VOL. XX, NO. 2 15 FEBRUARY 1976

60 PAISE

Dynamic Decade Indian Railways

Long years ago we made a tryst with destiny, and now the time comes when we shall redeem our pledge, not in full measure, but very substantially. At the stroke of the midnight hour, when the world sleeps, India will awake to life and freedom. A moment comes, which comes but rarely in history, when we step out from the old to the new, when an age ends, and when the soul of a nation, long suppressed, finds utterance. It is fitting that at this solemn moment we take the pledge of dedication to the service of India and her people and to the still larger cause of humanity.

At the dawn of history India started on her unending quest, and trackless centuries are filled with her striving and the grandeur of her successes and her failures. Through good and ill fortune alike she has never lost sight of that quest or forgotten the ideals which gave her strength. We end today a period of ill fortune and India discovers herself again. The achievement we celebrate today is but a step, an opening of opportunity to the greater triumphs and achievements that await us. Are we brave enough and wise enough to grasp this opportunity and accept the challenge of the future?

Freedom and power bring responsibility. That responsibility rests upon this Assembly, a sovereign body representing the sovereign people of India. Before the birth of freedom we have endured all the pains of labour and our hearts are heavy with the memory of this sorrow. Some of those pains continue even now. Nevertheless, the past is over and it is the future that beckons to us now.

That future is not one of ease or resting but of incessant striving so that we may fulfil the pledges we have so often taken and the one we shall take today. The service of India means the service of the millions who suffer. It means the ending of poverty and ignorance and disease and inequality of opportunity. The ambition of the greatest man of our generation has been to wipe every tear from every eye. That may be beyond us, but so long as there are tears and suffering, so long our work will not be over.

And so we have to labour and to work, and work hard, to give reality to our dreams. Those dreams are for India, but they are also for the world, for all the nations and peoples are so closely knit together today that for any one of them to imagine that it can live apart is folly. Peace has been said to be indivisible; so is freedom, so is prosperity now, and so also is disaster in this One World that can no longer be split into isolated fragments.

JAWAHARLAL NEHRU

Extracts from the speech delivered by Jawaharlal Nehru at the midnight session of the Constituent Assembly on August 14, 1947.

Yojana

Volume XX, Number 2
New Delhi, 15 February 1976
26 Magha 1897

Published on behalf of the Planning Commission in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil and Telugu.

Yojana seeks to carry the message of the Plan, but is not restricted to expressing the official point of view.

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S. SRINIVASACHAR

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Subscriptions: Annual—Rs. 13, Two years–Rs. 22, Three years—Rs. 31, **Foreign Subscriptions:** One year–£1.30 or $4.00. Two Years—£2.20 or $700.. Three Years–£3.10 or $9.50. Single copy—six pennies or $0.20.

EDITORIAL

End of the Tunnel

THE GREAT LEAP in faith India experienced on tightening the gears of national existence in June last year has taken it to realms which could not be imagined a year ago. Nowhere is this evident more than in the operation of the country's largest national enterprise, the Railways.

Steeped in apathy, deteriorating labour relations, accumulating losses and declining morale, the national carriageway went through a horrendous tunnel, and the darkest moment was when Mr L.N. Mishra, the Railway Minister, became the victim of a murderous attack. But that nadir itself proved to be the fateful turning point. Stung to the core by the body blow administered to it, the nation reacted and the declaration of the national emergency was the result.

Emerging out of the tunnel, the Railways are now once again in a position to make good its promise to the Nation, to continue the task of linking efficiently the farflung areas and to generate a surplus for further investment.

Final figures are expected in the Railways' annual budget, but there are signs of extensive leakages being stopped. Ticketless travel, unauthorised alarm chain pulling and travelling with unbooked luggage have all but come to an end. Punctuality performance, which had come down to as low as 60 per cent on some Railways, is now almost up to 98 per cent.

The promulgation of the emergency was occasion also for the Railways to make up its mind about anti-social elements. Certain kinds of pilferage, it was admitted, could not have been carried out without the connivance of the Railway staff themselves. There is greater vigilance now. Over 142,681 hardened criminals and receivers of stolen Railway property have been arrested. Stolen property worth over Rs 20 million has been recovered. Over 880 corrupt officials have been dealt with, in addition to the 2,500 compulsorily retired.

The raids numbering over 60,000 aimed against ticketless travellers resulting in the apprehension of 1.6 million of them have made travel far easier for the legitimate user. Queues at booking windows are now rarely longer than ten people.

All this is more than a good augury. It means that the nation's lifeline, once dangerously close to atrophy and collapse, is now back at its prime state of vigour. The pulse indeed reads full recovery for the national economy. □

"Loud Applause and A 21—Gu

THE TELEGRAPH AND RAILWAY came to India in the middle of 19th century, the one in 1851 and the other in 1853. These innovations, which in the free countries of the West came to act as powerful instruments of economic growth, failed to accomplish the same results in India as they were planned to serve primarily the military and economic needs of a colonial regime. Nevertheless when they grew into a vast network, they linked up the far-flung provinces of India, cutting through mountains and spanning rivers over wide stretches of the immense landmass.

In time, the vast cultural complex that had been India found its geographical and economic unity emphasised and strengthened as a result. By the end of the century the mighty railway network had become one of the major instruments of political and economic unification of the country.

Today the Indian Railways is an immense network the biggest public undertaking of its kind in the world, next only to that of the USSR.

The First Train

THE formal inauguration ceremony was performed on 16th April 1853, when 14 railway carriages carrying about 400 guests left Bori Bunder at 3.30 p.m. 'amidst the loud applause of a vast multitude and to the salute of 21 guns'. The Governor's band was present, but not His Excellency the Governor.

According to *Bombay Times*:

"The Governor, Lord Falkland and the Commander-in-Chief, Lord Frederick Fitz Clarence, with their respective attendants accompanied by the Bishop, the Reverend John Hardinge, left for the hills the evening previous in disregard of the memorable character of the occasion."

"The day", further reports the paper, "was observed as a public holiday by all Government Offices and banks etc."

The party reached Thana at about 4.45 p.m. where refreshments were served in tents and Major Swanson wished success to the new Company and its Chief Engineer, Mr. Berkaley. The guests returned to Bombay at 7 p.m. on 17th April 1853. The next day Sir Jamsetjee Jeejeebhoy, second Baronet, reserved the whole train and travelled from Bombay to Thana and back, along with some of the members of his family.

His Excellency the Governor, then Lord Elphinstone was, however, present a year later when the line was extended to Kalyan. He performed the opening ceremony on 1st May 1854. This extension, according to engineering standards then existing, was a difficult and outstanding achievement. It required a two-line viaduct over the estuary to the main land and two tunnels which with the exception of a small road tunnel near Satara were the first works of any magnitude undertaken by the East India Company in the Bombay Presidency. The cost was estimated at Rs. 84,000 per mile.....

(From "INDIAN RAILWAYS ONE HUNDRED YEARS (1853-1953)" Railway Board, New Delhi.

The First Railway Time-Table

GREAT INDIAN PENINSULA RAILWAY
OPENING FOR PASSENGER TRAFFIC

The Public are respectfully informed that on Monday the 18th instant, and until FURTHER NOTICE, Trains will be despatched daily, at the Hours and Fares named in the annexed Table, viz:-

BOMBAY TO THANAH

		First Train	Second Train	Fares		
		AM	PM	1st class Rs. a. p.	2nd class Rs. a. p.	3rd class Rs. a. p.
Bombay	Departure	7.20	3.45			
Byculla	-do-	7.38	4.3	0-6 -0	0- 2-6	0-1-0
Sion	-do-	8.00	4.25	1- 4-0	0- 8-4	0-2-6
Bhandoop	-do-	8.24	4.49	2- 2-0	0-14-2	0-4-3
Thanah	Arrival	8.40	5.5	2-10-0	1- 1-6	0-5-3

THANAH TO BOMBAY

		First Train	Second Train	Fares		
		AM	PM	1st class Rs. a. p.	2nd class Rs. a. p.	3rd class Rs. a. p.
Thanah	Departure	9.20	5.45			
Bhandoop	-do-	9.36	6.1	0- 8-0	0- 3- 4	0-1-0
Sion	-do-	10.00	6.25	1- 6-0	0- 9- 2	0-2-9
Byculla	-do-	10.22	6.47	2- 6-0	0-15-10	0-4-9
Bombay	Arrival	10.40	7.5	2-10-0	1- 1- 6	0-5-3

BOMBAY TO MAHIM

		First Train	Second Train	Fares		
		AM	PM	1st class Rs. a. p.	2nd class Rs. a. .p.	3rd class Rs. a. p.
Bombay	Departure	8.0	5. 0			
Byculla	-do-	8.18	5.18	0-6-0	0-2-6	0-1-0
Mahim	-do-	8.40	5.40	1-0-0	0-6-8	0-2-0

MAHIM TO BOMBAY

		First Train	Second Train	Fares		
		AM	PM	1st class Rs. a. p.	2nd class Rs. .a. p.	3rd class Rs. a. p.
Mahim	Departure	9.20	6.00			
Byculla	-do-	9.42	6.22	0-12-0	0-5-0	0-1-6
Bombay	-do-	10.00	6.40	1- 0-0	0-6-8	0-2-0

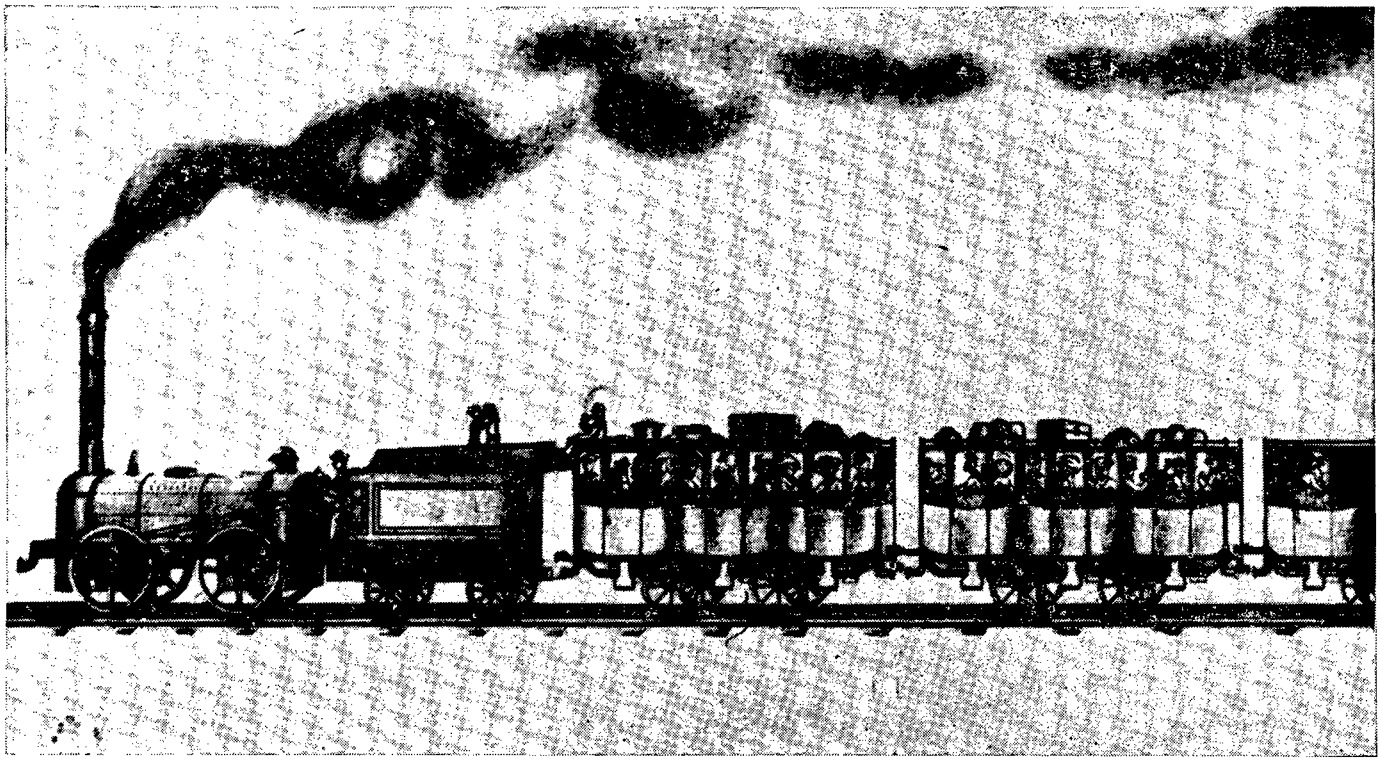
First class Day Tickets for the double journey, available only on the day of issue, will be given between Bombay, Thanah, and Mahim, at three-fourths of the ordinary fare.

Passengers, to ensure being booked, should arrive at the respective stations, and obtain their Tickets, five minutes earlier than the times above mentioned.

Further particulars may be obtained at the stations.

(By Order)
D.M. ROCHE,
Traffic Manager.

Salute"—The Beginning 123 Years Ago



TEN YEARS OF INDIAN RAILWAYS

STRAINS, STRESSES AND TREMENDOUS PROGRESS

M. N. BERY

Chairman, Railway Board

THE LAST DECADE has been a decade of numerous achievements for the Indian Railways. The Railway system, during these years, has steadily consolidated its position in the field of transport, both for passenger and freight traffic. It has built up the necessary infra-structure for meeting additional traffic demands in future and made substantial progress towards self-sufficiency, both in rolling stock and fixed structures. The Railways have made substantial headway on a modernisation programme to ensure efficient and economical operation.

The Railway system went through major stresses and strains arising out of the need to meet emergent demands to transport foodgrains and fodder to far-flung areas in the event of famine and movement of troops and military hardware during the last two wars in 1965 and 1971. The system met these challenges satisfactorily, proving its inherent strength and flexibility.

Planned Development

The Railways have come a long way during the last ten years since the Inter-Plan period 1966-69. Different aspects got attention under different plans. The Railways First Five Year plan (1951-55) concentrated mainly on replacement and rehabilitation of over-aged assets. During the Second Plan (1956-60) development of our transport was accelerated but at times demand still outstripped the capacity. The objective of the Third Plan (1961-65) was to develop sufficient capacity so that rail transport did not become a bottleneck in the industrial development of the country. A beginning was also made with the modernisation of traction and signalling.

In the Inter-Plan period (1966-69), annual plans were drawn up to meet the immediate requirements, keeping in view the long-term objective of developing sufficient capacity to meet the additional transport demand.

The emphasis in the Fourth Plan was not only to be ahead of the traffic demands but also on modernisation with a view to improving efficiency of operation. The Railways Fourth Plan covered the period 1969-74. The basic objectives of this Plan were to provide capacity for freight

and coaching traffic anticipated during the Plan period and to modernise the equipment and practices to the maximum extent possible with the available resources in order to improve efficiency and reduce costs.

The Fourth Five Year Plan originally envisaged an originating freight traffic of 265 million tonnes by the end of the Plan and an anticipated increase of about 23 per cent in the non-suburban passenger traffic. Owing to the reduced materialisation of freight traffic during the first two years of the Plan, the target was revised in consultation with the Planning Commission, to 240.5 tonnes of originating freight traffic and an increase of 19.8 per cent in the non-suburban passenger traffic. While the Plan outlay of Rs. 1700 crores was considered necessary, the actual outlay was fixed at Rs. 1525 crores in view of the difficult resources position. This outlay was further reduced to Rs. 1400 crores during the Mid-Term Appraisal. The actual investment amounted to Rs. 1420 crores, but because of the cost escalation, there was some reduction in the physical content and the increase of assets in the Plan period was less than anticipated.

The originating freight traffic reached 201.3 million tonnes in 1972-73, the penultimate year of the Plan, about 16.3 per cent less than anticipated by the end of the Plan. But in terms of tonne-kms. a more comprehensive index of rail transportation—traffic movement amounted to 136.5 billion which was only 8 per cent less than the volume of traffic, at which the revised investment plan was based. Unfortunately, disruption in the Railway operation caused by disturbed industrial relation resulted in a downward trend in traffic in 1973-74 and the tonnes originating amounted to 184.9 million and the tonne-kms. to 122 billion. The non-suburban passenger traffic, however, increased by 23 per cent in terms of passenger kms. thus exceeding the Plan target.

The physical achievements during the Inter-Plan and Fourth Plan period (1966-74) are:

New Lines (route kms)	1581
Electrification (route kms)	1837
Doubling and gauge conversion (kms)	3046
Rail renewal (kms)	12425
Sleeper renewals (track kms)	13572
Acquisition of rolling stock locomotives	1811
Coaching vehicles	9894
Elect. Multiple Unit Coaches	486
Wagons (in terms of 4-wheelers)	112925

Self-Sufficiency

Indian Railways during the last decade are progressing towards self-sufficiency covering almost all spheres of Railway working. The Railways' manufacturing units have given a concrete shape to the knowhow and made very substantial contribution towards this direction in the matter of their rolling stock requirements. These units have made rapid strides not only from the point of view of production, but also in substitution of import contents of the rolling stock produced.

Chittaranjan Locomotive Works (C.L.W.) which commenced production of steam locomotives in 1950-51, achieved the production level of 713 locomotives per year during 1959-60, against the target of 168. From 1961 onwards, it diversified its production by undertaking manufacture of broad gauge electric (25 KV) locomotives and broad gauge diesel hydraulic shunting locomotives. During the Fourth Plan period, 72 A.C. freight locos, 123 A.C. mixed traffic locos, 37 D.C. electric locos, 188 diesel shunters and 10 narrow gauge diesel locos were turned out in addition to completing the order of 97 steam locos placed earlier.

Diesel Locomotive Works (D.L.W.) began production of B.G. main line diesel-electric locos in 1963-64. From 1968-69 it also started manufacturing M.G. main line diesel-electric locos. During the Fourth

120,000 Railmen To Keep The Stock Running

The Indian Railways own 46 mechanical workshops for repairs and overhauling of their vast fleet of rolling stock. These workshops periodically overhaul and repair the fleet of locomotives, (8.700 steam, 1,700 diesel and 730 electric), 37,000 passenger coaches and 400,000 wagons. Some of the workshops are engaged in the manufacture of wagons, cranes and containers as well as over 500 diesel spares. The workshops at Amritsar, Samastipur and Golden Rock have the capacity to manufacture about 2,000 wagons per year. The Jamalpur workshop is engaged in the manufacture of ticket printing/slotting machines.

Railway repair workshops have also taken to reclamation of expensive diesel loco components on a large scale keeping in view the cost involved for their replacement. Latest processes of welding have been adopted and a reasonable degree of success has been achieved. Recently a traction motor repair workshop has been set up at Kapur. The traction motor was hitherto being replaced by imported ones at a cost of Rs. 300,000 in foreign exchange. The Kanpur repair shop reconditions the traction motor at an expenditure of only Rs. 50,000. So far as the workshop has reconditioned 18 traction motors. This job has been done for the first time in the country.

Most of the Railway repair workshops date back to the beginning of this century. Since then the repair requirements underwent a vast change due to advances in science and technlogy. From the good old steel horse, the Indian Railways switched over to diesel and electric locomotives. Similarly, from the wooden-bodied coaches, the Railways went in for light weight steel-bodied integral coaches which are of better design with more passenger comfort and safety. As against this, there have been comparatively fewer changes in the layout and machinery and plant of the workshops. With practically no additional inputs, the workshops are meeting in full the maintenance and repair demands of the Indian Railways.

In recent months, the outturn in these workshops has sharply increased. In August 1975, 8,356 broad gauge and 2,643 metre gauge wagons were turned out of these workshops after periodical overhauling as against monthly average of 6,428 broad gauge and 2,009 metre gague wagons during 1974-75. Similarly 10 per cent more locomotives were overhauled. In respect of coaches, in August, 1,884 broad gauge units were turned out as against monthly outturn of 1,571 in 1974-75. This increase was achieved despite heavy increase in the quantum of work arising out of corrosion repairs on coaching stock and the increase in work due to a recent decision to keep overaged locos in service up to 60 years. As a result of a system of incentive payment to workers introduced in 1961, productivity in repair workshops has increased to about 60 per cent over the level of 1958-59. The surplus capacity so generated enabled the workshops to maintain the increased holdings of rolling stock and further undertake diversified activities like manufacture of wagons, cranes, containers, fire boxes for boilers and various other components. The incentive earnings have increased in recent months enabling the workers to carry home bigger pay packets.

The Railways workshops have machine shops, foundries, blacksmith shops, machine maintenance shops and also shops where the rolling stock is completely stripped, examined, repaired and reassembled. These workshops have most modern facilities for the manufacture of special tools. There is a tool room equipped with precision machines including delicate die-sinking machines and thread grinders. The blacksmith shops have very heavy hammers and presses. This include drop stamps, forging machines and hammers of three tonne capacity. Thus the Railways are able to manufacture most of their forging components required for their own use.

In the manufacture of these components special steels are used and heat treatment facilities are also provided so that after a component has been forged its steel structure is improved by the heat treatment. The Foundry shops have arrangements for casting both ferrous and non-ferrous components. The machine shops have the most modern tools even to the extent of being able to manufacture complicated and high precision gears. □

Plan period 307 B.G. and 138 M.G. diesel locos have been turned out. The production in 1974-75 was 86 B.G., 15 M.G. locos and 5 WDS-6 shunters.

These two locomotive production units have made great headway in substitution of import contents, so much so that during the year 1973-74, the import content of an electric locomotive turned out of C.L.W. was only 23.7 per cent and that of a diesel electric loco was 23.1 per cent.

The Integral Coach Factory, Perambur (Madras) started production of passenger coaches in 1955-56. Originally planned for manufacturing 350 B.G. third class coach shells per annum, the I.C.F. at present has achieved the production level of 750 coaches per year i.e. more than double its planned capacity. During the Fourth Plan, the I.C.F. has turned out 3,393 broad gauge and metre gauge fully furnished coaches of various types, including 113 coaches exported to Taiwan Railways, the export order for which was secured against stiff international competition.

Export Promotion

In addition, Railway Production Units have increased their efforts towards export promotion. Indian Railways have already executed successfully three major orders for the supply of 113 coaches to Taiwan, 6 coaches to Zambia and 30 coaches to Philippines. They are now manufacturing diesel locos, coaches and wagons for supply to Tanzania.

The Research, Designs and Standards Organisation, (R.D.S.O.), of the Railways, which was formed in 1957, has expanded and diversified its activities during the last decade. These activities are directed towards improving the utilisation of the existing assets, modernising Railway operation and attaining self-sufficiency in the design and manufacture of Railway equipment.

One of the major achievements of Railways during the last deacade was the development of high speed routes between Delhi-Howrah and Delhi-Bombay where the Rajdhani Express trains are being run at a maximum permissible speeds of 130 kmph, and 120 kmph respectively. This was done by making minimum investments and carrying out minimal improvement to the existing Railway assets on these routes.

The research activities of the Railways have attracted international attention and an increasing number of requisitions for consultancy are now being received from various less developed countries. Consultancy services in matters pertaining to increase in speeds, design, testing and inspection of Railway equipment and construction of new lines have already been rendered for countries such as Thailand, Phillipines, New

Foreign Consultancy Services of Indian Railways

CONSULTANCY is nothing new to the Indian Railways. Though the first venture in this field was launched in connection with restoration of Hedjaz Railway line in Saudi Arabia during the First World War, the consultancy efforts of the Indian Railways gained momentum during the last decade. Late in 1968, the Hedjaz Commission invited a team of Railway experts to advise them on the rolling stock, signalling and communication requirements for the restored line. This was followed by yet another mission to the Hedjaz Railway in 1969 to survey and prepare a project for the strengthening and improving of the working section of this line between Damascus and Ma'an.

Further, two consultancy projects were executed at the request of the Syrian Government in 1969 and 1970. These comprised techno-economic feasibility studies for a standard gauge line linking the phosphate mines in the eastern region to the new port of Tartous and advise and detailed design of the signalling system for the newly constructed line from Damascus to Katana.

In 1970 an Indian team carried out a preliminary survey and traffic study for the 400 km Baghdad-Hsaibah project in Iraq at the request of that Government. This scheme was to provide a direct rail link between the Mediterranean port of Latakia and Gulf Port of Basrah via Baghdad.

Indian Railways have also rendered technical assistance to the Iranian State Railways over a wide gamut of activities comprising unit casting, rolling stock and track maintenance methods, traffic surveys, steel foundry and metallurgical practices, and staff training facilities.

In the pacific region consultancy was extended to Thailand and Philippines in 1969 and 1970. The work in Thailand related to studies and recommendations in connection with raising the speed of passenger trains without heavy additional investments. A project was worked out by Indian Railway experts of the Research, Designs and Standards Organisation, based on detailed studies, tests and trials of equipment and track installations. The proposals are now in the process of implementation. The technical mission to Philippines was entrusted with the task of analysing the functioning of railways and suggesting ways and means of improving operations. Studies were also carried out for recommending emergency measures for restoring traffic on a portion of the railway which had been subjected to extensive damages due to typhoons in 1970.

International Railway Activities

Besides rendering assistance to individual countries, the Indian Railways have also been vitally associated with international railway activities, like the Trans-Asian Railway network proposed to link Europe with Thailand and Singapore. For this purpose, assisted by another colleague commissioned by ECAFE, the present Chairman of the Railway Board, Shri M.N. Bery, prepared and presented reports to the special meeting of the Trans-Asian Railway Experts held in Bangkok in December, 1970. The first report was on establishing the basic parameters for technical compatibility of the rolling stock and fixed installations of the different railway systems. The second report covered traffic forecasts and economic viability of the missing links.

The range of such activities has expanded greatly of late particularly in the Far East, Middle East and Africa. It was to meet these growing demands that Indian Railway consultancy services were organised and placed on a rational basis in October, 1974, with the establishment of the new Company, in the public sector, the Rail India Technical and Economic Services Limited (RITES).

In the short period which has elapsed since its inception, RITES has already secured several overseas assignments of which the more important are:

(a) Survey for new lines in Syria—between 1. Dier-ez-Zor and Palmyra, 2. Dier-ez-Zor and Abu Kemal, and 3. Latakia and Tartuz.—a distance of 450 kms in all. This work has already commenced and the report is likely to be submitted during the next five months or so.

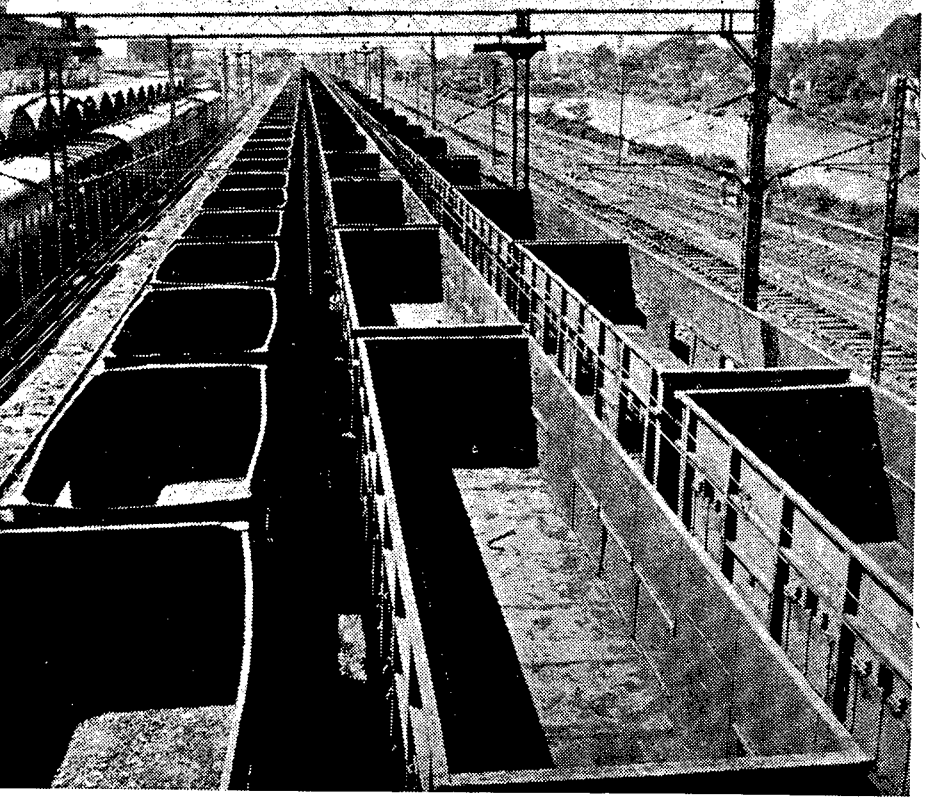
(b) Survey of a new line between Kerman and Shurgaz in Iran for a railway line 350 kms. This work is also in hand and the report will be submitted during the next three months.

(c) Deputation of experts, in several disciplines, to Zairian National Railways. These experts will have the benefit of back-up services as required from RITES. The agreement is a first step towards further consultancy assignments.

Many more projects are also being considered in various other countries—Zambia, Nigeria and Iraq.

RITES is fully backed by the expertise of the Indian Railways and its Research, Designs and Standards Organisation. The Indian Railways over the years have built up in a very large measure the entire range of feedbacks necessary to participate effectively in the tremendous programme of railway expansion launched by the developing nations.

Needless to say that RITES would be expanded suitably to meet the growing needs of consultancy in every aspect of railway transport including planning, organisation, construction and operation, in all the Third World countries. □



Once the resting place of Mughal Armies, on the march, it now knows no rest

MUGHALSARAI YARD

MUGHALSARAI YARD near Varanasi is the largest and the busiest marshalling yard of the Indian Railways. In fact, it is the largest yard of its kind in Asia. Spread over an area of 12.6 kms, it is located almost at equal distances from Delhi and Calcutta.

The yard is the confluence of many streams of traffic. Complicated operations of breaking up train loads, sorting the wagons destination-wise and marshalling the trains for onward departure in many directions are handled at the yard round the clock.

The yard receives over 6,000 wagons every day. After sorting and re-formation, they are despatched to various destinations. Over 40 goods and 34 passenger trains are handled each way in the yard every day.

Four important trunk routes converge in the yard, two from the Northern Railways and two from the Eastern Railways. They serve the coal belts, the mineral and industrial complexes of Eastern India, the steel plants, the fertilizer factories, the Calcutta port and the rich agricultural regions of the northern parts of the country.

The total track length of the yard complex at Mughalsarai touches 250 kms. Ten block cabins and 564 levers are brought into operation for control, reception, movement and despatch of trains besides numerous shunting operations within the yard and other intra-yard local movements. In addition, there are 200 levers in the 11 yard cabins controlling various movements over 756 points and crossings, 18 single slips, 10 double slips and six diamond crossings.

Results of Remodelling

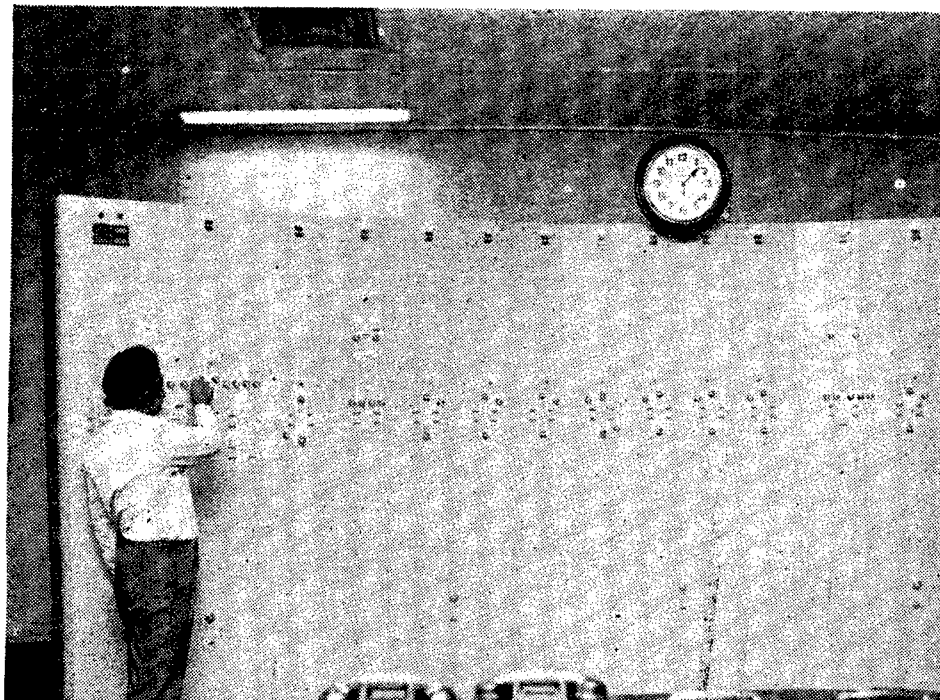
Originally designed in 1925, the yard was equipped to deal with 1,250 wagons in each direction to cater to the then anticipated traffic requirements. In view of the tremendous increase in freight movement necessitated by the planned development of the economy, the yard was remodelled in 1962-63 at a cost of Rs 20 million. The capacity of the yard has expanded by about 2½ times. The yard is being remodelled at a cost of over Rs 27 million to deal with 7,000 to 8,000 wagons per day.

Cream of Passenger Traffic

Functionally, the Mughalsarai yard is divided into two major parts—one dealing with passenger traffic and the other with goods traffic. The coaching yard at Mughalsarai handles scores of important passenger trains representing the cream of passenger traffic on the Eastern Railway.

The entire yard complex at Mughalsarai is sub-divided into smaller yards, both for the up and the down directions. And each of these yards is a self-contained unit having transhipment sheds, transfer lines, separate sick lines, water columns, etc.

Above: **View of Mughalsarai Yard.** *Below:* **A Remote Control Panel at the Yard.**



First Mechanised Yard

The Up Yard of Mughalsarai has the distinction of being the first yard that was taken up for mechanisation by the Indian Railways. Switching operations here are now controlled electrically and the electro-pneumatic retarders regulate the speeds of wagons rolling down the hump.

Mechanised Humping Operations

A new hump of about three metres has been provided at the yard with mechanical installations. A separate automatic exchange enables it to hump and classify over 4,000 wagons per day. All the points are worked from a centrally controlled panel located in the control tower and are operated electro-pneumatically.

The modern aids in humping operations provided in the yard have brought in substantial results. The time taken for humping of a 70 wagon train has been brought down from the earlier 25 minutes to 12 minutes at present. The humping rate has gone up to six wagons a minute compared to the earlier 3.5 wagons a minute. The speed of wagons over the hump has been doubled, to 3.218 km an hour against the level of 1.609 km an hour. The percentage of damage has been brought down by 0.5 per cent against 2 per cent obtaining in the manual era.

Down Yards

The Down Yard has almost a similar layout to that of the Up Yard except that it provides for manual humping. All the down yards at Mughalsarai are also adequately equipped and manned to deal with the down traffic. The down humping yard which is working round the clock and tackles about 42 to 45 trains every day has the distinction of possessing the hightest load for a non-mechanised hump yard, not in India alone, but perhaps in the world. To augment its capacity for the increased traffic, mechanisation of this yard is also in progress.

The complexity of the operations at Mughalsarai yard has rightly earned it the distinction of being the busiest yard on the Indian Railways. Known once as the resting place for the Mughal Army in its march towards Eastern India, Mughalsarai today knows no rest whatever. □

Zealand, Iran, Iraq, Jordan, Syria, Saudi Arabia and Egypt.

An independent consultancy company, Rail India Technical and Economic Service Ltd. (RITES), has been set up to render consultancy service in various fields of railway activity to railway administrations in the country and abroad. RITES as a consultancy company under the aegis of the Railway Ministry will freely draw upon the entire reservoir of talent and expertise on the Railways, the R.D.S.O. and the training institutions which have made such a spectacular development on the Indian Railways possible during the last two decades.

The prime consideration in the establishment of Rail India Technical and Economic Serivces Ltd. has been to help the countries in the developing world to meet the challenge of industrialisation and to share with them the unique expertise gained by the Indian Railways.

Modernisation

Modernisation has been a key note of the Railways' Rolling Stock Programme during the last decade. Older stock has been replaced by equipment of superior design and serviceability. The Integral Coach Factory, Perambur, during the last decade has introduced passenger coaches to suit customer requirements. Some of the new types of coaches include, two-tier second class ACC, 60 berther first class and second class with 90 seats.

As a part of their modernisation programme, the Railways have been selectively introducing diesel and electric traction. The steady displacement of steam traction by diesel and electric traction undertaken during last 10 years reduced the proportion of freight traffic hauled by steam locomotives from 61 to 35 per cent and passenger from 89 to 69 per cent.

The growth of secondary manufacturing industries, in particular in the small scale and the decentralised sectors, has created a greatly increased demand in specialised transport service, calling for safe, faster and reliable scheduled services including door to door delivery. This new situation received added stimulus owing to rapid development of road transport services. In this process, a good proportion of the traffic with higher unit value and for which Railway rates are higher (e.g. chemicals, textiles) has increasingly syphoned off by the road haulers.

Railways are, however, making efforts to arrest and reverse this trend specially in respect of high-rated traffic carried over long distances.

Quick Transit Service introduced to serve all important cities for expeditious movement of goods. Super Express Goods Trains, running to fixed advertised timings are also being run between major cities like Delhi-Calcutta, Delhi-Madras and and Delhi-Bombay. Container services introduced in 1966 and freight forwarders schemes in 1969 are two other innovations for attracting high rated traffic. These specialised services are gaining growing popularity.

Track Structure

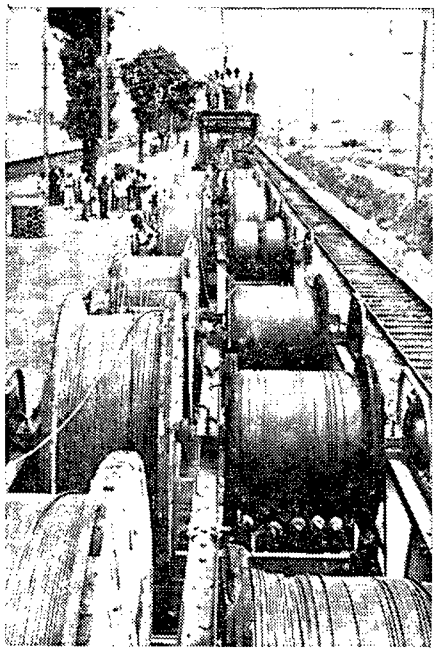
In line with the increase in traffic and train speeds, the track structure is being gradually upgraded by using heavier rails in place of lighter sections. At the end of 1973-74 11,828 route kms. (37.2 per cent) of the broad gauge track has been laid with 52 kgs. (or heavier) rails and 2,769 route kms. (10.8 per cent) of the metre gauge track has been laid with 37.13 kg rails. On sections of high density traffic, track is being maintained with automative on 'track' tie tampers. On five Zonal railways, 29 such tampers are maintaining about 3000 kms of track. Five track recording cars are being run at regular intervals on important routes of broad gauge and metre gauge to monitor bad record track geometry. These cars have helped the engineers to improve gradually the riding characteristics of track and in rationalisation of track maintenance schedules.

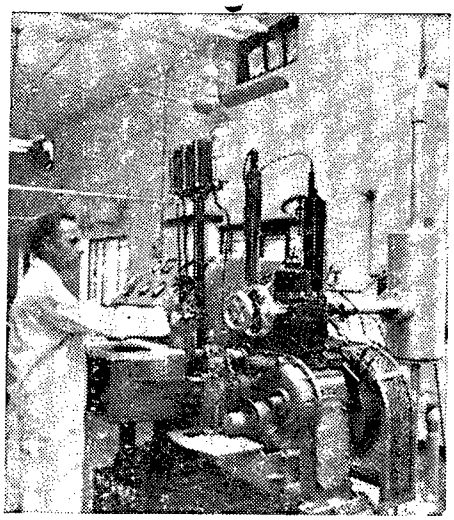
In order to increase the riding comfort of passengers, reduce fuel consumption, maintenance costs of track and rolling stock and to increase the life of rails and sleepers, welding of rails is being extensively adopted. For main lines, short welded panels of 3-rails (39 metres long) have been adopted as a general standard. On trunk routes, long welded rails of nearly 1 km. each, are being laid. So far nearly 1,300 kms. of long welded rails have been laid in track, and short welded panels exist on nearly 24,000 track kms. which constitute 33 per cent of total running track kms.

The Railways have embarked on a programme of modernisation and improvement of signalling and telecommunication facilities during the last decade in order to increase safety and operation and line capacity and to provide greater operational flexibility. With the steady growth in the activities of the Indian Railways, telecommunication network has been modernised to provide effective control of operations and conduct day to day administration. Multi-channel Radio

Relay Micro-wave system has been provided on nearly 7,500 route kms. in order to provide efficient and reliable long-distance communication.

Equipment for centralised traffic control, where trains are operated and controlled centrally over long stretches, has been developed and manufactured indigenously and introduced between Madras Egmore-Tambram (30 kms) section on Southern Railway. Major Yards like Ghaziabad have been provided with route relay interlocking system, equipment for which again has been developed and manufactured indigenously. Automatic train control and warning system has been introduced on Rajdhani Express running between New Delhi and Howrah. This enables automatic application of brakes in the event of a driver passing the signal at danger, thereby reducing the possibility of train accident. Some of the major marshall-

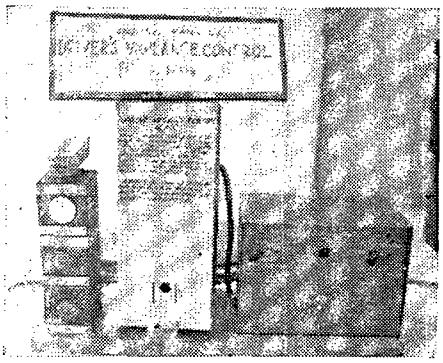


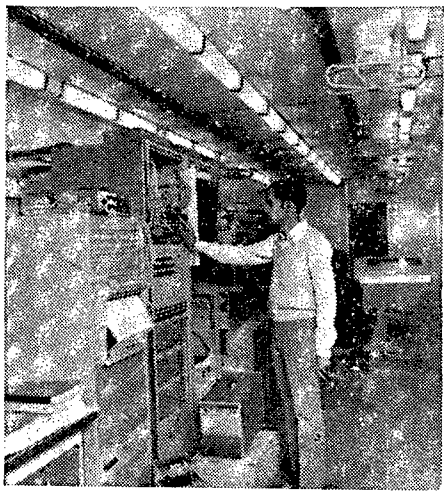


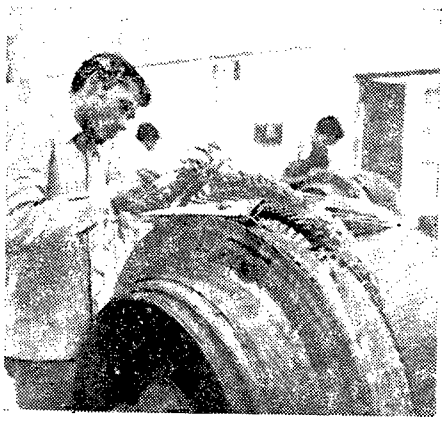
Above Left: **Electrification of Aligarh-Delhi section in progress.** Right: **Equipment for refining engine oil at RDSO, Lucknow.** Below Left: **A track recording-cum-research car.** Below: **Winding electric motors at the Kanpur workshops.**

PHOTOGRAPHS : N.R. SHAW

A compact rivers' vigilance control device made by the RDSO, Lucknow







Punctuality in the Railways,

INDIAN RAILWAYS run about 1770 pairs of non-suburban mail, express and passenger trains and 1210 pairs of suburban trains every day. These trains carry 73 lakh men, women and children from one place to another throughout the length and breadth of the country.

The passenger trains enable the commuters to attend their day's work and earn their bread and butter. They take the people to visit their near and dear ones in times of need. The businessmen use trains to keep up their appointments.

As such, running of these trains according to scheduled timings laid down in the time-table is of utmost importance.

It has always been the endeavour of the Railways to run trains punctually. But various internal and external factors affected their performance in this field.

Internally, the only factor responsible for late running of trains was erosion of discipline among the railway staff. Stable industrial relations on the Railways were disturbed during the last three-four years. The Railways faced numerous labour agitations during this period. This state of affairs came to a climax during the May 1974 strike. Resolute action on the part of the Railways and Government turned the tide. Discipline was restored. The health of the Railways organisation started showing signs of improvement almost immediately thereafter.

External Problems

In their bid to bring back industrial peace, the Railways initiated action for enlisting increased and meaningful involvement of the workers in railway affairs. The man-management policy was reoriented to reduce further the communication gap between the management and the employees.

This way the Railways were able to overcome various internal problems. Still the external problems remained unsolved. These problems were not within the control of the Railways and yet they affected their operations in a very big way.

Asia's largest and world's second largest railway under unitary management and, world's fourth largest railway system, employing 1.7 million persons, coming into contact with 7.3 million passengers every day, the Indian Railways cannot be expected to remain unaffected by the general social and political atmosphere prevailing in the country.

The punctuality performance continued to remain under severe strain in the period immediately after the strike on account of bundhs, students' agitations, shortage of water due to drought conditions in some parts of the country and floods causing breaches on other parts of the country. Besides, frequent power cuts and failures, thefts of telecommunication and overhead electric wires and difficult coal position affected the punctual running of trains to a great extent.

There were some other external factors also. One of the major external

ing yards have been mechanised and provided with automatic retarders to enable increased rate of marshalling and reduced damages to wagons during their transit. Close circuit television has been installed on important platforms at Madras Central and New Delhi stations to facilitate various announcements being made and visually displayed for the convenience of the passengers. Public address systems have been installed in Rajdhani Express and mobile train communication is being tried on Vrindaban Express on Southern Railways.

Computerised Aids to management

The growth of Railway system during the last ten years generated a need for change from manual handling of voluminous data and information to computerised applications in collecting operational data, with the least loss of time, for better managerial control. A beginning in computerised data processing was made on the Indian Railways in 1966 when 3 computer installations were commissioned in the Production Units at Chittaranjan, Madras and Varanasi. By 1970, computers were installed in each of the Zonal Railways with a centralised computer for recording wagon movement at the Railway Board.

During the last decade, computers have brought within their scope voluminous applications like freight and passenger accounting, staff pay rolls, and have covered control applications like inventory control and production control. Moreover in the area of yard operations at Mughalsarai and wagon movements on the vast broad gauge network, computers have rendered valuable assistance. In short, in the last decade, electronic data processing on the Indian Railways has become an integrated, dependable and inseparable service department for a quick and efficient management reporting system, leading to continuously improving operations.

The Indian Railways have at present a well-trained and efficient cadre

Right: **The inauguration of the Parikrama Rail Seva in Delhi by the Rail Minister Kamalapati Tripathi on 2 October 1975. Below: The Prime Minister enjoying a ride on Children's Railway.**

Internal and external factors

factors militating against better punctuality of trains was large scale incidence of alarm chain pulling, including disconnection of hose-pipes by miscreants. Another factor which assumed significance during the recent past was the emergence of organised gangs of smugglers near inter-state borders engaged in large scale smuggling of foodgrains. These gangs resorted to indiscriminate alarm chain pulling predominantly in Bihar, Orissa, West Bengal, Tamil Nadu and Andhra Pradesh. On an average, alarm chain was used to be pulled about 1000 times in a day.

Discipline Restored

It has been assessed that one alarm chain pulling delays a train for at least half an hour and then this delay leads to a chain reaction on other trains also.

That is why the Railways take special notice of detentions to trains causing their late running.

Detention of mail and express and other passenger trains are carefully investigated into by the Divisional Officers on the very next day of their occurrence. In addition, the punctuality of mail and express trains is also watched on each Zonal Railway. At the Railway Board level also, the punctuality of certain selected long distance mail and express trains arriving at Delhi, New Delhi, Howrah, Madras and Bombay is watched on a daily basis to ensure inter-railway coordination in respect of long distance mail/express trains.

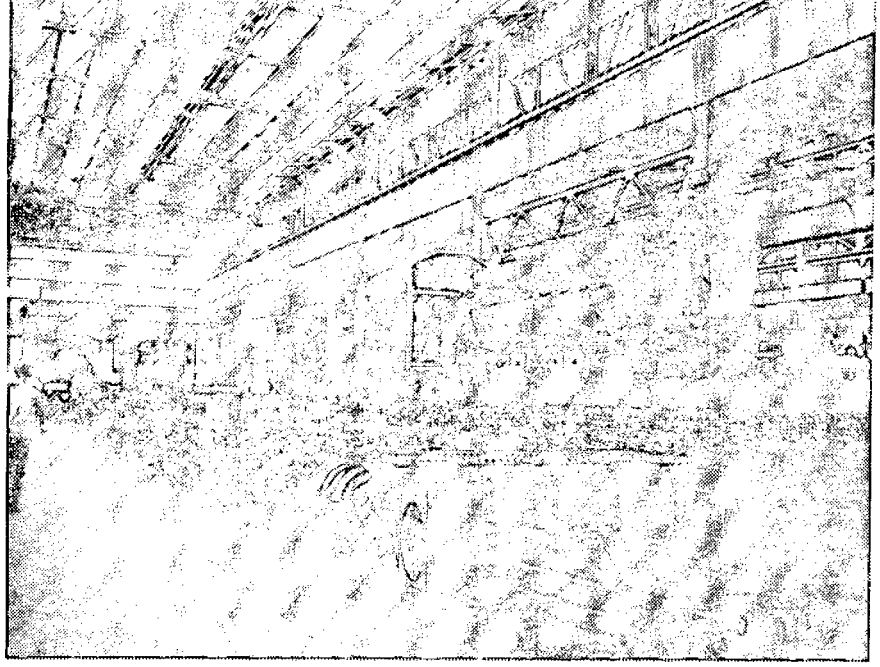
The declaration of emergency helped the Railways in more or less solving these external problems also. With the restoration of discipline and law and order, the Railways have come back to their normal level of efficiency.

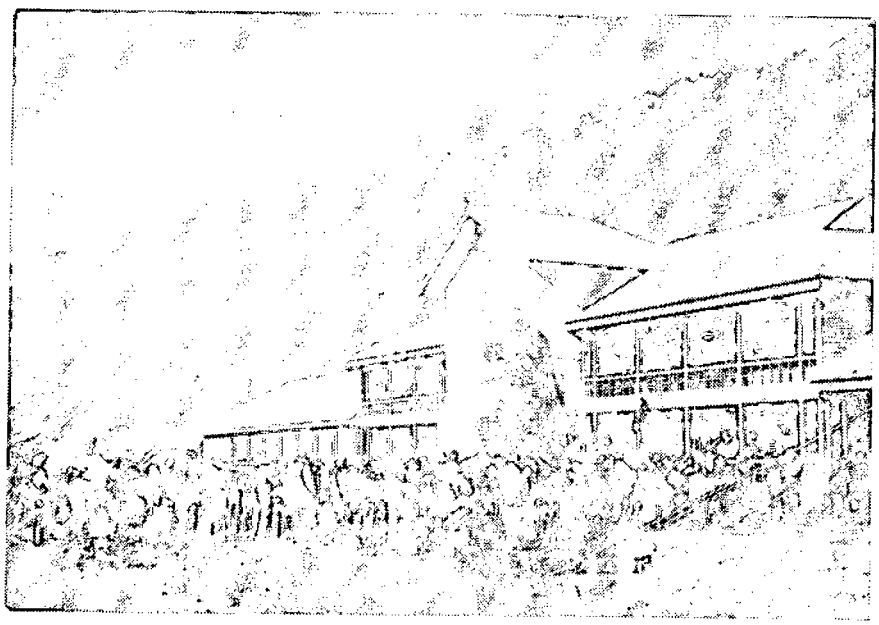
The special cell working at the Railway Board to keep round-the-clock vigil on over 100 important mail and express trains has been strengthened since the emergency. Such cells have been set up at the Zonal Railways also. This constant vigil has produced fruitful results.

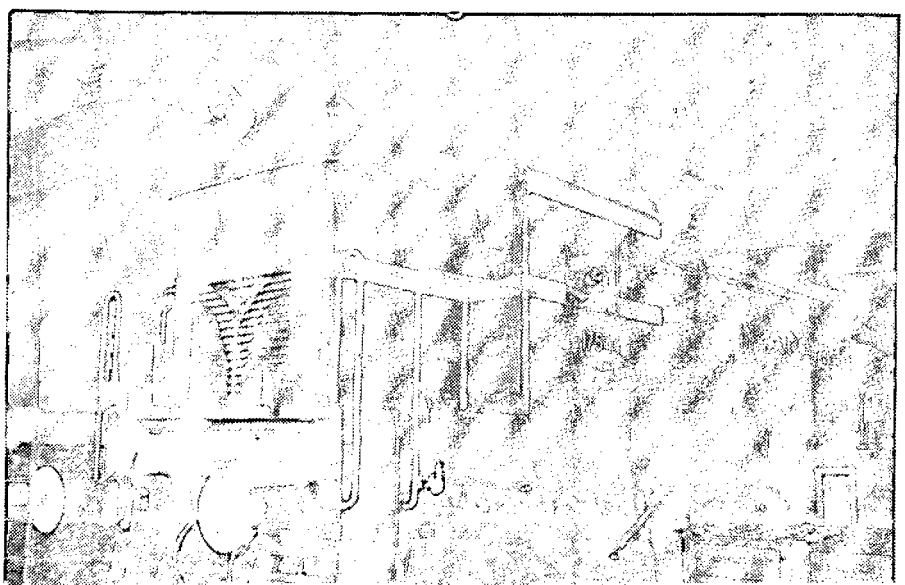
A number of other measures taken by the Railway Ministry, particularly after the promulgation of emergency, have also helped in improving the punctuality of trains. Special surprise checks conducted to create fear among anti-social elements have brought about desired results and the incidence of alarm chain pulling has been vastly reduced. The trains complete their run between one station and another without being forced to stop on the way. The passengers now do not have to go through the gruesome experience of endless wait en route.

Since the emergency, railway staff has become more disciplined and efficiency at all levels has improved. These factors have improved punctuality of trains on the Indian Railways to nearly cent per cent. Earlier only 69 per cent of the trains were running on time. But during the week ending December 6, the punctuality performance of Mail and Express trains on all the Zonal Railways ranged between 91 and 97.5 per tent.

This is indeed creditable on the part of the Railways which run about 6000 passenger trains daily. □







of Data Processing Managers, Systems Analysts and Programmers and Machine Operators; perhaps the best developed cadre in this field in the whole country.

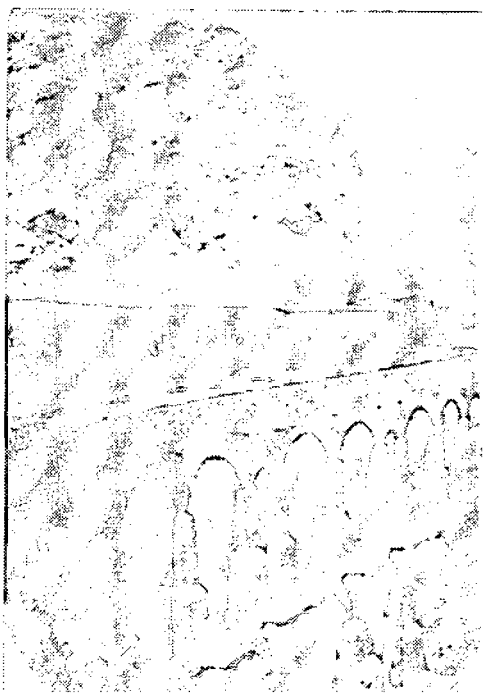
Training Personnel

To achieve technical efficiency and improved industrial relations and manage the assets, the Indian Railways have to depend upon trained manpower at all levels in the organisation. The Indian Railways have, therefore, organised a large number of training centres on Zonal Railways for giving training to their technical and operational staff.

Training of officers directly recruited by the Railways through UPSC as well as those promoted from the ranks is also given great attention by the Railways. Apart from technical training institutions for officers at Jamalpur, Secunderabad and Poona, the Railways have established a Railway Staff College at Baroda for training their officers in the field of management.

At the Railway Staff College, officers selected by UPSC for the Railways are given Foundation and Induction training, after which they attend Reorientation Courses periodically. To keep the Railway officers in constant touch with development in their own field and developments in the field of management sciences, the College regularly conducts special courses and seminars

Above Left: **The Diesel Locomotive Works, Varanasi.** Middle: **The Northern Railway Holiday Home at Pahalgam, Kashmir.** Left Bottom: **The WDM being given the finishing touches at the DLW.** Below: **A view of the Kalka-Simla Narrow gauge Railway.**



for their senior officers. Special attention is paid to Quantitative Management Techniques and Personnel Management. We are exposing a wider spectrum of railway officers to modern management techniques. Since the last four years the Railway Staff College, Baroda, has been conducting annually an 8-week course, exclusively devoted to Operational Research. Designed for middle management levels, officers of all departments, engineering and non-engineering, participate and are given basic training in the principles and applications of O.R. The course programme includes team analysis and solution of live problems of limited scope directly related to practical railway working.

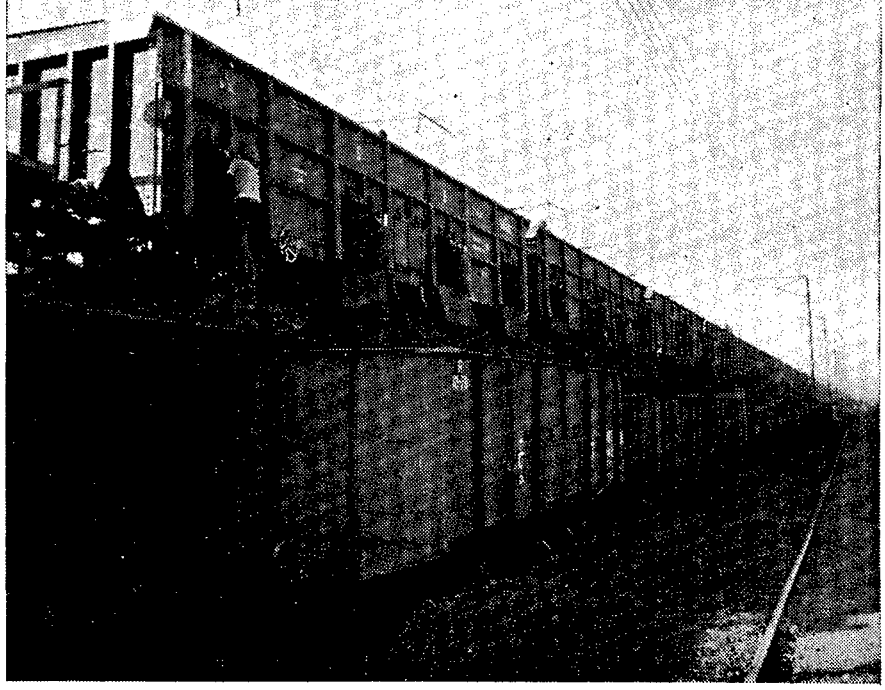
Staff Welfare

Keeping the large family of 1.7 million employees happy and contented is not an easy task, especially in the years of rising costs and expectations.

The Indian Railways, being the largest employers in the country, have provided wide range of amenities and facilities for the welfare of the staff. Among the public utility services, the Railways' expenditure towards staff is more than that of any other organisation. Subsidised housing, medical care, educational, recreational and travel facilities are available to the staff. The annual expenditure on these has been on the increase during the last ten years and in a year amounts to over Rs. 400 million. The weaker sections—Scheduled Castes and Tribes—are being provided with job opportunities and facilities through apprenticeship schemes and filling up of reserved posts on the basis of a time-bound programme. While recruiting apprentices, it has been ensured that the candidates belonging to Scheduled Castes and Scheduled Tribes and minorities are represented in accordance with the provisions of the Apprenticeship Rules. The scope of apprenticeship training scheme under the Apprentices Act has been amplified. As a result, about 12,000 apprentices will receive training annually as against 6,000 being done previously.

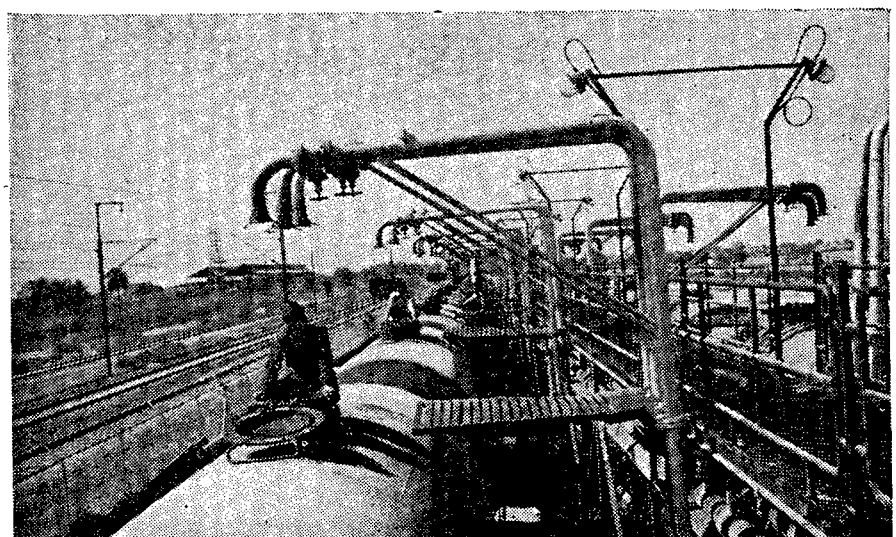
Railways have taken measures to further involve employees in the management and create a sense of participation among the staff. Tnis has improved discipline and efficiency.

Over the years, the Railways have developed a viable negotiating machinery for a continuous dialogue with the employees at all levels. A large number of important staff matters are satisfactorily dealt with



Coal unloading at Lucknow

Above: **The new, clean look at Delhi Main** Below: **Filling oil tankers at Panki, Kanpur**



in the forums of Permanent Negotiating Machinery, established in 1951, and the Joint Consultative Machinery set up in 1969. The Railway management has always kept open channels of discussion with representatives of the two recognised All India Railway Labour Federations on all outstanding issues and sustains a meaningful process of collective bargaining.

Looking Ahead

Railways in India have always been in the vanguard of industrial growth. Both internal commerce and international trade owe their growth to the active association of the Railways. In fact, the Railways and the industrial tempo of the country are so closely interlinked that one has an unavoidable impact on the other.

During the Fifth Plan period, Railways will have to lift a much larger volume of traffic than before. Greater reliance on modernisation, improvements in operational efficiency, higher productivity of fixed assets and managerial innovations are amongst the distinctive features of the strategy devised for accomplishing it. With the staff more disciplined, dedicated and aware of the challenges ahead, we will be able to face up to the expectations as regards our objectives in the Fifth Plan.

An essential element of the strategy of the Fifth Plan, so far as goods traffic is concerned, is to improve efficiency of bulk commodity transportation and to economise on rolling stock. Thus, piecemeal traffic of general goods will be reduced and arrangements made for the collection of "smalls" at important terminals for conversion into wagon loads along with provision of similar facilities at the unloading ends for onward movement by road to final destinations. Containerisation is also expected to help streamline the handling of "smalls" traffic.

As regards rail passenger travel, the Fifth Plan strategy is to meet fully the demand for medium and long distance traffic which the Railways are better suited to handle. This would require putting into service faster and longer passenger trains on long distance routes as well as an increase in the seating capacity of passenger coaches through suitable design modifications. Further, the anticipated growth of rail traffic would necessitate creation of adequate passenger terminals and yard capacities. □

DEMOCRACY
DEMANDS
DISCIPLINE

Making Rail Travel Safe and Noiseless

Northern Railway's Record of Performance

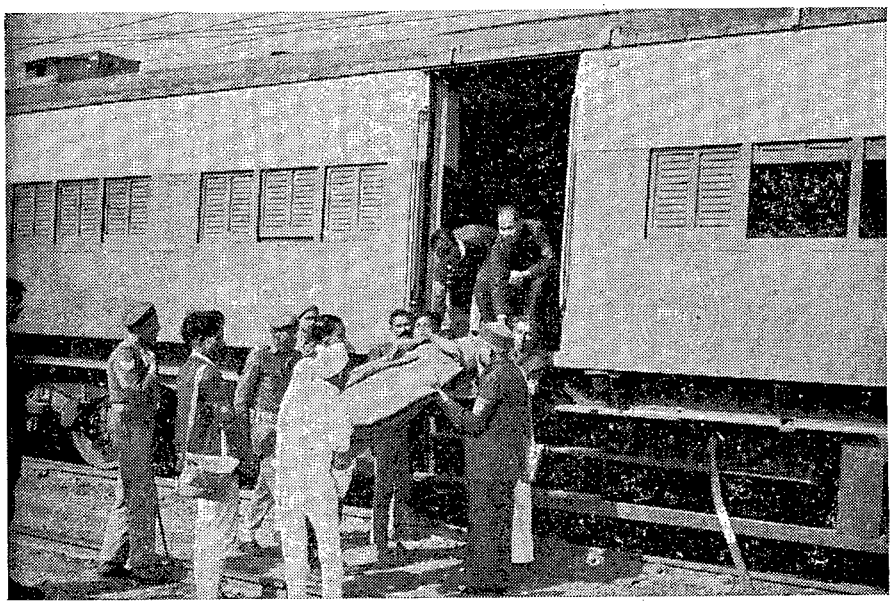
V.P. SAWHNEY
General Manager, Northern Railway

THE DECADE that has just gone by has been in many ways a dynamic one and a trend setter for quicker growth. The dynamism is evidenced by long strides taken on the path of progress in the field of rail transport. It was really a traumatic experience when the Railways had their share of strikes, agitations, and depredations by anti-social elements. In spite of these hurdles it has been possible for the railways to make an impressive contribution to the nation's economy. The Northern Railway traverses a sensitive zone and has on that account received special attention in regard to the three important desiderata for efficient rail operation, namely, modern track, traction and operation.

Track

The track has been modernised both in respect of laying and maintenance. Rail technology has gone through a century of evolution. Sophisticated instrumentation has been put into use to correct the defects in the track. The instruments measure gauge, twist, and unevenness which are the three cardinals of track parameters. The Amsler and the Oscillograph Cars are equipped with instruments which pick up defects directly from the track. Recently an electronic device for checking alignment defects has been developed by the Bhaba Atomic

A relief medical car



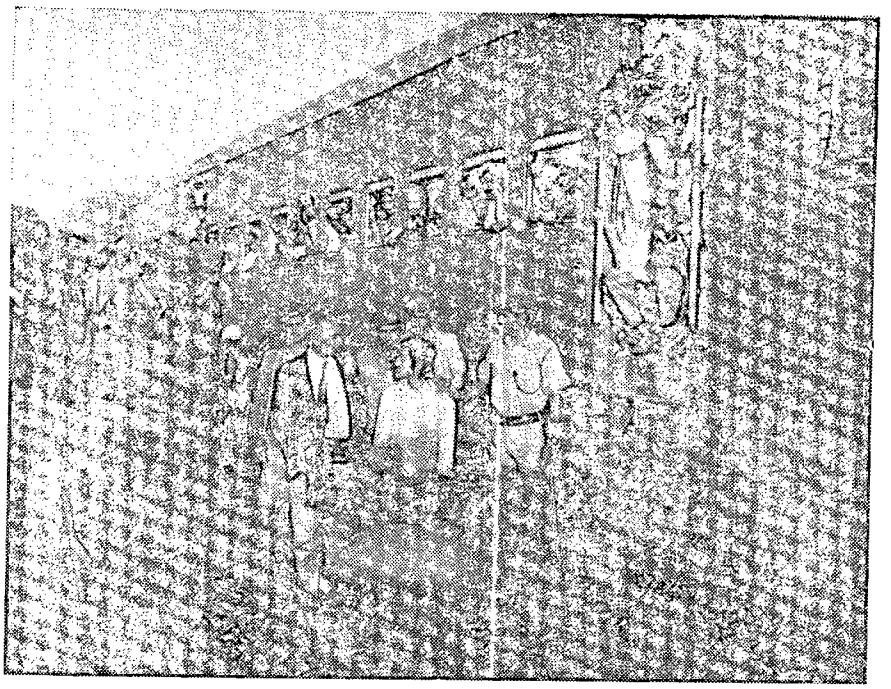
Research Centre and this is proposed to be installed in the Amsler Car.

The safety of the track is ensured through sophisticated instruments inasmuch as any internal fatigue or fracture in rails is detected with the help of ultrasonic flaw detectors. More than 6,000 km. have already been tested. The average output per machine per month is 30 km. on this railway, which is the highest for the Indian Railways. Eightyfive per cent of the components are being indigenously produced.

Points and crossings are reconditioned with modern methods. Gas welding *in situ* or electric welding in depots is being increasingly adopted. Nearly 4,000 points and crossings have been reconditioned so far. Tie tamping machines are used for mechanical maintenance of the railway track. These are self-propelled units capable of correcting alignment, cross levels and unevenness, as also packing of sleepers. Track geometry is relayed through infra-red rays from the measuring bogie to the panel in front of the operator. Just by pressing a butt on the operator can correct certain types of defects in the track. So far a little more than 4,000 km. of track have been tie-tamped. Plasser Quick Relaying System is used for relaying the track with concrete sleepers. On this zone 30 km. of track has been laid with concrete sleepers.

Elimination of noise, rather the cause of it, is sought to be achieved with new track welding methods. The Railway has now 745 km. of long welded and 3,400 km. of short-welded track. Being jointless the track does not reverberate with noise at joints, and has contributed to improved riding quality. A Flash Butt Welding Plant at Meerut established in 1970, has developed capacity for welding ten-rail panels, which is a special feature on this railway. During the last five years the plant has welded a little over 96,000 joints (940 km. of track). The Railway has carried out 6,000 km. of track renewals during the decade at a cost of nearly Rs 1400 million.

In the last decade the Northern Railway has added 318 route kilometres and 450 track kilomtres, taking the Railway's total route to 60,234 km. Kathua-Jammu rail link, Hindumalkote-Sriganganagar, Goods Avoiding Line in Delhi, and the Delhi Avoiding Line are some of the important lines opened during this period. The decade has culminated in the Northern Railway having the best track or Indian Railways over the Rajdhani route-Mughalsarai to New Delhi and set for maximum speed of 130 Kmph.



A raid in progress

More trains and faster ones are made possible with the adoption of diesel and electric traction. With an efficient and modern track suited for high speed trains, the fastest Rajdhani Express was introduced in March, 1969, between Delhi and Howrah, hauled by a powerful diesel locomotive. The train now runs at 130 km. per hour. This was followed by a similar Express train to Bombay. During the decade 46 passenger services including mail and express trains were dieselised.

Electric traction was first introduced on this Railway in 1965. It was a welcome augury for this sensitive region. The section between Mughal sarai and Allahabad was the first to be electrified. In the next phase, the section upto Kanpur came under electric traction. Then followed the electrification of Kanpur-Tundla, Tundla-Aligarh, and Aligarh-Khurja sections. Now almost all main and express trains are hauled by electric locomotives between Howrah and Tundla. Electric traction has in fact now been extended upto Harduaganj. Coal trains to this place are hauled by electric locomotives. So far nearly 700 km. of route have been put under electric traction (between Mughalsarai and Khurja).

Work on further electrification is progressing fast on the Khurja-Delhi route. Foundations have been completed upto Minto Bridge, masts have been erected upto Ghaziabad, and also up to Tilak Bridge in New Delhi area (between Ghaziabad and New Delhi via second Yamuna Bridge). The section between Khurja and Delhi (a length of 138 km.) is expected to be completed this year, but would reach Ghaziabad by the end of February 1976. With the completion of the work on this route, Howrah-Delhi will be the first of the important trunk lines to be brought on to electric traction, a total distance of 1,441 km.

Kanpur has an electric locomotive shed with a capacity for maintenance of 100 locomotives. Another shed, initially with a capacity for 50 locomotives, is coming up at Ghaziabad. In the next phase, Ghaziabad shed will be augmented to home 100 locos. The shed here will be commissioned this year.

As electrification is approaching Delhi, the possibility of running electric trains in and around Delhi area is a nearer vista. A survey is already in progress for the running of suburban services, by using the 12-foot-wide electric multiple units between Delhi and Aligarh. Similar surveys for other routes around Delhi are also contemplated.

Improvements in Signalling Methods

Modernisation of track and traction postulates fool-proof signalling mehtods and quicker communication channels. Since 1955-66, the standard of signalling has been improved. Multiple aspect signalling with colour lights have been commissioned at 104 stations. The conventional system with multi-cabins has been progressively replaced by a centralised system of signalling operation with in-built safety features. Route Relay interlocking panel has been intro-

duced to control operation of trains in Delhi and Ghaziabad yards. Four more major yards on this railway are planned to be provided with this system in the near future. Where traffic density is very high, automatic signalling has been introduced. So far, a total of about 40 km. have been covered on this zone.

The inter divisional and intra divisional communication has been effectively improved by the provision of microwave communication which covers a total of 1,779 route kilometres. Further 1,060 route km. have been planned for provision in the coming years. Single line sections which were predominantly using token instruments are now provided with tokenless block instruments. There are continuous track on 63 block sections. Forty more sections will be brought on to this system in the near future.

A special feature of operation on this railway is that nearly 50 per cent of goods movement are constituted by foodgrains. The green revolution gave a fillip to our loading performance. Prior to 1968, the average daily loading was 4,500 tonnes. In 1968, following bumper crops, we were called upon to move 20,000 tonnes per day. This immense challenge was met and successfully completed within three months. All the movement has been achieved by evolving suitable strategies, within the available resources, which included movement by block rakes, quicker loading and transhipment facilities, avoidance of short lead movement, and even loading in open wagon except during rains.

One of the significant methods adopted for improved through-put is marshalling on the trains which terminate in the marshalling yard nearest to the point of destination of the wagons, thereby eliminating detention to wagons *en route*. This method has been effectively used on the railway.

Wagon stock has been augmented. The zone has now a fleet of 74,500 wagons consisting of 4-wheelers and bogie stock in the ratio of 3:2. New types of wagons (BOX, BCX, CRT) have been pressed into service.

Commercial Strategy

The first marketing organisation came into being in 1967 on this railway. The organisation gave a new direction to the commercial strategy. The railway is run on commercial lines not, however, losing sight of its social obligations. The marketing strategy has been streamlined to make the railway revenue conscious and customer-oriented.

Analysing the economics of commodity earnings, the railways have laid stress on high-profit yielding commodities numbering 47 in all. These included fertilisers, sugar, oilseeds, iron & steel, mineral oils, cotton and cotton manufactured goods, to name a few.

It is a matter of gratification that the strategy has paid rich dividends. It has been possible for the railway to secure more traffic, drawing considerably from road haul in recent years. The high-yielding commodities have now received the merit of restriction-free booking. As a result, the loading figures of these commodities picked up to nearly 500,000 tonnes even by the end of four months following the emergency, as against about 370,000 tones in the previous year. Several commodities which used to be loaded largely on trucks are now carried by the railway. For instance, fertilisers from Nangal alone picked up revenue amounting to 50 per cent over the previous year's revenue.

Mineral oils (petroleum and petroleum products) provide another important stream of traffic for the railway. Prior to 1967 this railway loaded very little POL traffic. The loading of POL however commenced when Barauni-Subedarganj pipeline was extended to Panki near Kanpur in 1967. From an average of 20 to 50 wagons per day in the beginning, loading at Panki has been gradually going up. One hundred and forty tank wagons were loaded on an average per day in November 1975, an all-time record.

More Passenger Trains

In the last ten years a number of new train services have been introduced. The policy has been directed to link up the State capitals with the national capital and provide services to remote regions of the country. Punctuality of trains has improved from 87 per cent in 1965 to 97 per cent today.

Speed and higher capacity of passengers are ensured through dieselisation and augmentation of capacity of coaches. As many as 748 coaches on the broad gauge and 100 on the metre gauge were added to trains. A large number of Second Class Sleepers have also been provided. In 1966 there were 34 sleeper coaches on the broad gauge and 16 on the metre gauge. Today, we have 175 coaches on the broad gauge and 56 on the metre gauge. There were only 4 diesel hauled trains in 1966 on this railway. Today as many as 46 trains run on diesel traction against none in 1964.

In the last ten years 106 new trains on the broad gauge and 16 on the metre gauge were introduced. These included important services like Rajdhani Express, Jayanti Janata Express to Cochin/Mangalore and Samastipur, Tinsukhia Mail and Kashi Viswanath Express. For the commuters of Delhi a very important landmark was the introduction of the Parikrama Rail Seva in October, 1975. The train has become very popular in a short time. A newly designed rake with a pleasing colour scheme, a booking window inside the train, and a public address system for announcements and taped music and a running commentary of tourist, interest, is the gift of the new year.

Self-sufficiency

Technological advance has been the mainstay of the railways in striving for self-sufficiency. The railways have made the best possible efforts to utilise the infra-structure to the fullest extent. As diesel and electric traction has progressed, the demand for spares and components has increased. The Railway has either been taking to import substitution or encouraging indigenous manufactures to diversify their production. Despite many a hurdle, service level has improved from about 80 per cent in 1965 to nearly 97 per cent in 1975. This has resulted in cumulative saving over the last ten years, the maximum being Rs. 220 million in 1974-75. With the use of electronic data processing optimum inventories have become possible. The turn-over ratio is expected to go down further. With the introduction of codified numbers about 15,000 items have been eliminated from the stock.

Holes have been plugged in respect of leakage of revenue. Ambush raids on free trippers have yielded nearly Rs. 1.7 million in the first six months following the emergency. Theft and pilferage have come down sharply; compensation claims have been considerably minimised; discipline above all has become the hallmark in every activity of the railway.

Passenger Amenities

A number of passenger amenities have been provided at railway stations and on trains. During the last ten years, the number of electrified stations has been increased from 546 to 835. The level of illumination especially in the second class coaches has been improved and additional fans have been fitted in these coaches. Air-conditioned chair cars and sleeper coaches have been added on important routes. The newly introduced two-tier air-conditioned sleeping berths in mail or express trains are highly popular.

(*Continued on page 41*)

MANAGEMENT SCHOOL

SUBHASH J. RELE*

The Railway Staff College at Baroda was formerly the palace of the Gaekwads. *Right:* **A group division on management.**

IN the garden city of Baroda, in a sprawling lush green 20-hectare area adjoining the Bombay-Ahmedabad National Highway stands an awe-inspiring monumental structure which was once the palace of the famous Gaekwads, the rulers of the enlightened princely State. The tradition of imparting enlightenment continues today and in this fastest-growing industrial city, the structure houses the Railway Staff College. This metamorphosis took place in the year 1952 when the palace was converted into a transportation centre. Since then, it has never looked back. On the contrary, the College has earned superlatives even from International bodies like the Canadian International Development Agency in successfully meeting the training and development needs of the Indian Railways, particularly at a time of radical modernisation and technological advance. Noting the high quality of training provided, the international authorities have affirmed their conviction that this institution has the potential to develop within a few years into one of the outstanding transportation colleges in the world. A number of other distinguished foreign visitors have eulogised the work being done by this institution. Mr. W.J. Burnett of the Canadian High Commission who was in Baroda sometime back has called it "Hall of Academe". A delegation of high officials from Indonesia have expressed the view that they would like to send their railway officers to this college for training. This definitely is a high tribute paid to any management institute in the country.

Agent of change

After a visit to this college, I thought it a misnomer to call it a college or an institute. It is more than that. It is an agent of change. Over a steaming cup of tea, dynamic Principal S.R. Gokhale, Director of the College told me that the thrust of the effort made at this institute is to prepare 'adminocrats' for the Railways. He elaborated thus: "for our requirements what we need is neither a bureucrat, nor a technocrat, but one who combines the qualifications and attitudes of both."

Indian Railways are the nation's largest undertaking with an investment of Rs 46,000 million and a manpower of 1.4 million, engaged in the task of running more than 10,000 trains every day over 7,000 stations extending over a route-kilometerage of almost 60,000. The Railway Staff College plays a vital role in meeting the training needs of 8,000 officers who manage this vast Railway system.

Modest Start

Before Independence, the Railways in India were managed by different private British companies who depended on their homeland for recruitment and training of management and technical personnel. It is not, therefore, surprising that until 1925 there was no arrangement of formalised training for railway officers in India. It was only after the Acworth Committee Report of 1920-21 and the Lee Commission's recommendations of 1923-24 that the need for providing 'organised training to the railway officers in India was recognised and a Central School of Transport was opened at Chandausi in 1925 to train officers of the Transportation (Traffic) and Commercial Cadre. There was no arrangement for training technical personnel viz. Mechanical, Civil Engineers, etc. The need for a co-ordinated training programme for officers of all the departments finally led to a Railway Staff College being set up at Dehradun in 1930. However, this college was short-lived, falling victim to the shortage of railway finances during the great depression of the thirties. In 1937, the Wedgwood Committee considered the reopening of the College but the World War intervened and it was not until January 1952 that the Railway Staff College could be set up at its present site at Baroda.

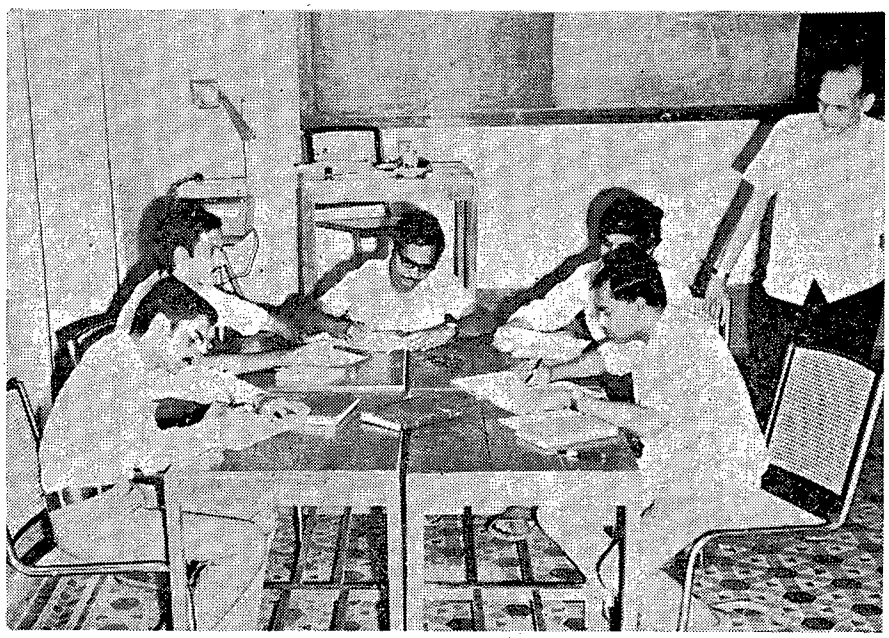
Starting modestly in 1952, with only 18 Probationary Officers, the College has steadily enlarged the number of participants, the scope of training and the number of courses, Today, the College trains about 130 officers at a time in various courses tailor-made to the requirements of different groups of officers. Since its inception, the College has trained more than 9,000 officers and its training facilities have also been made available to the Railways of other developing countries of Asia and Africa.

Special Courses

The College runs a wide range of courses for managers from the initial foundation training course for young recruits to seminars for

* Shri Rele is Editor, *Industrial Times*, Bombay.

FOR RAILWAYMEN



senior managers. It runs 12 types of regular courses tailored to the specific needs of officers of various disciplines in railway management. In addition to this, courses and seminars are organised almost throughout the year on particular aspects of railway management. A spokesman of the College remarked: "We do not waste our training capacity even by a single day." The College conducts special courses in such techniques as methods study, work measurement, linear programming, materials management and computer programming. While officers of the Indian Railways receive extensive on-the-job training in the field, they come to this college in spells of 8 to 12 weeks, during which they are provided with conceptual perspectives.

Quick Decisions

The courses held at the College are designed to cater for the need of the officers in both professional training as well as management development. It is obvious that requirements and qualities for developing managerial talent and techniques for the railways are different from the requirements and talents for developing other managers. Basically, the Railway Staff College tries to develop the capacity for quick decisions. The term "management training" is used to describe the process of individual officers learning specific techniques and professional skills whereas "management development" is used to describe the process of officers learning management concepts and practices and developing managerial skills and attitudes. Principal Gokhale explained to me that whereas a certain amount of management training is given as part of inservice professional training to all officers, special courses are held for senior officers, in-service (junior administrative grade and above), on management development.

Modern Concepts

The need for Management Development on the Indian Railways is self-evident, faced as we are with the gigantic task of management of 1.4 million employees spread over the length and breadth of the country. The role of the behavioural science in changing attitudes and motives of the managers, in increasing their interpersonal and intergroup competence and making them more responsive and appreciative to organisational problems is increasingly recognised.

The Management courses are conducted for administrative grade officers. The courses are attended by senior officers of various departments from the different railways. The participants are exposed to modern concepts of management theory and practice including, Decision-making, Communication, Leadership, Motivation, Behavioral Science, Management Information and Control Systems, etc. In these courses stress is laid on structured discussions rather than on formal lectures. This enables the rich and varied experiences of these senior officers being pooled, as it were, for the greater benefit of all the participants. Eminent managers from both private and public sectors are invited to address the participants and to initiate and guide discussions. Case Studies, Role Playing and Management Games are the main methods adopted for induction amongst the top executives.

Personal Involvement

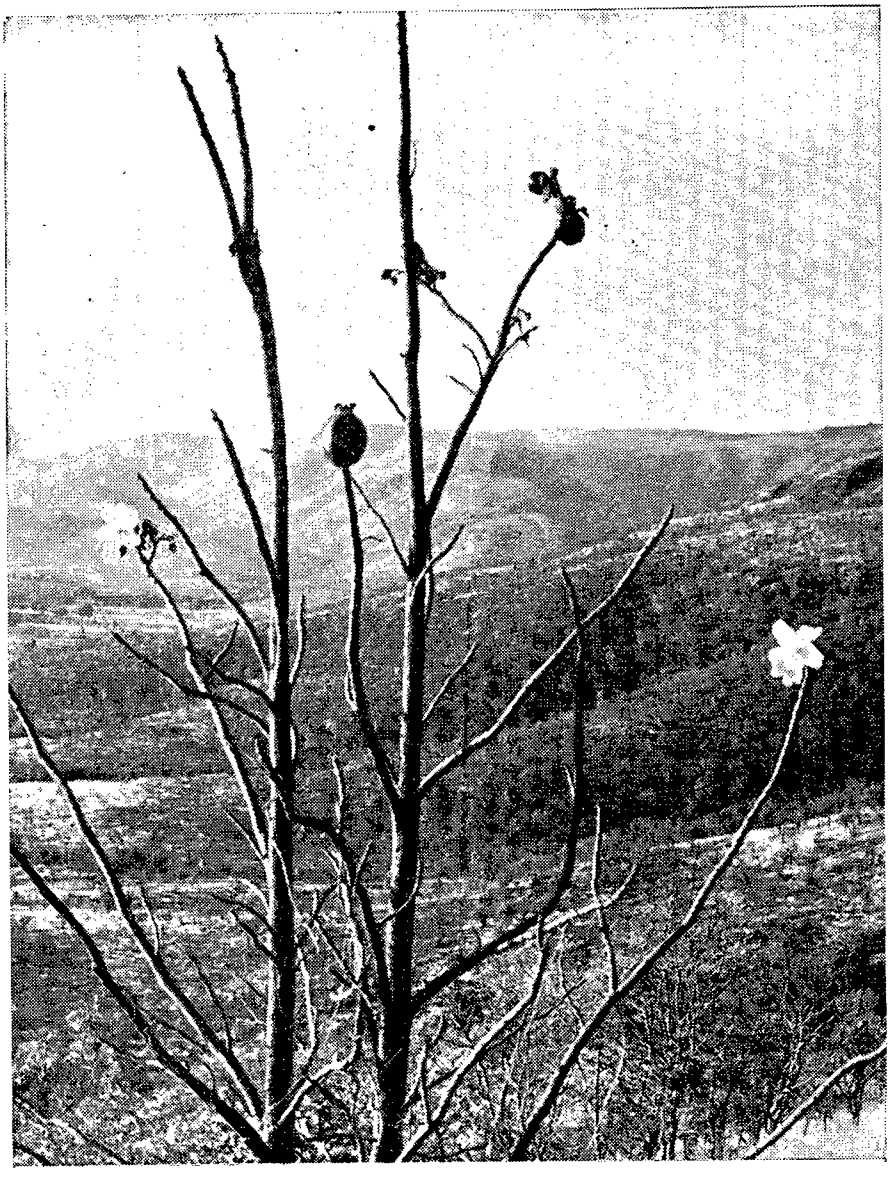
Visiting faculty from amongst university professors, institutes of management, management consultants, industrial managers of standing and specialists in scientific, technical and engineering fields, are frequently invited to speak on special subjects. Senior Railway officers who are specialised in their own areas are also invited to share their experiences with the trainee officers. The training strategy adopted depends upon the identification of training needs of the officers. Since trainee officers have varying backgrounds of education, experience and intelligence, the choice of training methodology is based on their individual and group training needs, emphasising their personal involvement in the learning process so as to draw out the best in them. Classroom lectures are extensively supplemented with exercises with simulated models, case studies, syndicate exercises, group discussions, role-playing, in-basket techniques, task models, incident methods and business games to help decision-making and improve the problem-solving competence of the training officers. Intensive use is also made of audio-visual aids such as slides and film strips. For an organisation that does not take any fresh entrants at intermediate levels of management because of the highly specialised nature of work, it is equally essential to be able to constantly review and update their knowledge to keep pace with the changing environment and development. The Railway Staff College does this on a consistent basis. □

you need

THE GREEN EARTH

By M. Krishnan

THE TORCH-WOOD IN SPRING



PHOTOGRAPH BY THE AUTHOR

WITH January, the cold-weather is over in the hill-dotted plains. The days are blazing hot and the nights heavy with dew, the trees shed their leaves and stand stark and bare and the grasses wither and turn brown, men set fire to the forests to clear the debris and stimulate fresh growth, and everywhere the lesser pools dry up and the dust rises thick from the parched earth. Spring has arrived with earliest summer.

There is a fervid unrest in the air, and in the deciduous forests the trees burst suddenly into bloom. Their flowering, and the magical appearance of shrill green leaf-buds on their dead-looking boughs, is a thing that has never failed to thrill me, though I know it will happen, and I cannot say which forest flower I like the best, for they are all lovely in their very different ways. But none of them has the sheer opulence in a setting of gloom and paucity of the yellow silk-cotton.

Cochlospermum religiosum, the yellow silk-cotton, is to be found in most dry, stony forests on the lower hills of the peninsula, and is associated with *Maha Sivaratri* and vernal festivals. It is a small, misshapen tree with no beauty of bole or bough, dark-barked and with contorted branches. About now it has shed its leaves and is naked, and the blunt twigs in which the branches end are almost a purplish black in colour, and look like gnarled fingers, blending with the fire-charred blackness of the hillsides with no greenery to relieve their sombre desolation. Then the dark-calyxed flower-buds appear on the twigs, and open out into great chalices of the purest gold, fully five inches across, and crowded with rich yellow stamens.

The contrast between the sheer opulence of the flowers and their charred, black setting is almost stunning. In due course the flowers give place to big, dark capsules, shaped somewhat like a pomegranate, and inside these are the seeds, covered in fine, silky floss. Somehow the silk-cotton of the tree is not much used, unlike that of the red and the white silk-cotton trees, for kapok or for stuffing pillows and mattresses. Gamble remarks that the wood is fibrous and light and "entirely valueless', but it is resinous, too, and in the old days was much in demand for torches. In those days torches were not electrical, but made of bright-burning splinters of wood, lashed together, and the traveller by night along jungle paths liked to carry a touch of yellow silk-cotton, for even the greenwood would burn because of its resin-content. That is why the tree is called, in some old books, the Indian torchwood tree. □

A TALE OF OUR TIMES

"ARE YOU a pot-bellied pain-in-the-neck?" Screamed the headline at Kamakshi. Beneath the bold typography was the picture of a girl, wondrously pot-bellied, fat oozing from every pore and a large tear about to drop from the tip of her nose.

Kamakshi sat up. The picture of the girl in the advertisement was a little too much like her own for comfort. The adipose tissue bulging from her midriff was occasion for sufficient pain for her, but it was the first time that someone had told her that it could be a pain-in-the-neck for someone else.

The joy that had come upon her on reading the advertisement in the previous page featuring a cherub enjoying a large bar of Badcurrie's Fine Starch chocolate quickly evaporated as she read the copy following closely the contour of the potbelly.

It declared that girls with such contours could not hope to get fine husbands, and if they already possessed such husbands, they were in grave danger of losing them. It then told Kamakshi in no uncertain language to go get a large can of 'Imlicol' and subsist on that till the husband made the scene, or came on on line, as the case could be.

True, Kamakshi pointed out to herself, her husband had a potbelly larger than her own. But men were notoriously blind to their own faults. What if he had started noticing her potbelly? For the past several years, he had stopped noticing anything about her, still, you could never trust these men....

Kamakshi decided to do something about it.

And the very next page of 'Femalia' offered her a more practical answer. Food fads, swore the copy, this time built around a broad sporting the narrowest of bras, didn't help any. What you needed was a spot reducer, guaranteed to milk you clean of all your unwanted fat. Plug it in for ten minutes every morning and you could fit yourself into the bra here illustrated at the end of the week. Money back guarantee. Fill the coupon below and send it off to Mister Gross Paprika, the friend of all unhappy girls. The postman would collect.

Fifteen days from now, Kamakshi reasoned with herself, was her birthday. Her husband could certainly be relied upon to forget the date unless reminded, but that was no reason why she should deprive herself of a nice present of her own liking. She had kept some money for buying herself a nice saree for the occasion. *That* could wait, Kamakshi told herself. She straightaway cut the coupon, filled it up with block lettering and posted it out to Mister Paprika according to his direction.

Came the birthday and the husband did the most unexpected thing. He drew out two crisp hundred rupee notes from his wallet, gave it to her with an affectionate smile, and told her to spend it as she liked....

Kamakshi was still considering the wonder of it when the postman knocked. But, instead of one package, he had *two* to deliver, both addressed to her. Had Mister

Ignoraman wants to know whether orthopedists can do something for the crippled jute mills.

Yojana Quiz

How much of the diversity of India do you know? The dozen questions below should provide the clue.

1. The capital of Himachal Pradesh is (a) Chandigarh, (b) Simla, (c) Kalka.
2. The capital of Haryana is (a) Rohtak, (b) Ambala, (c) Chandigarh.
3. The capital of Gujarat is (a) Baroda, (b) Ahmedabad, (c) Gandhinagar.
4. Which place receives the heaviest rainfall in the world? (a) Kerala, (b) Assam, (c) Meghalaya.
5. Which is the second largest river basin in India? (a) Brahmaputra, (b) Ganga, (c) Godavari.
6. Which State has the largest number of districts in India? (a) Madhya Pradesh, (b) Andhra Pradesh, (c) Uttar Pradesh.
7. Where is the Ukai multi-purpose project situated? (a) Maharashtra, (b) Gujarat, (c) Andhra Pradesh.
8. India's first nuclear power station is at (a) Kota, (b) Tarapur, (c) Kalpakaam.
9. Which is the only gold producing State of India? (a) Rajasthan, (b) Karnataka, (c) Bihar.
10. Nickel ore is found in (a) Burdwan district of West Bengal, (b) Cuttack district of Orissa, (c) Nilgiris district in Tamil Nadu.
11. The highest radio station in India is at (a) Leh, (b) Shillong, (c) Kohima.
12. India's national bird is (a) the Peacock, (b) the Mynah, (c) the Pigeon

ANSWERS: **1** *Simla.* **2** *Chandigarh.* **3** *Gandhinagar.* **4** *Cherapunji in Meghalaya.* **5** *Godavari.* **6** *Uttar Pradesh with 54 districts.* **7** *Across the Tapi river near the village Ukai in Gujarat.* **8** *Tarapur near Bombay in operation since October 1969.* **9** *Karnataka.* **10** *Cuttack district in Orissa.* **11** *Leh.* **12** *The peacock.*

Paprika made a mistake?

Her surprise at having to pay for two spot reducers was suddenly overcome with another thought: What if that husband of hers had ordered one for her without telling her? Had he given her that two hundred rupees in the morning to pay for his gift? It wasn't at all like him to be free with a hundred rupee note, least of all two of them. Her suspicions were right, he was after all taking notice of her fat, and the man was trying to be kind when giving her unkind hint....

Still, he had spared her a thought, kind or unkind.

Kamakshi decided to accept both the packages and return one to Mister Paprika with a claim for refund. Mister Paprika would certainly understand.

When the husband came home in the evening, Kamakshi was all smiles. Since there was that uncertain smirk on his face, she decided to waste no time in drawing him out:—

"I got that package you had ordered...."

"O, did you ? Silly of me to forget to tell you. Like it ?"

"How do I know ? You must open it and show it to me."

"That I will."

"But how did you know I wanted a spot reducer?"

"Spot reducer ?"

"Yes, isn't it ?"

"Well, No ! What is a spot reducer?"

"But I thought... Don't tell me it isn't a spot reducer!"

"I don't know if you can call it that. It is actually an electric machine. You plug it in and it starts...

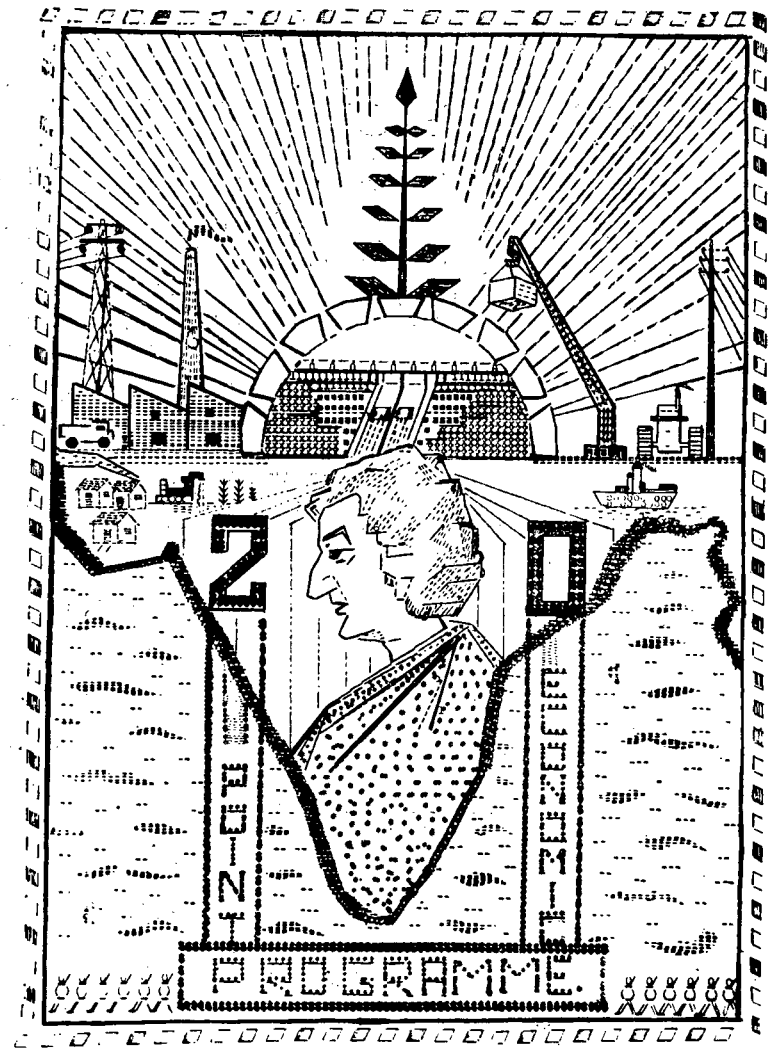
"Oh."

"Yes. And there is a suction pump and a hard brush..."

"What ?"

"Yes. I saw it at Batra's and decided to order one for you. It will save you a lot of work around the house, I'm sure. You see, it is a kind of mini vacuum cleaner.."

—Dadri



NOT in the same category as M.F. Husain's triology, "12 June 1975", "24 June 1975" and "26 June 1975" now adorning the first sheet of the GOI calendar this year, perhaps, but worthy of a close look, nevertheless, the picture above was done on a typewriter by Shri V.M. Pitre of Belgaum. We liked especially the smart little truck, upper left, and the twelve marching soldiers at the bottom. The serious critic may find things to say about their pot bellies, but their stance and posture must not go unremarked. The number of eyepopping hours Shri Pitre lavished on this work of painstaking tapmanship is not mentioned in the forwarding letter sent by the proprietors of Pankaj Prakashan, Belgaum, the publishers of 'Development Through Cooperation' edited by the typartist.

SHE SAVED THEIR LIVES

A young 19 year old woman in Gujarat has shown examplary courage when she saved the lives of twenty nine people single handed.

In the early weeks of October due to heavy rains many villages in Northern Gujarat were flooded. Village Fatehpur was surrounded by devastating flood waters of the Rupen river. The entire village was swept off. Only one pucca house and a school building were left standing. People in the village were cut off from the outside world and had to starve for three days. When waters receded about 50 villagers from a neighbouring village came to the rescue of the marooned people. The Fatehpur villagers decided to abadon the village. Since water was still flowing fast in some areas, the villagers chose a path from which waters had receded.

But this in itself was a grave mistake. A group of twentynine people got stuck in the soft mud formed when the waters receded. The more they tried to come out of the mud the deeper they went. With the result, most of them were struck thigh deep in the mud. They gave up efforts and had very little hope of coming out alive. Even the men in the village did not go to their rescue. A nineteen year old village woman Jaber, decided that it was high time something was done to avoid this tragedy. But nobody came forward to get trapped deliberately into a certain death. However, Jaber moved ahead and soon found herself stuck into the mud. By some intuition the girl lay down on her back and carefully took her legs out of the mud. Sliding on her back she reached the villagers and instructed them what to do and assisted them one by one to come out of the mud. She was the last to come out after everyone was saved.

When asked whether she did not fear danger to her own life while going to the rescue of others she said, "*the village people were to me like my parents; how can I standby and watch them meet their death helplessly?*" □

Cook Your Way To Better Health

CHHILKA SURPRISES

SHIRIN NIAZI has a few surprises with peelings (and not the variety you get when you step on them, either), of bananas, bitter gourds, orange, bottle gourd and mango in the January issue of 'Social Welfare'. Here they are for you to try out on the family and get some delighted "aah!"s and "OOH!"s:

Fried Banana Peel Curry

Roast over a mild fire chopped up banana peels, onion, garlic, green chillies, a dash of turmeric powder and salt to taste till the peels are brown.

Fry separately a routine curry paste till brown.

Add the roasted banana peels and other ingredients to the fried masala along with a cup of water. Mix well and cook for fifteen minutes.

When the appetizing smell spreads, the curry is ready, to be served with chapatis or rice. It is tasty and rich in protein.

Bitter Gourd Peel Curry

If you scrape off the skin from bitter gourds before cooking them, do not throw away the scrapings. Sprinkle salt over them and keep them aside for an hour or so, to remove some of the bitter taste.

Take some coconut gratings, half a teaspoon of turmeric powder, garlic, green chillies, four teaspoons of water and just enough salt to make up for any deficiency in the salted bitter gourd peelings.

Mix these ingredients thoroughly in the usual mix of curry spices with plenty of cooking oil.

Squeeze dry the bitter gourd peelings. Fry the curry, mix and add the peelings when the mix turns light brown. Mix thoroughly and cook over a mild fire for half an hour, stirring constantly.

Orange Peel Chutney

Chop orange peels into small pieces. Fry them in a little oil till brown.

Grind together with a little water some coconut gratings, half a teaspoon of mustard, green chillies, turmeric powder, salt, sugar and a little *dhania* (coriander) powder. Roast the mixture on a mild fire. Add fried orange peels and cook for another minute or so over a mild fire. Your delicious orange peel chutney is ready!

Bottle Gourd Raita

Boil the bottle gourd peels and mix with curds, sugar to taste, finely chopped green chillies and mint leaves.

Mango Peel Pudding

And now comes the most delicious dish of all.

Take the peelings of four large mangoes and chop them into pieces.

Boil half a litre of sweetened milk flavoured with cardamom, and cook the chopped mango peels in it.

Thicken according to your liking. Garnish with nuts before serving. □

Quotation Box

We should not aspire to live on charity.

—Nandini Satpathy

* * *

Democracy—particularly the parliamentary form of it—is not the quickest way to achieve economic development.

—B.K. Nehru

* * *

I get sound sleep in crises, I am not the sort to be intimidated by an ultimatum.

—Z.A. Bhutto

* * *

Politics is like boxing—you try to knock out your opponents.

—Idi Amin

* * *

Keep up rather than catch up.

—Air Chief Marshal O.P. Mehra's farewell message to IAF men.

* * *

Those who had denied the existence of god and turned iconoclasts had created 'new Gods' by erecting statues all over the State (Madras).

—T.A. Pai criticizing the emphasis on erection of Statues in Tamil Nadu

* * *

The Finance Minister does not wear a glorious crown.

—Yehoshua Rabinowitz
Minister for Finance, Israel

More Japanese women than ever are working in fields that range from physics to Zoology. Yet most women still wield their power in the home, following the ancient saying: A wise falcon hides its talons.

—Time

* * *

I am not a doctor but many people come to me every day seeking remedies for all manner of ills—not always of the body.

—Indira Gandhi

* * *

We don't have them (best sellers) in our country; nor do we have beauty contests—everybody is beautiful and so is every book.

—V. Slastenenko
Deputy Chariman of the Book Committee of the Soviet Union

* * *

We are the sixth largest book producers in the world. What we need to do is to inculcate the habit of reading.

—D.N. Malhotra
Managing Director, Hind Pocket Books & Technical Director of the Book Fair

In the days when Britannia really did rule the waves—a very short period of world history—the grandiose name of Great Britain sounded well enough, but our heads are no longer swollen enough for such a big hat to fit.

—The Economist, London

* * *

A safe guide to best sellers in India would be the best seller lists that appear in, say, Time magazine.

—Behram Contractor in Times of India

I have no questions on Angola. Angola is not my country.

—Leonid Brezhenev.

* * *

The shadow of the client-proprietors is perpetually hovering over the work rooms of all our news agencies.

—V.C. Shukla

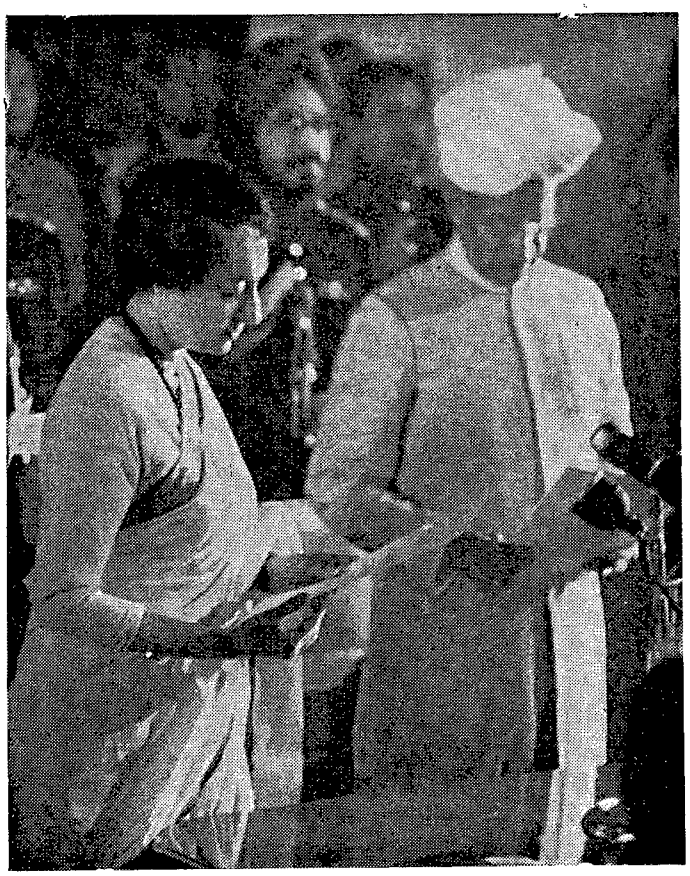
* * *

".....paper money and inflation were both invented in China. The first recorded instance of inflation....was during the thirteenth century when the Mongol emperor, Kubla Khan, was unable to pay his soldiers in coins, so used a wood printing block to produce military money. Unfortunately, so much was printed that it quickly became worthless."

—Arthur Hailey
in *The Money Changers*

A DECADE OF ACHIEVEMENTS

Chronology of Important Events



January 19, 1966:	Shrimati Gandhi is elected leader of the Congress Party in Parliament.
January 24, 1966 :	The new Council of Ministers headed by Smt. Indira Gandhi is sworn in by President Radhakrishnan.
January 26, 1966 :	In her first broadcast to the Nation, Shrimati Gandhi pledges herself to the ideals of democracy and secularism, to planned economic and social advance, and to peace and friendship among nations.
February 5, 1966 :	Prime Minister Indira Gandhi declares open Asia's longest bridge on the Sone named Jawahar Setu.
February 25, 1966 :	India and Pakistan withdraw troops from each other's territory in implementation of the Tashkent agreement
June 5, 1966 :	The Rupee is devalued involving a reduction in its external value by 36.5 per cent with the object of improving the economy of the country.
July 15, 1966:	First Super Bazar set up in New Delhi to make available to the people essential commodities at reasonable prices.
September 2, 1966:	Prime Minister announces removal of restrictions on the making of gold ornaments of more than 14-carat purity.
October 24, 1966 :	A Joint Communique issued at the end of the 'Summit' of Heads of Governments of Yugoslavia, UAR and India in New Delhi urges economic co-operation among the newly independent countries.
November 1, 1966 :	Formation of the states of Punjab and Haryana and the Union Territory of Chandigarh.
January 23, 1967 :	India's first graphite plant is commissioned at Durgapur.
February 15, 1967 :	India goes to the polls for the fourth time since Independence.
March 12, 1967 :	Shrimati Gandhi who is unanimously re-elected Leader of the Congress Party in

Parliament is asked by the President to form a new Government.

March 13, 1967 : New Cabinet headed by Shrimati Indira Gandhi is sworn in.

August 30, 1967 : First successful live television test by the newly-established experimental ground station of the Department of Atomic Energy at Ahmedabad.

September 30, 1967 : India's territorial water limit is extended from 6 to 12 nautical miles.

November 9, 1967 : Supreme Court upholds the President's powers to suspend the enforcement of fundamental rights during emergency.

November 20, 1967: First India-made sounding rocket, Rohini (RH-75) is launched from the Thumba Equatorial Rocket Launching Station near Trivandrum.

November 24, 1967 : Lok Sabha rejects the No-Confidence motion against the Government by 215 votes to 88.

December 22, 1967 : Parliament approves Official Language (Amendment) Bill providing for a three language formula.

January 9/10, 1968 : State of Emergency proclaimed, in the wake of Chinese aggression, in October 1962 is terminated.

February 1, 1968: Prime Minister inaugurates UNCTAD-III in New Delhi.

February 2, 1968: Prime Minister dedicates Thumba Rocket Launching Station near Trivandrum to the United Nations for International Cooperation in Space Study.

February 7, 1968: The National Inte ration Council is revived with the Prime Minister as Chairman.

February 16, 1968 : The country's first zinc smelter goes into production near Udaipur in Rajasthan.

March 20, 1968: Prime Minister declares in the Lok Sabha that India will not sign the nuclear non-proliferation treaty even if it should entail the stoppage of foreign aid.

June 8, 1968: First India-built in-shore mine sweeper, 'INS Bhatkal' is commissioned into the Indian Navy at the Naval Dockyard in Bombay.

July 5, 1968: Indian Navy's submarine wing comes into existence with the arrival of the first submarine from the USSR.

October 14, 1968: Prime Minister addresses U.N. General Assembly at New York.

October 23, 1968: Prime Minister launches the first India-built frigate 'Nilgiri' at the Mazagaon, Bombay.

November 10, 1968 : The Bailadila Iron Ore Mine, the largest mechanised iron ore mine in Asia, is inaugurated in Madhya Pradesh.

February 13, 1969 : Prime Minister Indira Gandhi reshuffles her Cabinet.

June 26, 1969 : India releases 16,000 tons of Pakistani cargo taken over during 1965 Indo-Pakistan conflict.

July 16, 1969 : Prime Minister takes over Finance portfolio from Morarji Desai; Desai resigns from Cabinet.

July 19, 1969 : Prime Minister announces its decision to nationalise fourteen major Indian banks in the country.

August 12, 1969 : Shrimati Gandhi demands freedom of vote for Party Members in Presidential election.

August 20, 1969 : V.V. Giri is elected President of India.

August 22, 1969 : Prime Minister presides over the first meeting of the National Committee for the 500th birth anniversary of Guru Nanak.

August 27, 1969 : The Atomic Energy Commission announces 10-year profile and plans to build one 400 to 500 megawatt fast breeder atomic reactor every year in the 1980's.

October 2, 1969 : Birth Centenary of Mahatma Gandhi celebrated.

October 26, 1969 : Smt. Indira Gandhi appointed as the first Chancellor of the Jawaharlal Nehru University.

November 14, 1969 : Prime Minister donates 'Anand Bhavan' at Allahabad to the Nation.

January 10, 1970 : Prime Minister formally dedicates to the nation the country's first nuclear power station at Tarapur in Bombay.

January 23, 1970 : Reservation for Scheduled Castes and Scheduled Tribes in Parliament and State Legislatures is extended for another ten years.

Mrs Gandhi Receiving the Bharat Ratna award from President V. V. Giri

February 8, 1970 : Prime Minister inaugurates the 140-ft. high Rana Pratap Sagar Dam in Rajasthan.

February 9, 1970 : Rs. 30-crore Urea fertilizer plant at Kota in Rajasthan is commissioned by Prime Minister.

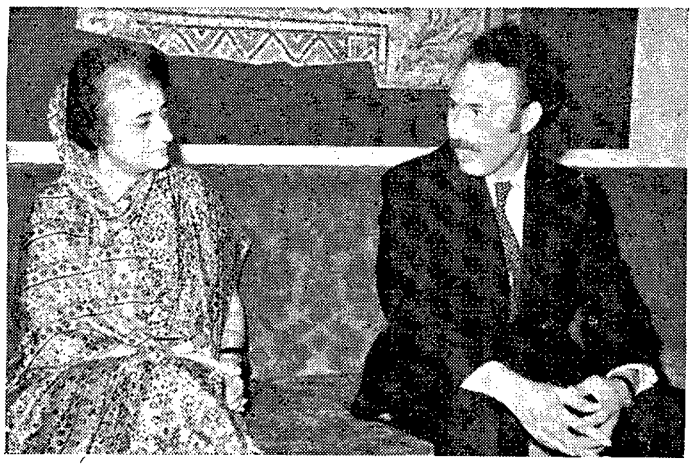
March 19, 1970 : Prime Minister inaugurates drilling of the country's first off-shore oil well in the Gulf of Cambay.

April 2, 1969 : Formation of Meghalaya, a new autonomous Hill State in Assam.

May 18, 1970 : Government fixes maximum selling prices of 17 essential drugs under Drugs (Prices Control) Order.

August 1, 1970 : Government sets up three-member Monopolies Commission.

Crowds greeting the PM after the Supreme Court judgment



The PM with President Boumedienne of Algeria

September 9, 1970 : Prime Minister attends Third Conference of Non-aligned countries at Lusaka.

October 19, 1970 : First India-made MIG aircraft is handed over to the Air Force.

October 23, 1970 : Prime Minister addresses Silver Jubilee session of the United Nations.

December 27, 1970 : President dissolves Lok Sabha and orders mid-term poll.

January 25, 1971 : Formation of Himachal Pradesh.

February 2, 1971 : India bans overflights of Pakistani aircraft across Indian territory following the blow ing-up of a hijacked Indian plane at Lahore.

February 18, 1971 : India established first satellite communication link via Arvi Earth Station.

March 1, 1971 : Polling in the fifth General Elections begins all over the country.

March 14, 1971 : Congress wins a landslide victory—350 seats out of 518 in the Fifth Lok Sabha.

March 18, 1971 : New Union Council of Ministers headed by Shrimati Indira Gandhi is sworn in.

March 31, 1971 : Both Houses of Parliament pass resolutions expressing solidarity with the people of East Bengal following the arrest of Sheikh Mujibur Rehman on 25 March and Pakistan's military breakdown in East Bengal.

April 28, 1971 : In three protest notes India advises the Government of Pakistan to ponder over the serious consequences of the continued provocative activity by the Pakistani Army along the Indian borders.

May 13, 1971 : 106 general insurance companies including 42 foreign companies are nationalised through the promulgation of the General Insurance (Emergency Provisions) ordinance.

June 25, 1971 : Leh Station of All India Radio, one of the highest in the world, is commissioned

The Indo-Bangladesh Treaty of Peace, Friendship and Cooperation

August 2, 1971 : Parliament approves the Medical Termination of Pregnancies Bill seeking liberalistion of the abortion law.

August 9, 1971 : India and Soviet Union sign 20-year Treaty of Peace, Friendship and Co-operation.

September 16, 1971 : 214 coking coal mines in Bihar and West Bengal are nationalised through the promulgation of an ordinance.

October 24, 1971 : Prime Minister Indira Gandhi leaves on a tour of five European countries and the U.S.A. to meet leaders of these countries, for an exchange of views on the reality of the situation created by the influx of about one crore Bangladesh refugees into India.

November 18, 1971 : Formation of India s second naval fleet 'Eastern Fleet', in Visakhapatnam is, announced.

November 21, 1971 : Three intruding Sabre jets of the Pakistani Air Force are shot down over Boyra near Calcutta by the Gnat Fighters of the Indian Air Force.

November 24, 1971 : About ten million refugees from Bangladesh have crossed into India since the Pakistan Army's crackdown in Bangladesh on March 25, 1971.

December 3, 1971 : A state of emergency is declared following Pakistanis' treacherous attack on Indian Air bases.

December 3/4, 1971 : Prime Minister broadcasts to the nation at midnight and says that Pakistan has declared a full-scale war against India and the war in Bangladesh had become a war on India.

President Tito, Prime Minister Mrs Gandhi and President Nasser

December 4, 1971 : Indian Forces enter East Bengal in support of the Mukti Bahini, the Bangladesh freedom fighters. It also establishes our supremacy in the air.

December 6, 1971 : India recognises the People s Republic of Bangladesh.

December 16, 1971 : The fourteen-day war culminates in the liberation of Bangladesh with the surrender in Dacca of Lt. Gen. A.A. K. Niazi along with about 93,000 Pakistani troops.

December 17, 1971 : Prime Minister's offer of ceasefire in the western sector accepted by Pakistan.

December 18, 1971 : Announcement of Bharat Ratna for Prime Minister which was conferreed on her on January 26, 1972. All-party MPs felicitate P.M. on the successful outcome of the conflict with Pakistan.

January 20, 1972 : Full-fledged State of Meghalaya and the New Union Territory of Arunachal Pradesh (formerly NEFA) are inaugurated.

January 21, 1972 : Formation of States of Manipur and Tripura and the Union Territory of Mizoram.

January 24, 1972 : Prime Minister releases the first volume of the selected works of Jawaharlal Nehru—a 20 volume series of Nehru's writings, speeches and correspondence.

March 5, 1972 : First round of General Elections to 16 State Assemblies and two Union Territories begin in the country.

March 18, 1972 : Prime Ministers of India and Bangladesh

Embedding a Time Capsule

sign a joint declaration in Dacca to safeguard peace, security and freedom and territorial integrity of the sub-continent through joint efforts and regular consultation.

March 19, 1972 : India and Bangladesh sign a 25-year treaty of Peace, Friendship and Co-operation.

April 29, 1972 : India and Bangladesh agree to share equitably the waters of all the rivers—Ganga Teesta, Brahmaputra.

May 22, 1972 : A zero energy fast reactor, the first of its type in the country goes into operation at BARC at Trombay.

May 27, 1972 : A 'Nehru Capsule' containing a chronicle in words and pictures of the Nehru era is buried in Shantivana in Delhi to mark the eighth anniverary of Jawaharlal Nehru's death.

June 2, 1972 : A Space Commission is set up on the pattern of Atomic Energy Commission.

June 14, 1972 : Prime Minister addresses the plenary session of the U.N. Conference on Human Environment at Stockholm.

July 3, 1972: At Simla, the Prime Minister, Shrimati Indira Gandhi signs an agreement with Pakistani President (later Prime Minister), Z.A. Bhutto to settle differences between the two countries peacefully through bilateral negotiations without resorting to force.

August 14-15, 1972 : The President and the Prime Minister address the mid-night session of Parliament marking the 25th anniversary of Independence.

October 3, 1972 : Prime Minister inaugurates first blast furnace complex at Bokaro.

October 8, 1972 : India recognises the German Democratic Republic.

December 20, 1972 : Indian and Pakistani troops complete withdrawal to their respective side of the international border.

January 17, 1973 : A Rs. 44-lakh lighthouse at Pygmalion Point in Nicobar Islands is inaugurated.

January 30, 1973 : A time capsule devoted to the life and work of Mahatama Gandhi embedded at Gandhi Smriti, New Delhi.

January 30, 1973 : Governement takes over the management of 464 non-coking coal mines.

February 5, 1973 : Prime Minister is awarded with FAO medal of honour.

April 24, 1973 : Supreme Court upholds the Parliament's right to amend the Constitution including fundamental rights, but not the basic structure of framework of the Constitution.

January 28, 1974 : India and Sri Lanka reach an agreement on the future of 1,50,000 stateless persons of Indian origin not covered by the 1964 Shastri-Sirimavo Pact. The agreement stipulates conferment of citizenship on 75,000 persons by India and another 75,000 by Sri Lanka.

February 2, 1974 : Sagar Samrat, India's first offshore mobile drilling platform, spuds the first oil well in Bombay High Structure.

April 1, 1974 : The Fifth Five Year Plan is launched with the two major objectives of removal of poverty and attainment of self-reliance.

April 9, 1974 : Foreign Ministers of India, Pakistan and Bangladesh sign in New Delhi an accord to clear the way for the normalisation of relations among the three countries and the establishment of a durable peace in the sub-continent.

April 30, 1974 : India completes repatriation of about 93,000 Pakistani prisoners of war and civilian internees.

May 16, 1974 : India and Bangladesh reach an agreement on border demarcation between the two countries.

May 18, 1974 : India conducts an underground nuclear experiment for peaceful purposes at Okharan in Rajasthan.

June 26, 1974: Indias biggest thermal power station at Koradi near Nagpur starts generating power.

August 8, 1974 : India and Indonesia reach an agreement delimiting the maritime boundary between the southernmost island of the Nicobar group and Indonesia's northern-most We Island.

September 21, 1974 : An ordinance is promulgated for the take over of 103 sick textile mills.

October 15, 1974 : Indo-Pakistan telecommunication links restored.

October 15, 1974 : India lifts the 14-year old ban on travel to Portugal.

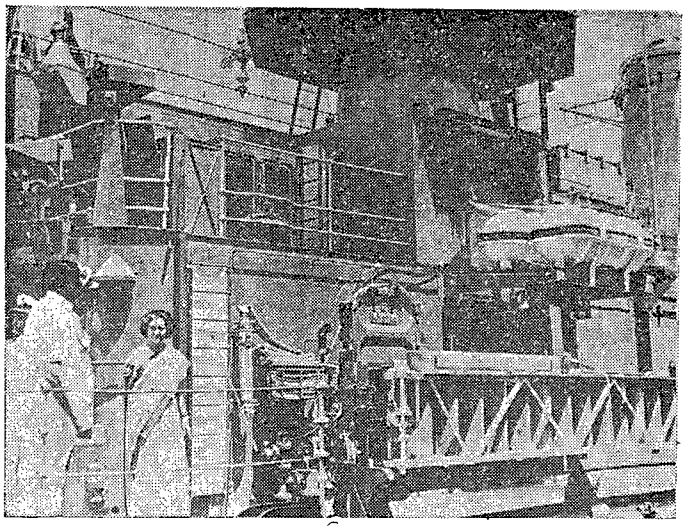
December 7, 1974 : The nine-year old embargo on trade between India and Pakistan ends under the agreement signed by the two countires on November 30, 1974.

December 31, 1974 : India and Portugal re-establish diplomatic relations.

The Non-aligned Conference at Algiers

1975—A DETAILED CHRONOLOGY

January **1** India lifts embargo on trade with Portugal.
3 Union Railway Minister Shri L. N. Mishra succumbs to his injuries sustained in a bomb explosion at Samastipur on January 2.
India and the United Arab Emirates agree to establish a joint commission on economic, technical and cultural cooperation.
4 Shri P.N. Haksar takes over as Deputy Chairman of the Planning Commission.
9 India and Mauritius sign an agreement under which



The INS Nilgiri

Mauritius will receive a Rs. 5 crore loan and a Rs. 10 crore trade credit.
11 Oil struck in the third well at Bombay High.
The Prime Minister inaugurates the all-weather new Mangalore port.
12 Smt Indira Gandhi arrives in Maldives.
The fifth International Film Festival concludes in New Delhi.
13 An oil industry development board is set up.
15 Tanzanian Prime Minister arrives in New Delhi.
The Statesman celebrates its centenary.
India and Pakistan sign a protocol in New Delhi for the resumption of direct shipping services.
17 India and Tanzania agree to set up a ministerial level joint commission for economic, technical and scientific cooperation.
India's first micro-computer launched in New Delhi.
18 Prime Minister Indira Gandhi arrives in Baghdad on a three-day visit to Iraq.
19 A strong earthquake in Himachal Pradesh causes loss of life and damage to propoerty.
23 India and Pakistan sign in Islamabad a one-year trade pact.
25 President Kenneth Kaunda of Zambia, receives the Jawaharlal Nehru Award for promotion of peace and international understanding for 1970.
26 India and Zambia sign three agreements on economic and technical cooperation.

February **2** The 1974 Borlaug Award for outstanding work in agriculture awarded to Dr S.V.S. Sastry, project coordinator of the all-India coordinated rice improvement project.
5 Prime Minister Indira Gandhi commissions the 31,000-tonne smelter at the Khetri copper complex.
7 The third Triennale India opens in New Delhi.
10 The former President V.V. Giri conferred 'Bharat Ratna.
12 India and Yugoslavia sign in New Delhi a five-year agreement on scientific and technological cooperation.
15 Direct Indo-Pak shipping links restored.
18 India and the Soviet Union sign in New Delhi a five-year agreement for cooperation in the scientific field.
21 Shankarrao Chavan forms a new Maharashtra state ministry in Bombay.
25 A new Jammu and Kashmir ministry headed by Sheikh Abdullah sworn in at Jammu.
26 India and Australia sign in New Delhi a five-year agreement on scientific and technological cooperation.
28 India and Sri Lanka sign in New Delhi a five-year agreement on science and technology cooperation.

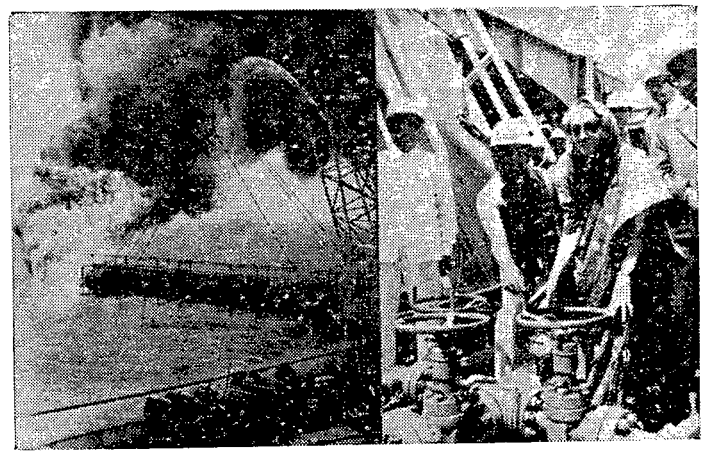
March **1** Sikkim becomes an associate state of the Indian Union.
India and Iraq sign in New Delhi a collaboration agreement covering petroleum research.
5 India and France sign an agreement in New Delhi on cooperation in off-shore drilling for oil, power generation and transmission.
6 Jayaprakash Narayan leads a rally in New Delhi to present a charter of demands to Speaker of Lok Sabha and Chairman of Rajya Sabha.
7 Report of the Fact Finding Committee on Newspaper Economics presented to Parliament.
Sir Kamisese Mara, Prime Minister of Fiji, arrives in New Delhi.
10 Naga National Organisation ministry headed by John Bosco Jasokia sworn in at Kohima.
Mohammed Daud, President of Afghanistan, arrives in New Delhi.
11 President's Rule extended by six months in Gujarat.
13 Parliament approves the Kashmir accord between the Centre and Sheikh Abdullah.
India wins the third World Cup Hockey defeating Pakistan at Kualalumpur.
19 India and Soviet Union sign in New Delhi a working programme for applied science and technology for 1975-80.
20 A Rs. 20-crore rocket propellents and ballistics project at the Bhandara Ordnance Factory inaugurated.
22 President's rule proclaimed in Nagaland.
23 BHEL makes the 236 mw steam turbine, the biggest in the country so far, for the Kalpakkam nuclear power station.
31 The fourth and fifth units of the Chandrapur Thermal power house under the DVC commissioned. This raises its total installed capacity to 660 mw, the highest in India.

April **1** India accords full diplomatic recognition to Prince Sihanouk's government in Cambodia.

4 The Indian Register of Shipping inaugurated at Bombay.
7 Morarji Desai begins an indefinite fast in New Delhi demanding early elections to the Gujarat Assembly.
Abdul Ghafoor resigns as Bihar Chief Minister.
10 Sikkim Assembly resolves to abolish the institution of Chogyal and seeks the status of a constituent state of the Indian Union.
Prime Minister Indira Gandhi inaugurates trial production of crude oil at the fourth well in Bombay High.
11 Dr Jagannath Mishra forms a new ministry in Bihar.
12 The first World Telugu Conference opens at Hyderabad.
13 Prime Minister announces the government's decision to hold Gujarat Assembly elections early in June.
Morarji Desai ends his fast.
Foundation-stone of the Rs. 25 crore automobile tyre and tube project laid at Chalakudy.
15 In a special poll held on 14 April the Sikkimese vote overwhelmingly in favour of abolition of the institution of Chogyal and becoming a state of the Indian Union.
The first general cargo berth at Paradip port formally opened.
17 Dr. Sarvepalli Radhakrishnan, former President of India, passes away.
Khandubhai Desai, labour leader and former Governor of Andhra Pradesh, dies in Ahmedabad.
19 'Aryabhata', the first Indian satellite launched from the Soviet Union.
22 India takes over the control of 'Aryabhata'.
23 India and the Soviet Union sign in Moscow an agreement for the second stage of space cooperation.
24 The 2,500th anniversary of Lord Mahavira's nirvana.
26 Sikkim becomes a full-fledged state of the Indian Union with the passage of the Constitution (36th amendment) Bill by Parliament and President's assent to it.
Liner service between India and Mauritius inaugurated at Bombay.
28 Prime Minister Indira Gandhi arrives in Kingston, Jamaica, to attend the Commonwealth Prime Ministers' Conference.
30 India accords full diplomatic recognition to the provisional revolutionary government of South Vietnam.

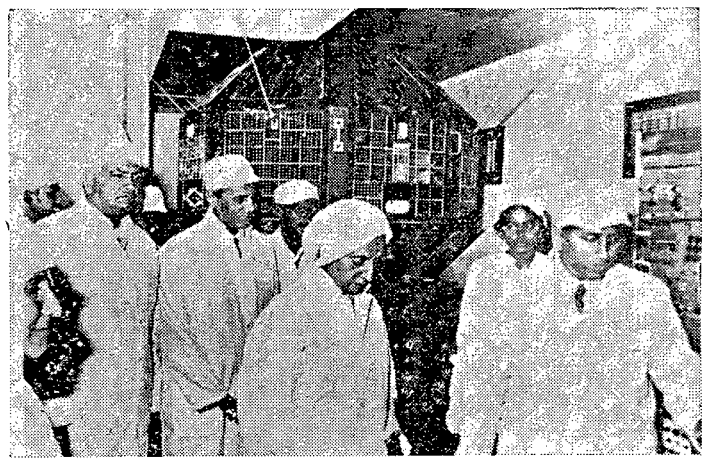
May
1 Commercial broadcasting services from Bhopal, Cuttack, Indore, Jaipur, Jodhpur, Patna and Trivandrum begin.
2 Kumari Padmaja Naidu, former Governor of West Bengal, passes away.
4 The second oil jetty at Kandla port commissioned.
5 State Bank of India's first branch in Bangladesh opened at Dacca.
6 Peter Alvares, trade union leader, dies at Chinchwad near Poona.
9 India's first electric typewriter released by the Hindustan Teleprinters Ltd., a public sector undertaking.
16 B.B. Lal sworn in as Sikkim's first Governor.
A six-member ministry with Kazi Lhendup Dorji as Chief Minister is sworn in at Gangtok.
19 The first public sector aluminium smelter at Korba in Madhya Pradesh starts producing ingots.
20 Nagaland State Assembly dissolved.
23 Vice President B.D. Jatti arrives in Dar-es-Salaam, Tanzania on a seven-day official visit.
24 The first public sector rubber processing plant opened at Vettilappara in Kerala.
26 President Fakhruddin Ali Ahmed arrives in Jakarta on a five-day state visit to Indonesia.

June
1 Gen. T.N. Raina takes over as Army Chief of Staff.
2 India's first sponge iron plant with a capacity of 100 tonnes a day inaugurated at Vijayawada.
4 India and Portugal sign in Lisbon a treaty to recognise India' sovereignty over the former Portuguese enclaves.
India and Soviet Union exchange letters in New Delhi for cooperation in the Calcutta tube railway project.
8 Elections to the Gujarat Assembly begin.
10 Foundation-stone of the public sector Kerala newsprint factory laid at Velloor.
11 Polling in Gujarat concludes.
12 Justice Jagmohanlal Sinha of the Allahabad High Court delivers judgment on the election petition filed by Shri Raj Narain in April 1971; sets aside the election of Smt Indira Gandhi, grants absolute stay of operation of the judgment for 20 days.
D.P. Dhar, Ambassador to Soviet Union passes away.
13 Leaders of non-CPI opposition parties begin a dharna in front of Rashtrapati Bhavan.
In Gujarat Janata Front wins 86 seats, Congress 75, Kisan Mazdoor Lok Paksha 12 and Independents 8.
18 Congress Parliamentary Party unanimously expresses its faith and confidence in Smt Indira Gandhi and says that her leadership as Prime Minister is indispensable for the nation.
President's rule revoked in Gujarat; Babubhai Jashbhai Patel of the Janata Front is sworn in as Chief Minister.
19 17 ministers of cabinet rank of Gujarat's Janata Front ministry sworn in at Ahmedabad.
20 Prime Minister Indira Gandhi files application in the Supreme Court seeking absolute and unconditional stay of the operation of the Allahabad High Court



Oil at Bombay High

verdict of June 12, 1975 pending final disposal of her appeal.
Smt Indira Gandhi addresses a mass rally in New Delhi.
24 The Supreme Court grants Mrs Gandhi stay of operation of Allahabad High Court judgment and declares she can continue as Prime Minister and take part in any proceedings of Parliament without the right to vote pending disposal of her appeal by the Court. The stay order preserves her position as



India's own satellite, Aryabhata

Member of Parliament and does not adversely affect her position as Prime Minister.
25 Non-CPI opposition parties led by Jayaprakash Narayan announce a programme of countrywide agitation to force the Prime Minister to resign.
25 The President declares a state of grave emergency due to existence of a threat to the security of India from internal disturbances.
26 The Prime Minister says in a broadcast to the nation that the actions of a few are endangering the rights of the vast majority and that the country's integrity

demands firm action.
Preventive arrests made at various places.

28 The first phase of the Rajasthan Canal project completed.

29 The President issues an ordinance amending the Maintenance of Internal Security (Amendment) Act under which no grounds need be given for detention.

July **1** Prime Minister Indira Gandhi in a broadcast to the nation announces a package of economic measures the 20-point economic programme.
Special deposit scheme for industrial and other workers with tax-free interest at 10 per cent per annum comes into force.
Ordinance issued amending the Conservation of Foreign Exchange and Prevention of Smuggling Activities Act to lay down that persons detained under the Act need not be given grounds for detention and that such detentions need not be referred to any advisory board during the emergency.

Offshore spudding at Bhavnagar

4 The government bans 26 organisations and groups including RSS, Jamaat-e-Islami-e-Hind, Anand Marg and Naxalite groups.
Sheikh Abdullah and Mirza Afzal Beg elected to the Jammu and Kashmir assembly.
India signs agreement for establishing the Association of Iron Ore Exporting Countries.
Ragging in colleges all over the country prohibited.

6 Acharya Vinoba Bhave describes emergency as an era of discipline.

9 Special income-tax squads appointed in four major cities to investigate investment of blackmoney in luxury houses.

15 Arthur Chung, President of Guyana, arrives on a ten-day visit in New Delhi.

16 MISA further amended under an ordinance which says that no person, not excluding foreigners detained under the Act can claim a right to personal liberty by virtue of natural or common law.

19 India and Libya sign in Tripoli an oil agreement for technical cooperation, exchange of expertise and mutual help in carrying out development projects in the two countries.

21 Monsoon session of Parliament begins.
Luis Echeverria Alvarez, President of Mexico, arrives in New Delhi.

22 Rajya Sabha approves proclamation of internal emergency.

23 Lok Sabha approves proclamation of internal emergency.
India and Mexico sign agreements on scientific and cultural cooperation.
P. Kodanda Rao, educationist, author and social worker, dies in Bangalore.
A five-member all Congress ministry headed by Rajkumar Dorendra Singh sworn in at Imphal.

29 India recognises the Government of Comoro Islands.

30 Parliament passes Taxation Laws (Amendment) Bill making various direct taxation acts more stringent.

31 The President gives assent to the Finance (Amendment) Act raising income-tax exemption limit from Rs. 6,000 to Rs. 8,000.

August **1** Prime Minister Indira Gandhi inaugurates Satellite Instructional Television Experiment (SITE) programme.
The President gives assent to the Constitution (38th Amendment) Act 1975 making President's power to declare emergency and to promulgate ordinances non-justiciable.
The President gives assent to the Conservation of Foreign Exchange and Prevention of Smuggling Activities (Amendment) Act 1975 making it operative from 1 July 1975.

5 The President gives assent to the Maintenance of Internal Security (Amendment) Act 1975 making Section 7 of the Act operative from 25 June and the remaining provisions of the Act from 29 June 1975.

6 The President gives assent to the Election Laws (Amendment) Bill to provide, among other things, that a person would not be deemed to be a candidate only from the date of filing nomination papers.
The five-member Indo-German Indus boat expedition from Leh to Khalsi achieves success.

7 Lok Sabha adjourns sine die.

8 India and Sri Lanka sign in New Delhi an agreement under which India will advance loan of Rs 10 crore to set up a fertilizer plant in Sri Lanka.

9 Rajya Sabha adjourns sine die.
Calcutta TV centre inaugurated.

10 The President gives assent to the Constitution (39th Amendment) Act empowering Parliament to set up a new forum for resolving disputes relating to elections of President, Vice President, Prime Minister and Speaker.

13 James Mancham, Chief Minister of Seychelles Islands, arrives in New Delhi.
Union Cabinet adopts the ILO convention granting equal pay for equal work for men and women.

15 Prime Minister addresses the nation from the ramparts of Red Fort in Delhi.
In Arunachal Pradesh, the Legislative Assembly is inaugurated; new Council of Ministers sworn in.
Madras TV centre inaugurated.

23 India extends to Nepal standby credit facility of Rs 10 crore.
Five additional instalments of DA for Central employees announced.
The noted Hindustani musician Vinayakrao Patwardhan dies in Poona.

25 Hearing of Prime Minister's election case appeal begins in the Supreme Court.
Patna hit by worst floods in living memory.

27 India and Peru sign in Lima an agreement for scientific and technological cooperation.
The second unit of the Santalidih thermal power station in West Bengal is commissioned.

September **3** West Bengal issues an ordinance for total debt relief to landless labourers and the poorest sections of peasantry.

5 Appointment of sole selling agents for sugar and vanaspati by any company banned for five years.

6 Meghalaya government fixes minimum wages of agricultural workers.

8 President Fakhruddin Ali Ahmed opens the International Telugu Institute at Hyderabad.

9 The President promulgates an ordinance to amend the Income Tax Act and abolishes the ceiling on amount of donations to the Prime Minister's National Relief Fund and other charities, qualifying for tax relief.

10 King of Bhutan arrives in New Delhi.
Rajasthan promulgates an ordinance making bonded labour a cognisable and non-bailable offence.

11 India and Hungary sign a protocol on economic, scientific and technical cooperation.

13 In an ordinance Andhra Pradesh amends the land acquisition act to speed up acquisition and to enable the government to provide more house sites to the poor.
The Indian Space Research Organisation and the Soviet Academy of Sciences sign an agreement to launch a second satellite from a Soviet cosmodrome sometime in 1977-78.

14 Vijay Amrithraj wins the men's single title in the Charlottee Tennis Tournament in USA.

15 India and Hungary sign in Budapest two protocols for increased cooperation in agriculture and water management.

16 India recognises the new independent state of Papua, New Guinea.

17 The third and the last unit of the Obra thermal station extension stage-I in Mirzapur district of Uttar Pradesh commissioned.

18 The Company Law Board prohibits appointment of sole selling agents for cement and paper for 5 years. Certain industries for which necessary machinery and raw materials are locally available have been de-licensed.
Bihar decides to give representation to workers in the boards of directors of state public sector units.
The government announces drastic cut in the excise duty on naphtha used in manufacture of industrial ammonia and menthol.

19 Coal India Ltd., is formed as a holding company to manage the nationalised coal industry.
The second unit of the Guru Nanak thermal plant at Bhatinda inaugurated.

21 The first oil well spudded in the Bengal basin.

22 S.K. Rai elected to Lok Sabha as Sikkim's representative.
Vijay and Anand Amrithraj win the doubles crown at the Pacific South Western Tennis championship.

24 The link between the rupee and the pound sterling is snapped.
Centre formulates a Rs 25 crore scheme to assist landless labourers and scheduled castes and tribes benefiting from land reforms in the cultivation of their lands.

Children's Art Exhibition

India and the Soviet Union sign in Moscow, contracts for the supply of equipment for the Mathura refinery.

25 Ordinance issued reducing the minimum bonus of workers to 4 per cent and define the concept of bonus as being payable in future only on the basis of profits, production and productivity. No bonus will be paid if there is no surplus at all.

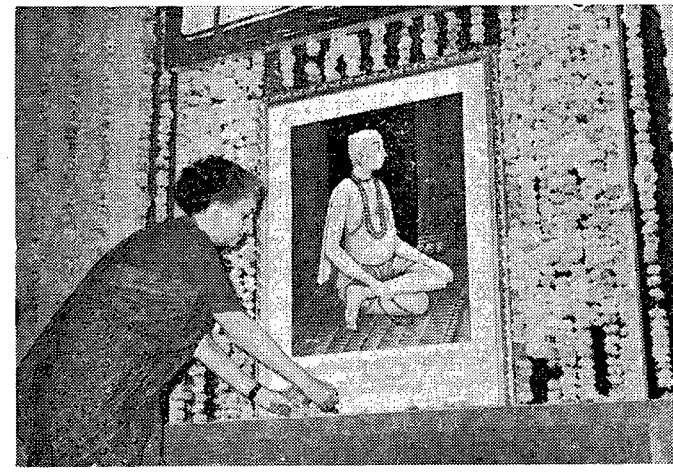
26 Three ordinances are issued: (*i*) to ensure equal wages to men and women for the work, (*ii*) to establish rural banks in the country for meeting credit needs of farmers and (*iii*) to promote speedier movement of public carriers through grant of national permits.
A direct satellite telephone link established between India and the Soviet Union.
President Fakhruddin Ali Ahmed arrives in Budapest on a four-day state visit to Hungary.
Rohini-300, the single stage sounding rocket developed at the Vikram Sarabhai Space Centre, Trivandrum, is successfully flight-tested from Thumba.

27 Prof. T.R. Seshadri, FRS, the noted scientist, dies in New Delhi.

28 President's rule in Pondicherry extended by six months.
Film director B.N. Reddi selected for 1975 Dadasaheb Phalke award.

29 Government decides to maintain status quo in procurement prices of paddy and coarse grain.

30 King Birendra of Nepal arrives in New Delhi for a one-day visit.
President Fakhruddin Ali Ahmed arrives in Yugoslavia on a five-day official visit.
A postal bank patterned on commercial banks opens in New Delhi.



Ramcharitmanas 400th Anniversary

Solomon Tahering elected to Rajya Sabha from Sikkim.

October 2 Five regional rural banks opened in U.P., Haryana, Rajasthan and West Bengal.
A 12-point minimum programme to prepare ground for total prohibition in the country announced.
Madhya Pradesh government issues an ordinance banning bonded labour.
K. Kamaraj, former president of the Congress, passes away in Madras.

3 An ordinance empowers railway authorities to dispose of by auction such consignments as are not removed by the consignees within seven days of termination of transit.

4 The Kerala Governor inaugurates the trial run of first generator of the Rs. 110-crore Idikki hydel project.

6 Chief Ministers of Maharashtra and Andhra Pradesh sign agreement on the sharing of the waters of the Godavari.
The second meeting of the Indo-US joint commission convened in Washington.

7 India and the US agree in Washington on a wide ranging programme for economic, scientific and cultural cooperation.
The noted Kannada author, D.V. Gundappa dies in Bangalore.

10 Oil is struck in the very first well drilled in the Bay of Bengal, east of Balasore in Orissa.
Satyajit Ray chosen as the most distinguished international film director of the last half-century by the British Federation of Film Societies.
The third watch production unit of the HMT formally inaugurated at Zainakoot near Srinagar.

14 Dzemal Bijedic, Prime Minister of Yugoslavia, arrives in New Delhi.

15 About 4 lakh women in the plantation industry start getting wages equal to men.

17 The Maintenance of Internal Security Act amended by an ordinance forbidding disclosure of the grounds of detention or material or information on which such grounds are framed.

20 Four members of an Indian border patrol killed in an ambush by Chinese soldiers well within Indian territory.
Karnataka government abolishes bonded labour.

23 A government notification makes it more difficult for

arrested smugglers to secure release on bail.

24 A Presidential ordinance declares bonded labour illegal with immediate effect

25 The government delicenses 21 industries in the medium sector and permits them to produce as much as possible from existing units regardless of their licensed capacity.

26 Oil has been struck in a well at Kharsangh in Arunachal.

28 21st Commonwealth Parliamentary Conference inaugurated by the President.

30 The government announces a scheme of workers participation at shop-floor level and factory level in manufacturing and mining industries in the public, private and cooperative sectors.

31 Sardar Vallabhbhai Patel's birth centenary celebrated.
Sachin Dev Burman, film music director, passes away in Bombay.

November 1 India and Afghanistan sign in Kabul an economic agreement under which India will assist Afghanistan in several fields of development.

4 Imposition of heavy penalties for misuse of import and export licenses, under an ordinance.

5 Another ordinance issued for the confiscation of illegally acquired property of smugglers, foreign exchange manipulators and their friends and associates.

7 The Supreme Court unanimously upholds the election of Smt Indira Gandhi to the Lok Sabha from the Rae Bareli constituency in 1971, and sets aside the judgment of the Allahabad High Court.

11 Accord on basic issues of the Naga problem reached between the union government and the underground Naga representatives.
The Medical Council of India announces derecognition of all British medical qualifications after March 1977.

12 Jayaprakash Narayan released on parole.

14 Dr Raul Prebisch, the Argentine economist, given the 1974 Jawaharlal Nehru Award for promotion of peace and international understanding.

16 The Maintenance of Internal Security (4th Amendment) Ordinance issued providing for another detention order against the same person even after expiry or revocation of a detention order.
The fourth International Training and Development Conference inaugurated in NewDelhi by the President.

19 Prime Minister Indira Gandhi lays the foundation-stone of a hospital at Singhtham, near Gangtok.
The first National Women's Sports Festival begins in New Delhi.
Mizo rebels numbering 101 surrender to the Lt Governor of Mizoram at Aizawl.

20 India and the Soviet Union sign a protocol in Bangalore on the launching of the second Indian satellite from Soviet Union in 1978.
Prime Minister addresses a huge public rally in Gangtok.

23 Vijay Amrithraj wins the Indian Grand Prix Tennis championship at Calcutta defeating Manuel Orantes of Spain.

25 The government announces major concessions for new sugar mills and for expansion of existing factories.

26 Attempt on the life of the Indian High Commissiner in Bangladesh in Dacca.
Government to take over by year-end the refinery and the marketing network of Burmah Shell according to an agreement signed in New Delhi.

27 Lucknow TV centre, the seventh in the country, inaugurated.

28 India and France sign in New Delhi an agreement for cooperation in scientific, technological and cultural fields.

29 H.N. Bahuguna, Chief Minister of Uttar Pradesh, resigns.
India and UNICEF sign in New Delhi an agreement on a master plan of operations for a five-year package of child welfare services.

30 The Union Council of Ministers reshuffled. Dr G.S. Dhillon and Bansi Lal appointed Ministers of the Cabinet and four new persons appointed Ministers of state. Defence Minister Swaran Singh, Shipping and Transport Minister Uma Shankar Dikshit, and Ministers of State, R.K. Khadilkar and K.R. Ganesh resign.
President's rule proclaimed in Uttar Pradesh; the State Assembly to remain in suspended animation.
The government announces selective increases in the prices of petroleum products effective from 1 Dec.

December 1 Banarsi Das Gupta sworn in as Chief Minister of Haryana.
New Union Ministers sworn in by the President.

2 President Fakhruddin Ali Ahmed arrives in Cairo on a state visit to Egypt.
Four agreements are signed in New Delhi providing for outright British grants totalling Rs 167.7 crore to India.
President promulgates an ordinance allowing a Delhi house-owner to seek summary eviction proceedings against the tenant if the houses are required for bonafide personal use.
The All India Muslim Law Board urges the government not to encroach upon the *shariat* through enactments or official resolutions.
Indo-Bangladesh border talks begin in Calcutta.
Czech Foreign Minister Bohuslav Chnoupek confers with the Prime Minister in New Delhi.

4 Indo-Bangladesh accord on border issues arrived at in Calcutta.

5 A two-member high-level delegation from Bangladesh arrives in New Dehi to discuss further development of relations between the two countries.
Producers of indigenous phosphatic fertilizers announce reduction of prices following government's reduction of duties on imported raw materials.
The Reserve Bank of India revises purchase and sale rates of pound sterling for spot delivery.
A valve designed by the All India Institute of Medical Sciences to save children suffering from hydrocephalus receives wide national and international acceptance.
Border Security Force wins the Nehru Hockey tournament.

6 Rajasthan is linked with the northern regional power grid, comprising Jammu, Himachal Pradesh, Punjab, Delhi and Haryana.
A contraceptive pill which can prevent pregnancy if taken once in six months is developed by an Indian homœopathic doctor.
The largest single deposit of iron ore in the world with an estimated reserve of 1,500 million tonnes is found in the Singhbhum district of Bihar.
India's first micro-computer system is demonstrated by a team of young electronics engineers in New Delhi.
Haryana government formulates a scheme to set up mini banks in rural areas to cater to the needs of small farmers.

7 A mammoth procession carrying the relics of Guru Tegh Bahadur, the Sikh Guru, is taken out in Delhi.
Sahitya Akademi awards for 1975 announced.
The four-day international conference against fascism concludes at Patna.

8 The government assumes special powers to prevent publication of 'objectionable matter, including proceedings of Parliament.
Press Council is scrapped.
Prime Minister addresses the biggest ever congregation of the Sikh community in New Delhi on the occasion of Guru Tegh Bahadur martyrdom tricentenary.
An international seminar on Ramayana opens in New Delhi.

9 The government reduces excise duty on steel ingots made by mini steel plants from Rs 200 per tonne to Rs. 50.
India and Rumania agree on a long-term programme for purchase of oil field equipment by the Indian government.
India develops the technology for culturing pearls hitherto the exclusive preserve of Japan, at CMFRI near Tuticorin.
The first ear bank in Asia is opened in New Delhi.

10 A National Institute of Homœopathy is opened in Calcutta.
1974 Arjuna Awards for leading sportsmen announced.
Prime Minister Indira Gandhi releases two commemorative volumes as part of the silver jubilee celebrations of Constitution and Parliament.
HMT introduces a new letter-press printing machine, used both for monochrome and multicolour printing, known as Super-Egeria RTAF capable of producing high quality printing up to a size of 18 × 23 inches.

11 India defeat Japan 3-2-in Eastern Zone Davis Cup tournament in Tokyo.
The GDR Foreign Minister Oskar Fischer has talks with the Foreign Minister Y.B. Chavan.
President Fakhruddin Ali Ahmed returns after a 10-day goodwill visit to Egypt and Sudan.
A vaccine against foot and mouth disease is developed

Inauguration of satellite instructional TV experiment

at the Indian Veterinary Research Institute.

12 The Second World Congress on Water Resources opens in New Delhi.

The Delhi Administration constitutes a Rural Development Corporation to give fillip to agricultural activity in the union territory.

The NCERT panel on new curriculum recommends introduction of work experience and strengthening of science teaching in the ten-year schools.

13 A scheme to produce power from the combined action of sun and water is proposed by three Indian scientists.

The first phase of Panchayat elections in Gujarat begins.

14 A Presidential ordinance gives the government the power to detain smugglers as long as the emergency lasts.

15 B. Shiva Rao, veteran journalist and parliamentarian, passes away in New Delhi.

The winter session of Parliament is summoned to meet on 5 January for a four-week session.

16 New Era of Progress exhibition in New Delhi opened by President Fakhruddin Ali Ahmed.

The Rs 6-crore urea plant of the Gorakhpur Fertilizer Factory is commissioned.

17 A prisoners' cooperative society, the first in the country, starts functioning in the Lucknow model prison.

18 Egypt agrees to supply India half a million tonnes of crude under a new trade agreement for 1976 signed in New Delhi.

19 The Chief Ministers of Maharashtra, Andhra Pradesh, Madhya Pradesh, Karnataka and Orissa agree on the distribution of a major portion of the Godavari waters, ending a 15 year controversy.

National Film awards are given away in New Delhi.

19 The President releases four volumes entitled "The Spirit of India", brought out to felicitate Smt Indira Gandhi on her decade of stewardship as Prime Minister.

20 Congress captures 13 out of the 18 district panchayats in Gujarat.

Madhya Pradesh Chief Minister P.C. Sethi joins the Union Cabinet as Minister of Fertilizers and Chemicals.

Bansi Lal is designated Minister of Defence.

Bishen Singh Bedi is appointed captain of the Indian cricket team to tour New Zealand and West Indies

The centenary convention of the Theosophical Society opens in Madras.

21 Air Chief Marshal O.P. Mehra is elected president of the Indian Olympic Association.

22 Vasant Desai, film music director, dies in Bombay.

23 S.C. Shukla is sworn in as Chief Minister of Madhya Pradesh.

The National Physical Laboratory celebrates its silver jubilee in New Delhi. Addressing the scientists, the Prime Minister asks them to tap solar energy.

24 Arya Samaj centenary celebrations begin in New Delhi.

The all-India report on the first-ever agricultural census on a national scale taken in 1970-71, is released.

25 Vinoba Bhave inaugurates the Bhoodan movement silver jubilee at Paunar Ashram near Wardha.

26 A Reserve Bank report says that the achievement of the economy is the containment of inflation and 2 p.c. rise in national income in 1974-75.

Dr A.B. Joshi, director of IARI, is awarded the Borlaug Award for his contribution to agricultural sciences.

27 372 miners trapped when an underground reservoir in Chasnala colliery in Bihar caved in; massive efforts to rescue the miners begin.

28 The former Union Minister Uma Shankar Dikshit is appointed Governor of Karnataka and the present Governor of Karnataka, Mohanlal Sukhadia is shifted as Governor of Andhra Pradesh.

29 AICC session at Komagata Maru Nagar, near Chandigarh, begins. D.K. Barooah elected president of the Congress.

The Congress approves the political resolution to postpone Lok Sabha elections by a year.

30 All hopes of rescuing the trapped miners at Chasnala recede; world assistance received to accelerate de-watering operations.

The Congress (O), Jana Sangh, BLD and Swatantra form the Janata Front bloc in Parliament.

31 The government appoints a one-man court of inquiry to inquire into the causes of the Chasnala mine tragedy.

Janata Front wins the election to the Ahmedabad Municipal Corporation.

The 75th plenary session of the Congress concludes at Komagata Maru Nagar.

The voluntary disclosure scheme results in a spectacular disclosure of nearly Rs 15000 millon of black money.

The first ocean research vessel, R.V. Gaveshani, commissioned at Calcutta.

SPURT IN INDUSTRIAL ACTIVITY IN KARNATAKA

During the last three years, the State has received 228 letters of intent/industrial licences covering new investments in the large and medium sectors in the State involving a total investment of Rs. 340 crores and an employment potential of 64,000 persons.

To attract fresh investment, especially in the private sector the State Government is concentrating its resources on the development of infrastructural facilities particularly in industrial areas and estates and by providing technical and financial assistance through a net work of institutions. This is in addition to several incentives and concessions offered for new investment.

As many as 40 large scale units have gone into production involving an investment of Rs. 50 crores with a employment potential of 12,000 persons, 30 of them in 1973-74 and the rest in 1974-75.

In the small scale sector, there has been a spurt and a total number of 7000 units have been registered in the State during the last three years. This has doubled the number of small scale units existing in the State. The investment brought in by these units is estimated at Rs. 60 crores. Employment is provided to 75,000 persons.

Three new Rural Industries Projects at Bijapur, Bidar and Hassan have been sanctioned and have commenced functioning.

The progress registered in small scale sector, the special employment programme and the Rural Industries Projects are part of a conscious policy followed in the State since 1972-73 to pay special attention to spread the benefit of industrial activity as widely as possible both in terms of employment and regional dispersal.

The most significant development in the public sector is the Kudremukh iron ore Project. Iran has agreed to extend 630 million dollar loan to India for the development of this project. The project will help exploition of the ore resources and starting of several ancillary industries.

ISSUED BY:

THE DIRECTOR OF INFORMATION & PUBLICITY,
GOVERNMENT OF KARNATAKA
BANGALORE-560001.

BOOKS

Planning Rural Development

U. K. Srivastava, P.S. George and K. L. Sharma: Planning and Implementation of Rural Development Projects by a Voluntary Agency, *CMA Monograph No. 56, Indian Institute of Management, Ahmedabad, Pages IX+289, Rs 12.50*

SPEEDY rural development is sine qua non of an agrarian economy like ours. The present report strikes an optimistic note in this direction. It is divided into eight chapters and with some appendices at the end. At the outset the need for spatial integration of various sectors of the economy is highlighted. The activities of a voluntary organization, viz., The Bharatiya Agro-Industries Foundation (BAIF) at Uruli Kanchan, near Poona formed the core of this study.

The report envisages an evaluation of the various activities such as the lift irrigation programme, the cattle development programme, the Joint Co-operative Farming and the Tractor hiring unit of the BAIF. This has been done to identify the major pre-requisites for successful planning and implementation of rural development projects. In this process, a multipronged strategy has been pursued by BAIF for obvious merits that follow in such as exercise. In Chapter II, the authors have expounded the historical setting of Uruli Kanchan development programme. The project was conceived, taking spatial planning model, having interrelated activities within its fold. The activities were taken up in stages. The Foundation received support from various donor agencies. The major activities are:

(a) Lift Irrigation Scheme :

Using data on costs and returns, the investment potential of the lifts was calculated on the basis of four criteria, pay-back period, net present value, internal rates of returns and Benefit-cost ratio.

An intriguing analysis made by authors relates to the relative merits of an enterprise in the context of larger social benefits and not from the angle of financial gains. The net income per acre was nine times higher under the operating lifts than those under benchmark lifts for all farm sizes. The estimated income elasticity of demand corresponding to the increased income for cereals and foodgrains turned out to be 0.64 respectively. The utility of this estimate serve little pupose as there is high order of correlation between these two concomitant variables in the consumption function.

(b) Cattle Development Programme:

Under this programme, the Foundation provided technical staff, instruments, liquid nitrogen, frozen semen and technical guidance. Cross breeding of exotic breeds with indigenous cattle raised the net income accruing to the farmers by nearly three fold in comparison to a local cow in 10 years.

(c) Joint Co-operative Farming Society:

Another interesting facet of the study explores the relative success story of the much maligned joint farming under the cooperative fold. The cumulative effect of this enterprise in neighbourhood has shown immense possibilties of raising income on even the worst possible land of the area. In 1972-73, while the

A Timely Survey

A Survey of Research in Demography *by P.B. Desai, ICSSR Project, Popular Prakashan, Bombay, 1975; Pages xi+440; Rs 50.*

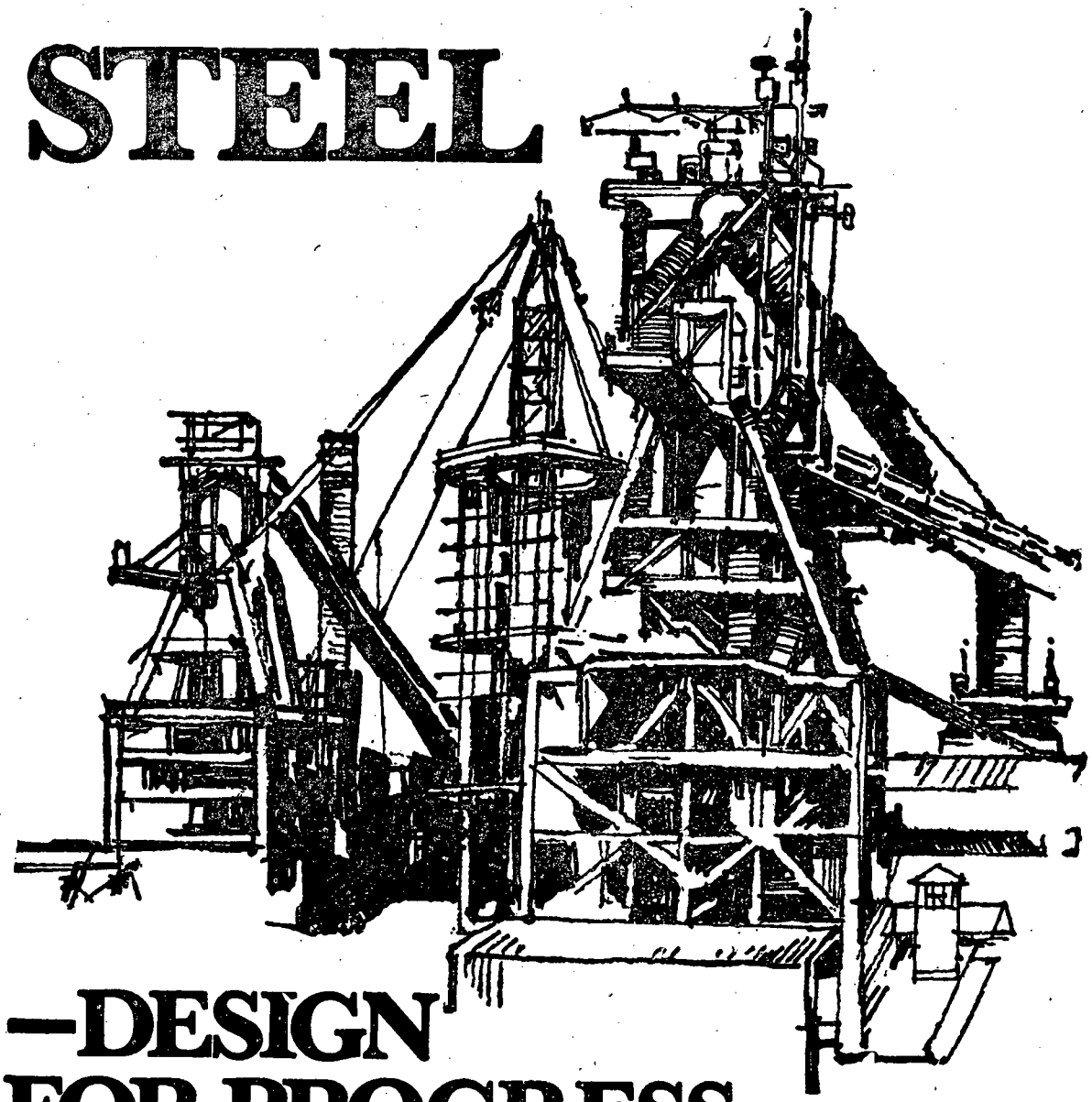
THE author of this timely survey characterises demography in its present state as being "a baby that requires to be nursed to maturity into a viable basic social science". Under Indian conditions one cannot disagree with this statement. In fact, that demography at all succeeded in escaping a still birth in the face of the rampant antics of the academic theoreticians and the practitioners of family planning, as distinct from governmental programmes resulting in a lot of spurious research and eccentric discussions, must be deemed, indeed, as a late Twentieth Century miracle. As a subject taught in the universities either separately as in the unique case of Kerala, or alongside such main subjects as economics, sociology, demography and statistics as an optional or compulsory paper, it has suffered lack of popularity as well as esteem. However, it is too much to say that with the publication of this survey incorporating well balanced accounts of the phases of the growth of the discipline, its status had altered to any perceptible degree. Much, however, remains to be done.

The five chapters of the book are taken up with an account of the development of demography, the sources of economic data, a survey of demographic literature and an assessment of the present state of research in the field with a concluding chapter of perspectives and priorities in research. This last portion, though not lacking in earnestness, appears to be merely the listing of topics and priorities in substantive research. The overall goals of planning relating to output, employment and the question of economic and social inequalities, have been touched upon. There is a welcome emphasis on the demographic analysis of the working force combining with it the economic study of labour and its productivity within the matrices of economics of industrial structure and occupational distribution. The linkage between demographic research and economic activity analysis has also been mentioned. However, beyond these points, no summary of the work done so far under these headings either in India or abroad or its appraisal, has been given.

About 335 pages of the survey are taken up with appendices and bibliography under classified headings. The work has, indeed, been laboriously done and the author has quite candidly admitted that the perusal of the contents of several papers and books, monographs, reports, etc., remains to be undertaken methodically at a later date. The reader of this survey is likely to be disappointed if he is looking for an intelligent economic synthesis of the work done in the field alongside the multifarious research projects and their findings resulting from family planning drives, particularly the new-fangled aspects of sociological research. Some of the entries in the bibliography e.g. 'Urdu Ghazals' (*page 147*) and a few of the titles of books and papers appear to be somewhat farfetched and unrelated to the subject matter even in its widest cultural dimensions. Overall, this survey is a useful compendium for students and workers in the field, being possibly the first of its kind.

—B.N. Nair

STEEL



—DESIGN FOR PROGRESS

Steel spells progress and steel plants are changing the face of India. Modern temples, Pandit Nehru called them.

Dasturs design the plants that make and shape steel. Plants large and small, to produce steel of diverse types—using Indian raw materials, with Indian know-how, tailored to suit individual requirements.

Dasturs are in the forefront of steel plant design and technology—pelletizing, direct reduction, OBM steelmaking, electric arc steelmaking, continuous casting etc. As in India, they are also actively planning steel development in South East Asia, West Asia, Africa and Latin America.

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sample farmers (on their own) earned Rs 592 per acre, 23 out of the 30 farmers interviewed in neighbourhood expressed their willingness to join a society of this type.

(d) Tractor Hiring Unit:

The study found costs and returns on tractors was justified on the basis of the four criteria of investment made. The use of tractors between agricultural and non-agricultural purpose did not reveal any definite trend whatsoever.

Further, even for the same tractor, the peak and slack periods in demand were different in 1972 and 1973. In this connection, the report examines optimal utilisation of tractor scheduling with the aid of queuing theory under four alternative hypotheses. Three significant observations made by the authors on the use of tractor are:—

(i) Tractor farms used a larger amount of inputs for crop production,

(ii) The availability of tractors did not decrease hired labour utilization on the farms, and

(iii) The net farm income per acre increased only for farmers with less than five acres (p. 223). While we may agree with the first two propositions, the last one is not readily convincing.

The study has shown that dramatic changes could be brought about in the rural scene, provided there is spirited leadership and scientific culture to reckon with. "Viability in rural development depends on sustained growth in rural incomes, derived primarily from agriculture, that can meet the costs of deveopment programmes"* BAIF has lived upto this criterion. Again, the planning and organisational strategy pursued by the Foundation, underscore the need for performance budget and informal system of communication to bridge personnel problems. Ironically enough, the BAIF succeeded in securing involvement of all employees deposite its rural base. The authors feel that this was primarily due to a high level of job involvement and job satisfaction. BAIF organizational model was essentially cooperative in character. This resolved conflcts, generated cooperative behaviour, creative motivation and decentralised decision making process.

It will be a lesson to the exponents of cooperation who offer lip sympathy to the movement, but fail to perform their obligations. Furthermore, cooperatives can learn many useful lessons from the success story of BAIF. By a strange logic, the authors conclude that the type of organization should not be the major consideration for proper implementation of rural development programmes. Despite this vulnerable hypothesis, the report is worth perceiving for its methodological consistency in dealing with rural problems.

—N. Mohanan

*Albert Waterson, A Viable Model for Rural Development, *Development Digest*, xiii, 3, July 1975, pp. 4-5.

Indian Publishing

Publishing in India *by Philip Altbach; Oxford University Press, Delhi (1975); Pages 115; Price Rs 20.*

TO ESTABLISH an indigenous publishing house is an act of liberation and therefore a necessity because it breaks the control, indeed the monopoly which the white races have had over the world literature", wrote an author while writing about publishing in Nigeria. In this act of liberation India is behind none. Though pitted against heavy odds, stringent financial squeeze and an inelastic market, Indian publishers have created in their country one of the largest publishing enterprises in the Third World. In terms of the number of titles published, India ranks eighth in the world.

It is true that a whole time Indian publisher has never existed. The sheer need to survive has forced the typical publisher to estrange himself from that "inherently unprofitable venture" of scholarly publishing into wholesaling, retailing, importing and the so called popular publishing. It is also true that a good many of these publishers have come into the business not so much for the love of the printed word, but more because of their involvement in some related field like printing and book selling.

Hardly any serious attempt has been made in the past to understand the problems of publishers in India. The sociological and historical literature on publishing in developing countries is very sparse. The most serious problem affecting publishers in these countries is economic which is also one of the last well understood aspects. Philip G. Altbach, who is no stranger to the Indian academic world—his earlier work which he co-authored with Dr. Amrik Singh of Delhi University had been extensively reviewed in India—has now attempted what he rightly calls an explorative and descriptive study of the Indian publishing scene. In a three part study he has set the Indian scene against the backdrop of the role of publishing in the intellectual system of the society and of the Third World publishing in particular.

Indian publishing exhibits most of the problems and possibilities that exist in the developing countries. Added to the scarcity of investment capital, industrial capacity and skilled manpower is the shortage of intellectuals. Though books can contribute to the easing of scarcities of educational resources, scholarly book publishing in the Third World is limited to producing "at highest prices for the smallest audiences". In this respect India is no exception. The colonial past overshadows the intellectual and educational life of most of the developing countries. The "intellectual" trade relations is grossly unbalanced. Out of date and clearly irrelevant text books manufactured in Europe are common in Africa. This is one aspect where India has scored better, her publishers have fostered indigenous scholarly writing to a great extent. Gone are the P.L. 480 days when the mighty dollar inundated the Indian publishing world, when everyone who wanted to make a quick buck tried to fill the Indian book shelves with subsidised American texts. India today prefers a much more selective publication programme, reproducing only what is absolutely essential.

However, two aspects, as Mr. Altbach rightly points out, where Indian publishers continue to err are lack of professional standards, and a grossly irrational and unethical distribution set up. Not one of the calibre of Peter Jayansinghe and Manaktlal can survive in India.

Worth noting in the Indian context is the author's suggestion of University Presses as particularly relevant model for the Third World since this mechanism provides needed autonomy and links with one of the most important intellectual institutions.

In this non-controversial book, Mr. Altbach has kept clear off polemics, carefully avoided "the inside stories", but has admirably combined a wealth of information with active concern for the intellectual process of this country and the key role books will have to play in modernising India and the rest of the Third World.

—Augustine J. Veliath

THE PRESS—

Its Power and its Responsibility

D.R. GOYAL

MORE than two decades ago, the Press Commission had, in its report, referred to the enormous potentiality of the Press for good or evil. The Commission had said "The Press wields tremendous powers and has equally tremendous responsibilities. It is always a dangerous situation when power and responsibility do not go together as is the case with at least some units of the Press in India."

What the Commission has said then is equally relevant to the state of the Indian Press now, and the three Ordinances about the Press, promulgated recently, have to be viewed in this background.

One of the Ordinances is for the dissolution of the Press Council, while the other is designed to prevent publication of objectionable matter. The third Ordinance repeals the Act under which some protection was given to newspapers for the publication of Parliamentary proceedings.

The Ordinances became necessary in order to remedy the very evil to which the Press Commission had referred. It is neither possible nor desirable to regulate the Press on the basis of censorship. Since the Press has by and large failed to regulate itself, there was no option but to regulate it under the law of the land, in any case, censorship is only a temporary measure.

But the question whether it was at all necessary to regulate the Press is as relevant as the question whether it was necessary to proclaim a State of Emergency or to put a ban on communal and extremist organisation like the R.S.S. and the Anand Marg under the circumstances prevailing then.

There is hardly a right thinking person who has not welcomed the Emergency or the ban. The people have given these measures wholehearted support and Acharya Vinoba Bhave characterised it as the "Anushasan Parva"—era of discipline.

Democratic System Preserved

In the period before the Emergency, some opposition leaders and parties acted in a manner which made the ordinary citizen wonder whether democracy as he had known it had any future in India. If the irresponsible utterances and acts of these people were a part of democracy, the people began to wonder if democracy could ensure the unity of the country or protect the life and property of the common man.

The very stability of the country, not to speak of the freedom of the common man was in peril and when Mrs. Gandhi took the bold step of taking firm action against the forces of disruption, the entire nation heaved a sigh of relief. The emergency measures were taken under the provisions of the Constitution and within the parameter of democracy. We now see that they have served to rekindle the faith of the people in democracy. The roots of democracy were strengthened and not weakened by the declaration of Emergency.

The same can be said about the Ordinances issued a couple of weeks ago. Before censorship was imposed, many newspapers and journals in the country had interpreted freedom of the Press as licence. There was every danger that if they were not checked, anarchy would prevail.

Press in a Democracy

The Press in a democracy has been vested with certain privileges because of the responsibilities that it has to carry out. If it does not discharge these duties, it has little claim to have these privileges.

In the recent years, the so-called big newspapers in the country were devoting their energies far more to the preservation of vested interests than to the reflection of the hopes, aspirations and feelings of the people. What they printed, particularly at the time of elections, had little relation to reality.

Forecasts were made and assessments given which had no basis in fact. Take the 1971 Parliamentary Elections. All the big newspapers were at one in saying that at best Mrs. Gandhi and her party would be able to capture anything between 150 to 200 seats. When the actual result proved that these prophets of doom were wrong, these newspapers began condemning the entire system of election.

This propaganda later became a part of an organised campaign against democracy itself. A responsible Press should have acted on its own against these tendencies. But what happened was exactly the opposite. A virtual race in irresponsible writing began. The common man asked in wonder! "Is there no one who can stop this?"

If this irresponsible writing had been limited to Opposition on the political plane, it would possibly not have caused heavy damage. This is because the common man in India is much more politically conscious than the barons of the Press would like to believe. This has been shown in one election after another.

By mere opposition on the political plane, sales would not have mounted. Some newspapers, therefore, resorted to mud-slinging, rumour mongering and, what is worse, obscenity.

Leaders Maligned

Who can forget the baseless propaganda indulged in by some papers at the time of the last Presidential Election? Some communal newspapers printed down-right defamatory and derogatory matter about the then Vice-President, Dr. Zakir Hussain at the time of the Indo-Pak conflict in 1965.

The Prime Minister, Mrs. Gandhi, became the main target of attack, and in maligning her, some newspapers crossed all limits of decency.

These examples became necessary because those who indulged in these practices would now conveniently like the people to forget that. Aspersions were cast on the entire Nehru family. One paper went to the extent of saying in an editorial that Jawaharlal Nehru was indirectly interested in the murder of Gandhiji.

Another newspaper said Mrs. Gandhi was involved in the murder of Lalit Narain Mishra. Alleged corruption in high places proved an

easy handle to malign any leader. The publication of these writings sapped the morale of the people and the vitality of the nation. Frustration and lack of faith in society ultimately brought the country to the verge of disorder and chaos.

InvitingC ommunal Elements

In times of communal riots, many newspapers printed matter which, instead of attempting to restore sanity among the people, fanned the flames of communalism. This was because the proprietor and the editor appointed by him believed in communal politics. And then again, more sensation meant more sales and, therefore, more money.

Both motives have the remotest connection with the social consciousness and responsibility to which the Press Commission had referred. A Press which forgets its responsibility is no longer the guide and guardian of the people. It becomes their enemy.

It was not that nothing could be done to see that the Press regulated itself and firm action taken against newspapers which indulged in scurrilous writings. The Press Council had full ten years to discharge these responsibilities.

But from its very inception, it became an arena of professional rivalry and controversy. Nothing was done to set out a code of journalistic ethics on the basis of the principles laid down by the Press Commission. The Council never acted on its own to check objectionable trends in the Press.

In the ten years of its existence, the Council did not take a single decision towards making the Press realise its responsibility to society. Even when complaints were preferred by individuals to the Council, the Council did nothing.

Malicious and distorted news items were deliberately published by newspapers and, by and large, character assassination and blackmail became the stock in trade. Resort to incitement for defiance of law was not uncommon. Freedom of the Press degenerated into licence. And yet, the Council stood by as a passive spectator.

Abuse of Privileges

The protection given to the Press about publication of Parliamentary proceedings was intended to give newspapers freedom to publish legislative proceedings in a free and fair manner without fear of legal action. But even this protection was misused.

Even the most baseless and irresponsible charges against Ministers, made by some sections of Opposition on the floor of the House, received front page banner treatment.

Taking advantage of the protection, politically motivated sections of the Press gave undue and disproportionate publicity to the parts of the proceedings which would create disaffection, distrust and disharmony.

The inability of the Press Council to regulate the Press and misue of the immunity in reporting Parliamentary proceedings made it obligatory for the Government to take corrective action. It is necessary to point out that constructive criticism continues to be protected even under the new law.

The printed word is a powerful medium which exercises considerable influence over the minds of people. No one realised its importance more than the late Chakravarty Rajagopalachari, former Governor-General and later founder of the Swatantra Party.

While piloting the Press Objectionable Matters Bill through Parliament as Home Minister, Rajaji had said "if you do not control the stuff produced from the printing machine, and no kind of restriction is to be imposed and no deterrent law is to be enforced, and if democracy should depend only on the goodwill of those who are inclined to rouse people to mischievious intent, then armed men will be needed in every district".

Rajaji had warned again that "we would have to live so far as internal order is concerned from hand to mouth. That way lies fascism". Rajaji's words have almost proved prophetic and the Government's action has not come a day too soon.

(Courtesy: All India Radio)

The past ten years of N. R.

(Continued from page 19)

The railway has introduced mid-on-generation system of train lighting on the suburban rakes running around Delhi. The system helps in the maintenance of electric supply for train lighting and complaints of low voltage or sagging lighting are now very rare.

Among the essential amenities are the provision of water-coolers at stations and on platforms, covering sheds, bathing places for second class travellers and furnished waiting halls.

Cleanliness of trains, stations, and railway track have been improved remarkably. For the first time in the history of Indian Railways the Northern Railway recently undertook a public opinion survey on cleanliness and conveniences at stations and on trains. The survey revealed a spontaneous public opinion recording 71 per cent appreciation of the efforts made to maintain cleanliness. Unsocial elements who used to preempt tickets and reservation have been weeded out by the administration coming down heavily upon spurious booking agencies and exercising strict vigilance at the booking counters at stations. The impact of the emergency on the racketeers operating at booking counters is well known.

Staff Welfare

Railwaymen have always been aware of the sign of the times and stood the test with self-confidence and patriotic fervour. On this zone there are nearly 800,000 railway employees and their families. Housing and medical facilities have been provided on a larger scale.

In 1965 there were 39,000 living quarters equipped with electricity. In the last ten years, the number has shot up to over 60,000 quarters. Fans are now provided also in the lowest type of railway houses. Street lighting in railway colonies has been improved by providing flourescent tube-lights and other high intensity light fittings as may be feasible.

Working conditions in offices, workshops, and sheds have been made congenial. Desert coolers are being progressively provided in the summer season. Staff relations have vastly improved and every endeavour is being made to maintain the best rapport with labour.

The decade has witnessed an unprecedented upsurge of enthusiasm among railwaymen to devote their energies to nation-building activities. Many a gadget has been devised by industrious workers in railway shops. Productivity in workshops went up by 47 per cent following the emergency.

Railmen are quite accustomed to emergencies over the decades since Independence. They have stood by the rail-users and tax-payers unflinchingly. In war and peace, their role has won acclaim. On all counts the dynamic decade has given great job-satisfaction to the bulk of the railwaymen of this zone. □

Development Notes

Power from Bio-gas

With a view to resolving the energy problem in the country, the Indian Institute of Technology, Delhi has developed a new technology for the generation of power through bio-gas which is extremely economical compared to petroleum fuels.

Experiments at the Institute have shown the commercial potential of the process which is mainly derived from waste materials including agricultural and industrial wastes. Bio-gas-operated motors of upto five HP can be plied for agricultural uses immediately, provided adequate assistance is rendered by the State Agricultural departments.

The Institute has also to its credit the development of synthetic fuels which, if blended with petrol, could result in saving on about 20 to 25 per cent of petrol-driven vehicles.

The Department of Fuel Technology of the Institute has recently completed a project of this nature which, with the blending of methonol and ethonol with petrol in requisite quantities, could result in considerable savings on fuel as also reduce pollution to the extent of about 60 per cent.

This department has also developed solar energy technology providing low-grade energy for the refrigeration industry, for which commercial potential has been established.

Wool Revolution in Haryana

Haryana is poised for a big breakthrough in the production of superior wool during the Fifth Plan.

The State envisages the strengthening of all the 25 sheep and wool extension centres functioning in various parts of Haryana and the setting up of at least half a dozen more centres for undertaking cross-breeding exotic and Indian sheep.

An integrated programme of mixed sheep farming has been cleared by the Union Ministry for Agriculture for popularising the high-yielding Corriedale strain, evolved under Indian conditions, at the Indo-Australian Sheep-breeding Farm, Hissar.

In the wood-shed area of each extension centre, farmers will be supplied 50 units of sheep, each comprising 20 ewes (at 50:50 cost) under the mixed sheep farming project. The beneficiaries will be required to return to the project authorities five ewes from the progeny within two years, which will be further distributed among the farmers who, in the meantime, may be oriented to take to mixed sheep farming.

UNDP's wool grading-cum-marketing project is also being expanded to keep pace with the new sheep farming strategy. The State Government has increased its annual non-plan allocation for the strengthening of the UNDP project to Rs 20 lakh, with immediate effect.

The UNDP project purchases raw wool from breeders at remunerative rates, sorting, grading and marketing in bulk to the woollen industry. Starting with a purchase capacity of Rs 1,00,000 during 1970-71, the project handles wool worth over Rs 2 million every year.

Meanwhile, the management of the Indo-Australian sheep-breeding farm proposes to double its existing flock of 7,000 sheep to meet the mounting demand of exotic sheep from various parts of India. This will save foreign exchange of about Rs 10 million every year.

The biggest achievement of the Indo-Australian farm is the reduction in the mortality rate of the Corriedale flock, from about 40 per cent two years ago to less than 15 per cent.

Pre-stressed Concrete Sleepers

The Structural Engineering Research Centre (SERC) of the CSIR Complex, Madras, has developed pre-stressed concrete monoblock broad gauge sleepers. Full-scale laboratory investigations have been completed and about 200 sleepers have been produced in the laboratory under factory conditions and subjected to static, dynamic and impact tests to ascertain their suitability for mass production. Complete specifications and methods of production and testing have also been finalised.

The SERC has recommended that the optimum capacity of a plant for production of sleepers will be around 100,000 a year, costing Rs 8.9 million, though an initial capacity of 25,000 may also prove economical.

The facilities proposed can also be utilised for manufacturing other types of concrete elements such as electric transmission poles, roof and flooring beams, columns, slabs etc. Pre-stressed concrete sleeper is different from other pre-stressed concrete units particularly in production technology and lends itself to economic production with mass manufacturing methods.

Two main pretensioned methods adopted in India for the manufacture of sleepers are the long-line and stress-bench methods. The SERC process is based on the first.

Manganese Ore Output Up

Manganese Ore India Ltd. (MOIL) produced 2,28,048 tonnes during the nine-month period April-December 1975 against the target of 2,21,401 tonnes. Of this, the production of high grade low phos ore was 1,60,674 tonnes against the target of 1,47,500 tonnes. This ore is suitable for production of ferro-manganese.

The production of high grade high phos ore for export was 30,308 tonnes during the same period. The Bhilai grade low grade phos ore was 36,992 tonnes against the target of 32,441 tonnes.

MOIL made a gross profit of Rs 8.4 million till the end of December due to better despatches for exports and to domestic consumers. As a result its over draft was also reduced by Rs 7.7 million during the year. The company faced no problem in marketing the Bhilai grade ore, because the Bhilai steel plant had agreed to accept more than the monthly tonnage produced by MOIL.

To meet the increase in demand for manganese ore, the company has drawn up a development programme envisaging an expenditure of Rs 5.1 million.

New Process for Soya Milk

Scientists of the Pantnagar university and the University of Illinois, have jointly developed a new method to manufacture soyamilk and related products.

Intensive consumer acceptance trials conducted by the university over a period of two years reveal that the technique can now be handed over for commercial exploitation to suitable entrepreneurs for the production of soyamilk and other related products.

These products, which will be the sources of good quality protein, will meet the much needed cheap food and good dietary protein.

Soyamilk, which is made from soyabeans, is like milk in appearance. It has about the same protein content as milk and can act as an excellent protein supplement to ordinary milk.

Two Crops on Drylands

With slight adjustments in the sowing schedule, it is possible to grow two crops in a year even on drylands in southern states.

Experiments conducted at the Bangalore-based University of Agricultural Sciences have shown that about 50 quintals of ragi and five to ten quintals of cowpeas can be produced from a hectare of land in a year without resorting to irrigation.

In areas where irrigation facilities are not available, normally only one crop is raised in a year. But this, experts maintain, amounts to gross under utilisation of available land and rainfall resources. Most parts of Karnataka, for example, receive around 800 mm of rainfall annually. Though it is not well spread out throughout the year, about 60 per cent of rain falling in August-September and another 30 per cent between May and July, can be judiciously exploited to support two crops.

The first crop of cowpeas can be sown in May and harvested after 85-90 days in the middle of August. Meanwhile a nursery of ragi can be raised to be transplanted in the main field immediately after cowpea harvest.

As a single crop, ragi is generally planted directly in the fields in July. But, by adopting the newly-developed transplanting technique, the adverse effects likely to result from belated sowing can be, avoided.

As an alternative, experts recommend growing of short-duration varieties of ragi as the second crop after cowpea.

Small doses of fertilisers, however, can help to get better yields from both the crops.

Tests conducted at the university have also revealed that maize can be used as an indicator plant for scheduling irrigation to wheat. Wilting signs in maize plants grown in the wheat field provide an indication that the main crop needs to be irrigated.

Haryana Boost To Electronic Units

The Haryana State Industrial Development Corporation has planned several projects for the development of electronics in the State.

Work on an electronics industrial estate and a testing and development laboratory at Gurgaon is already in hand. The Corporation will shortly set up projects like electronic wrist watches, agro-electronic instruments and semi-conductor devices.

The Corporation hoped to increase electronics production from the present Rs 150 millon to about Rs. 400 million by he Fifth Plan end.

The Corporation, has also planned to establish several growth centres in the State. The Gurgaon laboratory will promote and assist new industries, particularly small units. It is also proposed to train adequate number of persons.

The Rs 5 million Gurgaon testing centre, which was originally planned for Faridabad, was to be set up last year. The State has already received the first instalment of Rs 625,000 from the centre out of the promised Rs 2.50 million, while Rs 3.4 million would be advanced by the State Government towards the recurring expenditure. The rest of the expenditure will be borne by the Corporation.

The Corporation has also a proposal to set up industrial estates at Jagadhri, Ballabhgarh, Jind and Hissar. The Corporation has already set up such industrial estates at Murthal in Sonepat district, Ambala Cantt. and Yamunanagar. Work on two more such estates at Yamunanagar (second phase) and Panchkula has also been taken up.

Tisco Sponge Iron Unit

Tisco has set up a pilot-scale direct reduction plant with a capacity of 12 tonnes per day for the manufacture of sponge iron.

The plant, designed and built by the R and D Division, is based on a new technology of sing coal for direct reduction. The process is most suitable in India which has abundant reserves of non-coking coal. The plant has been running successfully for about a year yielding encouraging results.

Tisco has also perfected the electro-flux refining process for production of ultra high clean steel following laboratory scale trials in 1969. An indigenously developed commercial scale plant was set up in 1973 to produce 7,000 tonne per annum of high grade steels required for aircraft industry, electrical machinery and defence requirements saving imports of such steels.

Besides, special facilities like crop testing, corrosion and electronics laboratories and radioisotope cameras, pilot plants and prototypes for coke oven and a unit for quenching and tempering have been set up.

In addition efforts were on to develop suitable composition of steel and establish operating parameters. Tisco plant could produce hot rolled or normalised high strength low alloy steels with yield stress up to 45 kg/mm (sq).

Other R and D achievements in product development were steels for soft magnets, track shoes for earth moving equipment, steels with ultra high cleanliness for turbine blades, high speed cutting tools, armour plates and free cutting steels.

HEC Production Up

The production of steel plant equipment, machine tools, iron and steel castings, forgings, rolls and molten metal by the Heavy Engineering Corporation, Ranchi, rose steeply during the quarter September to December 1975.

Several new records in production were created and the volume of production rose by 38 per cent over the corresponding period in 1974. The production in foundry forge plant was worth Rs 72.3 million in October-December 1975 as compared to Rs 44.4 million in the corresponding period of 1974. The steel foundry of the foundry forge plant produced 5,506 tonnes of molten metal in December as compared to 3,309 tonnes in 1974-75.

Its production of 1,221 tonnes of shaped steel castings in December 1975 is also a new record. The plant turned out 1,785 tonnes of saleable machined castings and forgings in December against 1,061 tonnes achieved in December 1974.

In the heavy machine building plant, the production during October-December 1975' increased by 34.5 per cent over the same period in 1974. Bokaro and Bhilai Steel plants, the National Mineral Development Corporation, Bharat Aluminium Co. and Durgapur Steel plant, were the main buyers of HEC's products.

The equipments manufactured included crushers, sinter cars, transfer cars, hammer crushers, wagon loaders and excavators.

The output of the heavy machine tools plant during the quarter was the highest. Twenty machine tools worth Rs 18.6 million were produced during the last quarter.

The plant has manufactured a roll grinding machine for the first time in India and thus saved Rs 3 million in exchange.

Escorts Tractors for Nepal

Escorts has secured a $1 million order from Nepal for supply of 160 tractors to that country. The tractors with 46 HP will bear the brand name of its collaborators, Ford.

This is the largest order secured by any tractor manufacturing firm in the country. Payment will be in foreign exchange.

The order, obtained against stiff competition from the U.K. and Japan, is under a programme financed by the Asian Development Bank.

The first consignment of 50 Ford tractors was shipped last month. The second and third consignments of 50 and 60 tractors are due for shipment in January and February.

Escorts started its tractor marketing operations in Nepal in 1973 and has now established a well-knit dealer network there. At present, there are over 200 Ford and Escort tractors operating on Nepalese farms.

The company had earlier successfully airlifted 400 tractors and 1,200 matching implements to Afghanistan, against a prestigious order won against global competition, earning exchange worth over £ one million.

The annual demand for tractors in India is about 30,000 units, against which the industry's production capacity is 48,000 units a year. Exports would enable the industry to utilise its capacity fully.

USSR to Buy Indian Mica

The USSR will import 500 tonnes of mica valued at about Rs 76 million from India in 1976, under a contract signed between the Mica Trading Corporation of India and the USSR mica delegation.

The Soviet Union's purchases in 1975 were about 464 tonnes, worth about Rs 70 million. The marginal increase in the value of exports this year is because the Soviet Union is buying more of low quality mica.

The agreement was signed after tough negotiations, and considerable haggling over the share of supplies to be made by MITCO and private parties, which is in the proportion of 30:70.

Next year, MITCO will supply 40 per cent and private parties 60 per cent. The Soviet Union will choose its own nominees for effecting supplies from private exporters.

MITCO has also concluded a contract with Poland for exporting mica worth Rs 7 million for supply in the first half of 1976. Poland s import last year was about Rs 10.2 million.

Fertiliser Output Rises

The year 1975 has ended with the country achieving a production of 1.06 million tonnes of nitrogenous fertilisers between April and December marking an increase of 30 per cent over the production of 82,000 tonnes during the same period in the previous year.

The overall performance of fertiliser industry, particularly the public sector units, has been very encouraging—their production so far being 40 per cent higher than the production in the corresponding period in 1974. These units produced nearly 50,000 tonnes of nitrogen in the nine-month period of 1975 compared to 36,500 tonnes in the previous year.

The improvement in production was due mainly to better production management and maintenance, as also increased availability of power and cordial management-labour relations. At the present rate of production, it is expected that the target of 1.5 million tonnes of nitrogen production in the current financial year would be achieved. Production during 1974-75 was 1.185 million tonnes.

A large scale programme for augmenting indigenous capacity is under implementation. There are at present 20 operating units with total 2.46 million tonnes capacity. These include the 25,800-tonne Tuticorin Plant which was commissioned in June 1975 and the 51,000-tonne Gorakhpur expansion, which went into production on December 27, 1975.

Between now and March 1976 a new fertiliser plant each at Mangalore, Barauni and Namrup with an installed capacity of 15,000 tonnes of nitrogen production each are likely to be commissioned. With the commissioning of these projects the total installed capacity would increase to about 2.98 million tonnes compared to 2.46 million at present.

Regd. No. D (D)-152

Printed at National Printing Works, 10, Daryaganj, New Delhi–110 002 and Published by the Director, Publications Division, Patiala House, New Delhi-110 001.