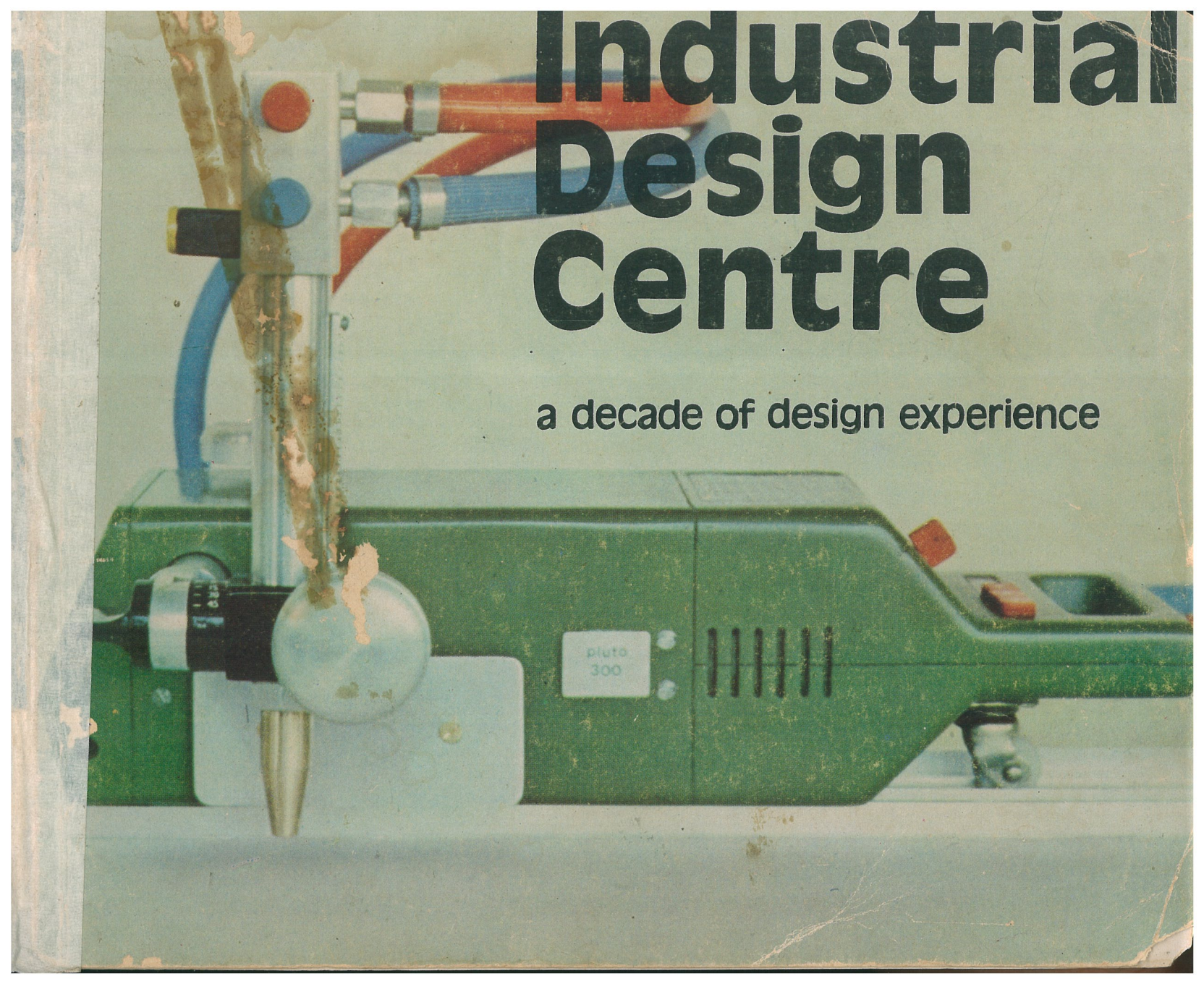
Industrial Design Centre

a decade of design experience



Acknowledgement

I first of all thank all the students present and past, who have been active participants of our design experiences. I thank my colleagues, Prof. S. Nadkarni, Messrs U. A. Athavankar, Kirti Trivedi, K. Munshi, V. P. Bapat, M. S. G. Rajan and A. Gaffoor for their kind cooperation. My thanks are due to Institute authorities in readily agreeing to bring out this document. My associates Messrs Agarkar, Nagarkar, Patkar, Raut, Kshirsagar and Rane have been extremely helpful in bringing out this document. And without their help the issue would not have come out in time. I sincerely thank the Printers, Sudarshan Art Printing Press who have been extremely accommodative to print the document in such a short time without loosing quality. My thanks are also due to all IDC Staff and others who have been helpful in bringing out this document. Finally I thank Harikumar Nair who prepared a document on IDC for ICSID which was the inspiring element in bringing out this issue.

A. G. Rao
Assistant Professor
Industrial Design Centre

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Concieved and Edited by

A. G. Rao

Industrial Design Centre

Indian Institute of Technology
Powai, Bombay-400 076

Foreword

Industrial Design emerged as a profession to bridge the gap between Art and Technology. It slowly developed into an activity concerned with the design of relationship between man and man-made objects at micro and macro levels.

The presence of Industrial Design Centre at the Indian Institute of Technology has a desirable effect in studying the man-technology relationships at a practical level. The training in Science and Technology lays sole emphasis on development of analytical thinking in a person. It is increasingly being realised by educationists all over world that the creative aspects of thinking so far being emphasised only in Art Education are as much necessary for the growth of Science and Technology.

Again with the presence of Industrial Design Centre with its bias on training creative faculties, we envisage to train our Scientists, Technologists and Designers with a balanced growth in their thinking. The present publication representing the work of students and faculty over last ten years projects the design approach evolved for a developing country with complete indigenous efforts. We hope that our experience would be of value to the other developing countries and it is timely to release this issue on the occasion of the UNIDO sponsored International Seminar on "Design for Development" being held in India.

Prof. A. K. De
Director
Indian Institute of Technology

It gives us a great pleasure and a sense of pride to put before you our decade of design experience. Ten years is not a long span of time for any new activity to achieve perceived goals and objectives. Our objective is to reach the benefits of design to a common man. We have achieved this to some extent and sure of accelerating this process with the new policies of Government. My faculty is very much tuned to the requirements of our national plans, the plans which will uplift the life style of our masses. From 'Ghamela' design to design of 'Gas cutting machine' or 'Coal-Chula' to 'Boiler' reflects the aspiration of the faculty and motivation of students that they are socially responsible people and they have a task to serve the people. Ten years back when terminologies such as Appropriate or Alternative technologies were new, IDC brought out rural designs which are very much appropriate to the technologies available in those remote areas. I personally don't give much to these terminologies as its approach existed in India years back. People without the help of technologists or designers, found themselves simplified technical and manufacturing solutions to their own products. We are training designers to solve problems that affect the way people think, work, play, travel, spend their money or change their habits. They learn to understand human behaviour and human functioning. We ask them to understand their profession so well that their ideas can be expressed clearly, creatively. As personal interests and capabilities are developed, they become more specific in their goals. Besides our academic responsibility we are also obsessed with the need for promotion of design at various levels — management, shopfloor personnel and consumers. Industrial Design Centre during the last ten years organised various short term courses, brought out publications, wrote in journals and newspapers, organised exhibitions. did variety of consultation jobs to help to bring design awareness among people and industry. One of the fortunate coincidences is the existance of IDC in IIT. Earlier doubts about the marriage of design with technology, faded away due to the positive response and concern to the development of IDC by institute's faculty and the directors. We have learnt a lot from them specially in academic sphere. Freedom and the flexibility that existed in IIT's educational structure, helped us to bring out a well disciplined educational programme in Design which has been recognised by the UNESCO as a model for asian region. This is a tremendous achievement as far as IDC is concerned and the credit goes to the faculty who is constantly evaluating and elevating its educational contents. Our interaction with other programmes and projects at IIT brought happy understanding and realisation that the industrial design is a very positive factor in the growth of man-made, scientific and technological environment.

None of what we have done could have happened without the vision and determination of a man 'Dada' or Prof. Adarkar who long ago saw the need for professional design education and pursued it. We have gratitude and admiration for his spirit and strength of purpose.

My hearty congratulations to Mr. A. G. Rao with whose dogged efforts this interesting document has been brought out.

I look forward to the year 1989, ten years from now, when IDC's impact would have been felt not only in Industry but on the Nation as a whole.

Prof. S. Nadkarni
Faculty-in-charge
Indusrial Design Centre

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Introduction

I have had the previlige to be associated with the Industrial Design Centre almost from its inception. Close observation and active participation in the growth of an organisation and the formation of a new profession are exciting experiences, which have prompted me to take up this work of presenting the design experiences of last ten years. At the outset the document is a reportage of the projects undertaken by students and faculty of the Centre. But this document is more than a mere reportage. It clearly reflects a line of thinking and an identifiable approach distinct in character, evolved over the past ten years. The ideas and opinions expressed, represents the thinking of students and faculty in general. However, individual differences are bound to prevail and I am responsible for any excessive expressions. Design profession in any developing country would have to cope up with the multitude of problems. The experiences in the West can only give us leads and unless an approach appropriate to deal with the development problems rooted in Social, Cultural and Political structures is developed, the profession would remain a white elephant.

It is in this context, we thought of bringing this document which attempts to project in detail how these social, cultural and political factors would influence the selection and way of solving the design problems. We hope the document would trigger off in depth dialogue and thinking amongst developing countries about the design profession.

A. G. Rao

Industrial Design Centre

Industrial Design Centre was set up by the Government of India under the auspices of Indian Institute of Technology, Bombay in 1969 for study of environmental design problems within the field of industrial production and communication. Prof. V. N. Adarkar, who was largely responsible for starting the centre was appointed as the Adviser for the first five years.

Aims and objectives put down by the committee for formation of the Centre were as under — "Aim of the Industrial Design Centre is to prepare students to enter into a new creative activity as professional industrial designers who with experience and maturity can reach the highest level of design practice, research and development necessary for the industry.

The object of Industrial Design Centre in the first phase is to promote the Post Graduate Diploma Course to train industrial designers from among the graduate engineers, architects and applied artists, as also to organise short-term refresher courses for persons engaged in design activity in industry.

In the second phase, it is intended to start a full five-year course in industrial design at graduate level, so that the students can be admitted to the course right from the young age to develop into industrial designers. Such undergraduate course would be supported by Post Graduate Course to initiate research and development in this creative sphere."

But, as the design centre emerged, it was realised that industrial design in a developing country with its varied cultural heritage has a vital role to play in the National development. It soon became clear that the profession constantly dealing with the development and future of people will have to inculcate values in the society, appropriate to fulfill the physical, social and cultural needs and aspirations of the people, in a manner acceptable to the majority. The efforts at the centre have been concentrated on the task of inculcating these 'desirable values' through education, practice and propogation. The design projects and other activities reported throw light on how this task is being tackled at the Centre.

The design centre functioning as a part of the technological institute, has an Advisory Committee to help in formulating its programmes. It was envisaged by the Government initially to make the design centre a separate autonomous institute after first five years. Later, it was decided to make the centre as a part of the I.I.T., Bombay, functioning like a department.

The presence of the centre in the last ten years has made an impact within and outside the Institute. It has been recognised by the other Departments of I.I.T. as a live Department practising a vital Co-discipline, by the Industry as a creative force in product design and by the World Design Community as an active unit trying to develop a meaningful approach for the profession in a developing country with indigenous professional talent. The centre's performance can be well understood when seen through its four basic objectives: Education, Research and Development, Practice and Propogation.

Education:

The prime objective of the centre has been education. The centre started with a 15-month Post Graduate diploma course for graduate engineers and architects. The course was based on the experience of the first post graduate diploma course in Product Design conducted by National Institute of Design, Ahmedabad, which in turn had drawn the course contents from the famous school of design at Ulm, West Germany. Over the year the centre has evolved a refined programme which is well organised with developed courses with latest inputs but more suitable to Indian Conditions. With this back-ground the centre is introducing a two year post graduate programme of Master of Design in product design. Similar programmes in visual communication and environmental design are expected to start in the coming three years with U.N.D.P. assistance. The centre has trained so far over seventy designers who are well received by the industry and some of them occupy senior positions in design departments. They have also been a good source to draw faculty for both the

design institutes in the country. The feed back from the past students brought out the necessity to conduct short-term exposure courses to management cadres in industry. A four day exposure called Expo ID is a popular course with the industry and is conducted every year with a number limited to thirty sponsored candidates. This course has further triggered off one day and two-day in-house programmes for management, which are conducted at the request of industry. A three week Industrial design workshop was conducted for instrument designers in '78. A summer school of four-week duration was organised for college teachers, with the sponsorship of Indian Society for Technical Education. This is envisaged to pave the way for the introduction of an elective course on Industrial Design in all Engineering colleges India. The centre, at present, conducts an elective course on Industrial Design for the under graduate students of engineering at the Institute.

The course material for all the courses is drawn from the student projects which cover wide spectrum of human activity and faculty projects which are either in-depth-studies of specific problems or professional work done for the clients.

Research and Development

Research and Development became important due to two reasons. One to act as a basis for the academic development of the subject to help in formulating new courses and increasing the quality of courses, and second to tackle unconventional design problems important for the economic growth. The study surveys done on activity analysis of a hospital and post office, colour choice investigation and ergonomical studies for the miner's safety gear fall in the first catagory. The design of letter-box for post and telegraphs, design of a more efficient coal-chula and kerosene-stove, design of a light weight bus body, design for rural areas etc. fall into the second catagory.

The centre plans to start an ergonomical research laboratory and a full fledged prototype development unit in the near future. Number of specific research projects dealing with National problems will be undertaken during the next three years under the U.N.D.P. Programme.

Design Practice :

Faculty members at the centre have tackled several consultation projects from Industry and Government. design services with high standards. Projects are often dealt in depth though the client looks at it as a superficial problem. The case studies from practice projects strengthen the courses to industries and students. Consultation projects further help the faculty to be alert and up-to-date with the current trends in the industry and profession.

Propogation :

Propogation of design values to Industries and Public, continuously goes on through the permanent exhibition at the centre. In addition, the centre organised an exhibition alongwith Society of Industrial designers of India at Jehangir Art Gallery. The exhibition named 'Products for People' had a massive response from People and Industry. Centre publishes an yearly journal, named 'Out-Put'. In addition to lectures by faculty at various forums, the media like news papers, T.V. and radio are made use of, for propogation. With the U.N.D.P. assistance for its development Industrial Design Centre is on the verge of expansion at present.

Educational Programme

The educational programme of 15 month duration at the Centre is meant to train graduate-engineers and architects as industrial designers. The task is characterised by two factors one of short duration and the second of students' earlier training. Students coming out of Indian Colleges and Universities with rigid pattern of education, are used to solving given problems with a formula based approach. They normally lack the experience of working with their hands. Unlearning much of what they have already learnt is essential for them to enter design profession. So the first task of the training is to propare students who can think with a questioning mind and absorb information with discretion on his own. The next task is to impart information on design profession. The third and the most important task is to inculcate professional values in the student which result in an emotional identity with the profession. Various courses are formulated with these three tasks in mind.

Basic Design

Students with engineering background have no inputs in aesthetics. To offset this disadvantage selection of candidates is based on their skills in sketching and aptitude for Art. The task in Basic Design has been to formulate suitable exercises to logically convince and convey the aesthetic experience to analytically oriented students. In the beginning mostly, abstract exercises in form, composition, etc. were given. It became difficult for the students to relate this to product design later. The method seemed to be too indirect and time was too short to absorb. Tasks with few realistic variables were framed to counter this problem. 'To generate a form to lift a cube' was posed as a problem. It became easy for the students to start with. Complex exercises based on actual products like 'create an aesthetically pleasing form to be held in hand and spoken into' were introduced. No constraints of material or process came into picture at this stage. The exercise was less abstract but open enough to come with a new form.
Other factor observed about the basic design was time consumed in making finished models. For instance a radii manipulation task' would consume a lot of time. But the content of learning seemed to be limited. A general policy was evolved to cut down time for such tasks and to lay emphasis on tasks where the students have to take creative decisions. Trying out number of variations quickly, using materials like clay was stressed. Further tasks, pointed towards learning of design elements were developed with this approach. Composition exercises where definite graphic elements were to be composed in a given frame with a definite time limit of 3 to 4 hours were tried out. Quick but increased number of tasks fecilitated varied exposure of the subject. A sequence of tasks which slowly lead to completely open exercises without constraints seem to satisfy the students' requirements.

Communication Techniques

This topic includes free hand drawing and other presentation techniques like perspective-drawing, rendering and graphic presentation. The course in free hand drawing is aimed at imparting skills and confidence to draw. Initial tasks are intended to free the student from self-consciousness that he is drawing. In one task students are asked to draw blind-folded, listening to music. Making sketching part of their attitude is recognised as essential for visual thinking.
The second part of the course deals with drawing objects through geometric analysis, using centre lines as the basis. Students are encouraged to draw natural and man-made objects by resolving the shape into geometric forms. Students find it easy to draw a seen object but difficult to concieve a new object and then draw. To develop this faculty tasks are given where students have to draw three dimensional views of the objects with given two dimensional views. Presentation techniques like graphic presentation of product ideas using coloured papers are stressed as the majority of the students find it difficult to acquire proficiency in

rendering in a short duration. Simulation techniques for making mock-up models and trial models are dealt in thoroughly as the student, after his training, often lands up in an industry with no model makers.

Product Design

This subject is dealt through a product design task. Additional inputs in quick concept forming are imparted through a series of creative design tasks and accompanied lectures. Inputs in the subject of creativity has also helped in developing the supporting course of Product Design Theory which used to mainly deal with design analysis. The present Product Design Theory course is a fairly developed course with constant inputs from Practice. It has an integrated approach to analysis and synthesis treating creative aspect as a part of design process rather than a quantum occuring as a 'creative leap' at one stage.

Control Panel Organisation

The importance of dealing with controls, indicators and their organisation led to formulating a separate topic named Control Panel Organisation which is dealt like a product design task.

Supporting Courses

The courses in Materials-Processes, Applied Ergonomics, 20th Century and Culture, Behavioural Sciences, Planning Techniques, Design Management, Marketing and Industrial Economics are developed as supporting courses to the design courses.

Course in Materials and Processes deals with the nature of materials, processes and their relationship with Form. In addition, variety of information on their properties, economics availability and technical design considerations while using them, are dealt by the visiting faculty from the industry. The task of design faculty has been to fill up the gaps, coordinate and direct the course into an usable subject by designers.

The course in Applied Ergonomics is conducted by the design faculty of the Centre and specialists in Ergonomics. Again the efforts are to focus the attention on using the ergonomic information and considerations in design activity. The tasks in ergonomics and design often become complimentary and overlapping to avoid the seperation of ergonomics as a seperate specialised subject.

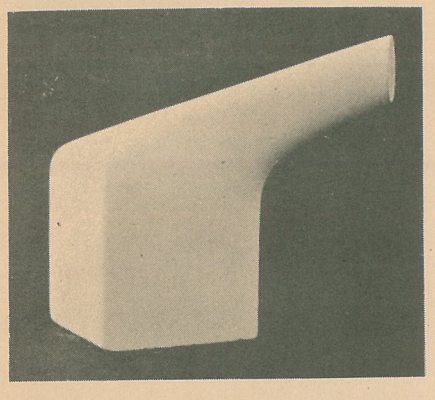
The course in 20th Century Art and Culture deals with the History of Art, Design and its influence on culture from early ages to 20th century. The course is mainly dealt by the visiting faculty and includes exposure to films and theatre.

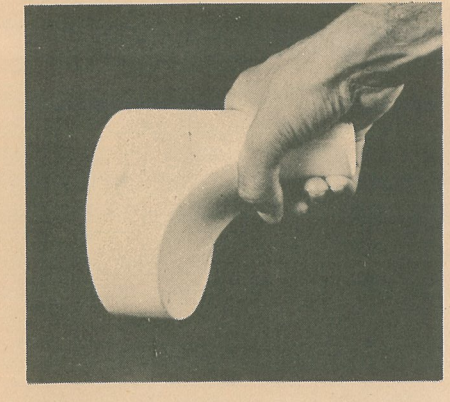
The course in Behavioural Sciences is being developed with emphasis on the requirement of designers. Methodology is stressed so that the student after training will be able to make use of the knowledge in practice.

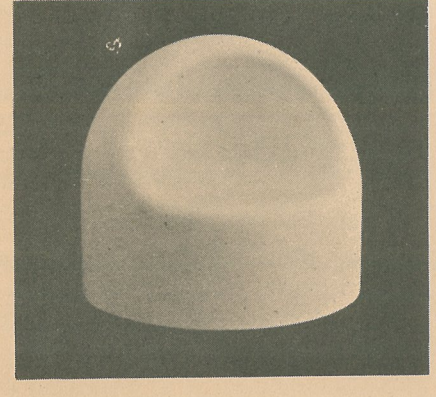
Course in Planning Techniques, Marketing and Industrial Economics are intended to familiarize the students with management subjects. The Design Management course deals with the problems of professional practice in the Indian context. Designers from industries are invited for a dialogue with the students.

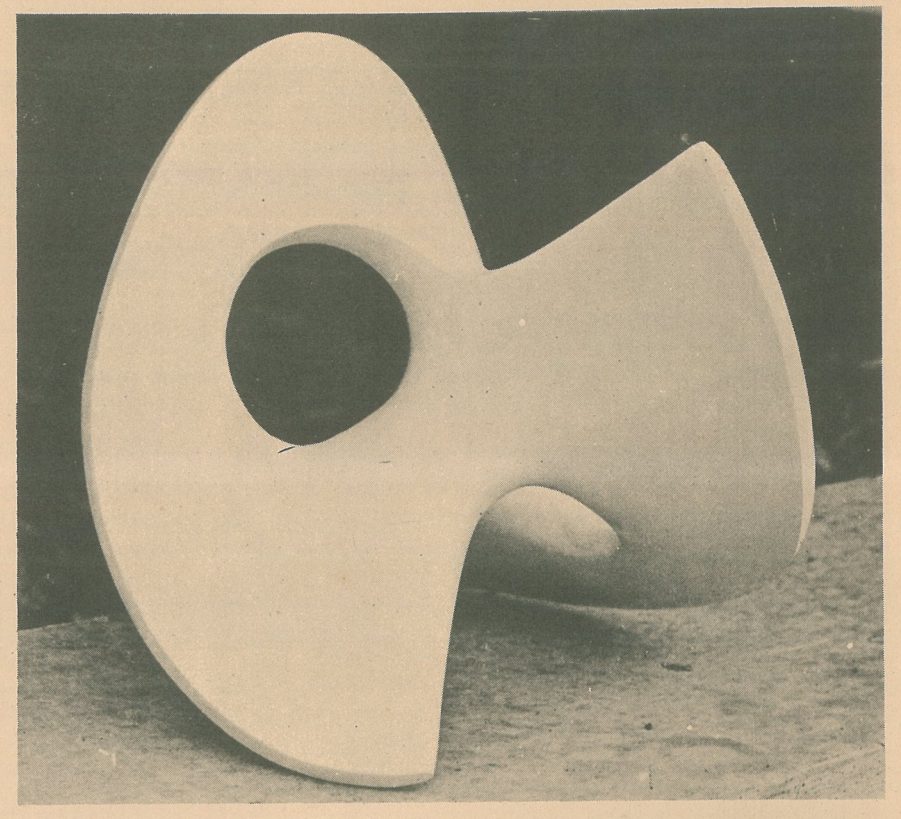
Diploma Projects

The diploma is given based on two projects one of 8 weeks and the other of three months duration. Importance is given to doing number of projects as this would leave the student with a capacity to deal with variety of problems. This would be essential as the student often may have to head the design section in industry after training. The 15-month programme has been quite satisfactory to meet the immediate demands of the industry. The Centre is about to introduce a two year Master of Design Programme with few advanced subjects, which would enable the designers trained at the Centre, to tackle design problems in depth.

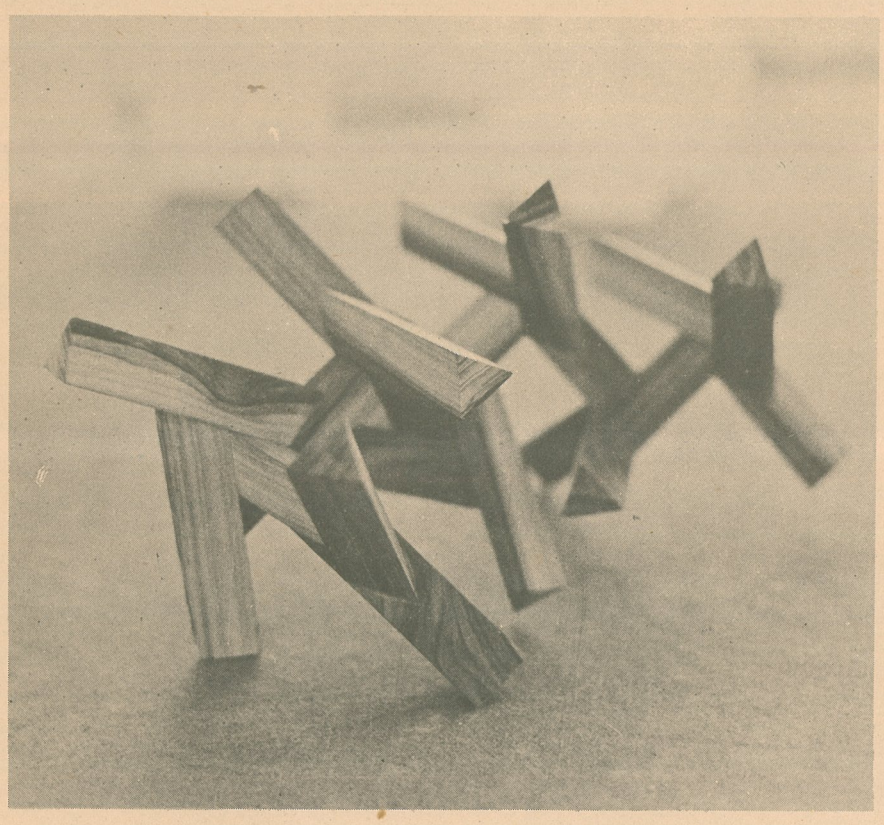


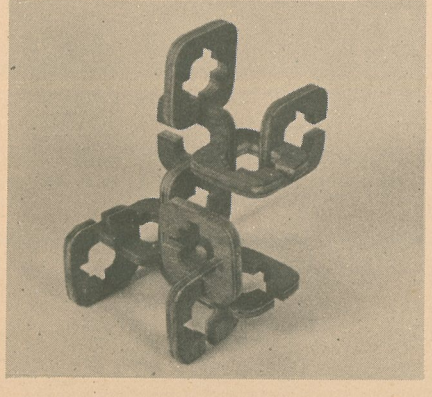


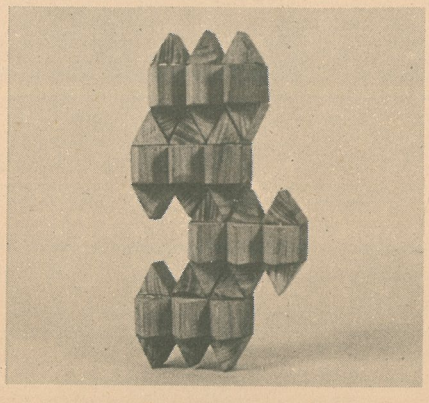


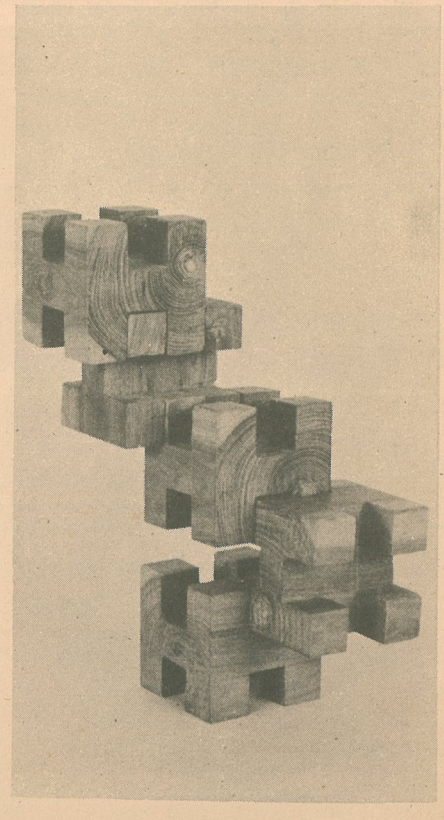


Basic Design exercises







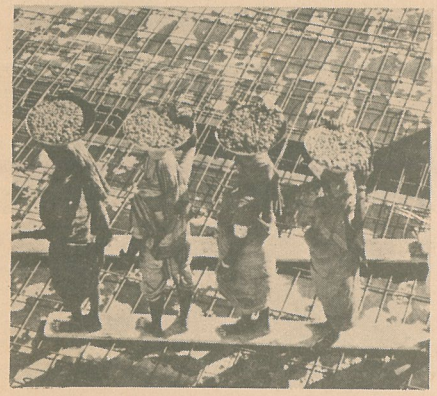


Design Projects at the Centre

The various projects undertaken form the back-bone of creative output of the Centre. Design projects have been tackled at four levels — class room projects, diploma projects consultation projects and research projects by faculty for Government and other agencies. Student projects offer a wide scope for choice of problems and become the test ground for designers' ability to look at problems and offer solutions with a vision. The research projects provide the very basis for the academic growth of the profession. The consultation projects form the forum for utilising the professional capabilities of the faculty and facilitate live feed-back from Industry to the professional education. However, all the projects are to be judged by the 'design quality' within their scope.
As the projects cover a wide range, they have been grouped into sections based on 'Use' for convenience of presentation.

For Occupational and Professional Use

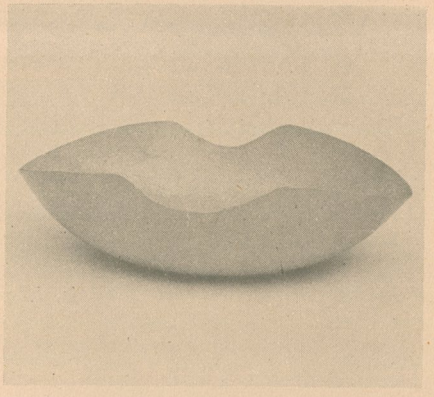
Products for occupational use become the priority items in a developing country. The income distributions clearly indicate that 70% of the population in the lower income groups consume only 30% of the national produce. This would mean that the poor majority spends very little on problems of comfort. Design of products for poor has little meaning unless it deals with their earnings. Workers and professionals have seldom any say in the choice of tools and equipments they use. Practising individual designers may never be commissioned to design these products in the present circumstances. Here comes a socially responsible and visionary role for a design institute to tackle such problems and propagate them among those responsible for decision-making. Students at the Centre are encouraged to take up such problems though from a narrow commercial and professional point of view such exercises may look academic.

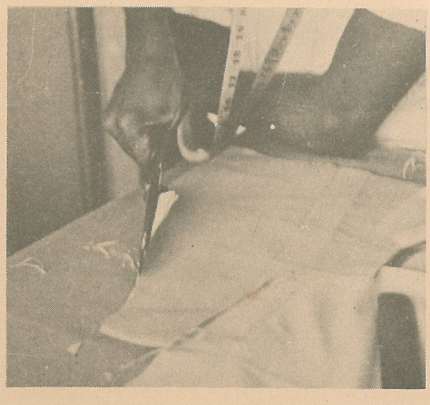


Gamela

Gamela, a pan shaped container, is widely used in carrying various types of materials like concrete, mortar and bricks. Detailed studies revealed problems in handling, stacking, carrying and transfering material. The new shape with elliptical contour facilitates stackability with or without material, gives better hand grip and guides the material for transfer in addition to making the gamela more comfortabl to carry on heads.

Design : S. K. Dastoor
Guide : S. Nadkarni

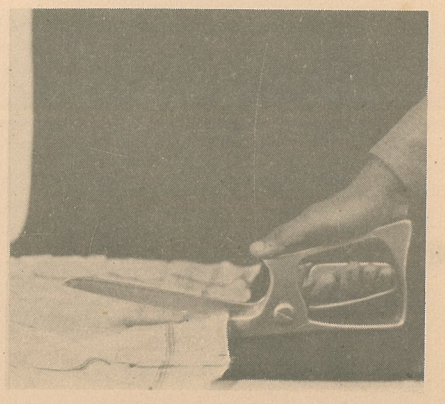


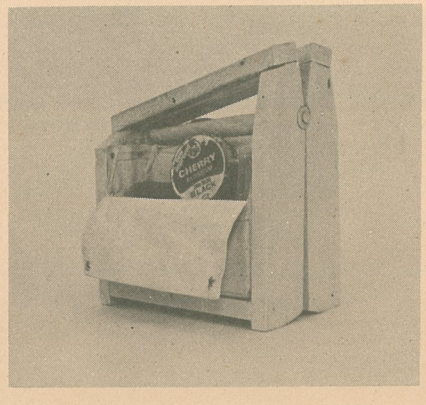


Scissors

Tailors prefer heavy scissors and rest them on the table while cutting. With the new design scissors can be used without lifting it from table as only one part is moved for cutting.

Design : S. K. Menon
Guide : A. G. Rao





Shoe-Shine Stand

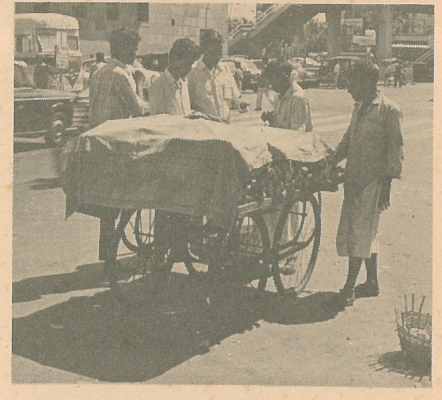
'Shoe-polishing' is a bread-earning profession for many a people in the country. Young boys go around with portable units in trains. Others operate on railway platforms or on foot-paths. The earnings of these people are meagre from this profession. It is a challenging problem to design for people who can afford almost nothing. Study of the problem led to the design of a portable shoe-shine stand with two wooden frames hinged at the centre. The unit turns into a stable stand for polishing when the frames are spread out. The unit costs Rs. 10/- with a profit margin of 15 per cent.

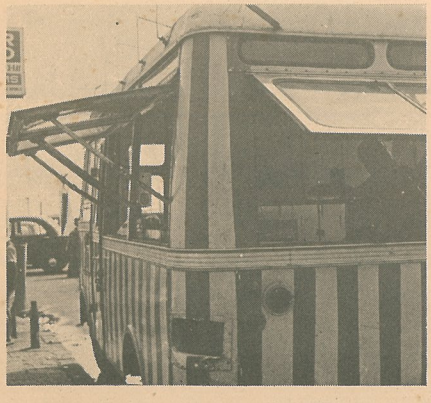
Design : Suhas Kakde
Guide : U. A. Athavankar

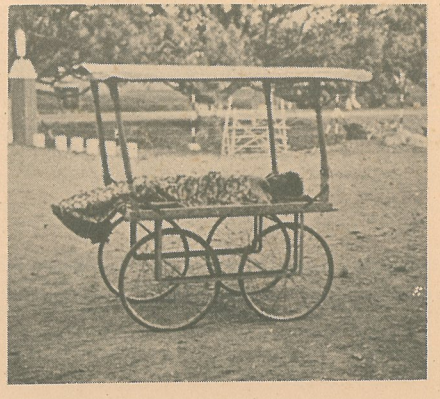
Mobile Cart

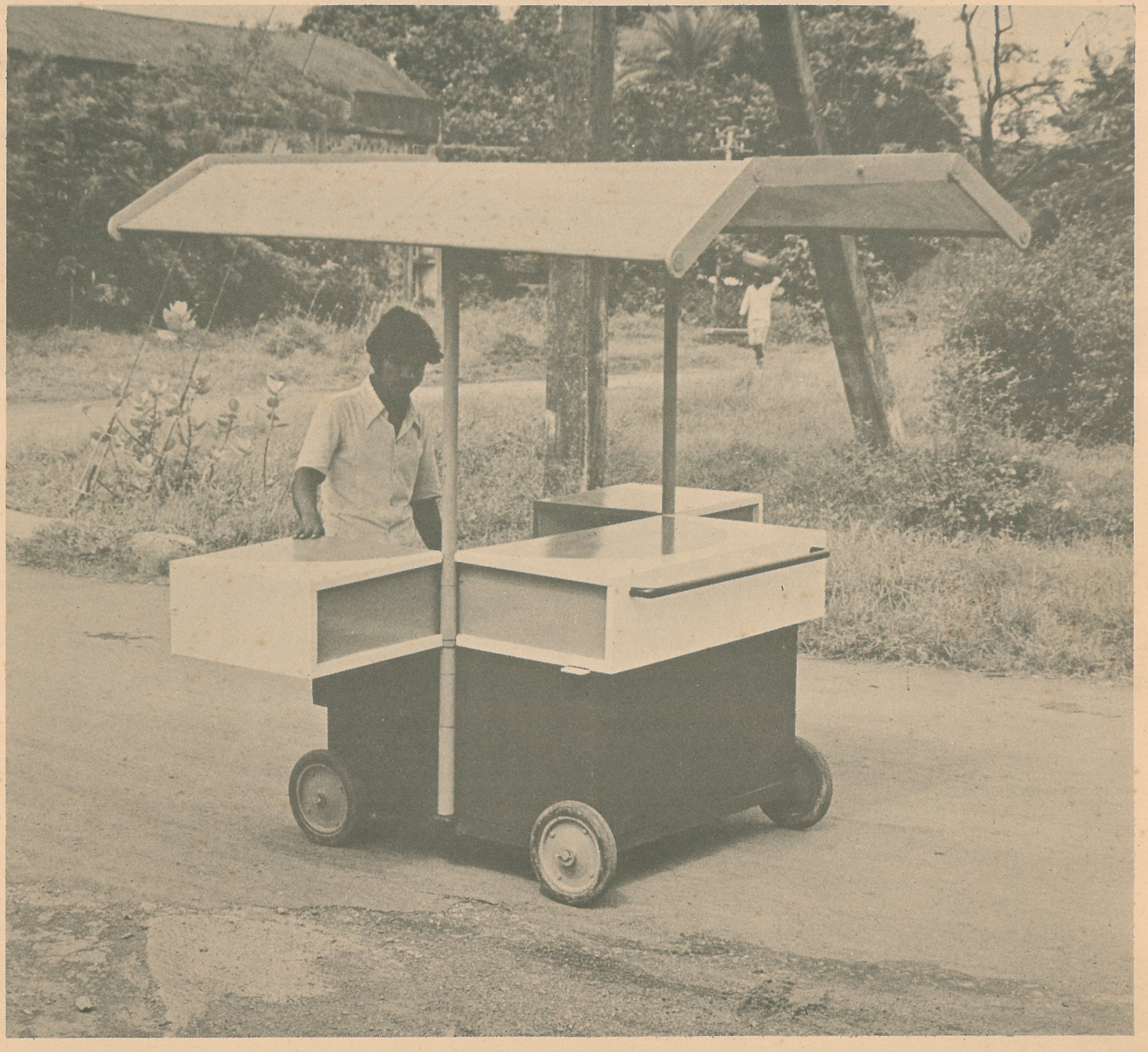
Mobile carts in our cities and towns are part of our culture. We accept them with their pros and cons. A redesign rather than an alternative system like restaurants is a culturally balanced approach. The design developed for CIDCO (City Industrial Development Corporation) makes the cart colourful to attract customers. The functional value of the cart has been multiplied with several combinations for different purposes like selling of bhel, puries, tea, pan, cigarettes, books and magazines. Enough storage area at proper heights and the foldable cover at the top to protect from Sun add to the convenience of the cart-owner.

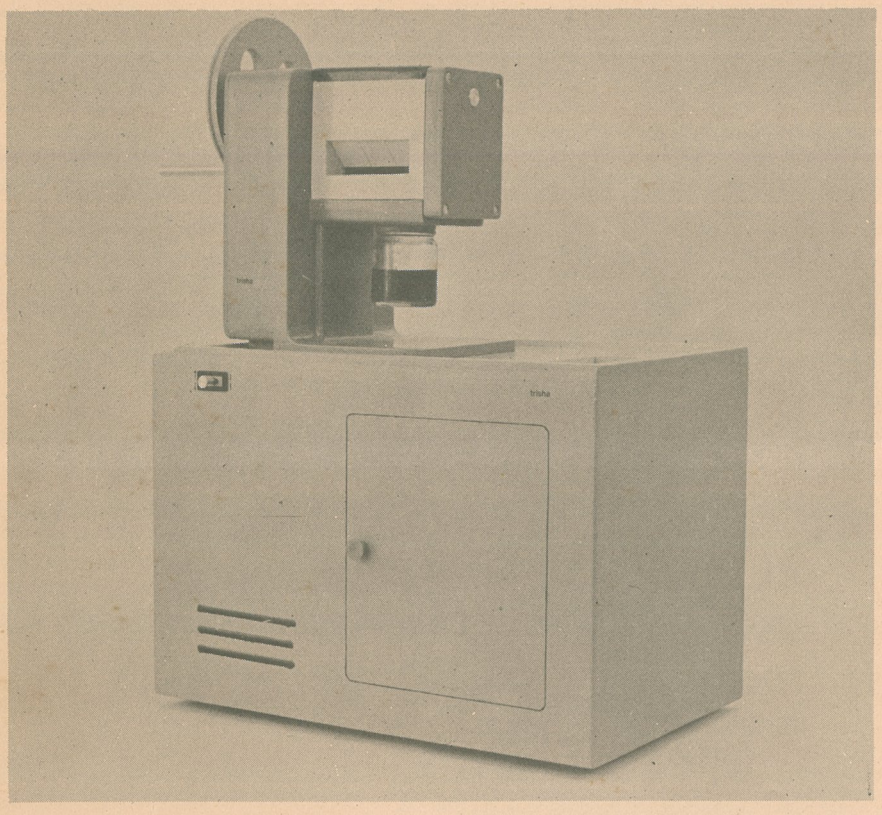
Design : Harikumar Nair
Guide : U. A. Athavankar









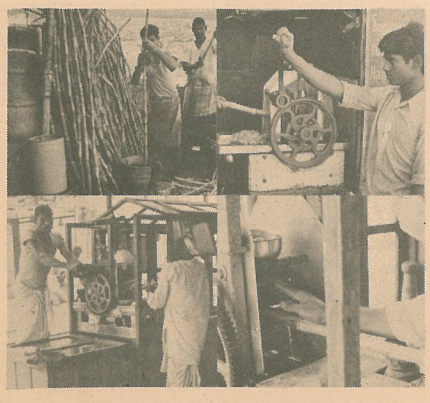


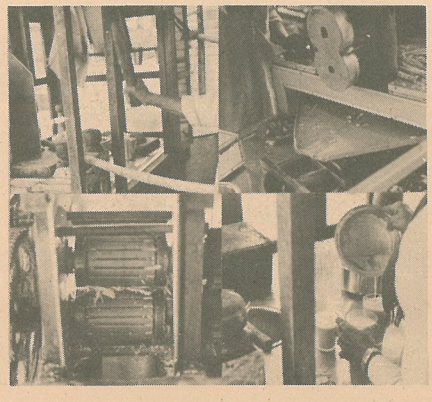
Sugarcane Crusher

Fresh sugar cane juice, crushed and served at road side shops, is inexpensive, nourishing and can easily compete with foreign drinks like coca cola. Further it provides employment to large number of small entreprenuers. The set-up, where the sugar cane is cleaned in front of you and ingredients are added as per your choice has the much desired human touch missing in an industrialised city and helps in preserving 'those cultural values' which erode day by day with the advent of capital intensive technology.

The various aspects of sugarcane crusher were studied. The new design suggested has a system of collecting the juice into closed standard bottles making it completely hygienic. The crushing mechanism is reorganised to ensure separation of parts that need lubrication, from the crushing area.

Design : Dilip M. Shah
Guide : S. Nadkarni





Barber's chair

The profession of hair-cutting has been characterised by caste in India. and till today practice of the profession is mostly restricted to particular community.

The feudal practice of village-barbers going from door to door providing home-service still continues in this country. In towns Barber's have shops which also act like communication centres as a radio and magazines help in gathering people.

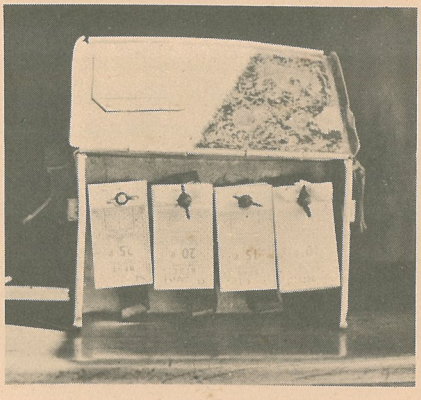
The design studies were focussed at this type of barbers who are large in number and cannot afford to invest large sums in the expensive furniture currently made for hair-cutting saloons. An inexpensive, attractive barber's chair with all ergonomical considerations of the user and the barber, was the outcome of the project.

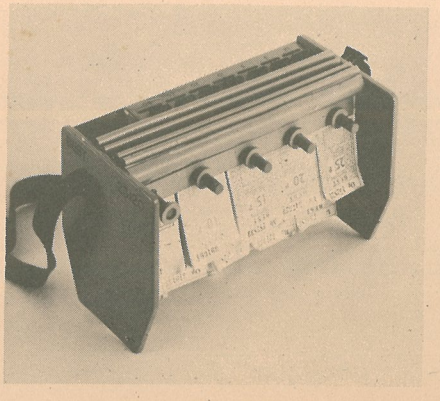
Design : H. S. Chauhan
Guide : U. A. Athavankar

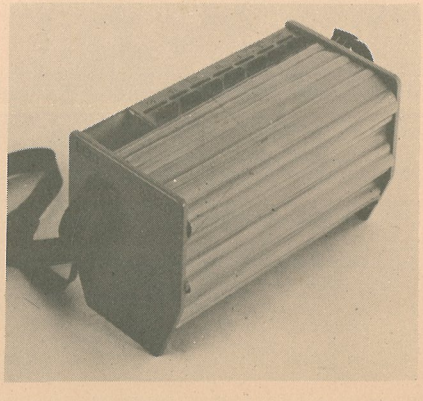
Ticket Dispenser

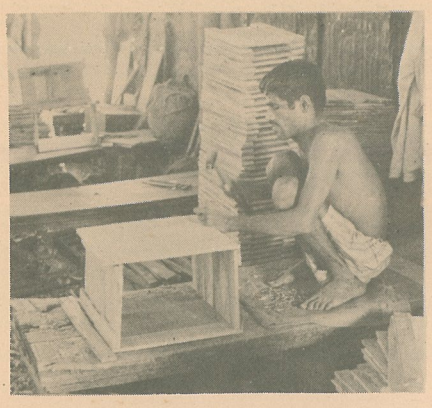
Bus commuters in Bombay are familiar with the annoying noise of the conductor's ticket-dispenser. After studying this problem a new design was arrived at. The combined ticket and coin-dispenser made of H.D. Polythene is light in weight and makes no noise. Rounded corners ensure commuter's safety. The tickets at different levels and the coin-dispenser quicken the work of conductor.

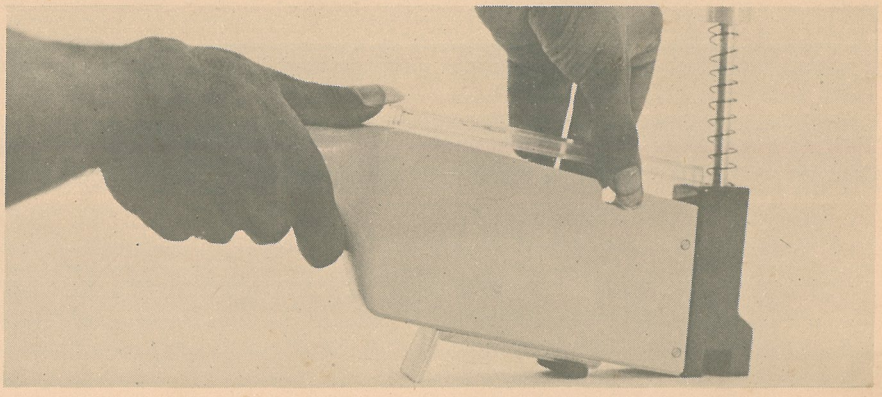
Design : V. Ramasubban
Guide : A. G. Rao









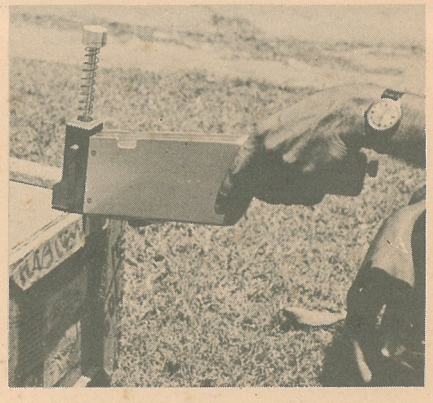


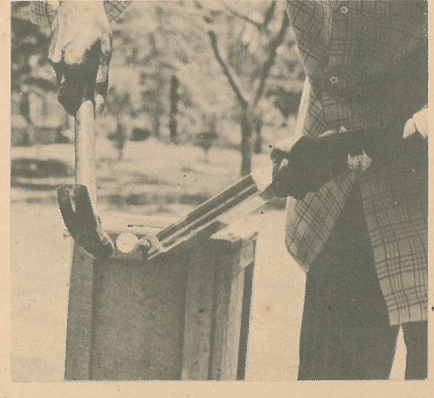
Nailing Machine

Nailing of boxes in industries is done at three levels. One employing manual labour with no investment getting an output of 10 boxes per person per day, second using power operated portable nailing machine costing Rs. 5000/- in foreign exchange with an output of 40 boxes per day and the third using two automatic machines costing Rs. 50,000/- in foreign exchange with an out-put of 400 boxes per 6 persons per day.

Indian industries mostly adopt the first type using manual labour as the wages paid per box are as low as half a rupee. Some industries have gone for automatic machines.
A new non-powered nailing machine was innovated. Costing around Rs. 150/- it feeds and positions nails using a spring, like in a 'stapler'. Hammering can be done with less attention and more accurately. The rate of box making can be increased to 25 per day per person doubling the income of the worker. As no power connections are required it can easily compete with the power driven machines.

Design : M. K. Kulkarni
Guide : U. A. Athavankar

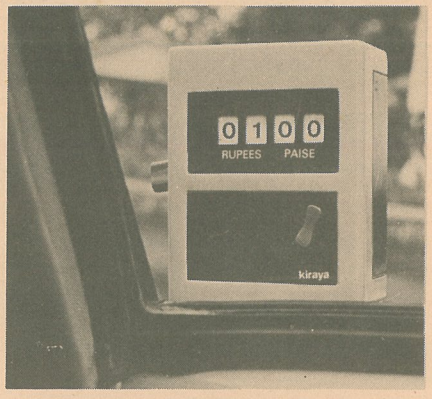


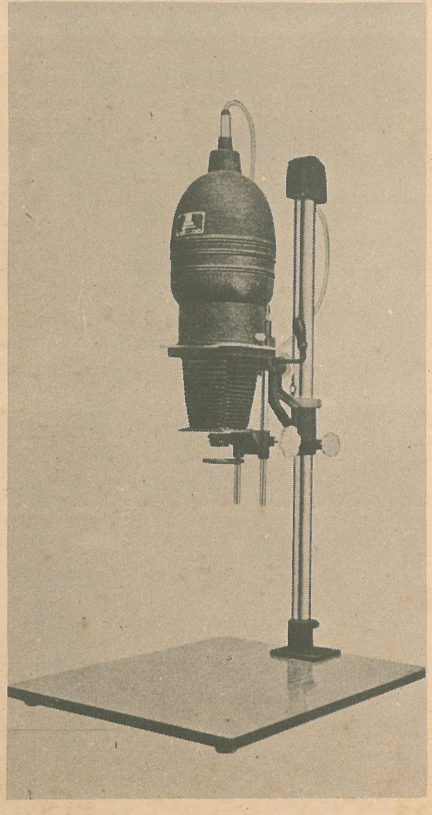


Taxi Meter

The present Taxi meter is irksome to customers and inconvenient to the taxi-drivers. The new design based on existing mechanism has bold graphics to indicate the fare and takes care of driver's convenience.

Design : K. C. Mahapatra
Guide : S. Nadkarni

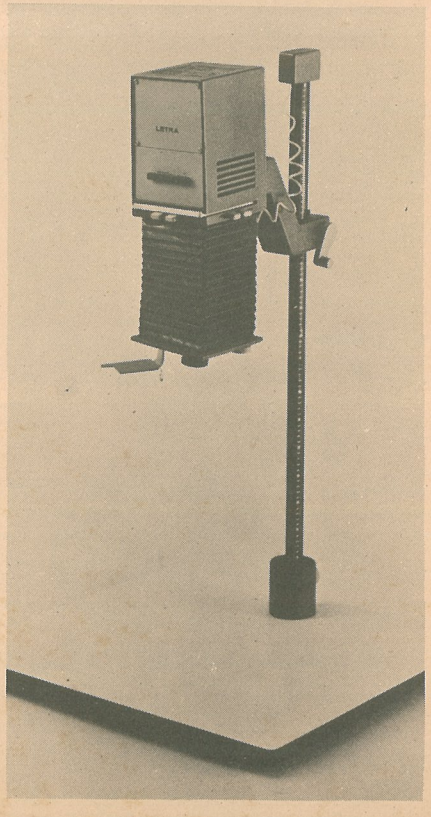




Enlarger

Many Manufacturers in the country are stuck with old imported designs, mainly due to inertia and lack of design inputs. The salient features of the new photographic enlarger meant for use by professionals are, use of inexpensive 'opal lamp' in the place of imported lamp, controlled movement of lamp-house and inclusion of a scale on the enlarger column for easy record, in case of repeat orders.

Design : Kirti Trivedi
Guide : M. Chattopadhyay



For Industrial Use

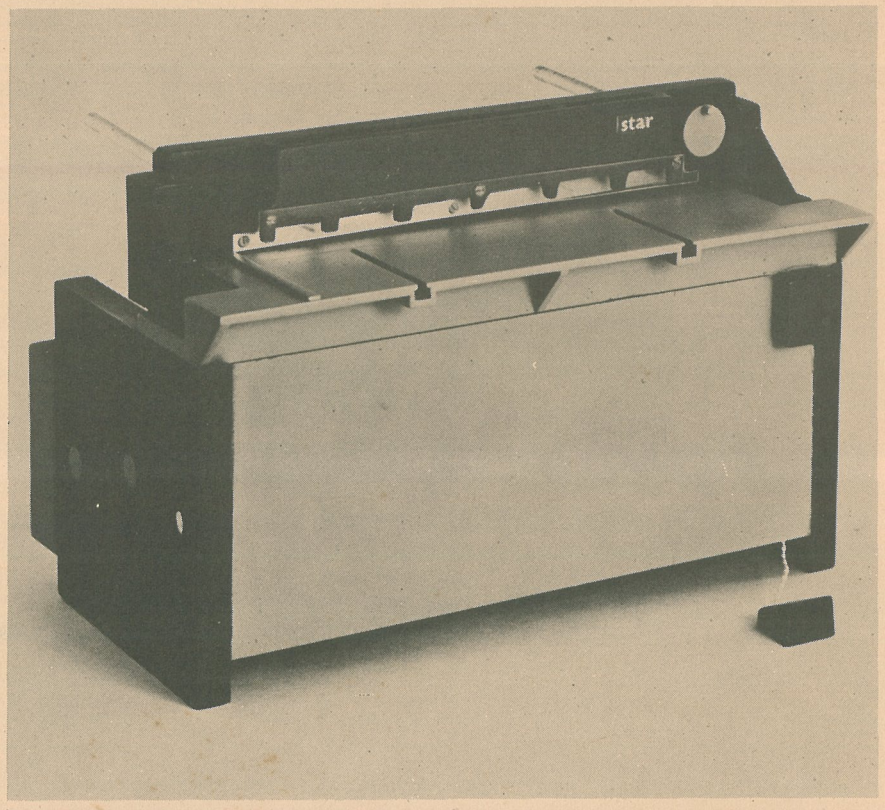
Industrial production is the root of economic development. Industries in India are well exposed to the latest developments in the West and Japan. The export of heavy engineering products is increasing at a significant rate due to the low labour costs. Problems of export make the heavy industries to look for Industrial designers for 'styling' their products. The role of industrial design as a a process resulting in reduced costs, increased efficiency and ease of manufacture is still not fully understood by the Indian Industry. Quite often a client who has approached the centre to improve the looks of his product has gone back with an improved manufacturing procedure, cost saving and a marketing strategy in addition to the improved looks. The organised heavy industry, is the most potential benefiter of Industrial Design in the near future, as the manufacturing is done on a piece-basis and design costs are insignificant compared to the costs of manufacture

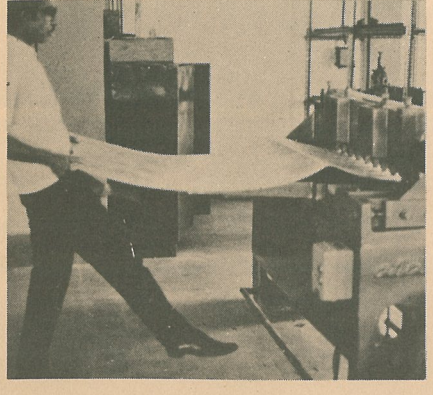
There is a vast scope for Industrial Design in the rapidly expanding medium and small scale industry. A Government policy to promote industrial design is much needed as this sector is ill-organised to invest in design.

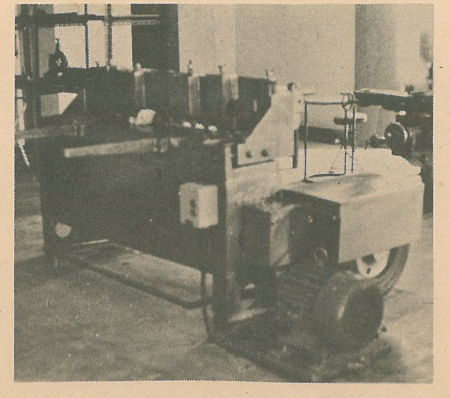
Shearing Machine

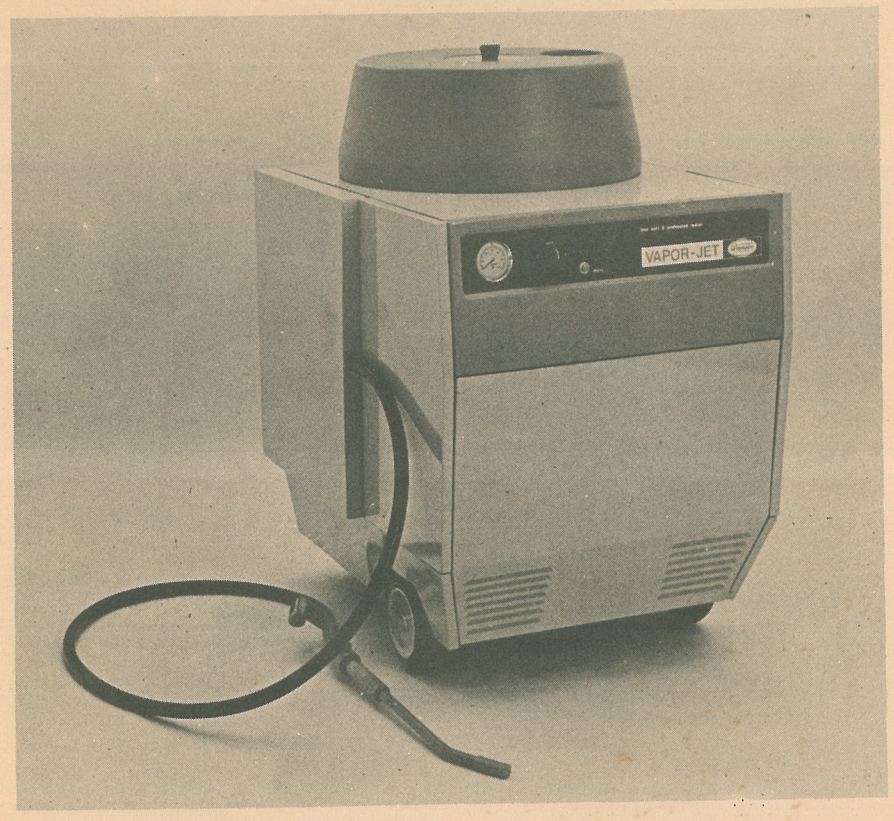
Space economy and operator comfort are neglected items of the present Shearing machine as seen in the photographs below. The re-design with minimum technical changes has many useful features like length adjusting gauge in the front, leg-operated switch that can be reached easily and a transparent guard for safety.

Design : S. S. Kshirsagar
Guide : A. G. Rao



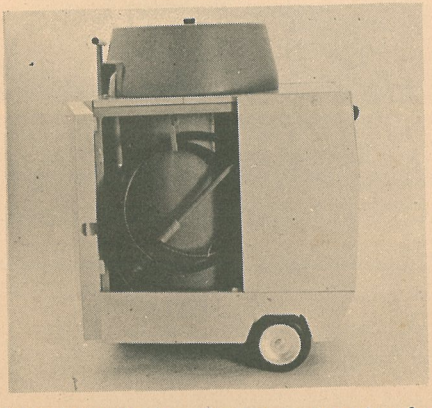


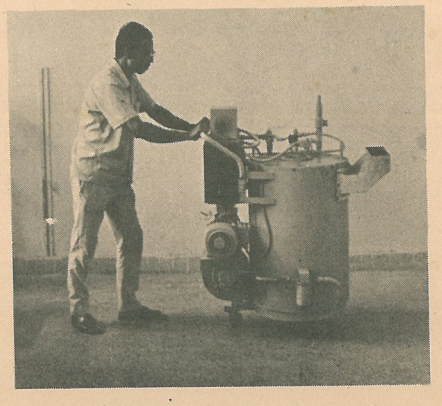


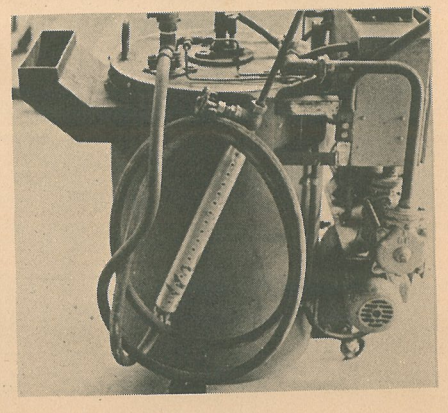


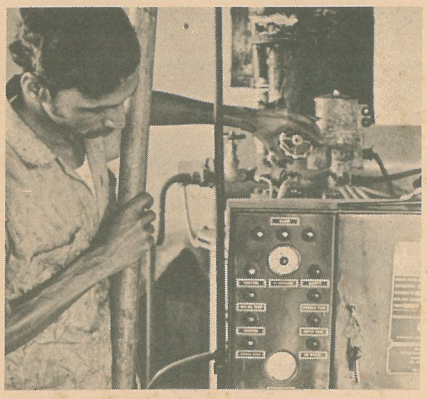
Vapor-Jet Steam Sprayer
The unit used by big hotels and industries for cleaning utensils etc. had the hang-over of the image of Boilers which the company manufactures. The main effort of the designer has been to create an image appropriate for the hotel use. The sheet metal body incorporates all working elements, plumbing and wiring inside. The unit is currently in production and is exported to many countries.

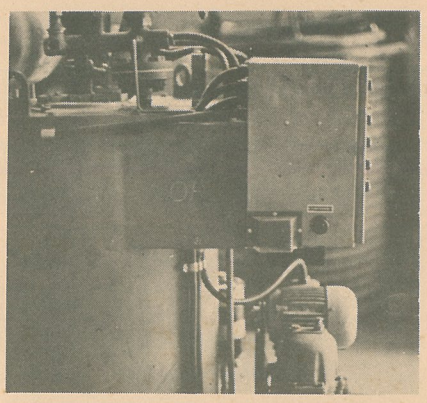
Industrial Design : M. Chattopadhyay
Client : Wanson (India) Pvt. Ltd.

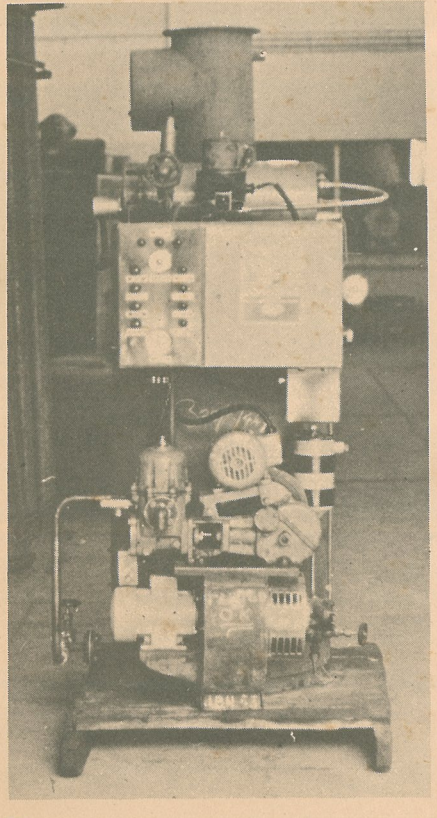


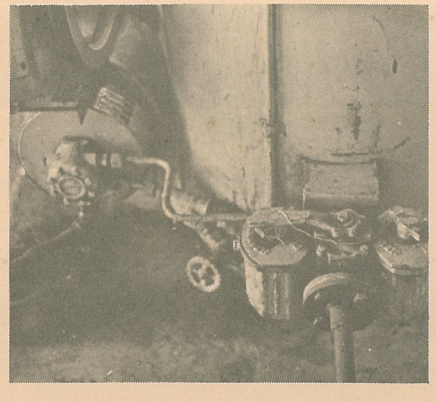


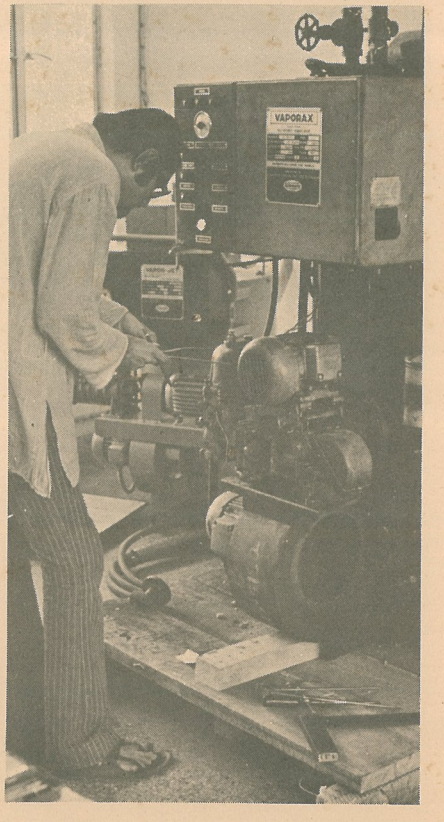











VAPORAX

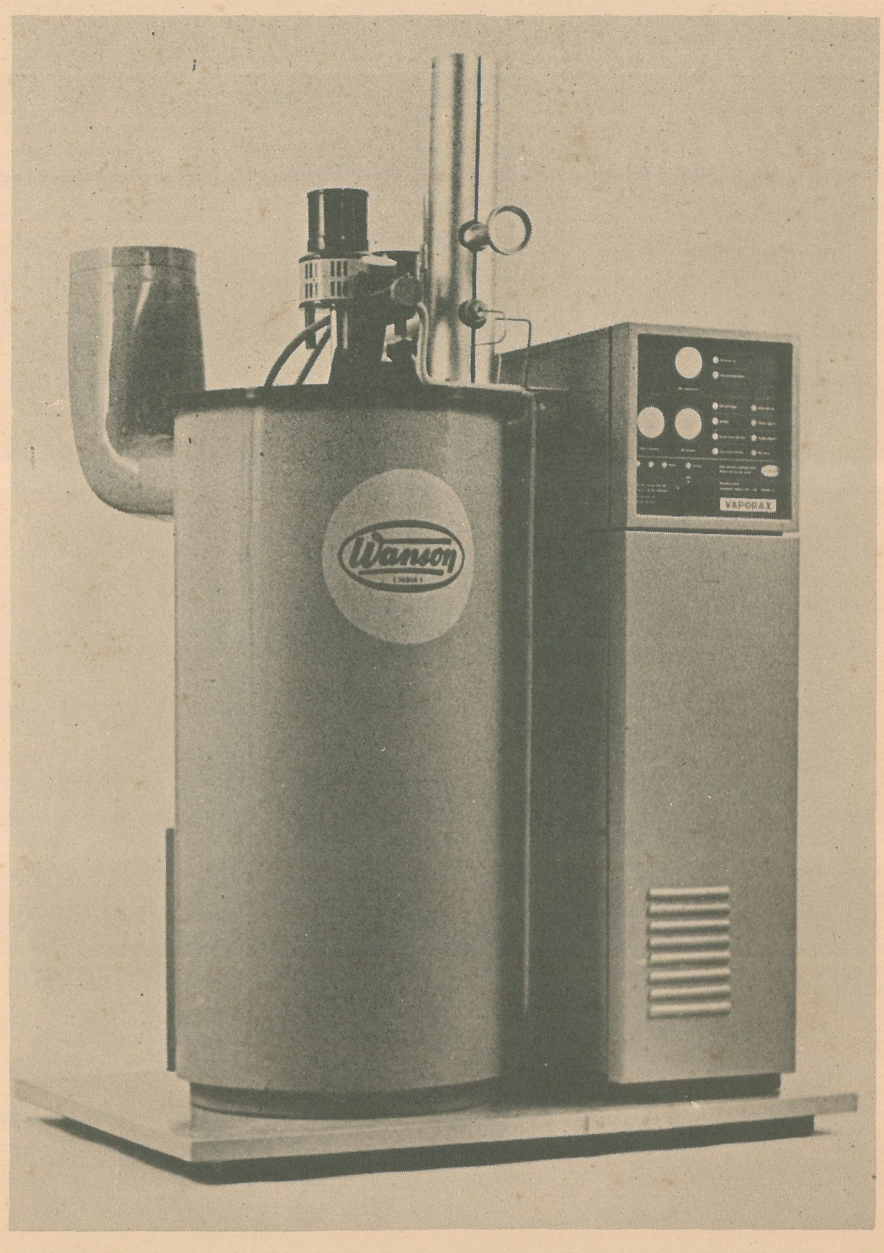
Vaporax Boilers

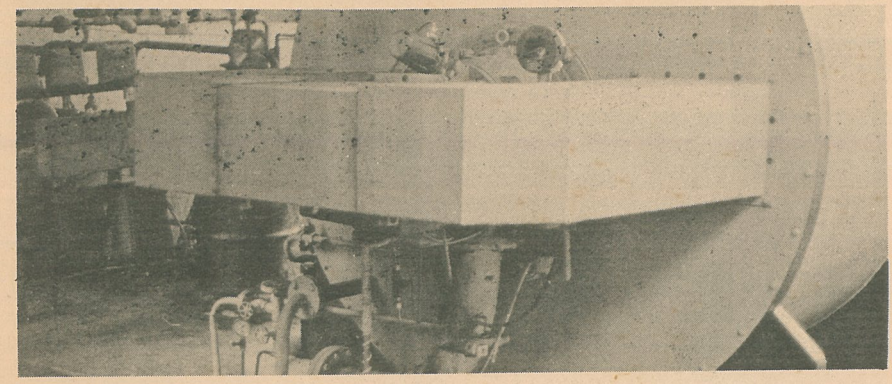
The redesign of the present Vaporax Boilers was assigned to improve the overall appearance. The detailed studies done by the designer led to a great deal of re-organisation of the range of boilers with different capacities

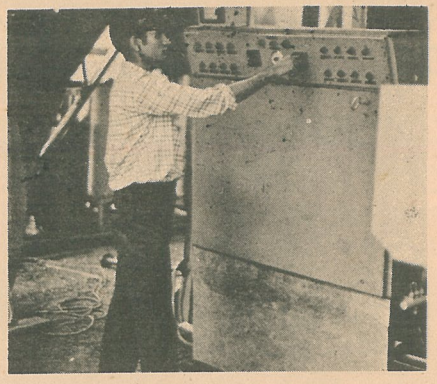
The control panel used to be welded at the top as seen in the pictures at the left side. When the boiler size increases the control panel goes up making it difficult to reach the controls. In the new design the control box is seperated from the main boiler which makes transportation easy. The height of the controls is decided with ergonomical considerations and remains unchanged as the boiler size increases with higher capacities.

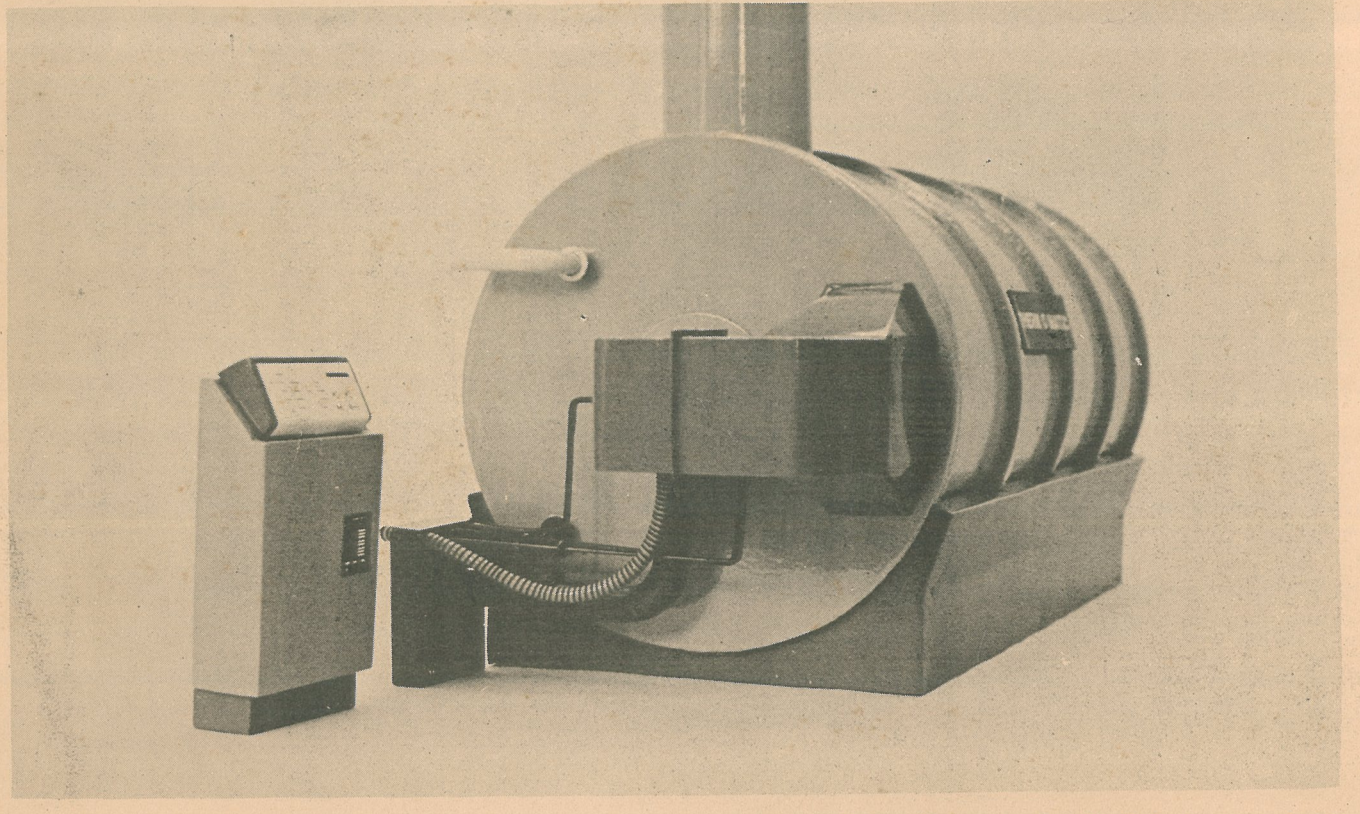
The various electrical, steam and water connections have been organised and colour coded for the convenience of manufacture and use.

Industrial Design : U. A. Athavankar
Client : Wanson (India) Pvt. Ltd.





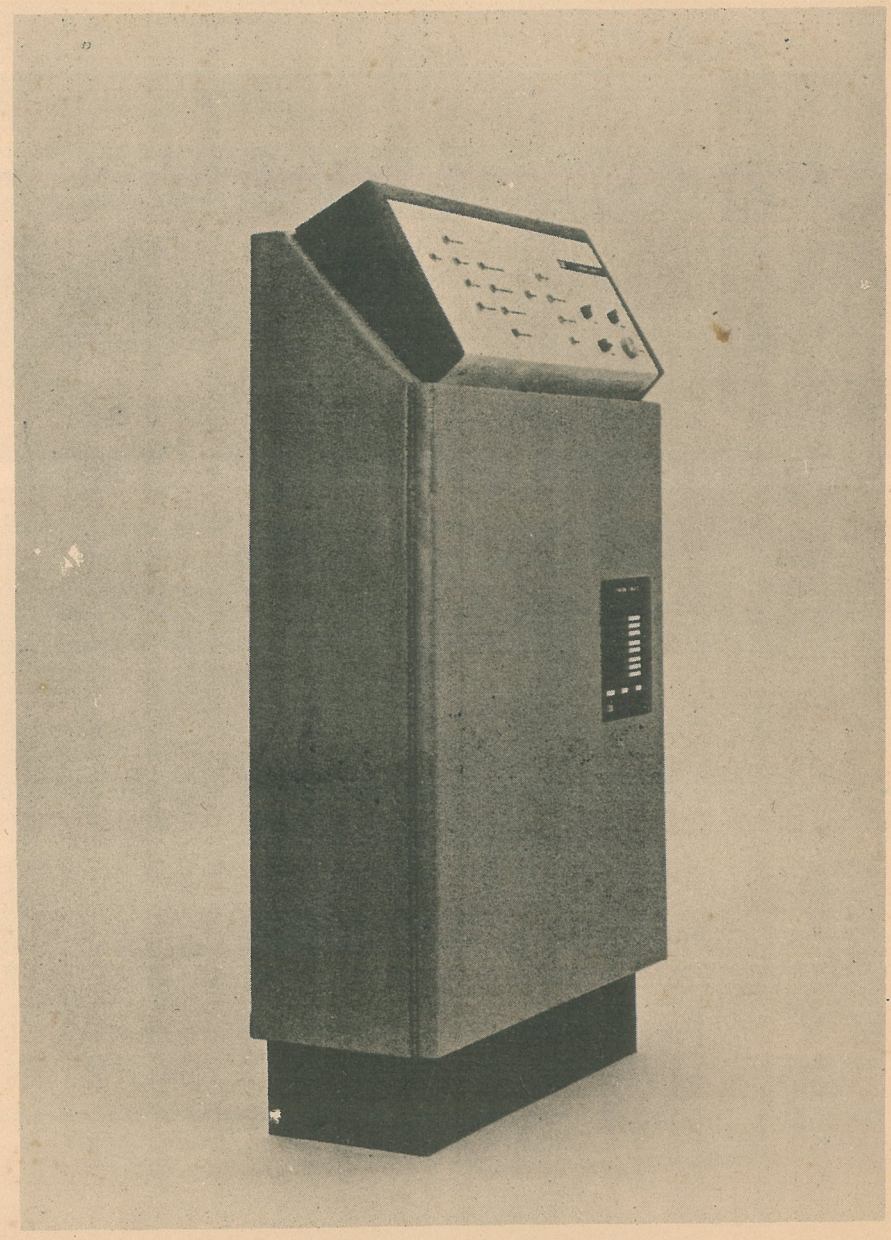


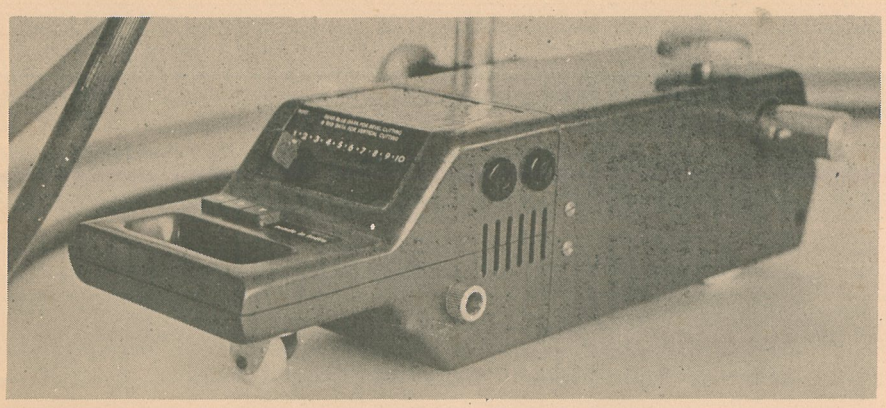


Thermomatic Boiler

The problem in the existing design of the boiler was mainly seen as that of 'looks' by the client while assigning the project. The two ducts (shown on left side page-top) feed the hot air from the boiler, back to the burner. To reach the burner for maintenance the ducts have to be opened resulting in three openable joints. The basic question 'Why two ducts ?' raised by the designer led to a single duct with larger inlet size. The resulting design eliminates one duct completely and reduces the joints from three to one resulting in manufacturing economy and ease of maintenance. The control box has been redesigned with improved proportions and comfortable height to be made in standard size sheet with least wastage. The controls are organised for better performance.

Industrial Design : A. G. Rao
Client : Wanson (India) Pvt. Ltd.



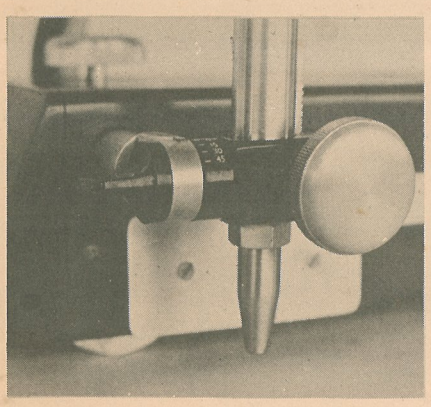


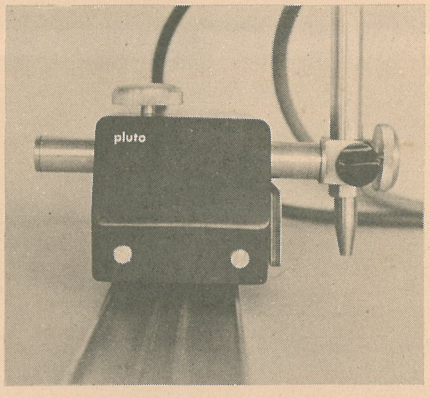
Gas Cutting Machine

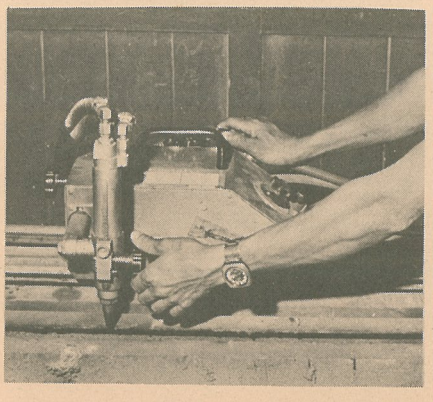
A complete, logical, re-organisation of gas cutting machine is attempted after a thorough analysis of the existing unit. The new design projects an image of precision and modernity so essential to create confidence in the machine.

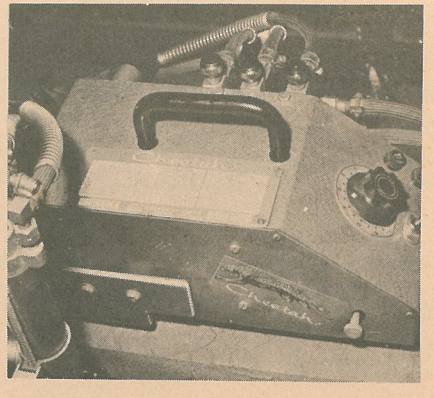
The main features of the design are comfort in operation and overall re-organisation leading to seperation of operating and non-operating elements for better communication.

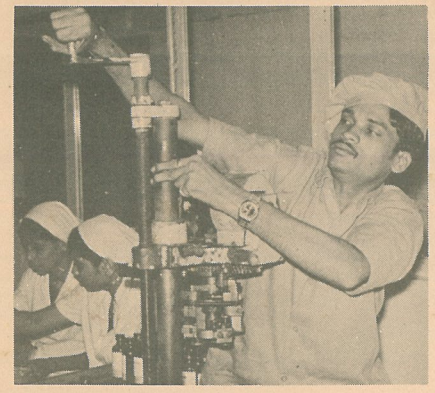
Design : G. S. Bhumra
Guide : Kirti Trivedi









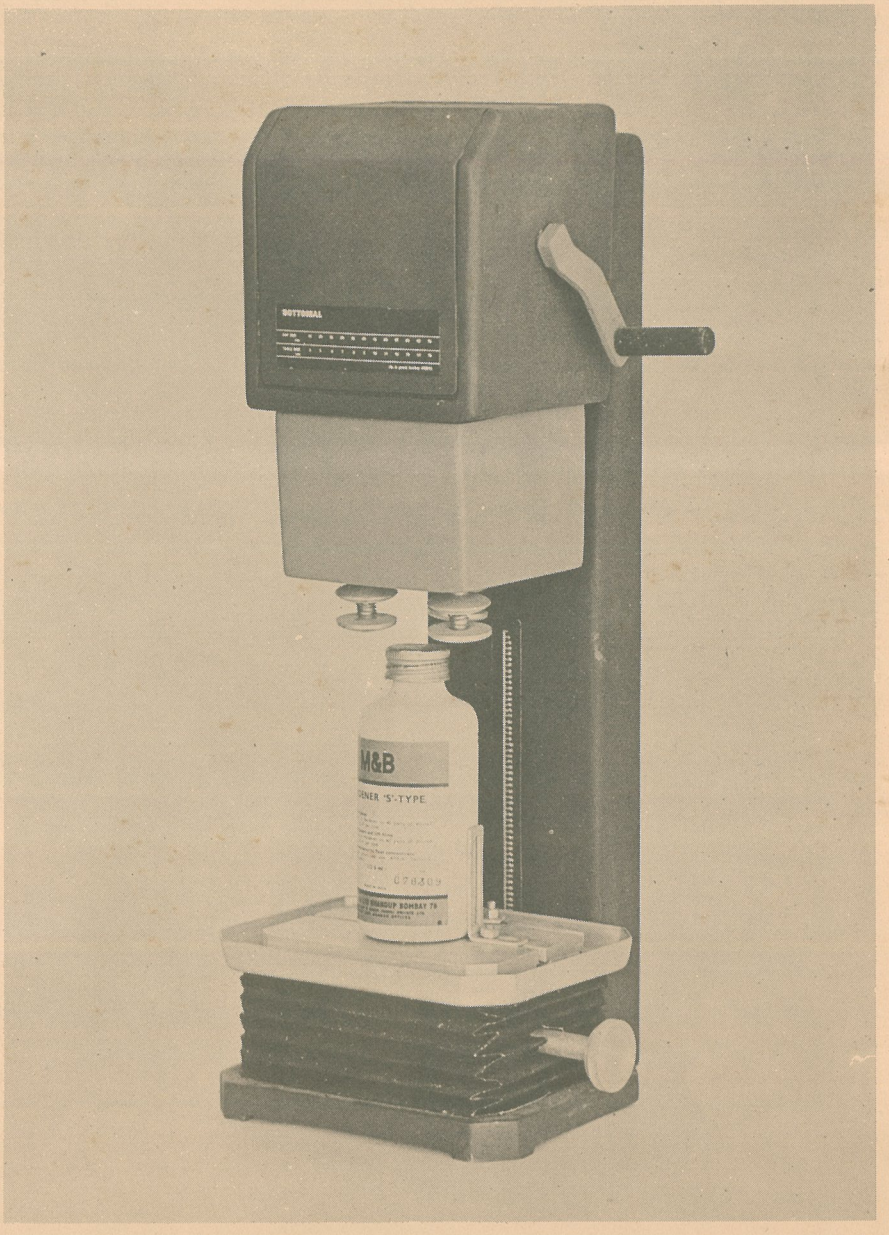


Bottle Closing Machine

Hand operated, semi-automatic and automatic machines are used for bottle sealing in industries. Only companies with foreign collaborations seem to use automatic machines as they need to be imported. Small and Medium industries use the other two types of machines.

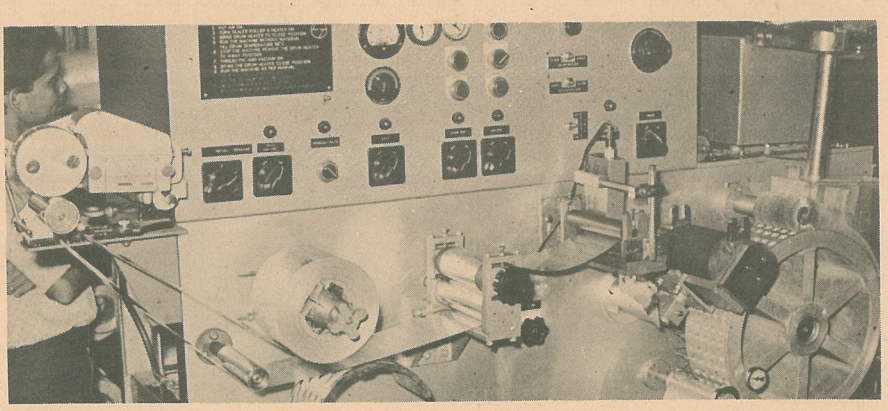
A new design for Hand Operated machine is proposed which has the operating advantages of and uses the advanced techniques of semi-automatic machines. The unit has a movable platform for height adjustment thereby fixing the height of operation at a comfortable level which is a missing factor in the existing machine as seen in the picture above. The machine being clean and simple in construction, is ideal for pharmaceutical industry.

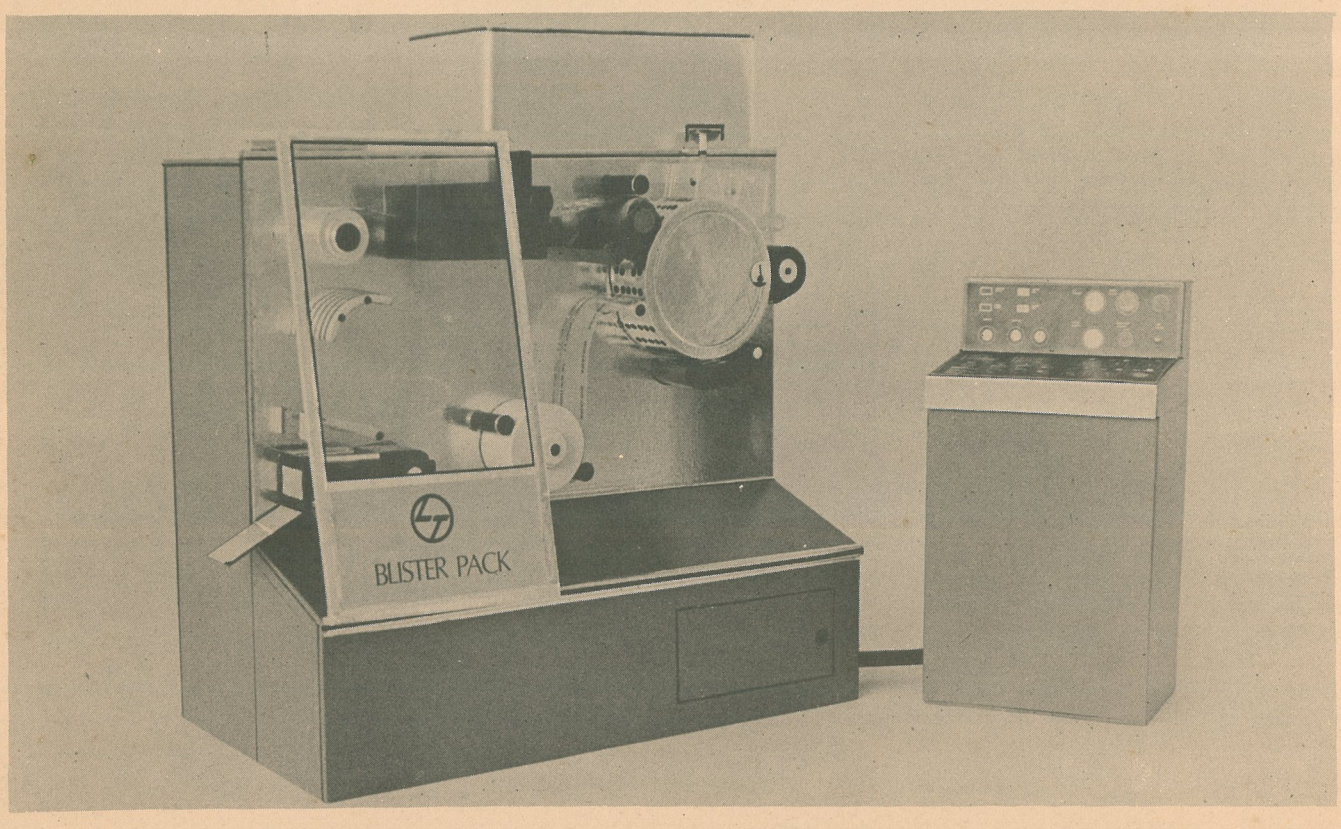
Design : S. B. Potnis
Guide : K. Munshi



Blister Pack Machine
An automatic machine for packing commonly used medicinal tablets, developed by Larsen and Toubro Ltd. was re-designed for better organisation and get up as a student project. The machine has an export potential.

Design : M. D. Kothari
Guide : U. A. Athavankar





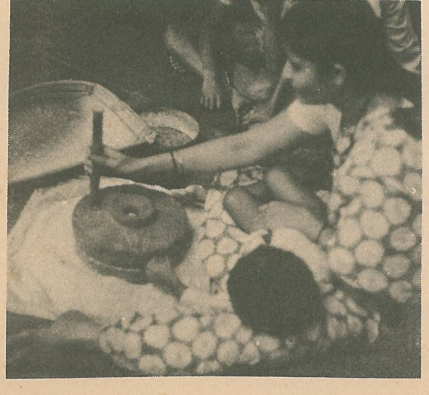
For Domestic Use

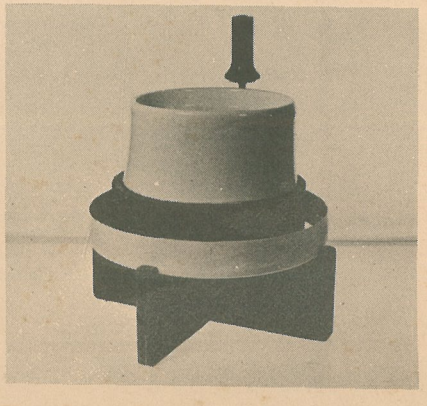
Consumer goods have been the 'focus' of Industrial design activity in the capitalistic economies. In the Indian situation the main demand for the manufactured products for domestic use come from the 'middle-income' groups. Manufacturers of these products take to the easy course of 'design plagiarism' of Western designs. But the Indian users are increasingly becoming aware of their actual needs and blind copies of Western products no more satisfy them. The design efforts at the Centre have been concentrated on detailed studies of cultural and social needs of users and bringing out innovative, economic solutions with Indian manufacturing constraints. Bringing the design awareness to the users and convincing the manufacturers of the benefits of good design through exhibitions and seminars has been one of the main taks of the Centre. An exhibition 'Products for People' held at Bombay has evoked keen interest amongst users and manufacturers.

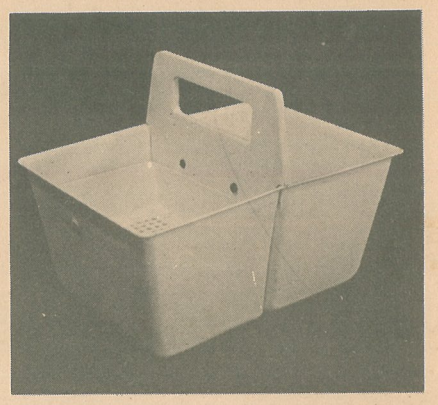
Domestic Flour Mill

Traditional stone-wheel grinders are still used in India. Electric flour mills are often inaccessable to villagers. In urban areas stone grinders are used when a small quantity of cereals is to be ground; for typical Indian cooking. In the new design stone-wheels are retained due to low cost. A hopper and a tray made of polystyrene are added. Flour is collected below through a hole in the tray by means of a rubber slider attached to the top wheel.

Design : S. B. Bidre
Guide : M. Chattopadhyay



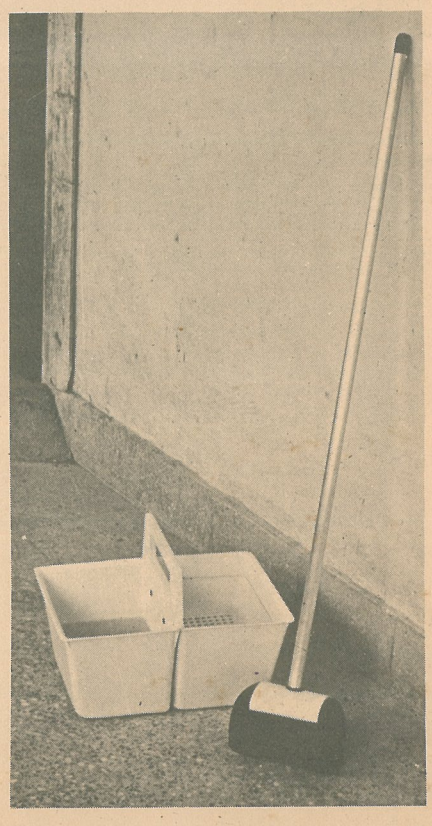




House Cleaning Aid

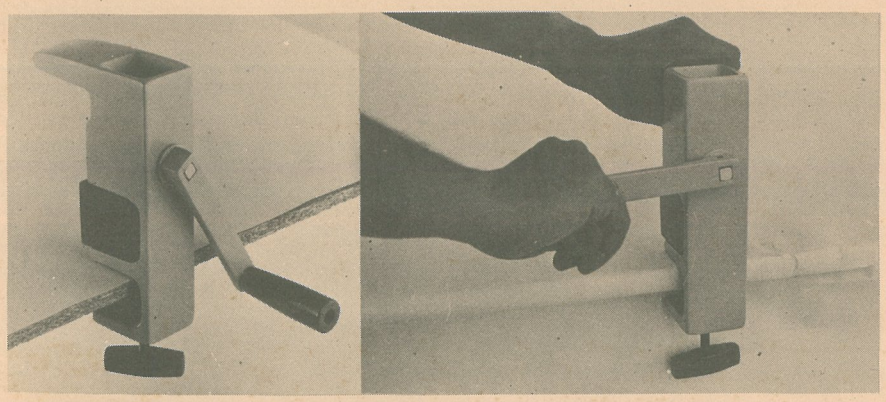
A basic activity like house cleaning is controlled by cultural habits to a great deal. Time and again one has to assess the wisdom of these habits against the scientific facts revealed day by day. House mopping is done in India in sitting postures. The ergonomically improved design is significant to modern middle-class house wives who are changing their habits with time.

Design : Prerana Pendse
Guide : L. K. Das



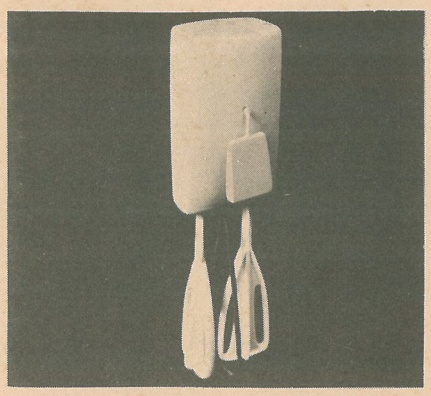
Coffee grinder
Considerable scope prevails in the improvement of Indian kitchen ware. The new coffee grinder is made of die-cast aluminium with a collector for ground powder.

Design : S. B. Akki
Guide : M. Chattopadhyay



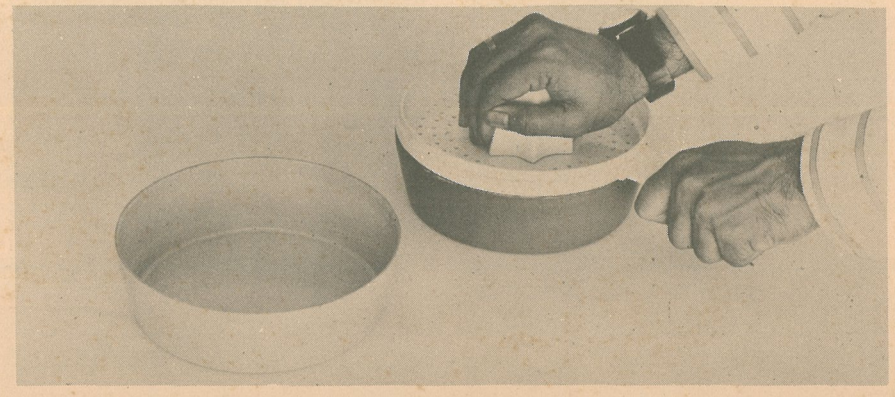
Egg Beater
The new egg beater is operated by pulling a spring loaded shaft. The unit with nylon blades is compact to hold and is easy to clean.

Design : P. Achutha Rao
Guide : A. G. Rao



Fruit Juicer
In the new fruit juicer, the juicer blade is rotated instead of the fruit piece. This makes the juice extraction easier. The profile of the juicer is worked out for maximum efficiency.

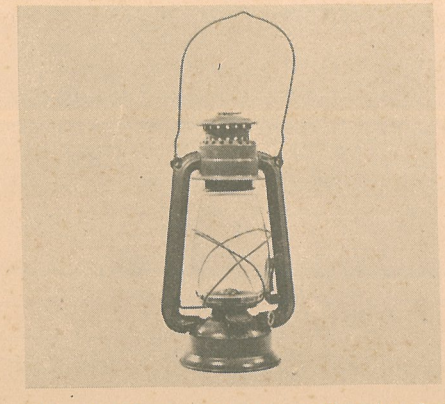
Design : M. Narvankar
Guide : U. A. Athavankar

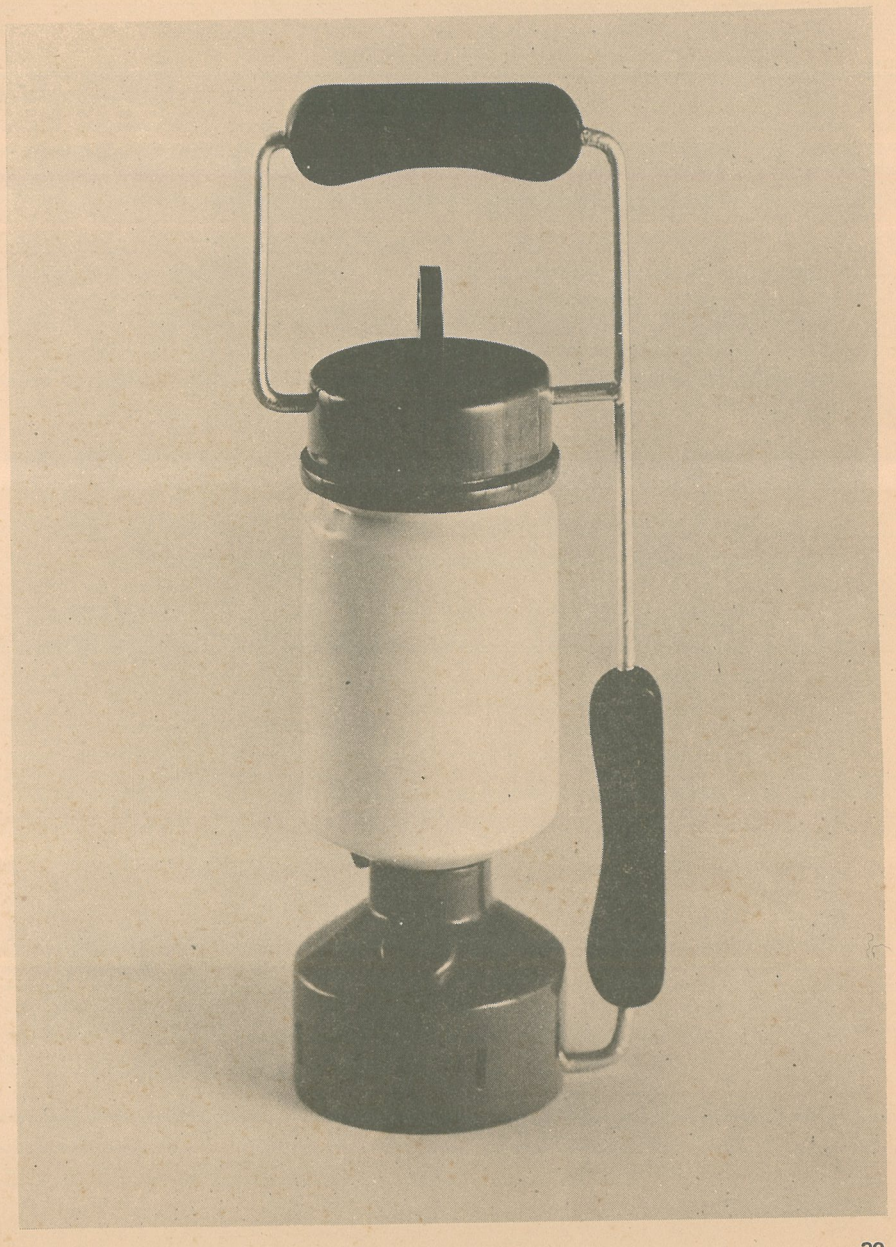


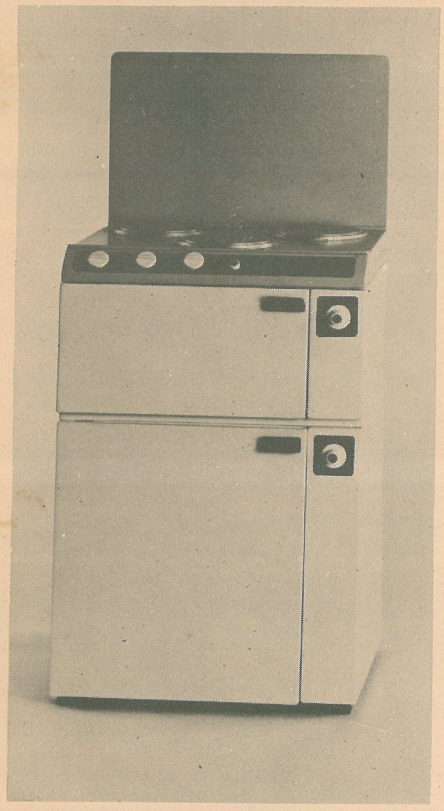
Kerosene Lantern

The kerosene lantern still widely used in Indian villages has attained such a symbolic value that we refuse to think of changes in it. Yet a detailed analysis revealed several problems in it. The new design casts less shadows, has two bakelite handles for carrying and has provision for easier kerosene filling and lighting.

Design : B. Bhaumik
Guide : S. Nadkarni
U. A. Athavankar



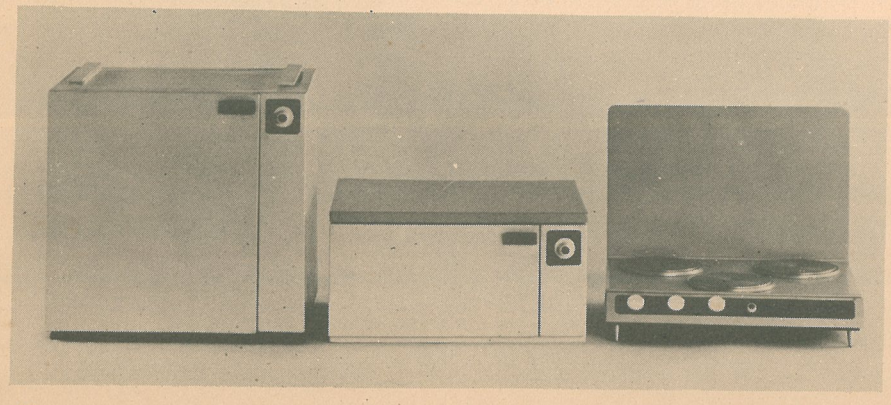


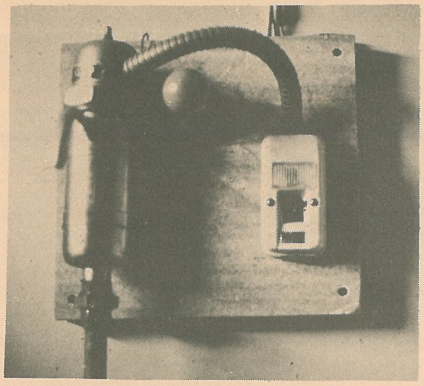


Electric Cooking Range

Electric cooking ranges available in the Indian market normally consists of hot-plates, grill and an oven making the total unit expensive for middle class customers. The new design adopts a modular approach whereby each of the units, hot-plates, grill and oven is manufactured and marketed seperately so that one can buy the range in stages. This is also advantageous to the manufacturer as the demand of individual items vary. The vertical shield behind the hot-plates prevents the walls from getting blackened.

Design : S. K. Dastoor
Guide : M. Chattopadhyay



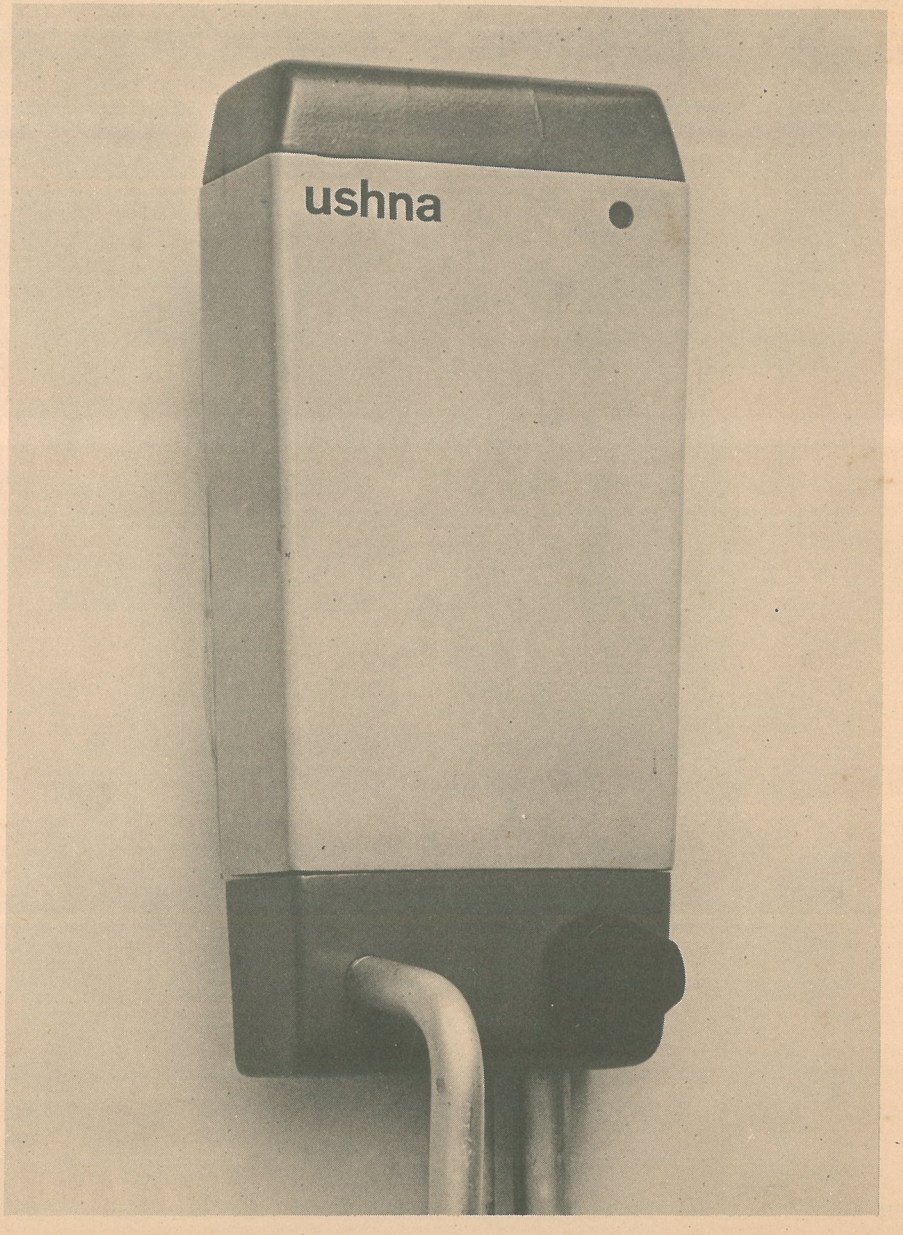


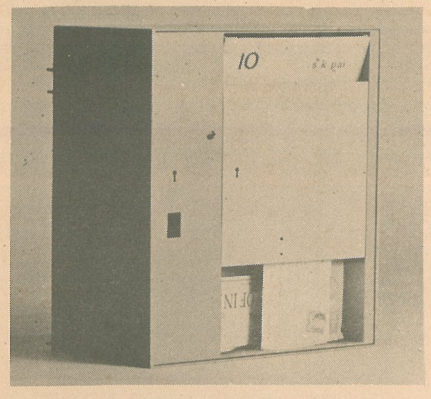
Electric Geyser

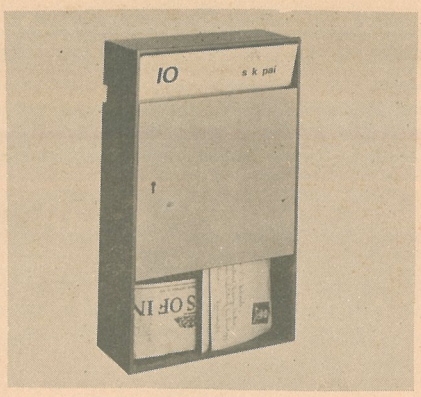
The very look of an existing geyser can frighten the user. A compact geyser with elegant looks was the result of a concept in which the heating is done by establishing electrical connection through water. The new design is inherantly safe as the steam formation possibility is eliminated. The inlet valve drains out the water when the water inlet is colsed.

The project undertaken as diploma work was later taken up by a manufacturer, and is currently under production.

Design : B. Bhaumik
Guide : U. A. Athavankar
Manufacturer : Kadirus Pvt. Ltd.
Design Consultant : K. Munshi

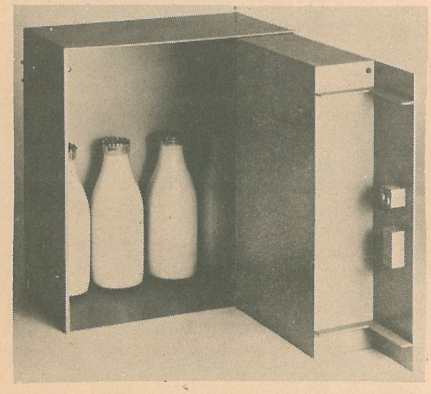


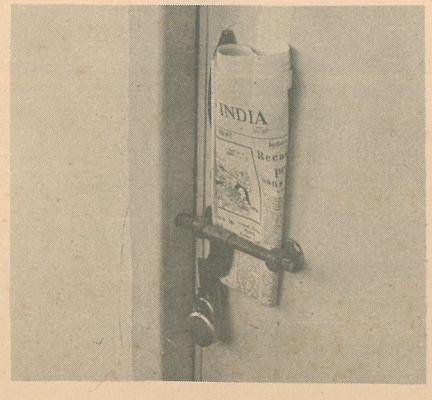


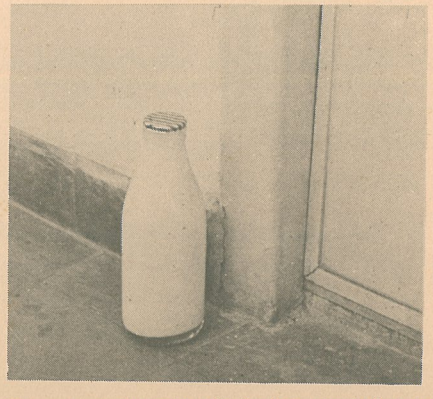


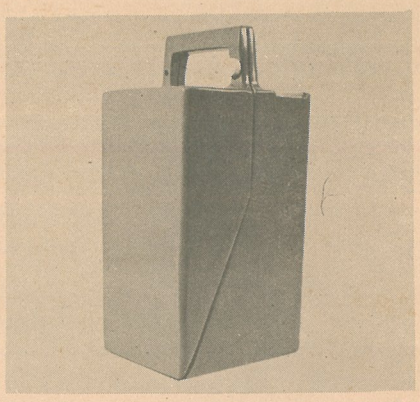
Milk and Mail Storage System
Distribution of milk and mail becomes a problem in multi-storied buildings. A central storage system for each building is desirable to avoid delay in the supply of milk, newspaper and mail. The new design consists of identical units which can be mounted together on an Aluminium section. The mail box which can be locked seperately acts as the door of the milk storage unit. The mail boxes seperately form into a system if there is no need for milk storage.

Design : P. Achutha Rao
Guide : S. Nadkarni
U. A. Athavankar







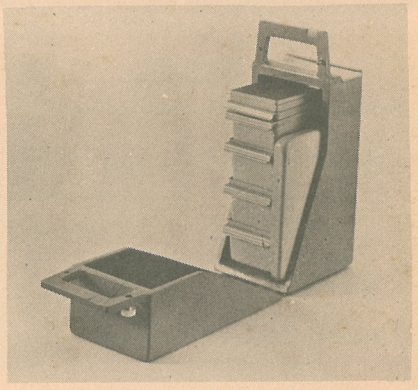


Lunch Box

As many as two lakh people avail the services of lunch box distributors in Bombay. But the boxes look shabby and get corroded. The food gets cold by the time it reaches the person. In addition it poses a typical cultural problem. It cannot accommodate variety of food items that are normally eaten at Indian homes.

A study of food habits of people from different regions was made. The sizes and shapes of the container were arrived for these requirements. For instance a seperate flat container is included for chapati and papad. All the containers are of moulded polypropylene. The outer box is of two parts with thermocole insulation This keeps the food sufficiently hot for 4 to 5 hours.

Design : J. K. Bansal
Guide : U. A. Athavankar



Tea and Coffee Sets

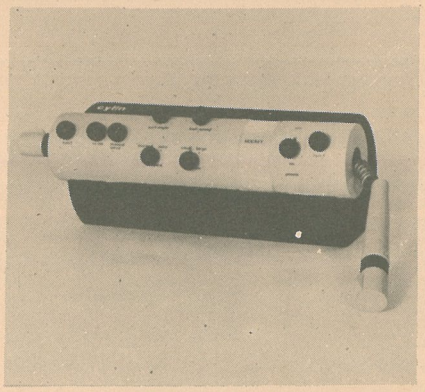
Ceramic design has mostly remained as a decorative art rather than a functional act. The result is the highly decorative ceramic-ware we see in the market today. The comfort aspects have hardly been improved. Tea or Coffee pot with the small opening at the top remains uncomfortable for cleaning. The lids continue to be vulnerable for breakage. The handles are difficult to handle and often break due to the weak joints with the main body. The sets are rarely stackable.

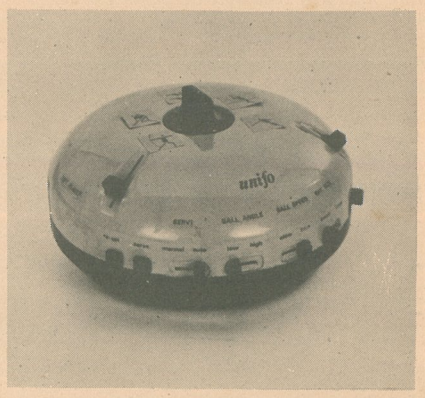
Tea and coffee sets were developed to inject the ideas of functionalism in the Indian ceramic market. The main features of the design are stackability, access to cleaning the spout and introduction of a wooden lid to enhance usage value of the set.

Design : A. Gaffoor

TV games
New concepts for TV games which are becoming popular in the Indian market.

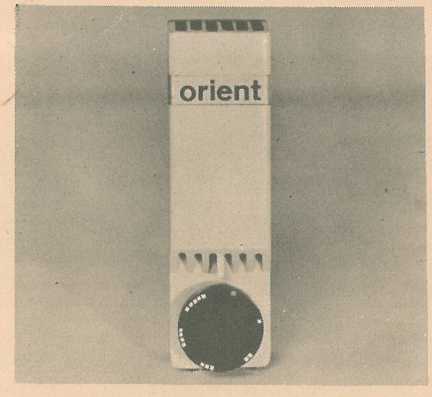
Design : Vinod Gupta
Ranjan Kaul
Guide : Kirti Trivedi.

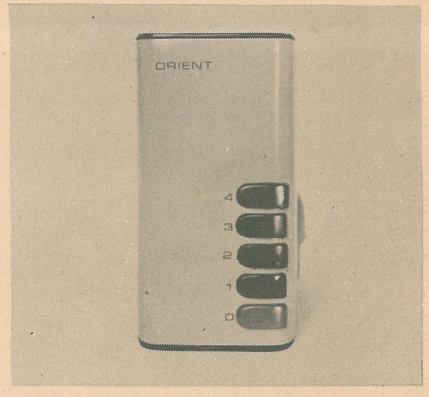




Fan Regulators
New shapes for fan regulators to suit the office and home environments.

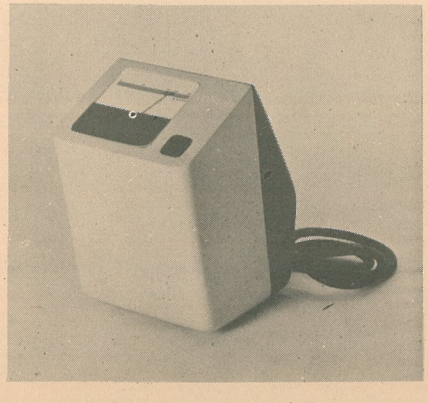
Design : V. Gokhale
H. S. Agashe
Guide : A. G. Rao

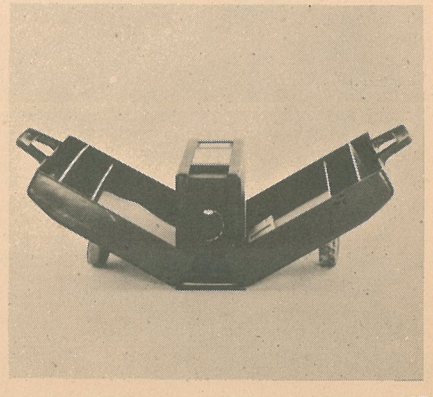


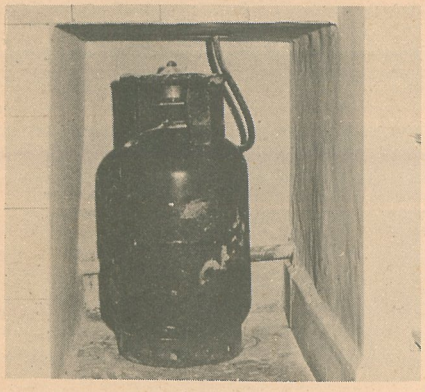


Domestic Voltage Stabiliser
Slide Projector
Improved designs to project the functional image of the product.

Design : Vinod Gupta
S. P. Raut
Guides : A. G. Rao
U. A. Athavankar



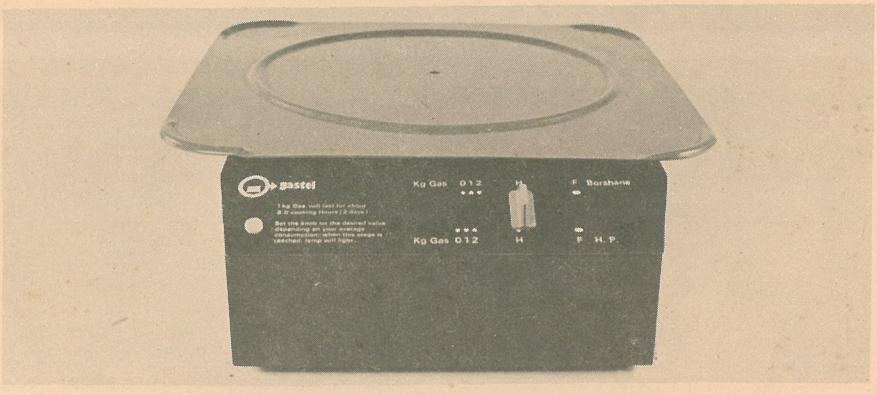




Gas Indicating Device

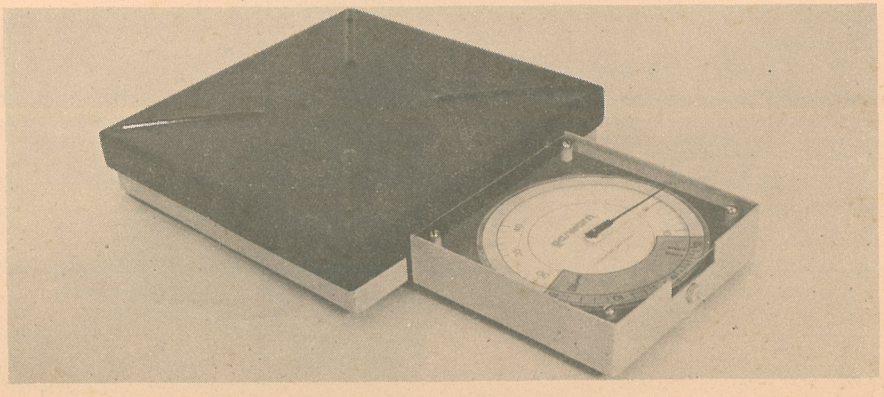
With slow services of gas supply companies it has become a problem for the house-wife to know when the cooking gas would be over. A gas indicating system based on weight measurement was designed to solve this problem. The house-wife can set the lever to get a signal before gas for a day or two is left in the cylinder. The correct weight of the cylinder can also be checked initially. The weighing system is based on linkages.

Design : M. Narvankar
Guide : A. G. Rao



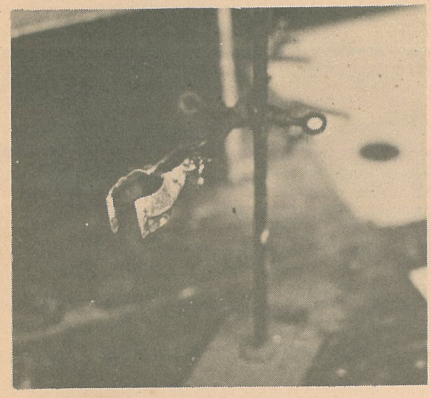
The same product based on springs was developed for M/s Karlekars with a reduced height and full indication of the weight. The unit was designed for manufacture with almost no investment using standard aluminium sections. A prototype was developed with a simplified mechanism.

Design : A. G. Rao, M. S. G. Rajan
Graphics : Girish Agarkar



For Laboratory and Office Use

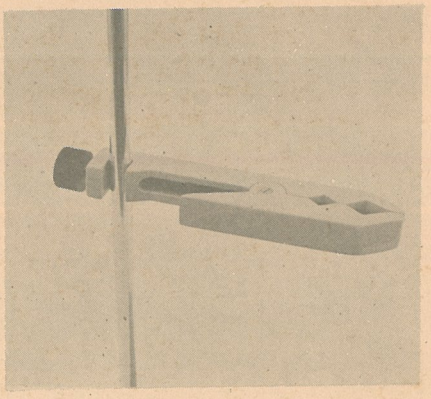
The product requirements here differ considerably from that of consumer goods. Products need to be robust and simple as they are handled by several people. Cost is often a secondary consideration if 'functional value' can be enhanced.
Universities and Scientific laboratories are the major customers of Indian industries manufacturing scientific and other equipment. Functional improvement and visual get-up to match the sophistication of the instruments are much cherished values by the scientists most of whom are exposed to the environments abroad. The importance of design needs to be propagated to the manufacturers in this area. A three week industrial design workshop conducted at the Centre for Instrument Designers generated a very good response from the Instrument industries.

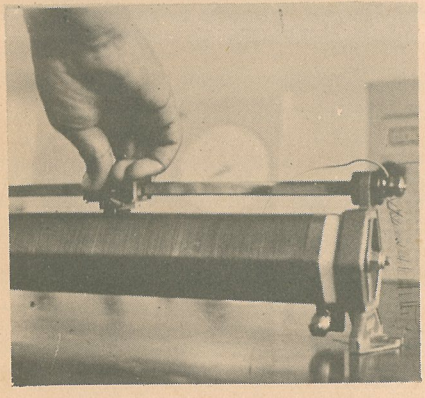


Lab-stand

The new stand with simple shape can hold test tubes and flasks. The bakelite clip has good chemical resistance.

Design : D. M. Shah
Gudie : M. Chattopadhyay

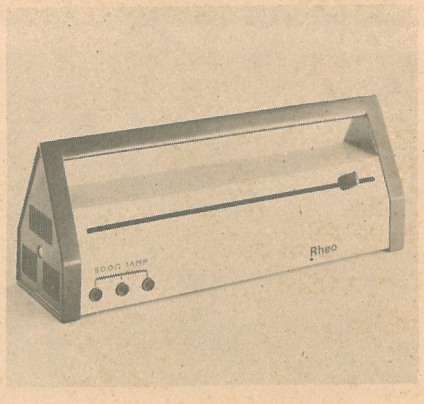


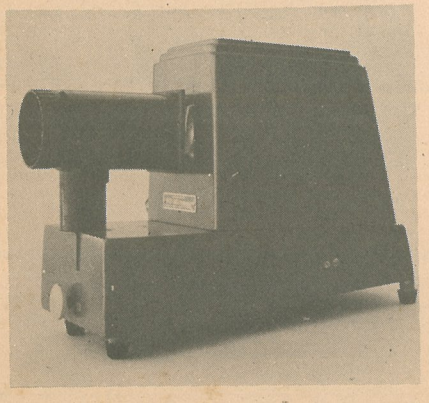


Rheostat

In the new design of rheostat all live parts are covered making it easier and safer to operate. Rheostats of different capacities can be made using the same end plates and the extruded tube.

Design : S. R. Menon
Guide : M. Chattopadhyay

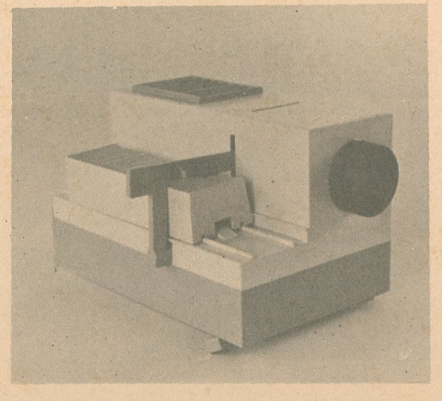




Slide Projector

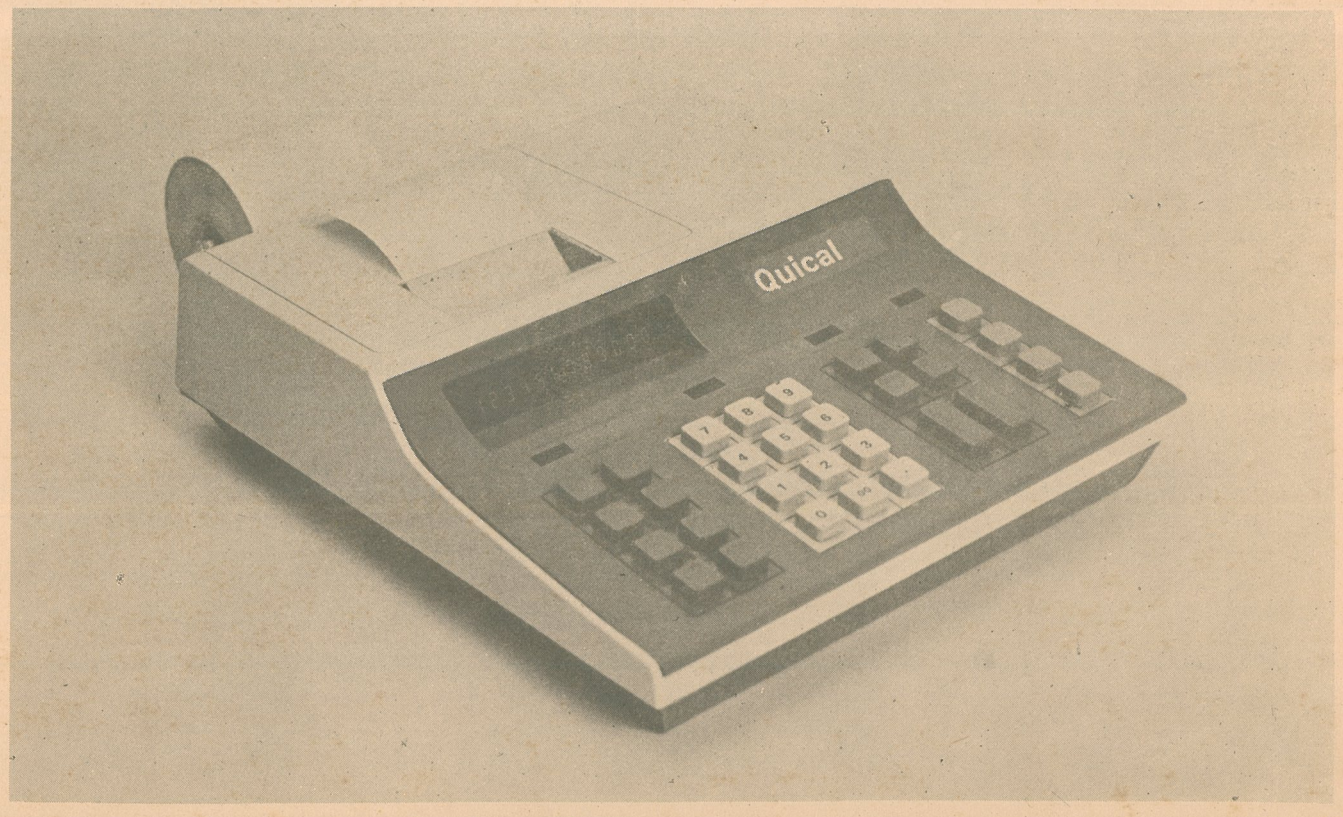
The slide projector at the right has hand operated continuous feeding of slides, with improvement in looks

Design : P. Achutha Rao,
S. S. Kshirsagar
V. L. Bakhale, D. S. R. Raju
Guide : A. G. Rao



Calculator with Print out
Calculators in the Indian market have reached a high degree of competition. Participation of the designer in tool making stage helped for the final quality of plastic mouldings.

Industrial Design : M. Chattopadhyay
Client : India Electronic Corporation



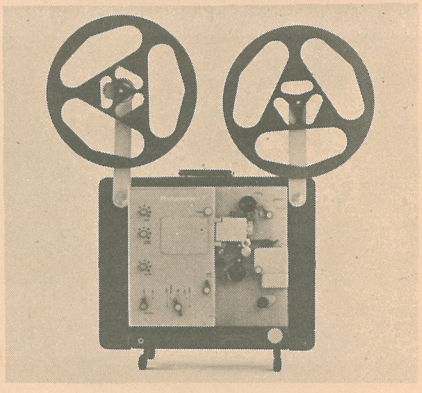
46 mm Projector

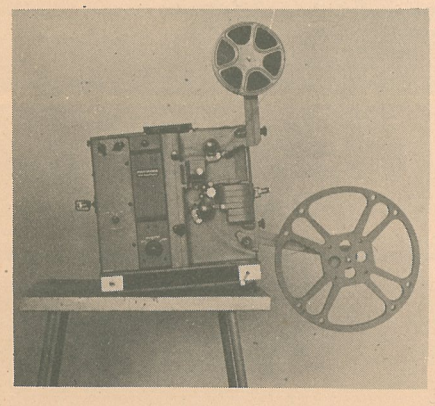
The existing unit is an old RCA design licensed to the company and has an established technical performance. The export needs made the company to approach Industrial Design Centre. The challenge to the designer was to attain the required level of sophistication and get-up with no major changes and low investments for the changes.

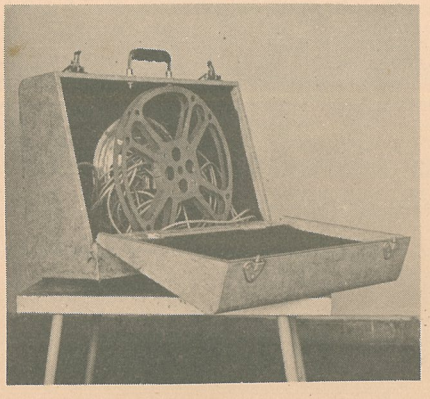
The new design uses vacuum formed covers to eliminate the problems in the present aluminium covers glued with rexin cloth. Both arms in the projector go up eliminating the need for special stand for the projector. The spool presently stored in the speaker box is placed in the backside of the projector. With this change speaker-box need not be opened.

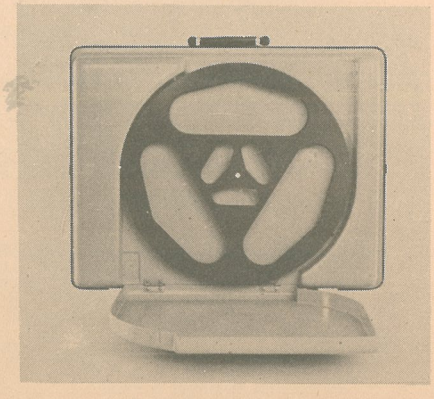
Controls have been worked out for better communication. Projector and speaker knobs are colour coded separately. All control knobs have a family look with the circle, a bar and radii as the main elements.

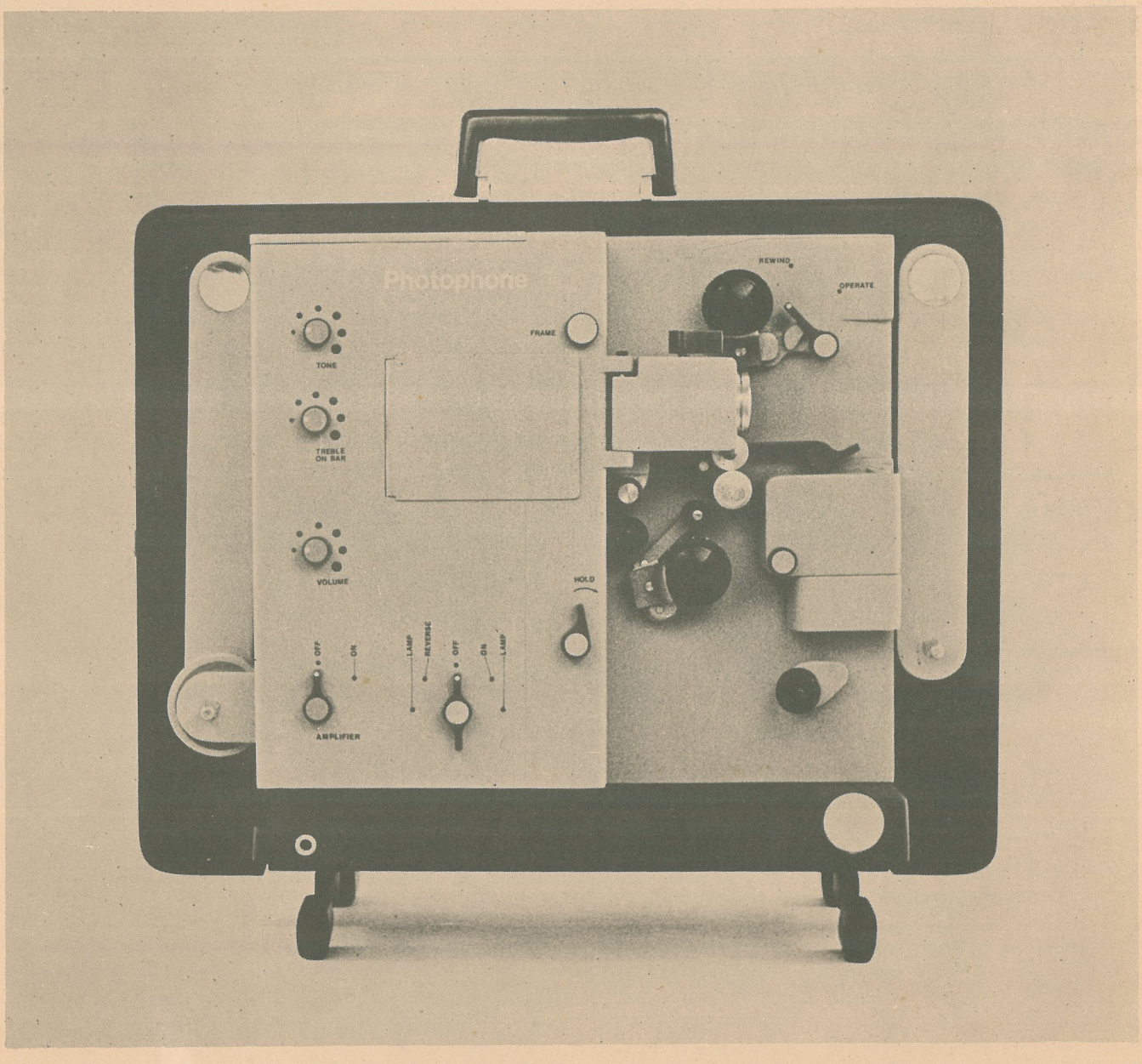
Industrial Design : A. G. Rao
Client : Photophone Equipments Ltd.

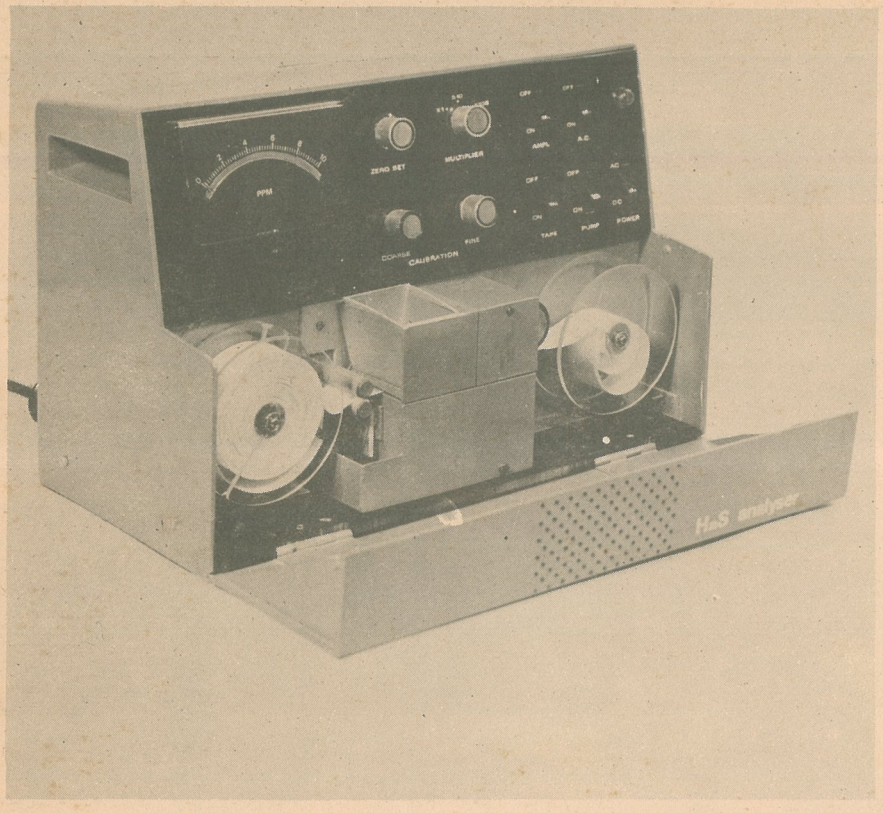









Photophone
TONE
TREBLE ON BAR
VOLUME
FRAME
HOLD
REWIND
OPERATE
OFF
ON
AMPLIFIER
LAMP
REVERSE
OFF
ON
LAMP

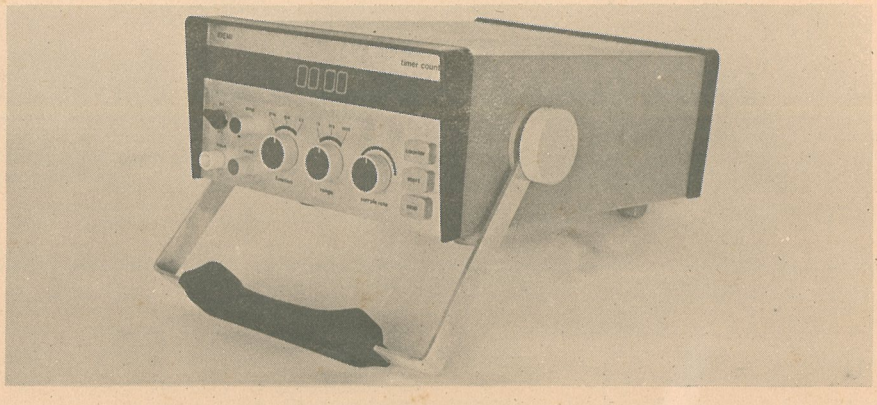


H_2S Analyser
A lab model of the analyser used for estimating Hydrogen Sulphide gas in the poluted atmospheres was developed by the environmental engineering group of the Institute. The unit was reorganised and brought into the form of a usable product that can be produced easily.

Industrial Design : V. P. Bapat

Timer Counter
The electronic timer counter developed by the Institute for Design of Electrical Measuring Instruments, was redesigned by an engineer of the Institute as part of 3-week Industrial design workshop for Instrument Designers.

Design : S. C. Adak
Guide : Kirti Trivedi



For Rural Use

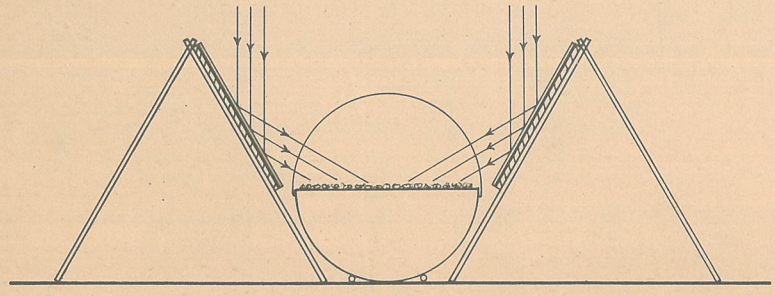
Majority of the population still live in the rural areas. A continuous drift of population towards urban centres for jobs has reached threatening proportions. The rural environments remain unchanged. A live problem for the socially conscious profession — what can the profession do in tackling this gigantic problem ? We can not get leads from elsewhere as the Industrial Design Profession in the West probably never had to face this situation.

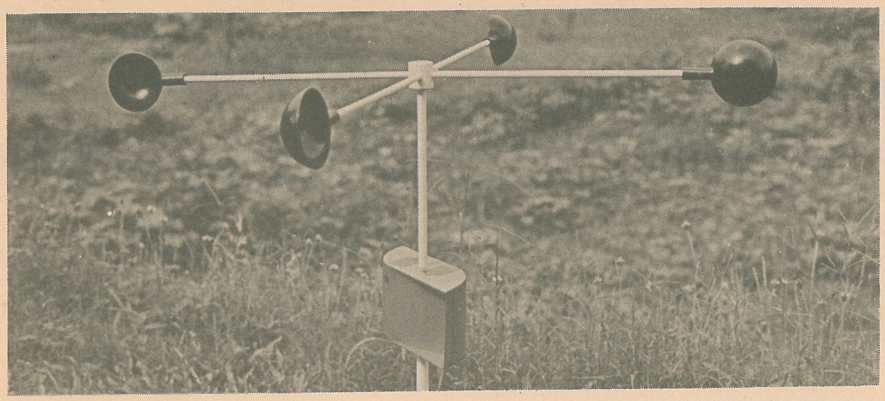
Students and faculty at the Centre took up for design, several products with rural use in mind. The lack of rural experience quite often became a handicap in reaching sensible, practical solutions. The involvement of students and faculty in the drought relief measures in Maharashtra State in 1972 gave an insight to the rural economies and exposed the futility of designing fancy rural products dealing with comfort aspects. Consequently approach to the design of rural problems got directed towards making functional and some times solely technical contributions relating to methods and processes. A long term contact with rural industry and environment became a necessary element of design. Quite often designers involved came accross a hoard of social, political and technological problems while attempting to solve a design problem. It is increasingly being realised by the faculty that the design efforts should not limit to products alone. The final solutions may be just methods and may have no semblanace to conventional Industrial design solutions and it would be more useful if design discipline as a problem solving process reaches people in the form of training rather than offering design solutions from an urban centre. Study, research and understanding seem to be more appropriate functions of an urban centre. The Centre has yet to make official policy decisions to incorporate such programmes and infrastructure as to make the design efforts for rural use meaningful.

Fruit Drier

Designing in a rural set-up often demands a different approach. The cottage industry in Konkan dries fruits in Sun and supplies it as raw material to other processing industries. The use of any other source of heat for quicker drying was ruled out because of the fear of complicating simple process and the dehydration requirements for gradual drying over several days. The new design enables drying at the right level, protects the fruits from dust and provides air circulation with a fan. The product is envisaged to be made by the villagers themselves with local materials. The drying rate can be increased with solar reflectors placed on either side of the main unit.

Design : S. A. Avasare
Guide : S. Nadkarni

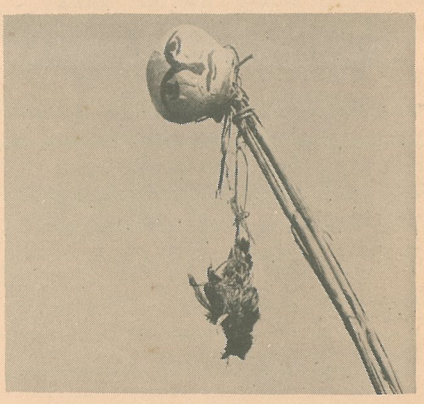




Bird Scarer

Birds eat up 15% of the Indian crops and at times the extent of loss can go upto 30% of the grain yield. A string to throw stones, hanging a dead bird and creating noises are methods used at present. But the birds can get used to sounds and figures in no time. One of the solutions suggested is a wind driven mechanism which throws stones as well as makes noises.
Two such units can cover an acre of land.

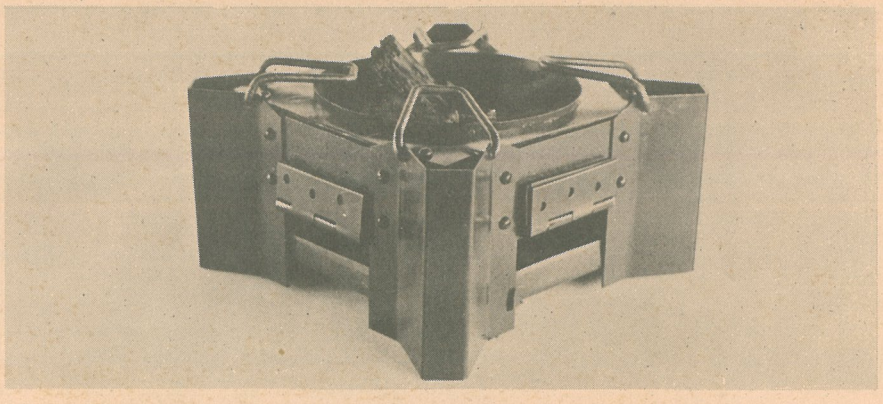
Design : V. R. Patil
Gudie : A. G. Rao

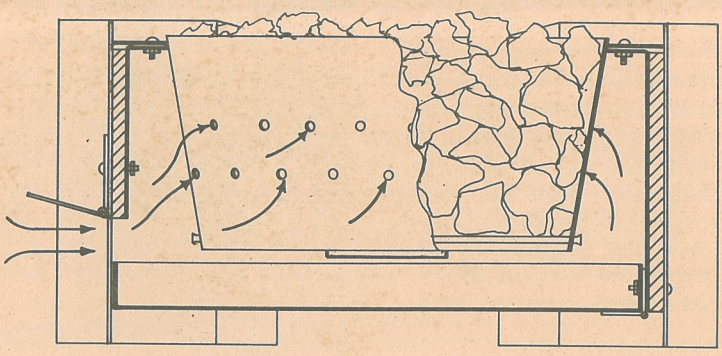


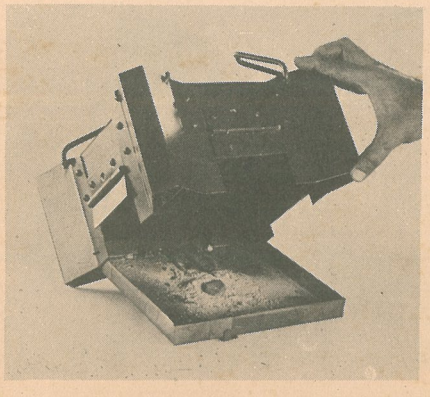
Coal Chula

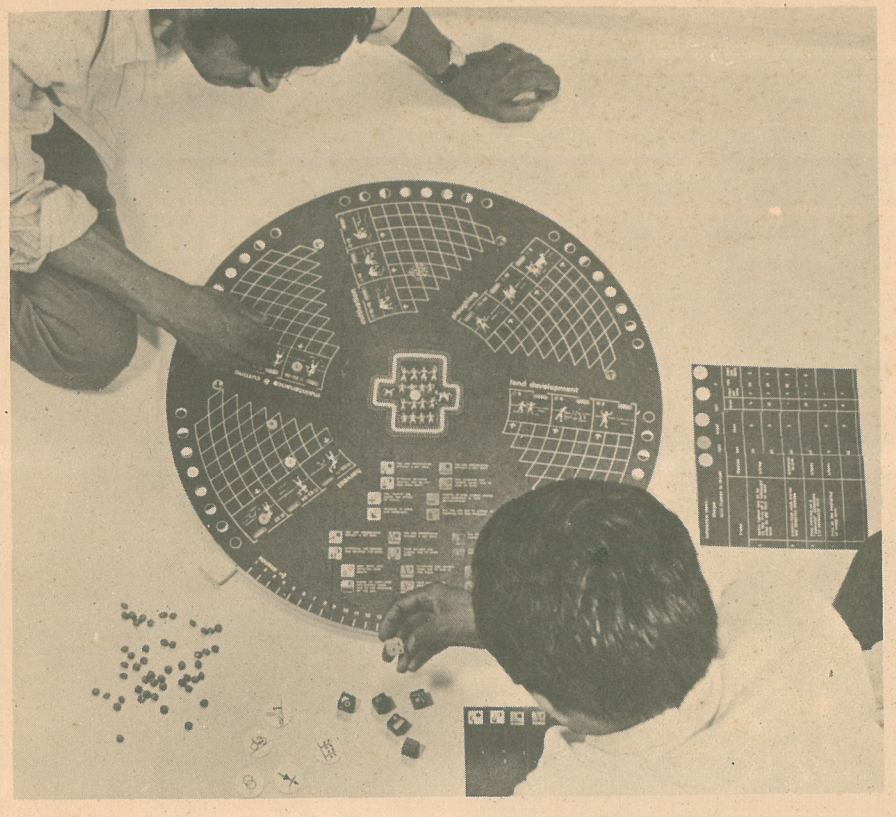
Portable coal stove (Chula) is traditionally made with a bucket and thick cement or mud insulation. A competition announced by Coal India provoked the designers to go into the basics of the problem. The new design arrived at, is for semi-urban use. Air gap between the outside asbestos insulation and fire pot in introduced which acts as a light weight insulator and also supplies hot air. The fire pot, has several holes to supply air evenly through out the coal to avoid smoke formation. The ashes can be cleaned easily as the whole bottom plate is hinged on one side. The two ducts help in getting controlled burning. The height of the 'chula' is kept low to increase stabliity. The unit can be made by a small industry with very little skills.

Design : A. G. Rao
M. S. G. Rajan
Dr. B. S. Jagadish
Sabastian.







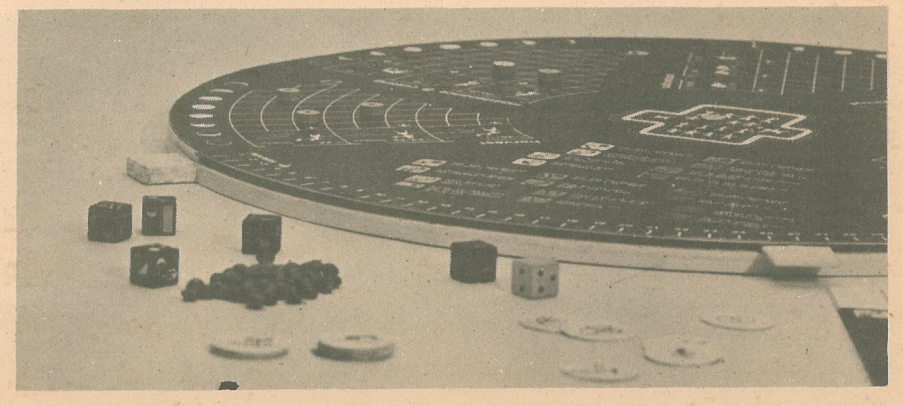


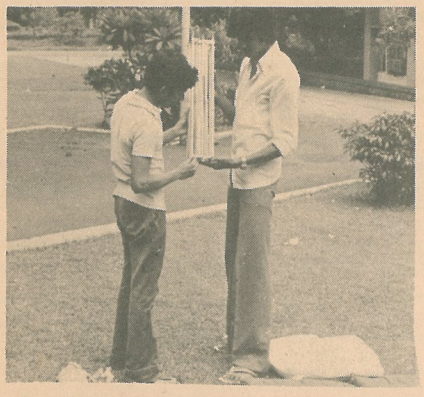
Edugame

Teaching of agricultural discipline to tribal people is the theme of the of the Edugame which won an international award in the Edugame International Competition held at Israel.

The game gives the problems (like you have a broken plough) and the players have to solve it using the money provided by the bank. The importance of Agricultural cycles isstressed in the game. If a player does not finish sowing in 10 moves (10 days) a red signal will come to make him stay there till the next sowing season comes. 3 to 4 children can play it at a time. It would be ideal for teachers to use it as an aid.

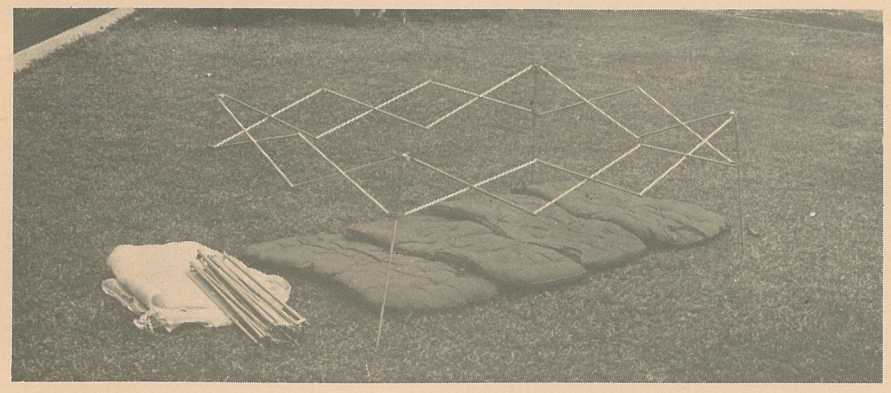
Design : U. A. Athavankar

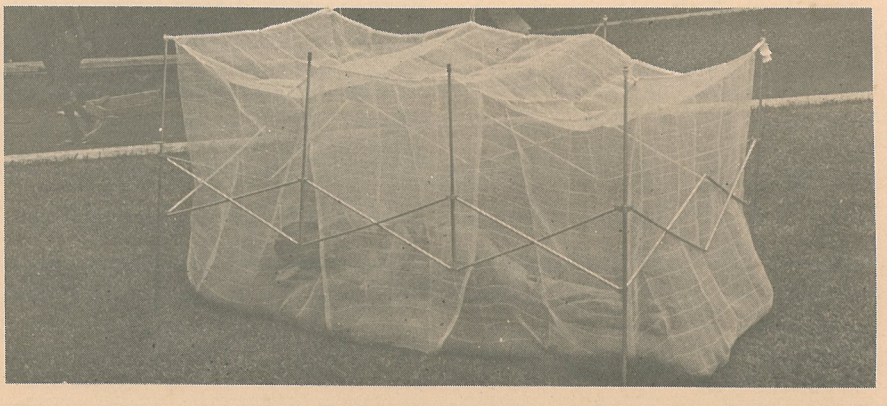


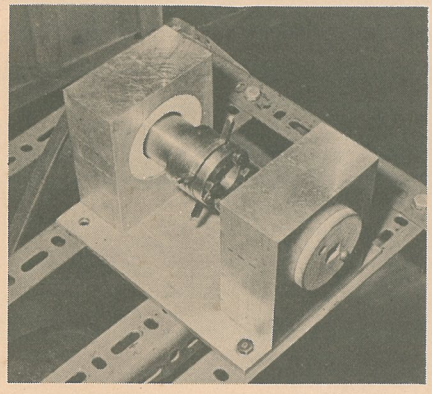


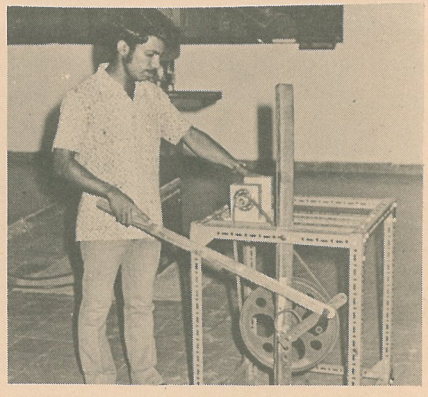
Instant Stand for Mosquito Net
With many urbans visiting rural areas, new demands for products generate. The project is an attempt to design mosquito-curtain stand which can be erected instantly. The solution is a stand which can be folded into a small unit as seen at top-left.

Design : Sanjay Ektate
Guide : A. G. Rao



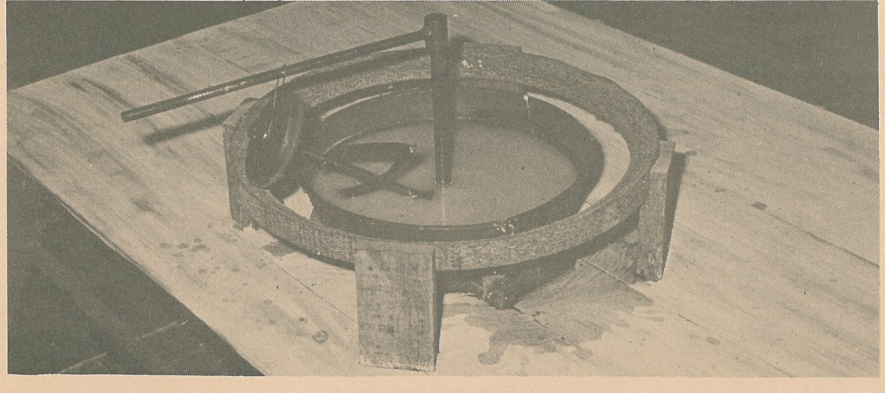






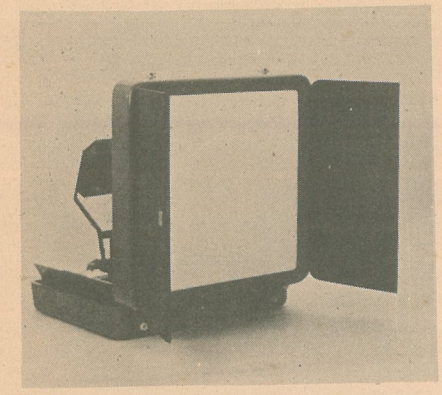
Stick Making Machine
A manually operated stick making machine was développed for a village industry at Wardha which had a problem of making thin, round sticks for use in toys. The tool part is to be fitted on a standard sewnig machine drive. The first prototype is being successfully used at Waigaon (Wardha). The close contact with the Gramin Udyogikaran Sangh at Waigaon (Wardha) extended the scope of designers' task to training the workers as seen in the middle picture.

Design : M. S. G. Rajan, A. G. Rao



Soap Amalgamator
Non-powered soap-industry is a protected sector by the Government. The manual soap-mixing is a tedious, slow process. Bullock-driven unit was designed with extensive trials made to get a correct mixer-blade profile for even mixing as seen in the scale model.

Design : U. A. Athavankar



Slide Projector for rural schools

Schools in rural areas are well aware of usefulness of the visual media like slide projection. But the schools normally do not have projection room facilities. Further, shifting the class to seperate room is a problem. Keeping this in mind a portable slide projection system has been developed.

One cover of the box acts as the screen for rear projection. The projector uses standard, easily available car lamps. A set of 25 slides can be stored in inexpensive PVC film-strips which can be moved through without removing the slides. The unit can operate on car-batteries. It can be easily fabricated in small workshops.

Design : V. P. Bapat
Guide : A. G. Rao

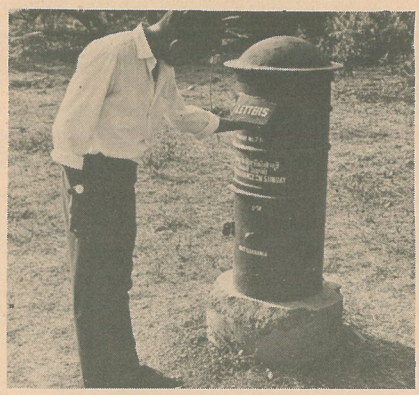
For Public Utility

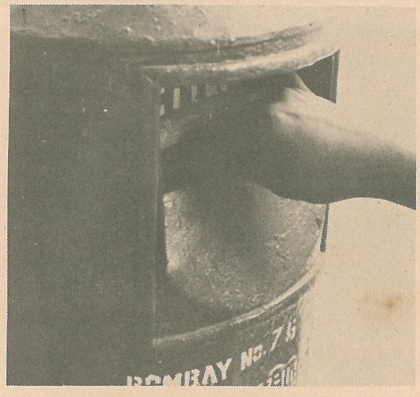
Mis-use rather than use becomes the main concern in designing products for public utility. A slope on the letter box had to be introduced because of the fear of people squatting on the box if a plain surface is provided. Having to deal with a disinterested, bureaucratic client is another feature of this category of products. A series of eight teams of officials of Post and Telegraph department visited over a 6 month period before a decision was taken to go head with the design. Internal politics of each public organisation poses another hurdle in the implementation of any change in the existing systems. Education of people in authority through seminars and courses seem to be the only way to make a dent in the design of products for public utility.

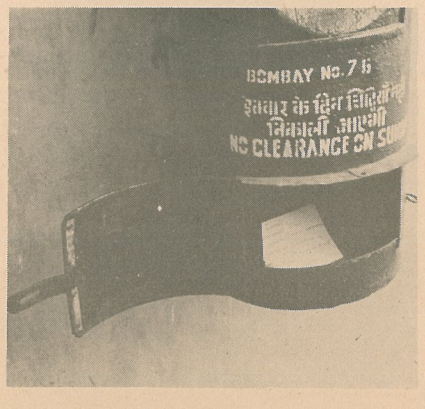
Letter Box

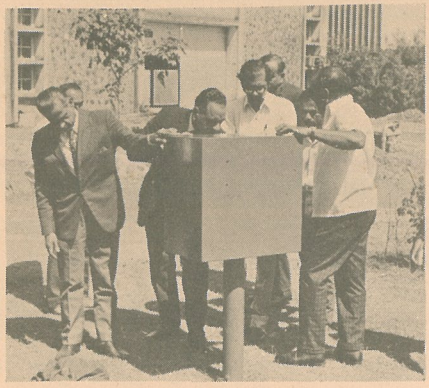
The letter box we use poses many problems. People have to bend to post the letters. The opening often hurts the hands. The post-man has to bend down to clear the letters. The unit looks shabby. The change of clearance time is indicated by pasting a chit of paper. The new box designed after thorough investigation takes care of these problems. The height of the mouth is convenient to post. The post man can easily clear the box. All the clearance timings are given. The shape is attractive and easy to fabricate. It can be taken out for painting or repair.

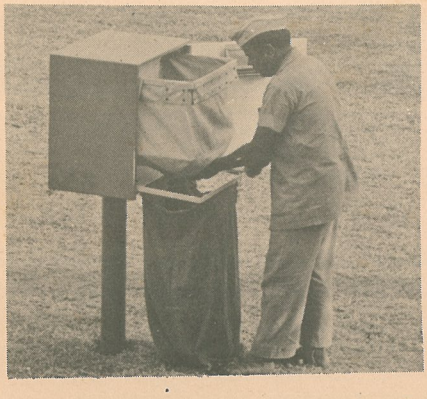
Design : U. A. Athavankar









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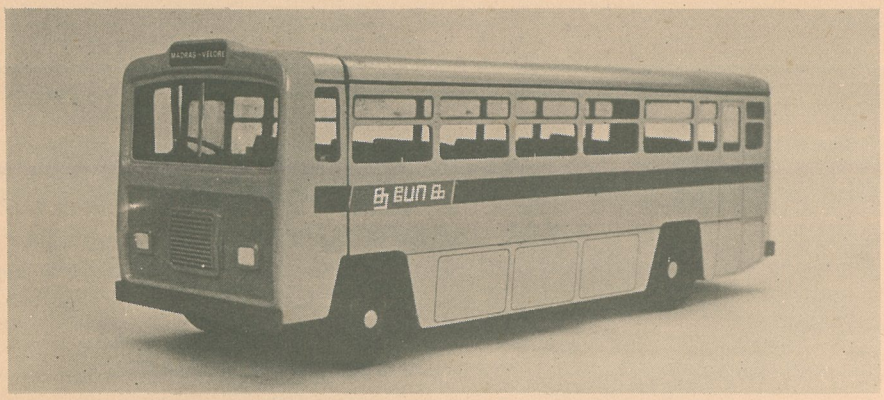
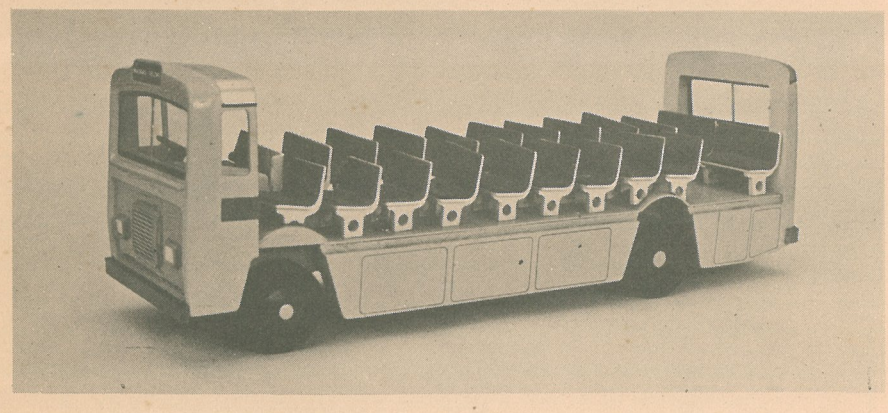
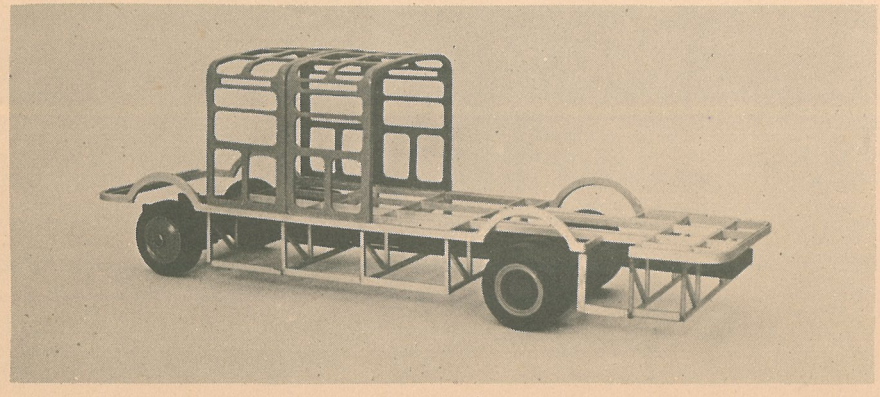






Light weight Bus Body

Weight of the bus can play a crucial role in fuel consumption. Design of light weight bus body was taken up by a team of designers in response to a competition. Studies revealed interesting facts in the present desion. The gusset-plates and screws weigh as much as 30% of the structure in the present design.

F.R.P. frames with Aluminium covering is used in the new design reducing the weight by 500 kgs. The luggage area is brought down to increase the stability. The project stands as a good inter-disciplinary project between structural engineers and industrial designers showing the potentials of team work in an Institute with various disciplines.

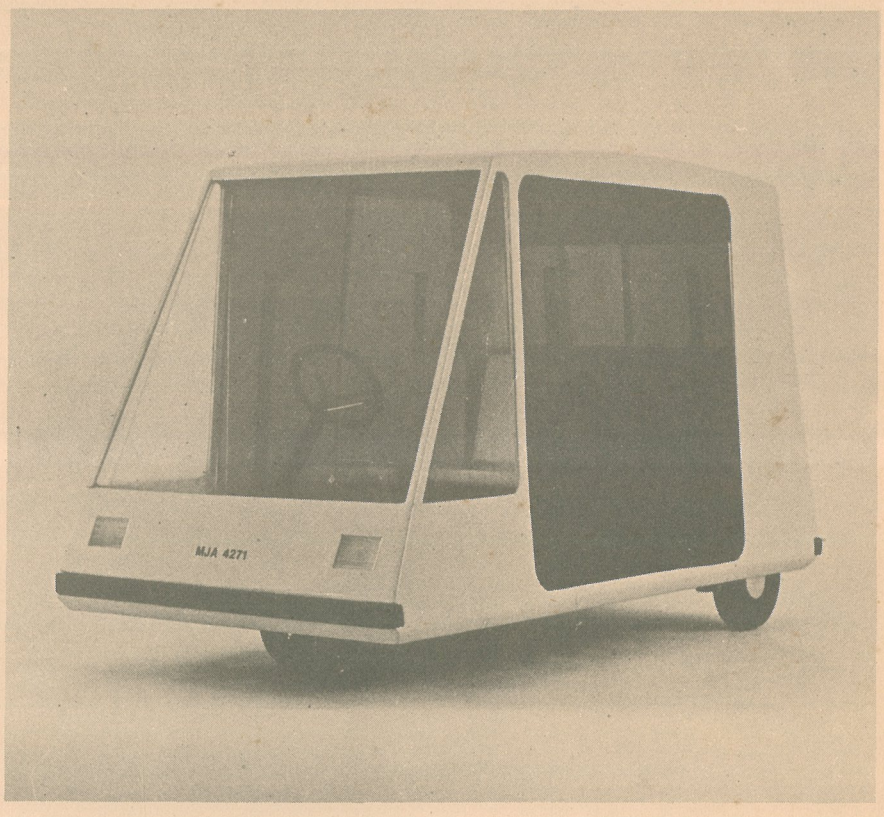
Design : U. A. Athavankar
M. Chattopadhyay
M. S. G. Rajan
C. S. Gurujee

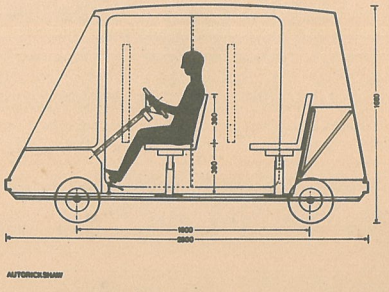
Auto Rickshaw

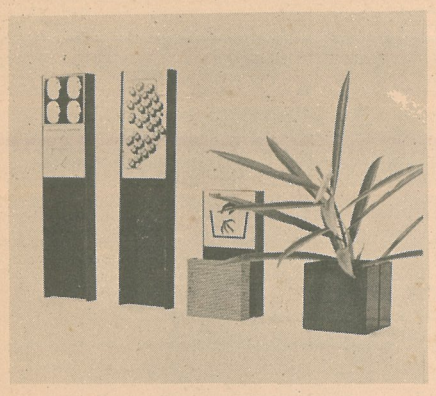
The auto-rickshaw has been in use as taxi in urban centres since long. But the design seen below left-side, has changed very little.

The redesign of the vehicle was taken up to generate new ideas in this perspective than to give a final technical solution. The interesting features of the new design are additional seat beside driver which can be converted into a bed for emergency use and better visibility.

Design : J. Arvind
Guide : S. Nadkarni





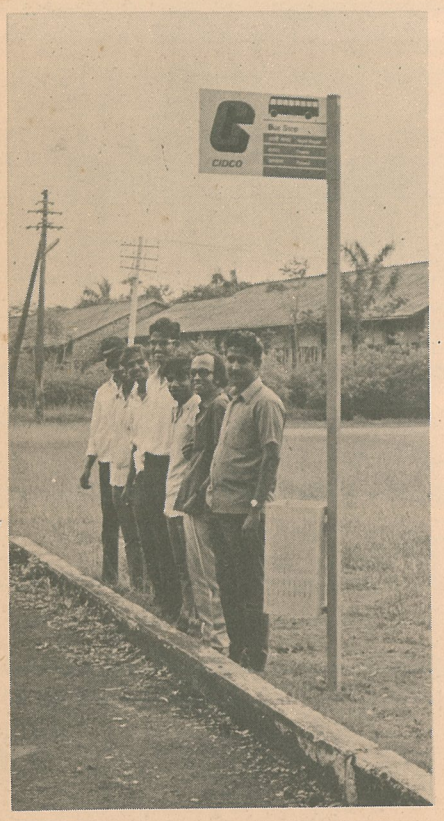


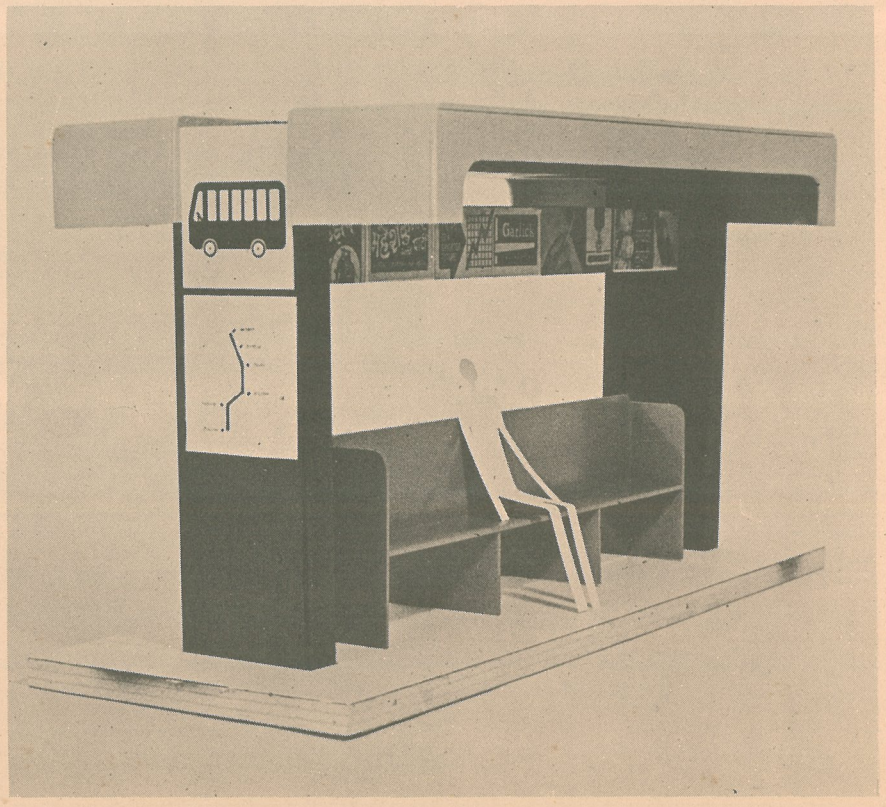
Street Furniture for CIDCO

Simple street furniture was designed for new Bombay programme of the City Industrial Development Corporation.

All the items designed have a simple construction, with bold clear graphic information.

Design : S. Nadkarni

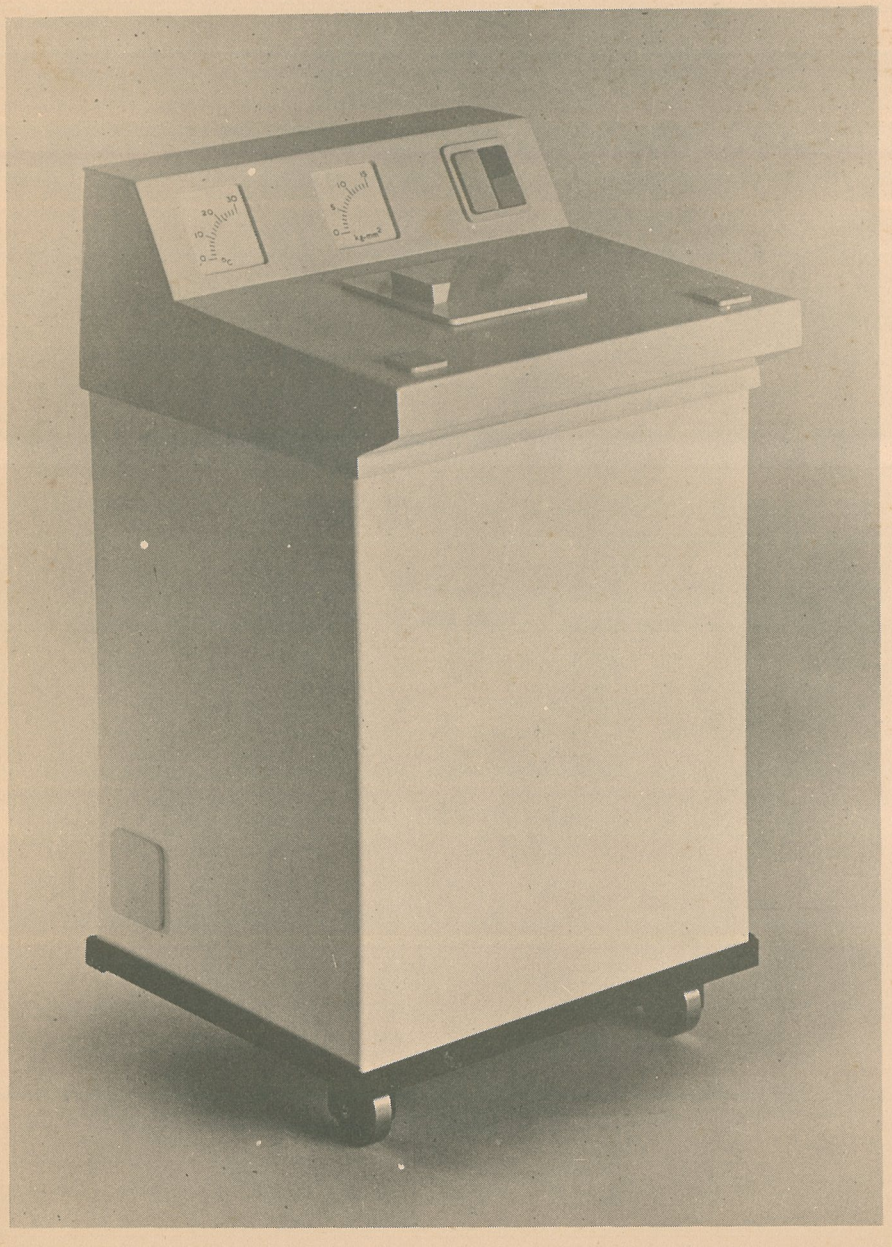




For Health Care and Disabled

Hospital-ware needs an urgent attention of designers. Unlike Western situation the funds available for medical equipment are very limited in India. Cheap but functional solutions need to be developed to meet the enormous demand of masses in this area. The poverty creates a vicious circle where the least any Government could do would be to provide free health-care. This would mean design of items for mass consumption. Detailed studies in this area are of prime importance, if the solutions have to reach implementation level.

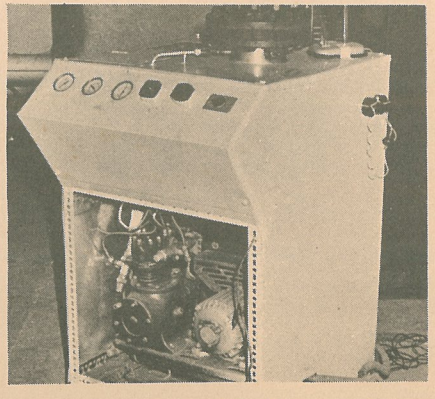
The Centre plans to take up involved research work in this area as quite often making of prototypes and extensive testing becomes essential part of the design work.

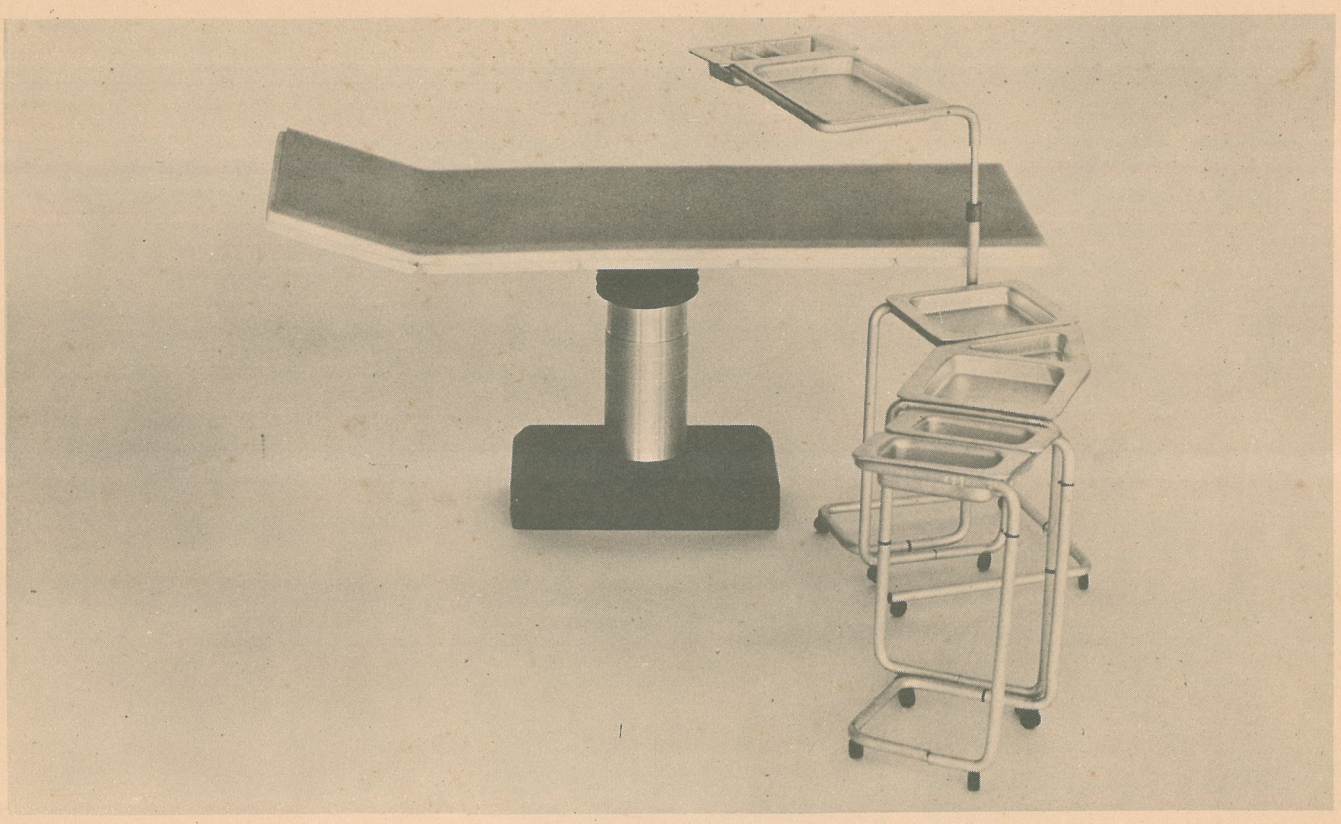


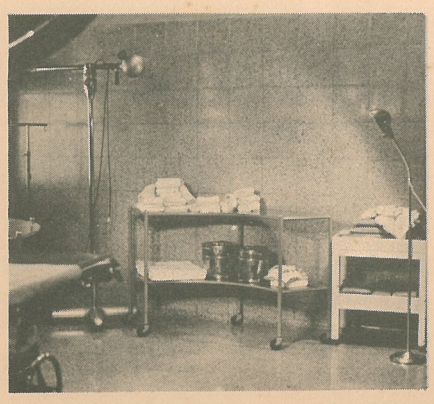
Organ preservation unit

Organs like heart can be stored for a few hours at high pressures and low temperatures. Students of Mechanical Engineering department of the Institute developed a technically functioning unit. This was redesigned to make the unit usable by medical personnel. The salient features of the design are the introduction of sliding lid for quick opening and closing instead of bolts and nuts, transportability, well-positioned controls and direct readings of temperature.

Design : M. J. Joshi,
N. T. Nagarsenkar
U. J. Seth, S. K. Dastoor
Guides : S. Nadkarni
U. A. Athavankar



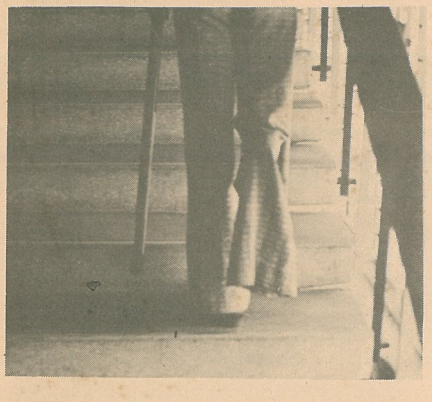


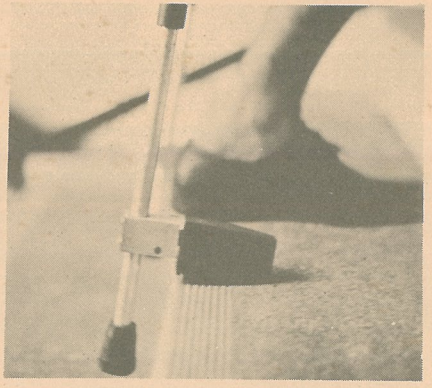


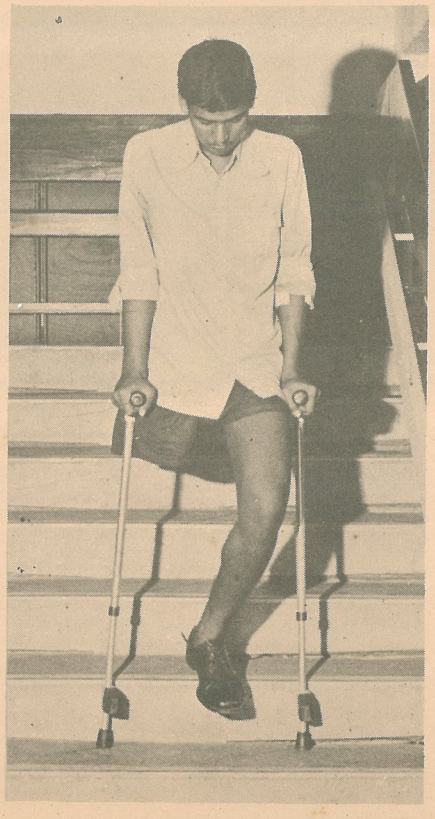
System of Hospital Trolleys

Different types of layouts of trays of instruments and services are needed for different tasks in the Hospitals. After a thorough analysis a system of trolleys were evolved. The new design incorporates features like demarcation of areas for different instruments. interchangeability of trays, place for discarded instruments, maximum space-usage and stackability — absence of which can mean disorder at a critical juncture of time.

Design : Prerana Pendse
Guide : Kirti Trivedi







Crutches for lame

Poor and disabled persons suffer more as they cann't afford to buy sophisticated gadgets even if available. An inexpensive set of crutches were 'designed after a thorough study of the requirements of lame persons.

The new design has a fore-arm rest in addition to the handle. The crutches hold on to the forearms when the hands are lifted up for bus and train-travel. A telescopic arrangement is made for height adjustment. Foldable shoes have been incorporated for ease of staircase climbing.

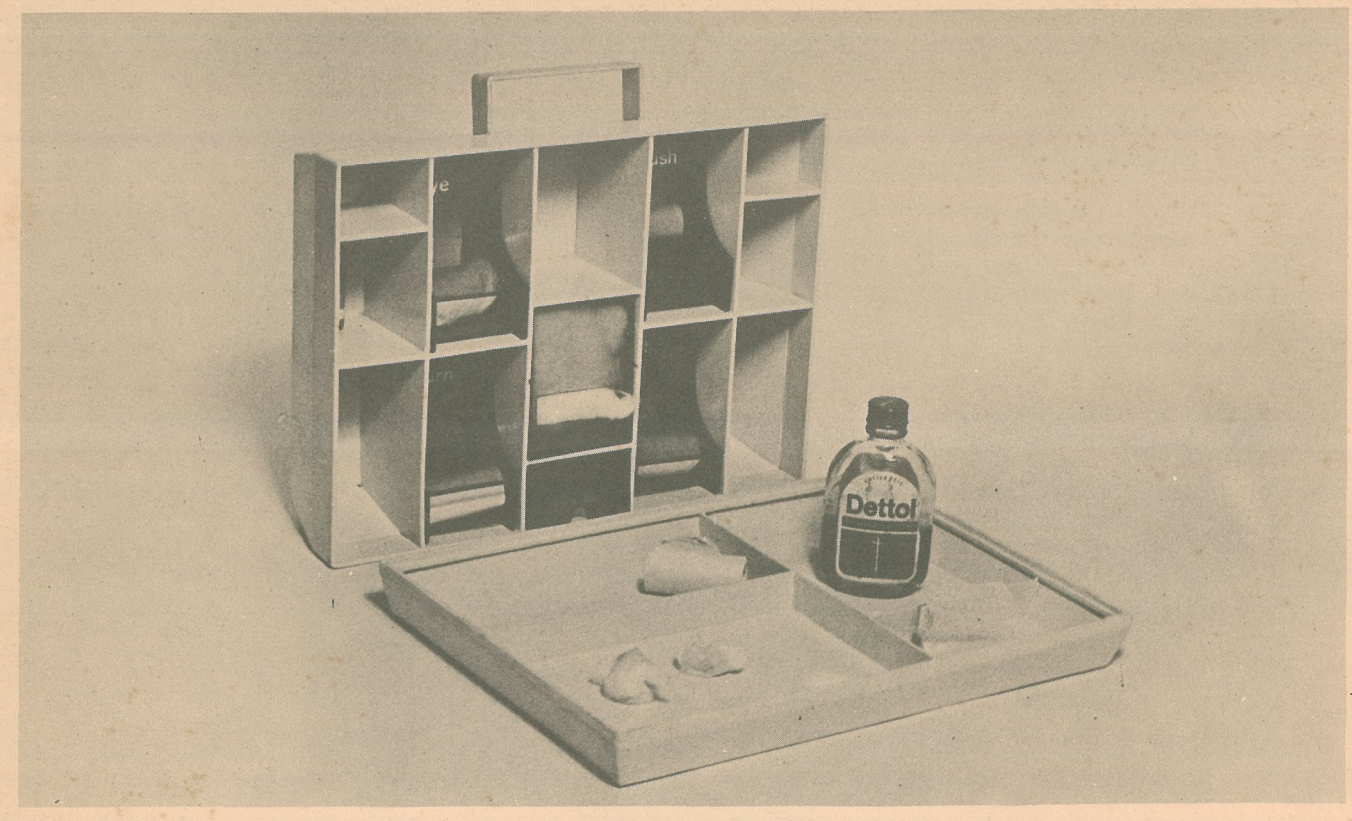
Several trials were taken before finalising the designs.

Design : B. A. Poovaiah
Guide : U. A. Athavankar

Miner's safety gear

Open cast mines have severel problems of heat and dust in tropical countries. Helmet and Respirator cum goggle were developed for Neyveli Lignite mines at the Centre. Anthropometric studies were conducted to arrive at right sizes. The newly designed helmet uses the shape of the skull to advantage to give more space and ventilation between the suspender and the shell. The respirator cum goggle takes into account cultural needs of the workers. Often workers chew 'pan' while working. In the new design the mouth is left free for chewing 'pan' or talking which was a deciding factor in the non-acceptance of use of respirator by the workers earlier.

Design : K. Munshi
Suhas Kakde



First Aid Kit

It is legally obligatory to have a first aid kit in industries, transport services etc. But the contents of the kit are seldom kept in order. First aid training is mostly missing. The design of first aid kit was undertaken keeping this in mind. In the new design all the items are covered and only required amount can be taken out, ensuring hygiene.

The contents are rationalised and better communication with untrained persons is ensured by using clue-words like 'burn' rather than the name of medicine.

Design : Mrs. Neera Adarkar
Guide : M. Chattopadhyay

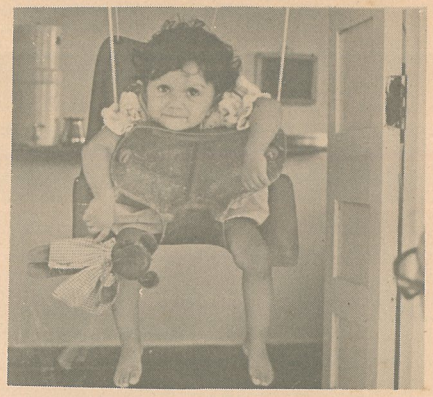
For Children

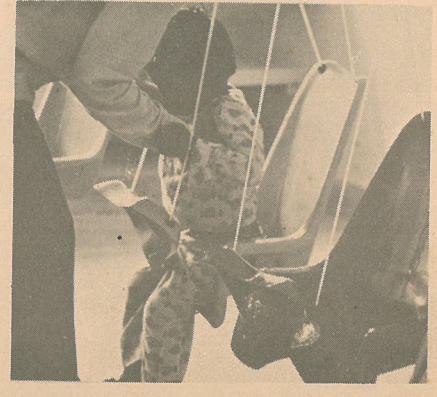
Products for children are neglected items in India. Awareness of parents in the role of toys in personality growth of child is so important that design efforts in the absence of such awareness almost seem to be futile. Organised toy-industry in India heavily depends on design plagiarism. Number of small toy-manufacturers in rural areas have no capacity to invest in design. A state policy in the interest of educational growth of children is essential to improve this situation. Educational aids deserve a direct support from the state. Again innovative, inexpensive products based on detailed studies are the need of the hour. The recent inputs into toy design from psychology has extended the scope of design to a research level. This is envisaged as a potential area for design research to be undertaken at the Centre in near future.

Swing for kids

Swings for children are used by all sections of people in India. Pictures at left indicate two types. One improvised by poor for very young children and the other marketed for older kids. The second type was redesigned after thorough analysis. Two designs were proposed, one with a polypropelene body in which a child can rest her head and the other with cloth and aluminium tubing with a provision to be carried on the back of parents.

Design : S. B. Potnis
Prerana Pendse
Guide : U. A. Athavankar

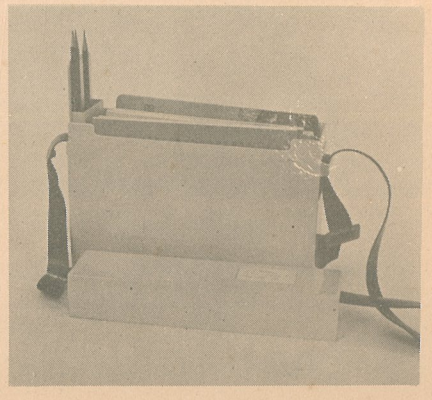




School Bag

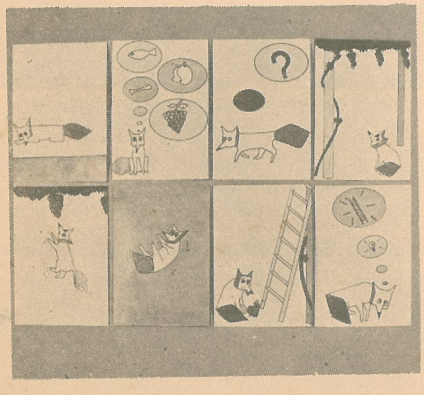
We see children carrying school bags with all their effort in wrong postures. A plastic bag which can be carried on the back, leaving the hands free was designed at the Centre. The light weight bag is colourful, cheap and protects the books from damage. A seperate box is kept for pencils and erasers. The lid gets self-locked while carrying. The belt is adjustable for different heights. There is provision for writing the name of the child on the bag.

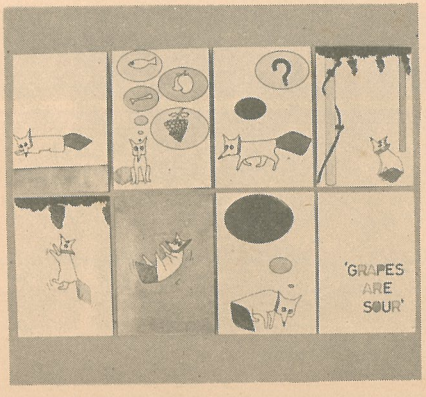
Design : V. L. Bakhale
Guide : A. G. Rao



'Kalpo-galpo' card game
This game meant for children of 5 to 11 years old has illustrations on cards from 8 stories. Stories can be built by making different combinations with different endings. The game is to be played like 'Remy' where the winner is the one who makes a story first. The game allows a free-play of thinking and helps in enhancing child's creative facilities. Younger children can just make stories out of the set.

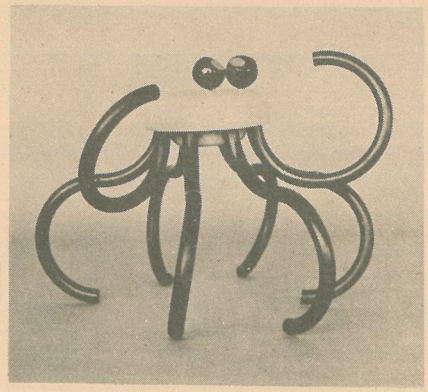
Design : A. G. Rao

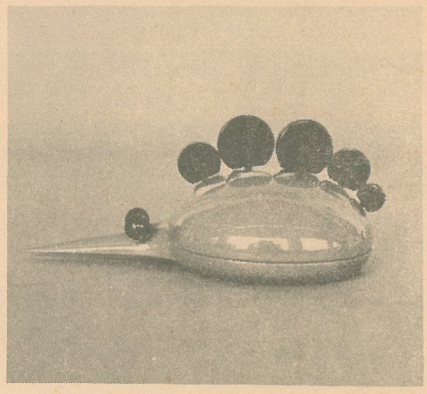


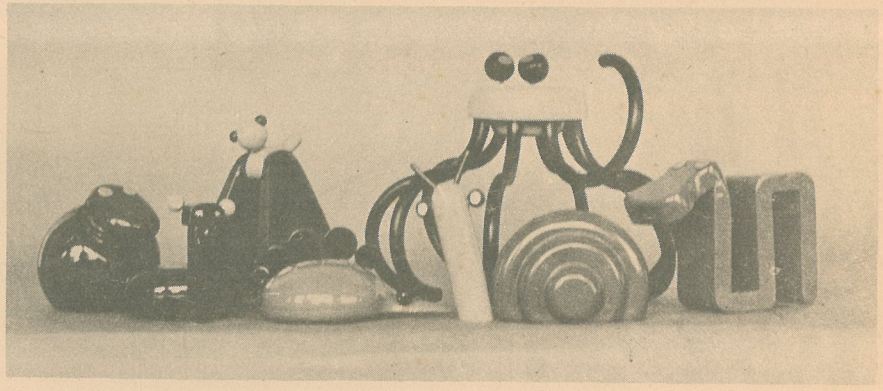


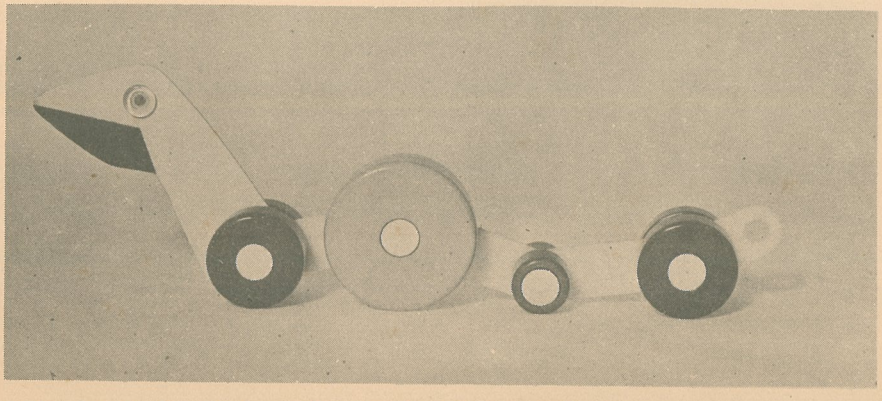
Wooden Toys
Toys in India are of poor quuality in general. An 'insect-series' of colourful wooden toys was designed with student participation in making them.

Design : Kirti Trivedi







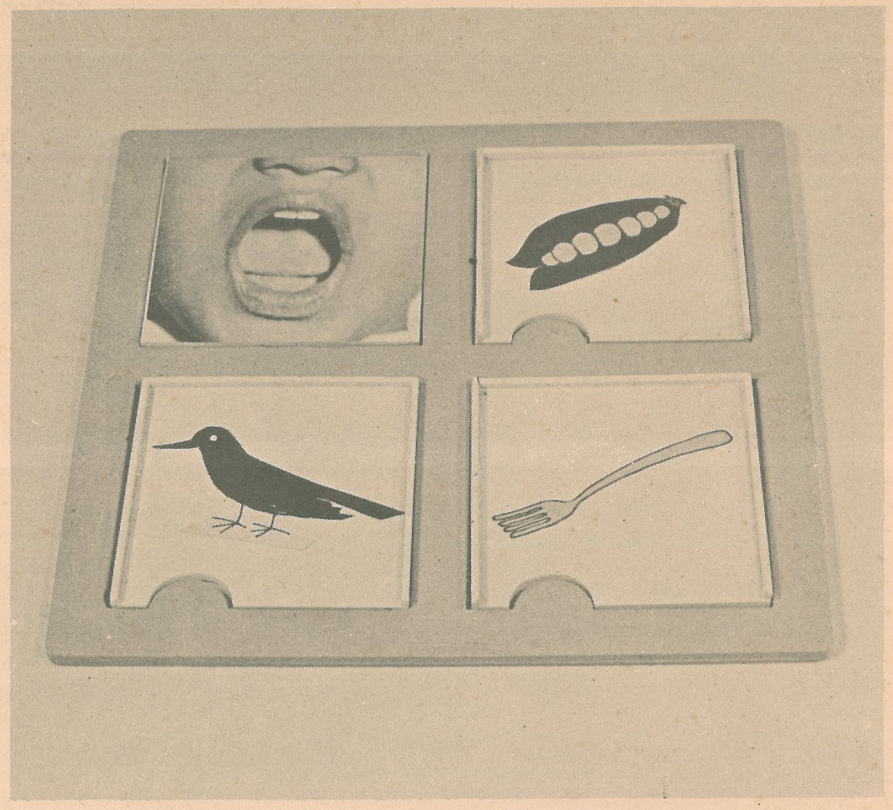


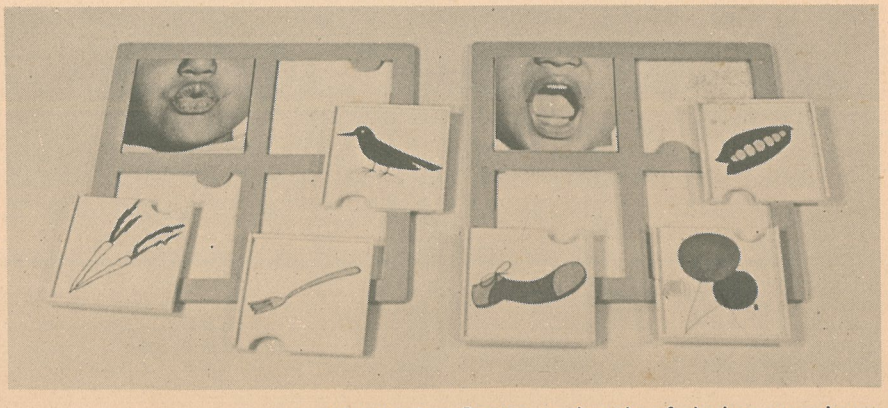
Rollit Toy Snake
A Rollit toy snake was designed out of turned wood. The toy has several combinations and the units are detachable.

Design : A. G. Rao

Language learning aid
Research work done in teaching dumb, is used in the aid for rapid learning of language. Children follow the lip movements to learn the phonetic words. The aid helps in self-learning of children after introduction by the teacher.

Design : Mrs. Neera Adarkar
Guide : A. G. Rao





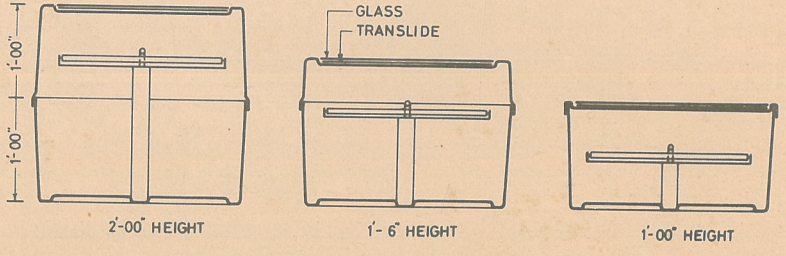
For Communication

Exhibitions almost follow designers. The Centre has undertaken the design of exhibitions at National and International levels, for the Govt. and Industry. The decisions to enter exhibitions are invariably taken at the eleventh hour pushing the designers towards a rush-approach. Though exhibitions offer an excellent platform in mass communication, the opportunity is seldom made use of due to lack of time. The Centre intends to conduct systematic studies in the creation of physical and behavioural environments with the advent of environmental design unit. Readiness with developed experimental ideas in mass communication would probably make the massive Government expenditure in exhibitions sensible.

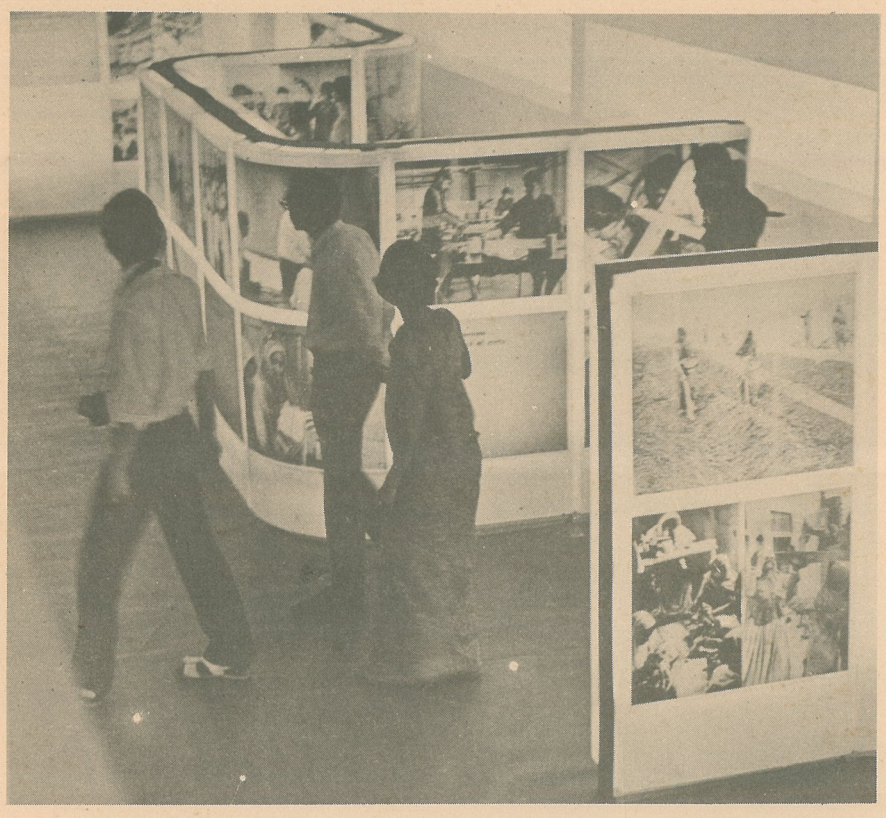
"Tryst with Destiny"
Education Ministry's Pavilion at Asia 72

The Centre was assigned the task of designing a pavilion on 'Education' in the Third Asian International Trade Fair termed as Asia 72. The design efforts culminated into a presentation "Tryst with Destiny" distinguished by its simplicity from the rest of pavilions. The scheme depicted educational efforts at various levels in the transformation of India since Independence.

The pavilion conveyed the theme through murals, illuminated photographes, filmed interviews, a film and publicity programme of posters folders etc. Vaccum formed plastic units which could be transported easily and assembled in a short time were designed. Items like chairs, ash trays, lamps were specially designed for the exhibition.



DISPLAY BOXES

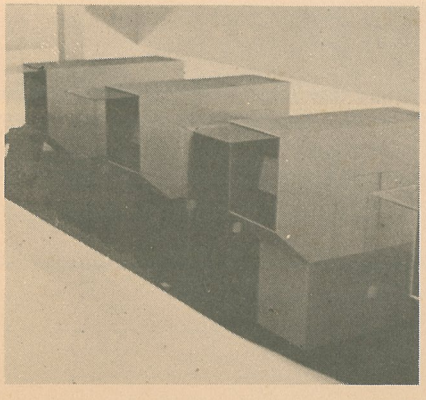


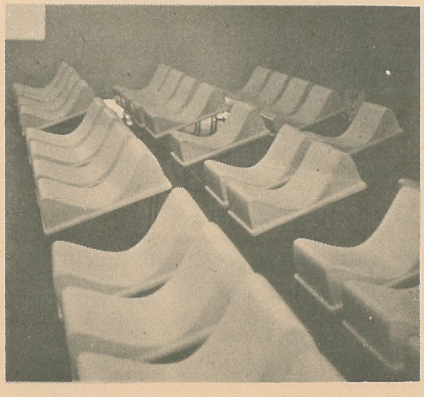
Exhibition Committee :
V. N. Adarkar – Chairman
S. Nadkarni
Dilip Chitre
Yashwant Chaudhary

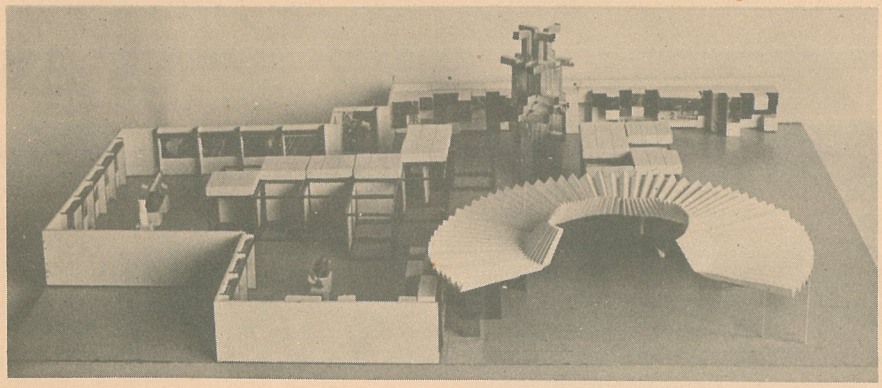
Design :
S. Nadkarni
U. A. Athavankar
M. Chattopadhyay
A. G. Rao
Subodh Dhairyavan
Roby D'Silva
Abdul Gaffoor

Pototypes :
M. S. G. Rajan & IDC Staff

Execution :
Design Organisation, Bombay

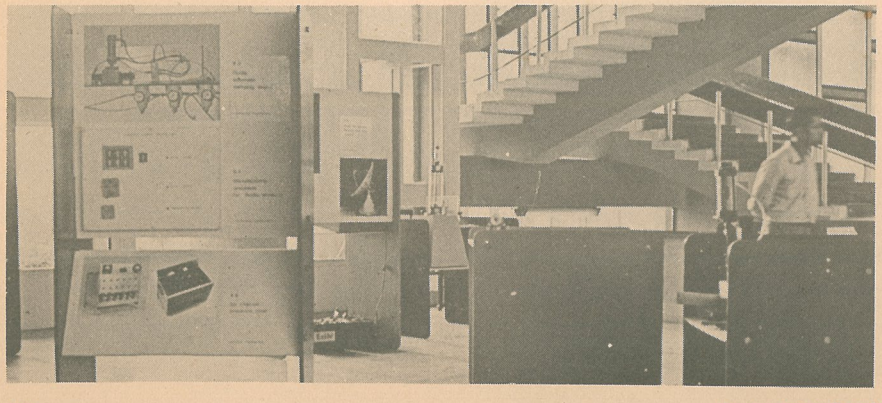






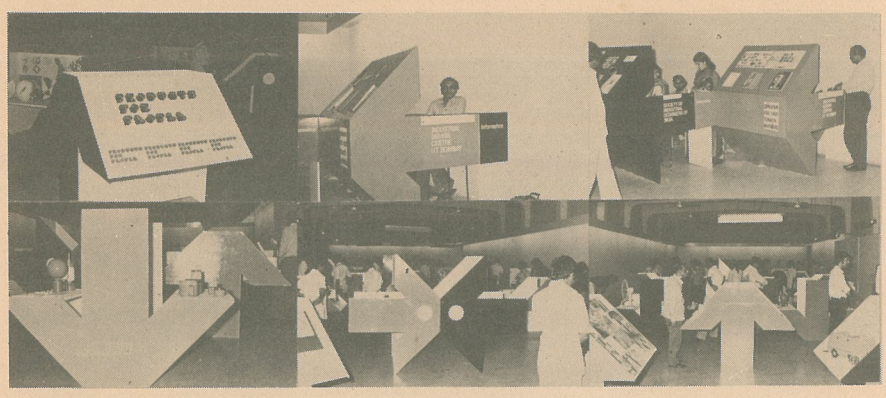
Trade Exhibition at Moscow
Indian Trade Exhibition at Moscow was undertaken for the Trade Fair Authority of India. The exhibition to be transported from Bombay in total had many challenging structural and organisational problems. The theme pavilion was designed to depict the Indian cultural values.

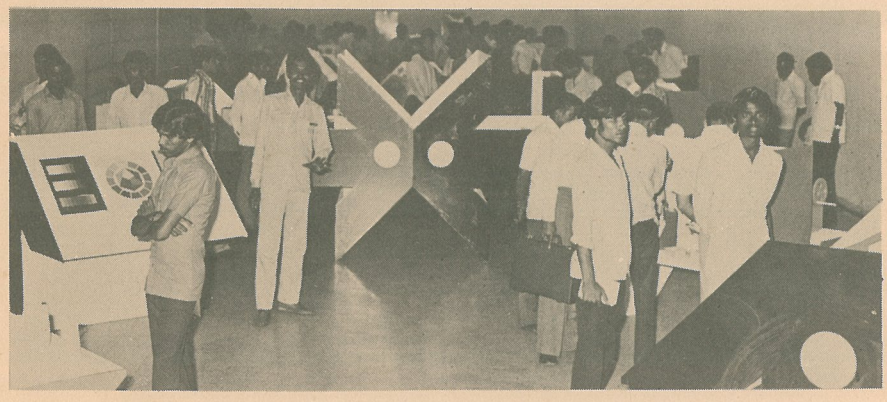
Design : S. Nadkarni



Exhibition at I.I.T.
A system of stands that can allow 2 D and 3 D material was developed for the exhibition at I.I.T. at the instance of Prime Minister's visit. The stands can be dissembled for storage and re-use.

Design : U. A. Athavankar
M. Chattopadhyay





'Products for People'

The Centre put up an exhibition named 'Products for People' at Jehangir Art Gallery, Bombay alongwith 'Society of Industrial Designers of India' (SIDI) with a view to expose the public and industries to the potentialities of the design through the work of the Centre and of SIDI members. The exhibition first of its kind in India was a great success and more than six thousand people visited during the 3-day period. The stands were specially designed for the exhibition.

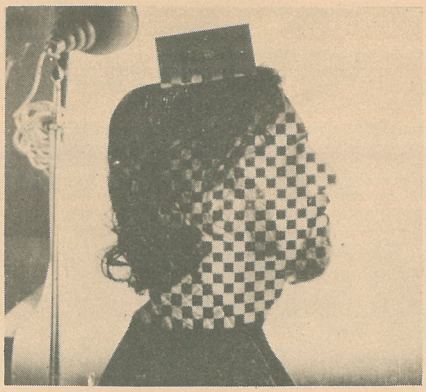
Design : Kirti Trivedi
A. G. Rao
M Chattopadhyay
(Coordinator)

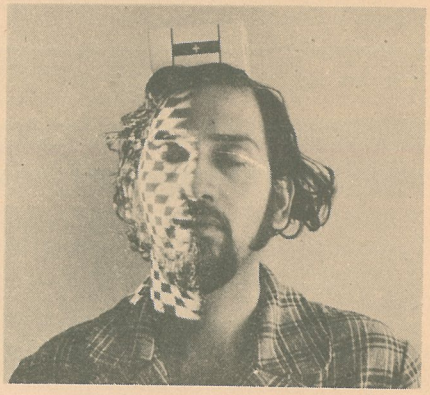
Ergonomic research at IDC

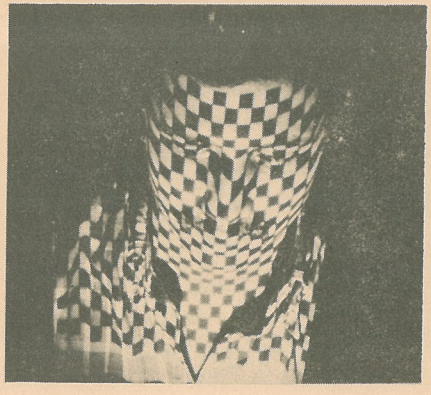
Designers in India face a big problem of lack of information on local people especially in subjects like Ergonomics. Information needed for applied use is still difficult to obtain. It was realised at the Centre quite early that the best way to ensure getting ergonomic information is to generate oneself. The Centre plans to build a full fledged ergonomic laboratory catering to the needs of designers and to develop the subject of ergonomics within the Institute.

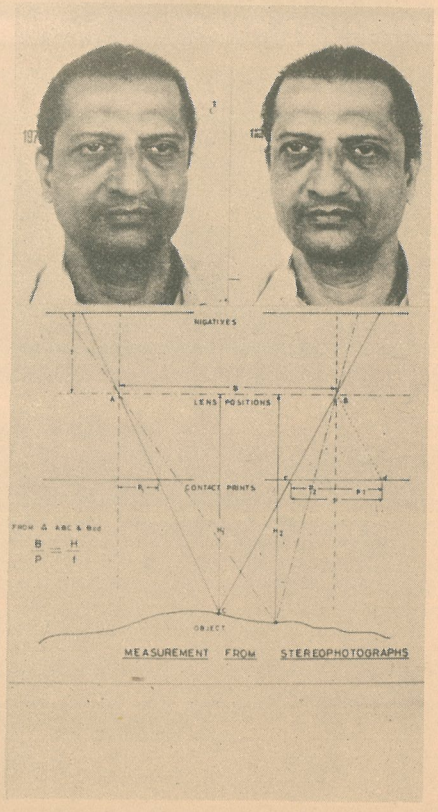
At present on-going design projects are being used as the problem source for deeper theoretical studies. The safety gear design for miners initiated a study of 3-D anthropometric measurements of complicated areas on the body like face and head. Design of school furniture for KG students initiated the development of a device to take anthropometric measurements of children easily.

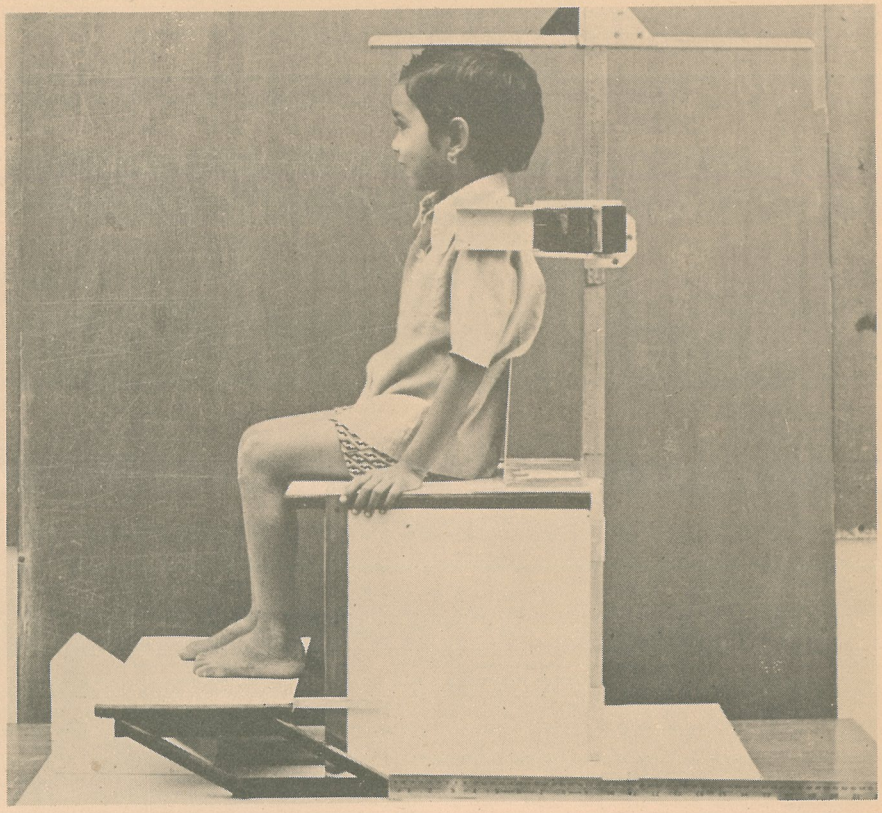
Researchers : V. P. Bapat, K. Munshi
Development Engineer : M. S. G. Rajan

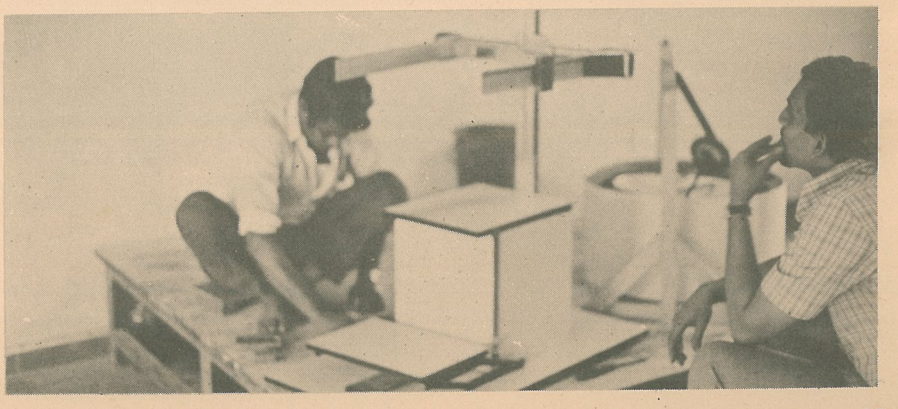


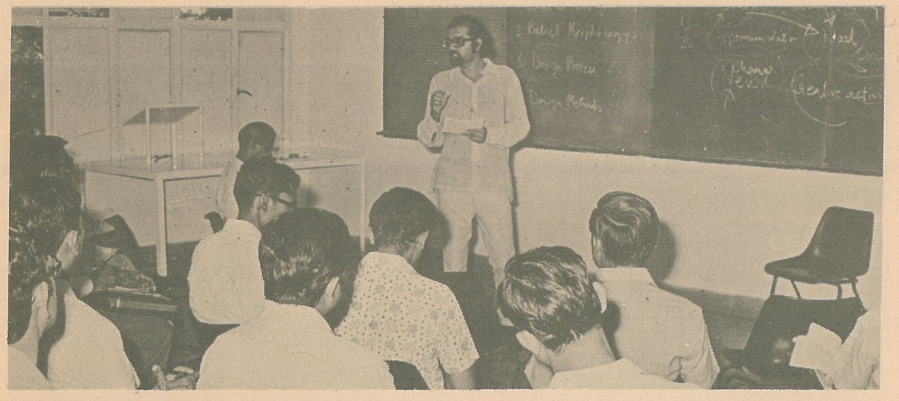










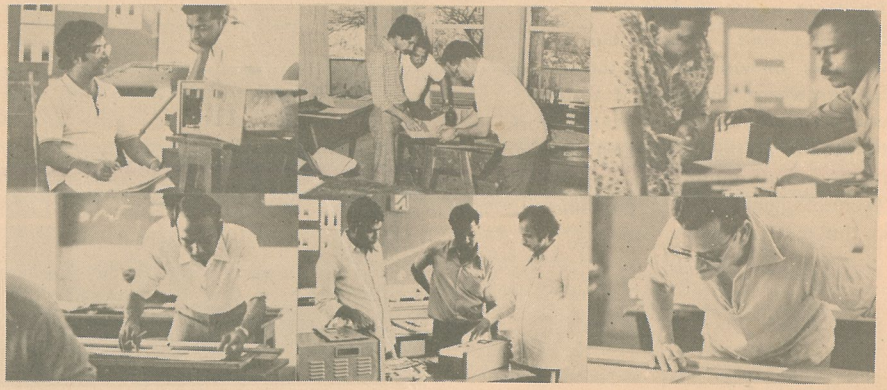


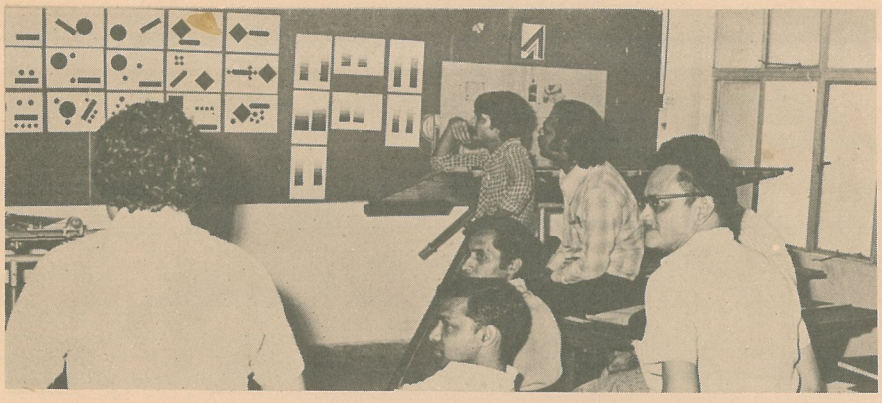
'Expo-ID' — 5-day course
Centre conducts a 4-day course on 'Exposure to Industrial Design' every year for sponsored candidates from Industry. The course has helped a great deal in spreading the subject and has been popular with Industries.

Co-ordinator : S. Nadkarni

Summer School for College Teachers
A Summer School for Engineering College teachers for 4 weeks was conducted at the Centre in May-June '78. The course was sponsored by the Indian Society for Technical Education.
Inclusion of an elective subject on 'Industrial Design' is expected to take place in Engineering Colleges all over the country in near future. The Centre at present offers such a course to the undergraduate students of I.I.T. Bombay. The Summer School will pave the way for introduction of such a course in other colleges

Co-ordinator : L. K. Das

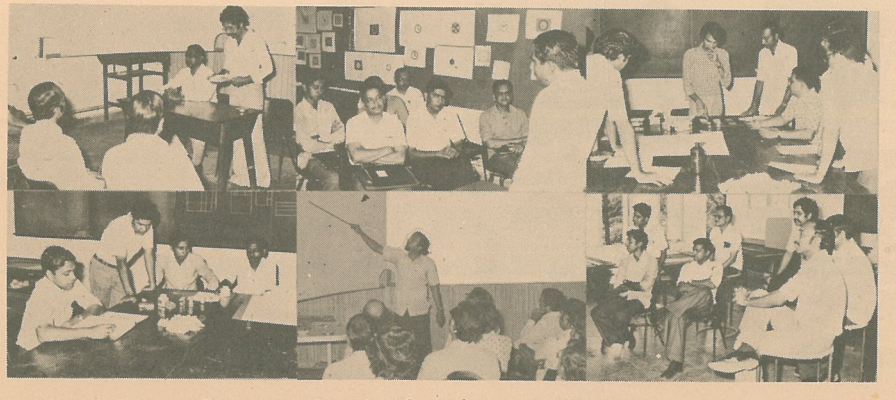




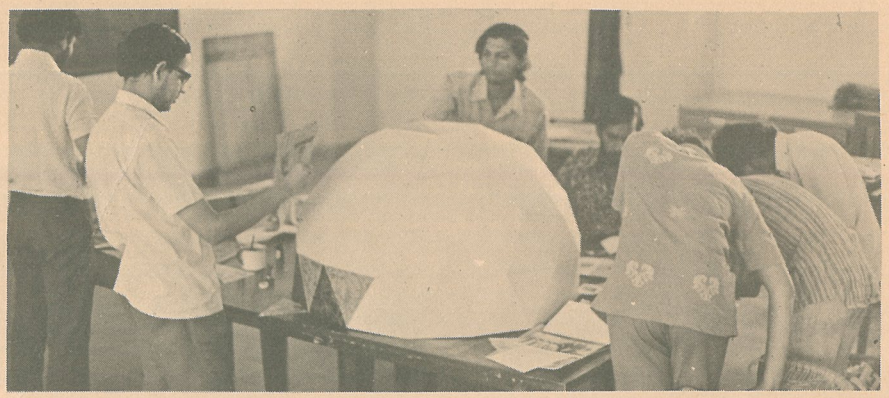
ID workshop for Instrument Designers

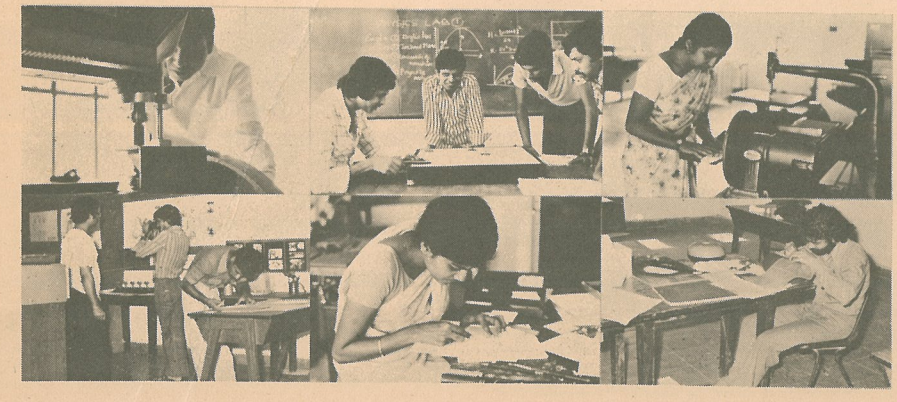
A 3-week workshop on Industrial Design was conducted for Instrument Designers sponsored from industry. Specially designed short exercises in Design and the intensive nature of the course enabled the candidates in coming out with excellent results at the end of the course.

Co-ordinator : K. Munshi



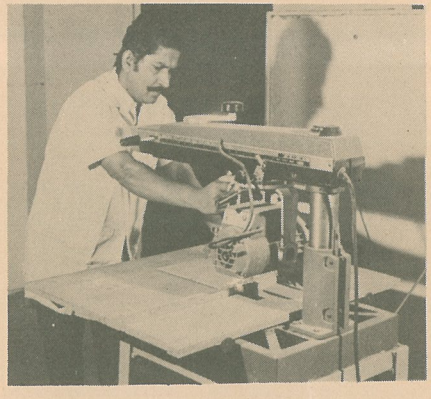
Students at Work
Students enjoy a high degree of freedom in working at the Centre. Students are encouraged to get emotionally involved in their work to create a 'design-culture' so badly needed to function in a stiff 'technological culture' prevailing in the Institute.

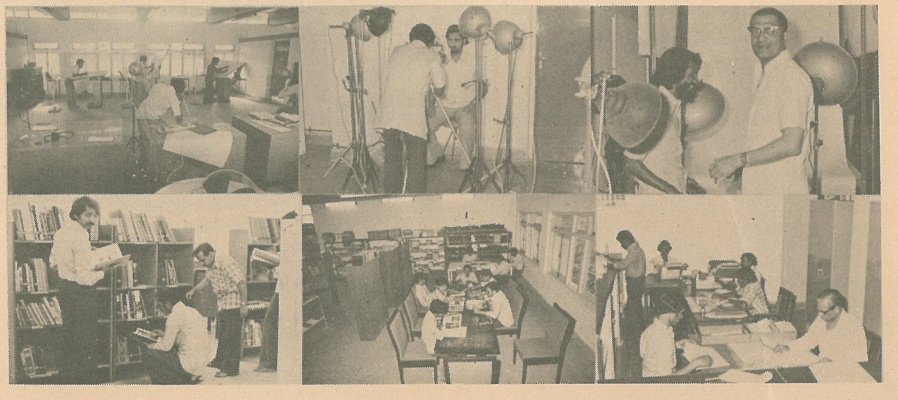




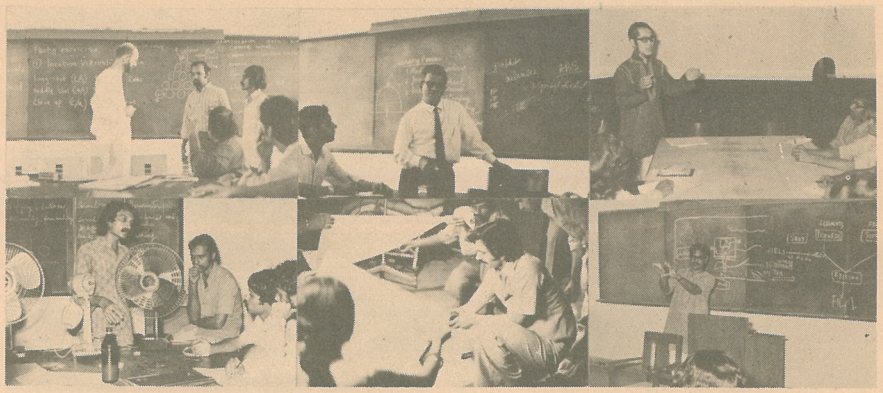
Working Facilities

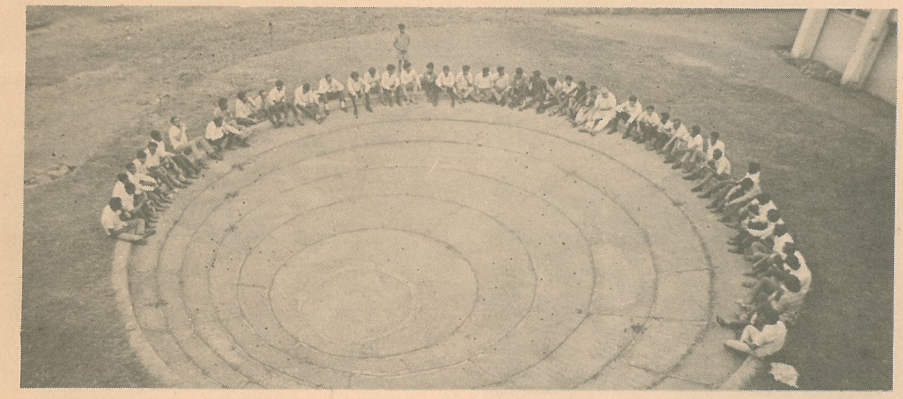
The Centre has excellent workshop-studio facilities. It is possible to make from mock-up models to full fledged prototypes at the Centres' workshops. The photographic studios are well-equipped to train students. The library at the Centre caters to the special needs of designers. In addition, Institute's library and workshop facilities are accessible to the students.





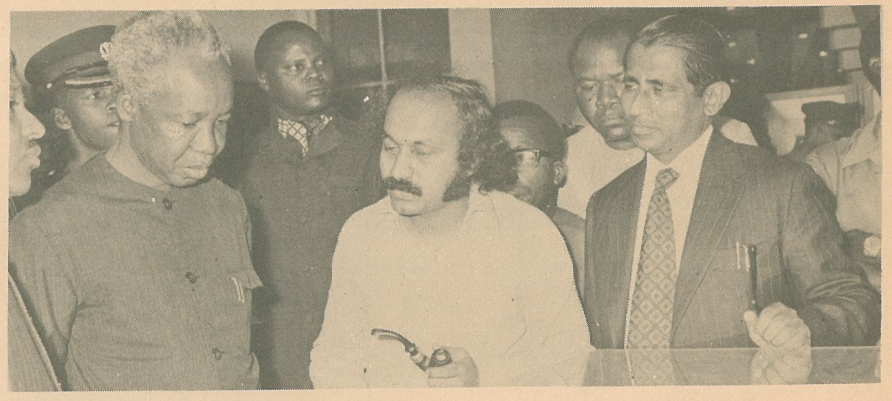
Students, Faculty Interaction
Informal atmosphere prevails at the Centre. Free exchange of ideas take place between students and faculty. On-going consultation projects are discussed with students. Visiting faculty plays an interesting role in the Centres' activities.





Visitors

Like any other pioneering institution the Centre attracts a flood of visitors. The response and criticism of the visitors has a invigorating role in the work of the Centre.



Industrial Design Centre

a decade of design experience

Photo : Kirti Trivedi
Nagarkar
Patkar

Cover + Graphic Layouts :
Girish Agarkar

Printing Coordination :
Sharad Kshirsagar

Printers :
Sudarshan Art Printing Press
5, Wadala Udyog Bhavan
Bombay - 400 031

Published 1979

Industrial Design Centre
Indian Institute of Technology
Powai, Bombay - 400 076