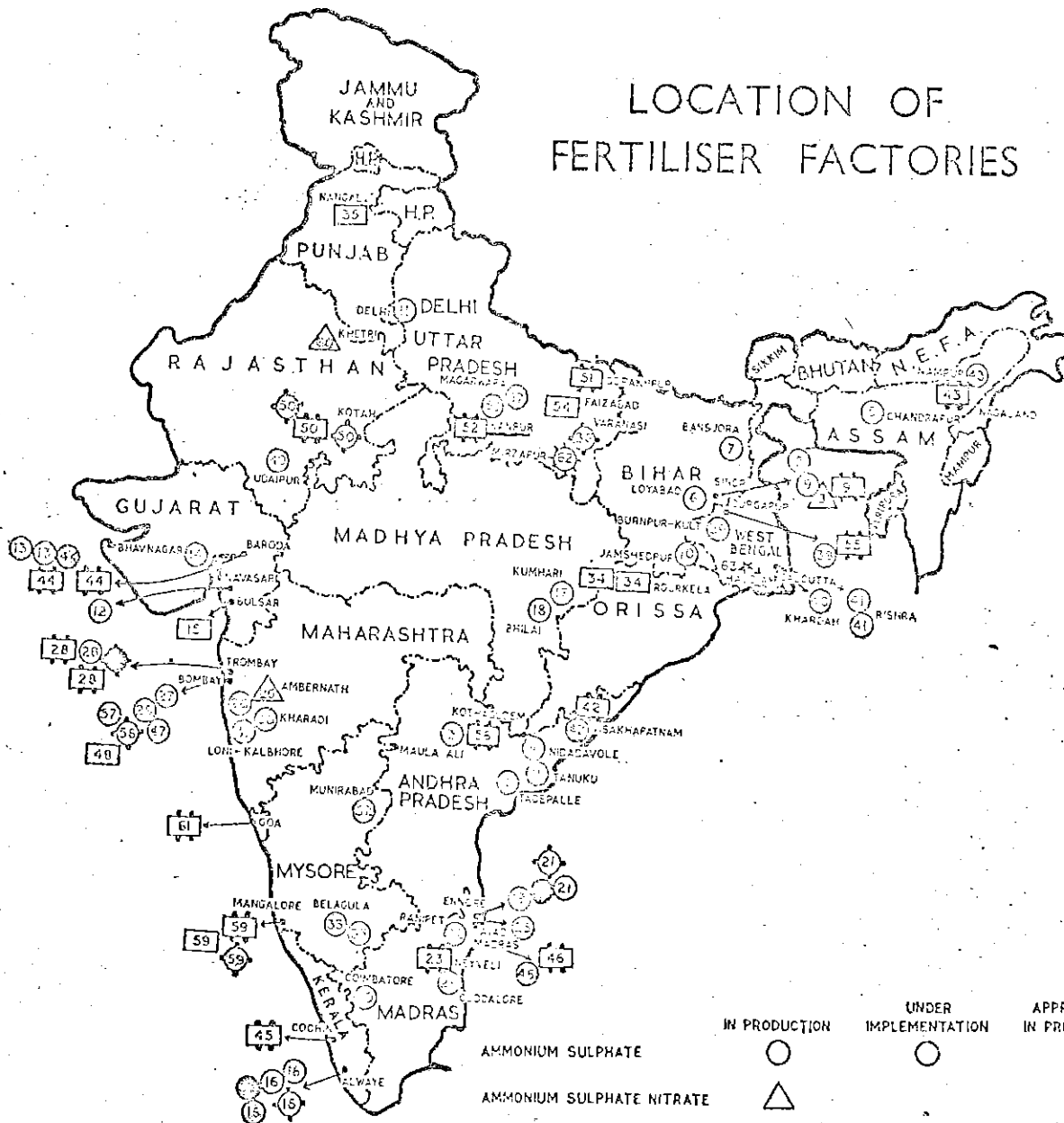
- (i) Opening stocks reported by States in respect of pool fertilisers;
 - (ii) supplies made by the Pool during the year; and
 - (iii) despatches in the form of non-pool fertilisers to destinations in different States;
- and deducting therefrom the closing stocks as reported by the States.

2. State-wise break-up for Nitrate of Soda is not available. Accordingly annual figure of import has been added in the aggregate of each year.

(Source: Department of Agriculture and Fertiliser Association of India).

12
13
14
15
16

LOCATION OF FERTILISER FACTORIES



	IN PRODUCTION	UNDER IMPLEMENTATION	APPROVED IN PRINCIPLE	PROPOSED FOR IMPLEMENTATION
AMMONIUM SULPHATE	○	○		○
AMMONIUM SULPHATE NITRATE	△			
CALCIUM AMMONIUM NITRATE	□	□	□	
UREA	▣	▣	▣	▣
AMMONIUM CHLORIDE	◇	◇	◇	
AMMONIUM PHOSPHATE SULPHATE	⊙	⊙		
NITROPHOSPHATE	⊠		⊠	
SUPERPHOSPHATE	○	○	○	⊙
DIAMMONIUM PHOSPHATE		◇		
DICALCIUM PHOSPHATE	□	□		

BOARD OF DIRECTORS

EXHIBIT VII (1)

Mr. A. W. Hamer	Chairman and Managing Director
Mr. M. G. Satow	Joint Managing Director
Mr. A. C. Muir	Executive Director, Fertilizer Division
Mr. K. V. Raghavan	Executive Director, Explosives Division
Mr. G. H. Perks	
Dr. A. Soetharamiah	Nominated by Government of India
Mr. I. G. Jhingran	Nominated by Government of India
Mr. P. K. Mukherjee	
Dr. J. Bell	
(Alternate Dr. S. K. Chanda)	
Mr. P. M. Dagnall	
(Alternate Mr. H. C. Raghbir)	

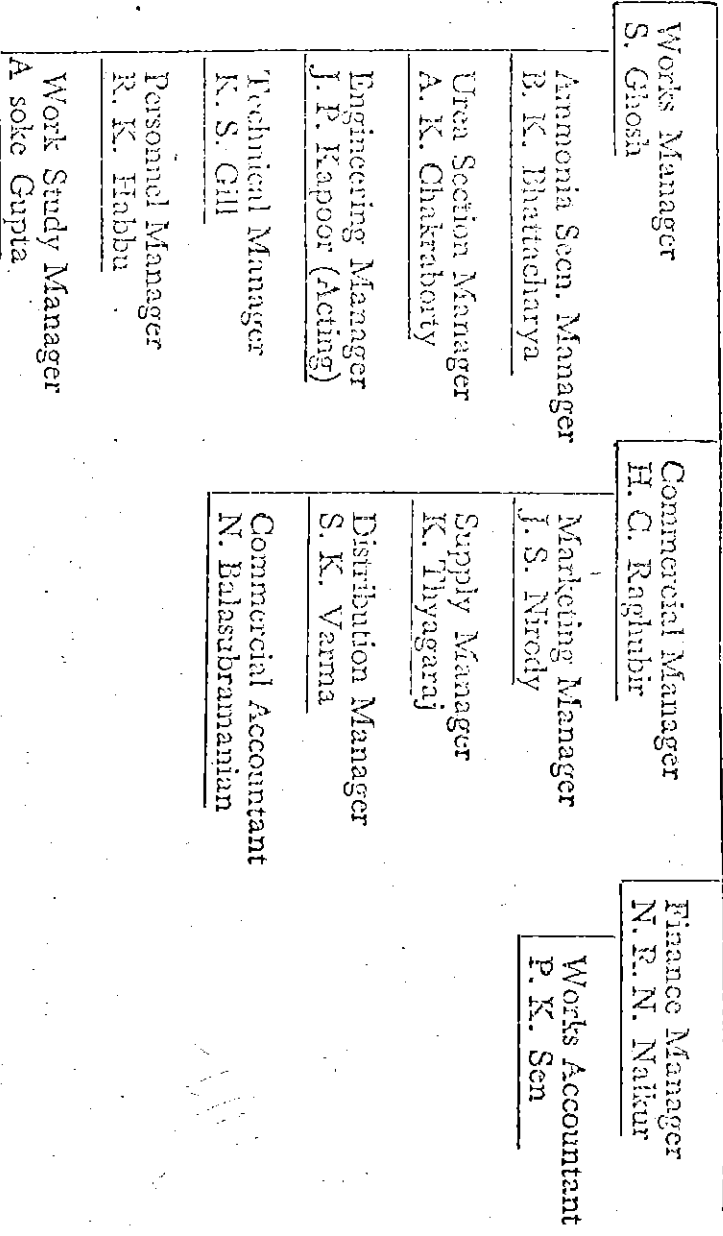
ORGANISATION CHART - FERTILIZER DIVISION

I. E. L. BOARD

Executive Director

A. C. MEUR

Legal Assistant
A. K. Dutt



Secretary to I. E. L. Board — B. Sen.

FINANCIAL ASPECTS

		Rs. Lacs	£m
Capital cost of the Project			
Fixed cost			
Foreign			
Japanese	Ym 3904	832	4.62
U.K.	£m 5.18	960	5.18
Others	\$m 3.34	250	1.39
Rupee		<u>2711</u>	<u>15.21</u>
Total Fixed Cost		4753	26.40
Working Capital		745	4.14
Interest during construction		370	2.06
Preoperational and Start up Expenses		172	.96
Total		<u>6040</u>	<u>33.56</u>

Sources of Finance

		Rs. Lacs	£m
Foreign			
Equity	I. C. I.	760	4.07
	I. F. C.	215	1.19
Loans	I. F. C. (W)	280	1.55
	T. E. C./M. G. T. C.	832	4.62
		<u>2087</u>	<u>11.43</u>
Rupee			
Equity	Government of India - Public	190	1.06
		503	2.79
Loans	I. D. B. I.	1900	10.56
	I. F. C. (W)	139	.77
Bank Overdraft and Cash Retentions		1221	6.95
		<u>3953</u>	<u>22.13</u>
	Total	<u>6040</u>	<u>33.56</u>

DESIGN AND MANAGEMENT CHARGES

To I. C. I. for overall Management & Design	—	£510,000
To I. C. I. for detailed designing of Ammonia Plant	—	£591,000
To I. C. I. for continuing technical assistance	—	£500,000

KNOW - HOW CHARGES

Urea know-how from Toyo Koaitsu through I. C. I., U. K. (Direct purchasing from Toyo Koaitsu would have cost us £450,000)	—	£200,000
I. C. I. Steam Reforming	—	£182,000
I. C. I. Ammonia Synthesis	—	£105,000
Shell Research De-Sulphurisation	—	£ 22,000
Benfield CO ₂ Removal	—	\$ 75,000

EXHIBIT X

COST OF PRODUCTION (at full output level)

	Rs. Lacs	Rs./Te
Raw and Packing Materials	1015	225
Electricity, Water	270	60
Maintenance, Insurance	264	59
Salaries, Wages (Process)	43	9
Overheads	143	32
Depreciation	450	100
	2185	485

Utilities (at full output level)

Power

Source	:	Panki grid Sub-station
Contracted Demand	:	50 mVA
Expected Demand	:	46 mVA
Annual Electricity Consumption	:	314 x 10 ⁶ kWh
Price	:	8.5 paise/kWh
Total Annual Bill	:	Rs. 268 lacs

Water

Source	:	Lower Ganges Irrigation Canal
Contracted Demand	:	15 cusecs (1,530 M ³ per hour)
Expected Demand	:	6 cusecs
Price	:	2.65 paise/M ³
Total Annual Bill	:	Rs. 1.46 lacs

Raw and Packing Materials (at full output level)

Naphtha

Source	:	Indian Oil Corporation, Barauni Refinery
Consumption	:	235,000 tonne per annum
Price	:	Rs. 240/tonne
Total Annual Bill	:	Rs. 564 lacs including excise, sales tax and freight

Fuel Oil

Source	:	Indian Oil Corporation
Consumption	:	23,000 tonne per annum
Price	:	Rs. 321/tonne
Total Annual Bill	:	Rs. 90 lacs

Packing Bags

EXHIBIT XI

INDIAN EXPLOSIVES LIMITED

BALANCE SHEET AT 30TH SEPTEMBER 1970

			1970	1969
	Schedule	Rs.	Rs.	Rs.
FUNDS EMPLOYED				
Shareholders' Funds				
Share Capital	(1)	21,46,32,945	21,41,18,310	
Reserves and Surplus	(2)	5,76,88,929	3,60,66,705	
		<u>27,17,21,874</u>		25,01,85,015
Loans	(3)	31,46,26,126		30,28,28,889
		<u>58,63,48,000</u>		<u>55,30,13,904</u>
EMPLOYMENT OF FUNDS				
Fixed Assets				
At Cost less Depreciation	(4)	54,27,09,795	6,10,95,613	
Capital Work in Progress at cost		37,88,079	46,59,66,491	
		<u>54,64,97,874</u>		52,70,62,104
Investments	(5)	5,52,000		2,56,000
Net Current Assets				
Current Assets				
Stocks	(6)	4,91,66,361	3,23,20,702	
Sundry Debtors	(7)	2,53,42,819	2,74,55,971	
Cash and Bank Balances	(8)	1,46,58,168	1,48,32,269	
Loans and Advances	(9)	1,22,10,343	84,15,409	
		<u>10,13,77,691</u>	<u>8,30,24,351</u>	
Less: Current Liabilities and Provisions				
Current Liabilities	(10)	5,47,59,073	4,33,13,120	
Provisions for:				
Taxation (Less advance payments)		31,60,319	94,18,258	
Proposed Dividend		36,01,500	36,01,500	
Sundries		6,76,833	11,66,805	
		<u>6,21,97,730</u>	<u>5,74,99,684</u>	
		<u>3,91,79,961</u>		2,55,24,667
Miscellaneous Expenditure				
Expenditure on Airstrip		1,18,165		1,71,133
		<u>58,63,48,000</u>		<u>55,30,13,904</u>
Notes on the Balance Sheet	(11)			

The schedules (1) to (11) form an integral part of the Balance Sheet.

This is the Balance Sheet referred to in our Report of even date.

A. W. HAMER *Chairman & Managing Director*
M. C. SATOH *M. Managing Director*

INDIAN EXPLOSIVES LIMITED

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED 30TH SEPTEMBER 1970

	Schedule	1970 Rs.	1969 Rs.
Income			
Sales		25,55,19,898	15,18,22,073
Less: Rebates		9,14,053	4,24,813
		<u>25,46,05,845</u>	<u>15,13,97,260</u>
Interest from Banks and Others		3,35,720	5,91,012
Income from Trade Investment		37,500	324
Miscellaneous Receipts		8,05,529	6,36,404
Profit on Disposal of Assets (Net)		1,33,174	81,512
		<u>25,59,17,768</u>	<u>15,27,06,512</u>
Expenditure			
Materials and Finished Products	(12)	8,14,27,710	7,43,51,787
Other Expenditure	(13)	9,67,21,208	3,87,02,714
Depreciation		3,32,98,317	69,81,629
Interest		1,61,28,664	14,24,511
Share Issue Expenses		33,181	13,51,551
		<u>22,76,09,080</u>	<u>12,28,12,192</u>
Profit before Taxation		2,83,08,688	2,98,94,320
Taxation etc.	(14)	83,464	1,56,20,000
Profit after Taxation		2,82,25,224	1,42,74,320
Transfer to Development Rebate Reserve		—	3,25,000
		2,82,25,224	1,39,49,320
Transfer from Development Rebate Reserve		45,00,000	—
		3,27,25,224	1,39,49,320
Surplus brought forward from last year		751	431
Available for Appropriation		<u>3,27,25,975</u>	<u>1,39,49,751</u>
Appropriations			
Dividends subject to deduction of tax at source:			
Interim paid at Re. 0.75 per Equity Share		—**	36,01,500
Proposed Final at Re. 0.75 per Equity Share		—**	36,01,500
Transfer to General Reserve		72,00,000	67,46,000
Transfer to Special Reserve		2,55,25,000	—
Surplus carried forward		975	751
		<u>3,27,25,975</u>	<u>1,39,49,751</u>
**Refer Note 7 under schedule (15)			
Notes on the Profit and Loss Account	(15)		

The schedules (12) to (15) form an integral part of the Profit and Loss Account.

This is the Profit and Loss Account referred to in our Report of even date.

LOVELOCK & LEWES
Chartered Accountants

A. W. HAMER Chairman & Managing Director
M. G. SATOW Jt. Managing Director
A. C. MUIR Director
B. SEN Secretary

Calcutta, 25th November 1970

INDIAN EXPLOSIVES LIMITED

SCHEDULES TO THE BALANCE SHEET

	1970	1969
	Rs.	Rs.
(1) SHARE CAPITAL		
Authorised		
83,20,000 Equity Shares of Rs. 10 each	8,32,00,000	8,32,00,000
1,66,80,000 A Equity Shares of Rs. 10 each	16,68,00,000	16,68,00,000
	<u>25,00,00,000</u>	<u>25,00,00,000</u>
Issued and Subscribed		
48,02,000 Equity Shares of Rs. 10 each	4,80,20,000	4,80,20,000
1,66,80,000 A Equity Shares of Rs. 10 each	16,68,00,000	16,68,00,000
	<u>21,48,20,000</u>	<u>21,48,20,000</u>
Paid Up		
48,02,000 Equity Shares of Rs. 10 each fully paid up (Of the above shares 13,72,000 shares were allotted as fully paid up Bonus Shares by Capitalisation of Share Premium Account and Revenue Reserves)	4,80,20,000	4,80,20,000
1,66,80,000 A Equity Shares of Rs. 10 each fully called up	16,68,00,000	16,68,00,000
	<u>21,48,20,000</u>	<u>21,48,20,000</u>
Less: Calls unpaid By Others	1,87,055	7,01,690
	<u>21,46,32,945</u>	<u>21,41,18,310</u>

Note: Number of shares held by Imperial Chemical Industries Limited, U. K.
— 1,09,60,000 (including 76,00,000 A Equity Shares)

(2) RESERVES AND SURPLUS

	Balance at 30th September 1969	Dividends * on Equity Shares other than A Equity Shares (Subject to deduction of tax at source)	Transfers from Profit and Loss Account	Transfers to Profit and Loss Account	Balance at 30th September 1970
	Rs.	Rs.	Rs.	Rs.	Rs.
Capital Reserve	6,954	—	—	—	6,954
General Reserve	1,78,54,000	3,000	72,00,000	—	2,50,51,000
Development Rebate Reserve	1,10,05,000	—	—	45,00,000	65,05,000
Dividend Equalisation Reserve	72,00,000	72,00,000	—	—	—
Special Reserve	—	—	2,55,25,000	—	2,55,25,000
Unappropriated Profits	751	—	975	751	975
	<u>3,60,66,705</u>	<u>72,03,000</u>	<u>3,27,25,975</u>	<u>45,00,751</u>	<u>5,70,88,929</u>

* Paid Rs. 36,01,500
Proposed Rs. 36,01,500

INDIAN EXPLOSIVES LIMITED

SCHEDULES TO THE BALANCE SHEET (Contd.)

	1970	1969
	Rs.	Rs.
(3) LOANS		
Secured Loans		
(a) From Banks—Long Term	8,35,00,000	8,35,00,000
(b) From Others—Long Term:		
International Finance Corporation, Washington	2,89,26,000	2,14,26,000
Industrial Development Bank of India	4,65,00,000	3,92,00,000
Industrial Finance Corporation of India	2,00,00,000	1,71,00,000
The Industrial Credit and Investment Corporation of India Ltd.	1,00,00,000	79,00,000
Life Insurance Corporation of India	3,00,00,000	2,58,00,000
(c) From a Bank—Overdraft	97,25,835	2,38,32,089
	<u>22,86,51,835</u>	<u>21,87,58,089</u>
Unsecured Loans		
(a) From a Bank—Long Term	18,33,905	18,33,905
(b) From Morgan Guaranty Trust Company of New York—Long Term	90,00,000	90,00,000
(c) From Toyo Engineering Corporation, Tokyo, on Long Term Deferred Payment Arrangement	7,34,61,256	7,32,36,895
(d) From a Bank—Overdraft	16,79,130	—
	<u>8,59,74,291</u>	<u>8,40,70,800</u>
	<u>31,46,26,126</u>	<u>30,28,28,889</u>

Notes:

Secured Loans

- The loans under (a) and (b) secured by mortgage of immovable properties and hypothecation of movable properties, present and future, subject to the charge securing the loan under item (c).
- The loan under (c) secured by hypothecation of Raw Materials, Finished and Semi-finished goods, Stores (other than those imported under the Deferred Payment Arrangement or purchased out of loan from International Finance Corporation, Washington) and Book Debts.

Unsecured Loans

The loans under (b) and (c) are guaranteed by the Industrial Development Bank of India to which guarantees, the charge on properties in respect of the secured loans under (a) and (b) also concurrently extends.

(4) FIXED ASSETS

	1970				1969	
	As per last Balance Sheet (At Cost)	Additions and Transfers during the year (At Cost)	Sales and Amounts Written off (At Cost)	Depreciation to date	Net Book Value	Net Book Value
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Land						
Freehold and Leasehold Buildings	65,53,556	2,17,776	2,51,351	—	65,19,981	65,53,556
Plant and Machinery	3,71,29,494	1,64,54,853	—	1,29,40,140	4,06,44,207	2,60,77,241
Railway Sidings	5,80,87,634	47,24,01,329	—	6,56,88,466	46,48,00,497	2,07,30,322
Rolling Stock, Motor Vehicles etc.	5,88,665	1,40,95,661	—	10,87,153	1,35,97,173	3,47,301
Furniture, Fittings and Equipment	81,69,123	54,39,812	5,48,354	63,84,021	66,76,560	29,50,461
	<u>70,95,475</u>	<u>73,68,984</u>	<u>3,23,134</u>	<u>36,69,948</u>	<u>1,04,71,377</u>	<u>44,36,732</u>
	<u>11,76,23,947</u>	<u>51,59,78,415</u>	<u>11,22,839</u>	<u>8,97,69,728</u>	<u>54,27,09,795</u>	
<i>Previous year</i>	<u>11,08,05,789</u>	<u>71,92,933</u>	<u>3,74,775</u>	<u>5,65,28,334</u>		<u>6,10,95,613</u>

INDIAN EXPLOSIVES LIMITED

SCHEDULES TO THE BALANCE SHEET (Contd.)

(5) INVESTMENTS — At Cost		1970	1969
Unquoted Trade	Rs.	Rs.	Rs.
Imkemex India Limited 25,000 Equity Shares of Rs. 10 each fully paid up	2,50,000	2,50,000
Belvedere Estates Limited 4002 Ordinary Shares of Rs. 10 each fully paid up	87,860	—
1/2% Debenture Stock fully paid up	2,08,140	—
East India Clinic Limited 5% Non-Redeemable Debenture Stock fully paid up	6,000	6,000
		<u>5,52,000</u>	<u>2,56,000</u>
(6) STOCKS — At Cost		Rs.	Rs.
Stores and Spare Parts	1,38,57,329	37,08,353
Packing Materials	39,80,740	11,06,434
Loose Tools	1,11,510	85,927
Raw Materials	78,54,171	57,62,370
Finished Products	1,84,81,486	2,05,75,331
Work in Process	48,81,125	10,81,637
		<u>4,91,66,361</u>	<u>3,23,20,702</u>
(7) SUNDRY DEBTORS		Rs.	Rs.
Secured			
Debts outstanding over six months	37,267	5,00,585
Other Debts	27,41,819	27,13,623
Unsecured			
Debts outstanding over six months:			
Considered Good (a)	73,38,339	60,52,755
Considered Doubtful	22,480	—
		<u>73,60,819</u>	<u>60,52,755</u>
Less: Provision for Doubtful Debts	22,480	—
		<u>73,38,339</u>	<u>60,52,755</u>
Other Debts — Considered Good (b)	1,52,25,394	1,81,89,008
		<u>2,53,42,819</u>	<u>2,74,55,971</u>
Included in			
(a) Tax Credits Receivable	60,38,145	53,49,000
(b) Companies under the same management			
Chemicals and Fibres of India Limited	81,230	65,325
The Alkali and Chemical Corporation of India Limited	—	1,12,596
Tax Credits Receivable	—	17,36,000
The maximum amounts due during the year by:			
Chemicals and Fibres of India Limited	1,56,315	65,325
The Alkali and Chemical Corporation of India Limited	5,44,318	1,72,113
I.C.I. (India) Private Limited	1,03,398	1,13,29,313
(A Private Company in which there are common Directors)			
(8) CASH AND BANK BALANCES		Rs.	Rs.
Cash in hand and in transit	14,11,382	4,58,254
With Scheduled Banks:			
Current Accounts	79,87,466	93,78,406
Dividend Accounts	59,475	41,393
Share Application Money Refund Accounts	5,975	5,975
National and Grindlays Bank Limited, London:			
Current Accounts	15,15,291	10,76,318
Short Term Deposit Account	36,78,579	—
With Morgan Guaranty Trust Company of New York:			
Current Account	—	4,96,923
Short Term Deposit Account	—	33,75,000
Maximum amount at any time during the year Rs. 38,71,923 (1969—Rs. 89,51,895)			
		<u>1,46,58,168</u>	<u>1,48,32,269</u>

INDIAN EXPLOSIVES LIMITED

SCHEDULES TO THE PROFIT AND LOSS ACCOUNT

	1970	1969
	Rs.	Rs.
(12) MATERIALS AND FINISHED PRODUCTS		
Opening Stock		
Raw Materials	57,62,370	36,55,338
Packing Materials	11,06,434	13,67,845
Finished Products	2,05,75,981	1,58,31,122
Work in Process	10,81,637	11,52,444
	<u>2,85,26,422</u>	<u>2,20,06,749</u>
Add: Purchases		
Raw Materials	5,88,83,657	3,91,43,045
Packing Materials	2,31,61,594	97,28,621
Finished Products	61,15,111	3,19,99,794
	<u>11,66,86,784</u>	<u>10,28,78,209</u>
Deduct: Closing Stock		
Raw Materials	79,15,723	57,62,370
Packing Materials	39,80,740	11,06,434
Finished Products	1,84,81,486	2,05,75,981
Work in Process	48,81,125	10,81,637
	<u>3,52,59,074</u>	<u>2,85,26,422</u>
	<u>8,14,27,710</u>	<u>7,43,51,787</u>

	Rs.	Rs.
(13) OTHER EXPENDITURE		
Stores and Spare Parts	49,37,345	13,31,447
Power and Fuel	1,73,44,794	41,46,281
Salaries, Wages and Bonus (a)	2,18,38,078	1,26,63,150
Contributions to Provident and Pension Funds	15,63,486	6,65,648
Welfare Expenses of Staff and Workmen (b)	19,51,169	8,48,544
Rates and Taxes	2,38,470	1,28,514
Rent	17,25,461	9,14,157
Repairs to Buildings (b)	3,99,978	2,11,012
Repairs to Machinery (b)	66,69,328	35,50,294
Insurance	32,69,828	17,00,313
Freight and Transport Charges	1,12,32,833	29,94,300
Commission to Sole Selling Agent	—	19,14,226
Other Selling Commission	4,05,031	2,25,124
Royalties & Technical Fees	36,73,212	28,88,209
Excise Duty (c)	1,10,08,378	3,20,487
Sundries (d)	1,36,32,840	60,68,794
	<u>9,98,90,231</u>	<u>4,05,70,500</u>
Less: Recovery of Expenses (including amounts allocated to Capital Rs. 7,09,635)	<u>31,69,023</u>	<u>18,67,786</u>
	<u>9,67,21,208</u>	<u>3,87,02,714</u>
Allocated as follows:		
Manufacturing	6,12,22,014	1,97,61,580
Selling and Distribution	2,66,83,763	1,47,04,205
Administrative	88,15,431	42,36,929
	<u>9,67,21,208</u>	<u>3,87,02,714</u>

INDIAN EXPLOSIVES LIMITED

SCHEDULES TO THE BALANCE SHEET (Contd.)

	1970	1969
(9) LOANS AND ADVANCES (Unsecured, considered good)	Rs.	Rs.
Advances recoverable in cash or in kind or for value to be received (a)	84,28,274	60,66,472
Deposits:		
With Customs, Port Commissioners and Excise Authorities	4,93,897	10,78,429
Other Deposits	32,88,172	12,70,508
	<u>1,22,10,343</u>	<u>84,15,409</u>
(a) Due by: Imperial Chemical Industries Limited, U.K.	—	2,01,151
Maximum due during the year	2,01,151	6,09,930
(10) CURRENT LIABILITIES	Rs	Rs.
Sundry Creditors	3,12,26,218	2,75,59,893
Other Liabilities	1,09,82,277	76,75,681
Imperial Chemical Industries Limited, U.K.	9,98,307	12,99,254
I.C.I. (India) Private Limited	92,003	1,73,052
The Alkali and Chemical Corporation of India Limited	31,799	—
Inkemex India Limited	11,431	—
Interest accrued but not due on Loans	1,13,55,647	65,60,348
Unclaimed Dividends	59,475	41,393
Directors' Current Accounts	1,916	3,469
	<u>5,47,59,073</u>	<u>4,33,13,120</u>
(11) NOTES ON THE BALANCE SHEET	Rs.	
1. Estimated amount of contracts remaining to be executed on Capital Account and not provided for	47,55,075	
2. Capital Work in Progress includes Plant in Transit	1,23,761	
3. Stocks include in transit	21,43,493	
4. Retirement Gratuities are accounted for on a cash basis.		
5. Contingent Liability: Arising from an Industrial Tribunal Award which has been challenged in the Calcutta High Court and an interim stay order has been obtained	1,45,291	
6. All foreign currency balances have been converted at standard rates of exchange on the date of the Balance Sheet.		
7. Previous year's figures have been re-arranged where necessary to make them comparable with those of current year.		

A. W. HAMER *Chairman & Managing Director*
M. G. SATOW *Jt. Managing Director*
A. C. MUIR *Director*
B. SEN *Secretary*

INDIAN EXPLOSIVES LIMITED

SCHEDULES TO THE PROFIT AND LOSS ACCOUNT (Contd.)

(13) OTHER EXPENDITURE (Contd.)	1970	1969
Included in	Rs.	Rs.
(a) Pension paid to a Retired Director	14,400	14,400
(b) Salaries, Wages and Bonus	26,97,281	14,69,565
Provident Fund Contributions	8,359	—
Stores and Spare Parts	25,75,908	22,29,626
Power and Fuel	58,261	17,048
Rent	2,39,884	—
Insurance	4,814	5,101
(c) Payment relating to previous year	3,523	2,069
(d) Write off in respect of expenditure incurred on Airstrip Provision for Doubtful Debts	52,968 22,480	52,896 —
Rs.		
(14) TAXATION ETC.	Rs.	Rs.
Income Tax	83,464	1,73,56,000
Less: Tax Credit under Section 280 ZB of Income Tax Act, 1961	—	17,36,000
	<u>83,464</u>	<u>1,56,20,000</u>

(15) NOTES ON THE PROFIT AND LOSS ACCOUNT

1. Rebates on sales are after adjustment of short provision of Rs. 8,473 in respect of previous year.
2. Interest from Banks and Others include Rs. 46,566 relating to previous years.
3. Interest from Banks and Others and Income from Trade Investment are shown gross and tax deducted is nil and Rs. 8,250 respectively.
4. Miscellaneous Receipts include Rs. 15,499 in respect of previous year.
5. Interest paid includes Rs. 1,46,42,776 on Fixed Loan.
6. Payments to Auditors:

Audit Fees	Rs. 50,000 (1969, Rs. 18,000)
Expenses	Rs. 4,199 (1969, Rs. 505)
Other Services	Rs. 10,000 (1969, Rs. 14,039)
7. Dividends for the year on Equity Shares other than A Equity Shares, subject to deduction of tax at source, Rs. 36,01,500 paid and Rs. 36,01,500 proposed have been recommended for payment out of the amount standing to the credit of Dividend Equalisation Reserve and General Reserve as on 30th September, 1969, and accordingly are shown under Reserves and Surplus (Schedule 2).
8. Total remuneration of the Directors including
 Managing Directors for the year .. Rs. 11,19,050 (1969, Rs. 6,57,513)
 Estimated cost of benefits included above .. Rs. 37,751 (1969, Rs. 23,111)
9. Central Government's approval is awaited to the appointments of Mr A. W. Hamer as a Managing Director, Mr M. G. Satow as a Joint Managing Director, Dr S. K. Chanda and Mr H. C. Raghurir as Alternate Directors in the Whole-time employment of the Company.
The remuneration paid/payable to the above-mentioned Directors and also the increased remuneration payable to the other Whole-time Directors amounting to Rs. 3,97,829 is subject to Central Government's approval.
The above appointments and remuneration have been approved by members in General Meeting.
The total Directors' remuneration shown in Note (8) is subject also to Central Government's approval due to absence of net profit vide Section 198 of the Companies Act, 1956. An application for the approval is being submitted.
10. The amount shown against Income Tax for the current year in Schedule 14 relates to U.K. Tax.
11. Previous year's figures have been re-arranged where necessary to make them comparable with those of current year.

A. W. HAMER *Chairman & Managing Director*
M. G. SATOW *Jt. Managing Director*
A. C. MUIR *Director*
B. SEN *Secretary*