

Industrial Training and Manpower Development Schemes

Manpower development is one of the central pillars supporting our new industrial strategy. It is important that we train enough skilled workers to meet the demand of the high technology industries and the brain services we are promoting. In this area, EDB supplements the Government's training efforts by operating its own special training centres and institutes of technology in collaboration with the private industrial sector and other governments. In addition, financial assistance to promote the upgrading of the skills of the existing workforce is also offered under the Skills Development Fund.

Joint Industrial Training Scheme

The EDB Industrial Training Scheme has been in operation for 10 years. Established with the cooperation of multinational companies and a foreign government, the Scheme aims to combine the expertise of the industrial partners and the financial resources of the Government in operating joint training centres. These centres are building up a pool of skilled craftsmen and technicians to service the expanding industrial sector.

There are four training centres:

- (1) Tata-Government Training Centre (TGTC) established in July 1972,
- (2) Brown Boveri Government Training Centre (BGGTC) established in July 1973 (ex Rollei-Government Training Centre),
- (3) Philips-Government Training Centre (PGTC) established in July 1975 and
- (4) Japan-Singapore Training Centre (JSTC) established in November 1979.

The centres conduct a 4-year apprenticeship programme in which apprentices are intensively trained for the first two years in the centres under the expert guidance of foreign and overseas-trained local instructors. The apprentices are then assigned to companies in need of skilled manpower for a further two years of on-the-job training.

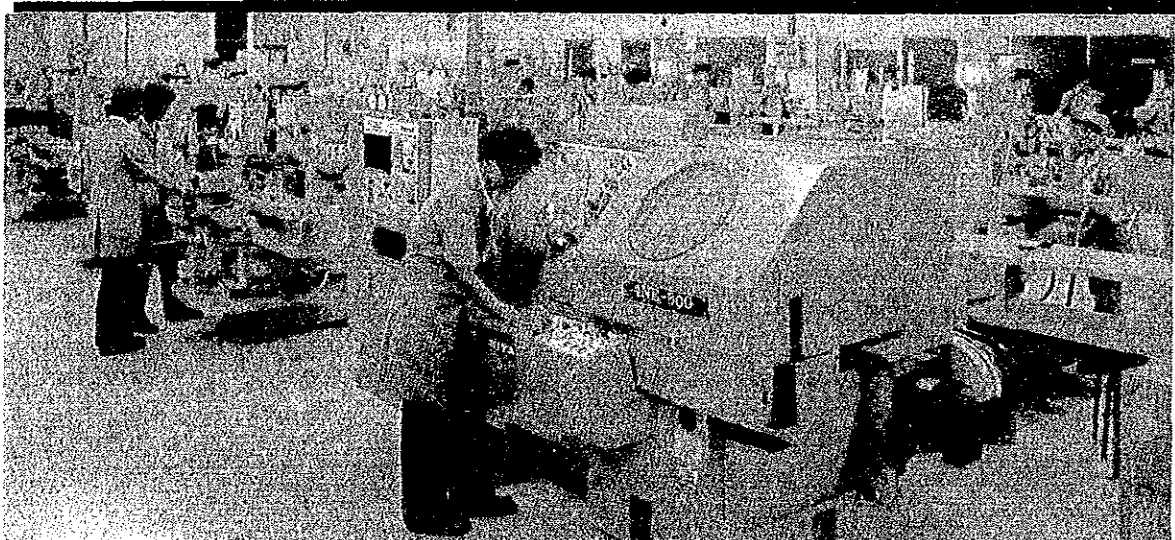
The main feature of the two year in-centre training programme is that the work environment in the centres closely duplicate that of industry. The courses offered by the joint training centres are for basic trade skills which are applicable to a broad range of industries:

- Precision Machining
- Production Machining
- Auto-lathe Setting
- Tool Room Machining
- Tool and Die Making
- Plastic Mould Making
- Precision Mechanics
- Industrial Machinery Maintenance
- Precision Optics
- Instrumentation and Controls
- Industrial Electronics
- Consumer Electronics
- Electrical Engineering

As at 31 March 1982, 2,298 apprentices had completed their two years in-centre training and were placed in 215 companies, while 1,242 were still undergoing training.

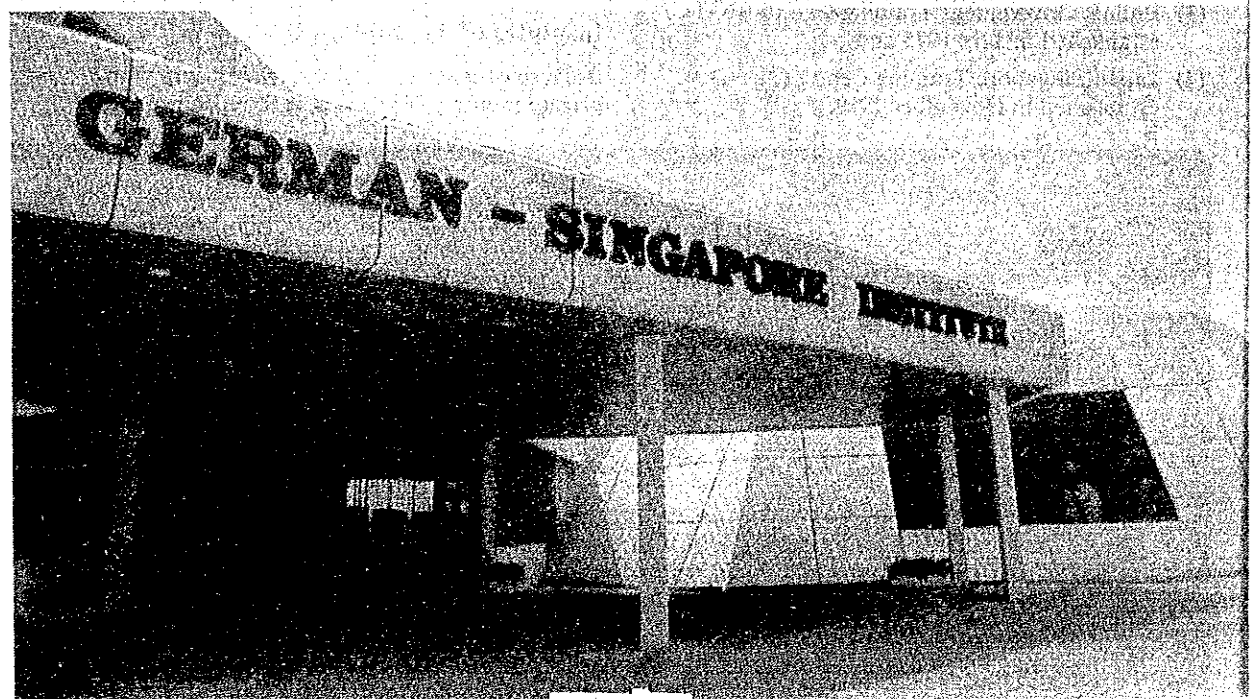
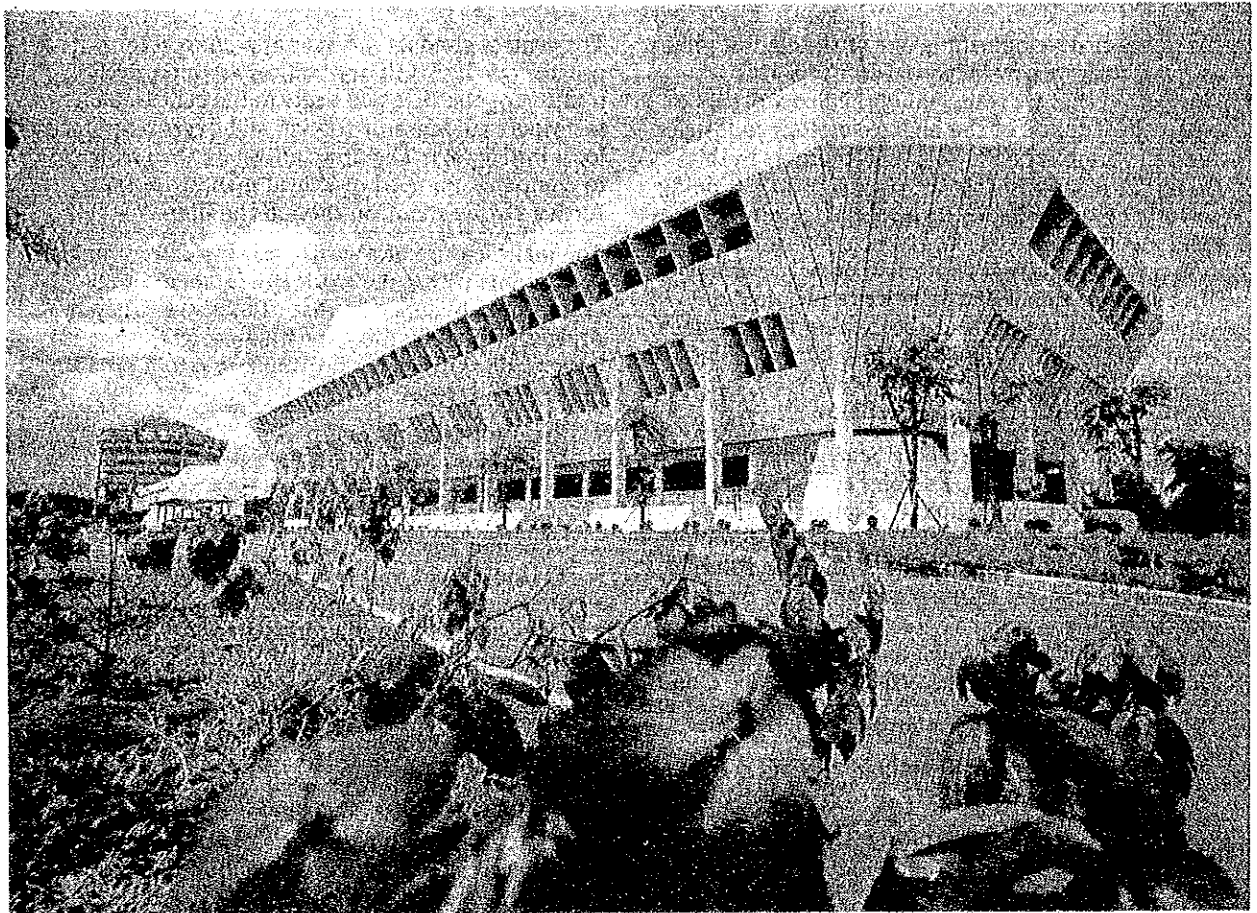
Institutes of Technology

Because of its close working relationship with private industry, EDB is able to recognise their



The latest arrival on the manpower training scene is the S\$35 million impressive and well-equipped German-Singapore Institute situated in Jurong Town (below).

A typical scene at the training centres and institutes where aspiring technicians are schooled in machining skills with the assistance of experienced instructors and modern equipment (right).



Representative scenes at the Tata-Government Training Centre (picture 1), the Japanese-Singapore Institute of Software Technology (picture 2, top) and the German-Singapore Institute (bottom).

skilled manpower requirements, often in advance of actual demand. In response to the needs of the industrial sector, EDB extended its training activities to cover more specialised training in such fields as tool and die design, production processes, robotics, microprocessor and computer applications, and computer software technology.

The following three new training institutes conducting such courses have been established in collaboration with the German, Japanese and French Governments:

German Singapore Institute of Production Technology (GSI)

The GSI commenced operations in February 1982. 12 specialists from Germany have been assigned to the Institute.

The GSI will train production engineering technicians and vocational instructors who will specialise in machining processes, tool and die making/design and production processes. The planned enrolment at full capacity is 400.

Japanese Singapore Institute of Software Technology (JSIST)

JSIST commenced operations in February 1982. Seven experts from Japan have been assigned to the Institute. The Institute is also equipped with S\$8 million worth of modern computer hardware. By providing training in computer software technology, JSIST will increase the supply of computer personnel required for the national computerisation programme as well as for the development of the computer software industry in Singapore. JSIST will also upgrade EDP professionals and managers, and provide middle and senior management training in the appreciation and applications of computers.

The Institute will have an initial output of 350 trained personnel a year, with provisions for expansion after the third and fourth year of operation.

French Singapore Institute of Electro-technology (FSI)

The FSI is scheduled to commence operations by April 1983. There will be a total of 12 French experts and an enrolment of 400 people when the Institute is fully operational.

The FSI will specialise in training technologists for the electrical/electronic manufacturing and servicing industries. Strong emphasis will be placed on control engineering, instrumentation, robotics, microprocessor and computer applications.

Skills Development Fund

The Skills Development Fund (SDF) was set up in late 1979 with the specific objectives of upgrading the skills and expertise of persons in employment, retraining retrenched workers and introducing sophisticated and more skilled operations in business. The SDF has since introduced the following 3 financial assistance schemes:

The Training Grant Scheme

The main aim of the scheme is to encourage employers to undertake training programmes which upgrade the skills of their employees by subsidising the cost of such programmes.

Grants are awarded for training courses which are relevant to the objective of economic restructuring and to skills development. The following courses are not eligible under the scheme:

- (i) Training courses which are inductive, i.e. aimed at familiarising a person with his job;
- (ii) Operative training in simple skills;
- (iii) Short general exposure courses which acquaint the trainee with some concepts, techniques, etc to give him a better appreciation of the topic.

Training programmes which have commenced prior to an application for grants, are not eligible for consideration.

Generally, grants are based on 30%, 50% or 70% of the allowable costs in the training programme. This is to ensure that the employers are also financially committed to the training programme to an extent which guarantees their continuing perseverance. The major allowable costs are course fees, absentee pay, return airfare, stipends or cost of living allowance, instructors' salary and new training equipment.

The number of applications received and processed, and training grants committed, have shown a rising trend since the inception of the scheme. As at 31 March 1982, the Fund had committed S\$71.4 million in training grants to 4,376 successful applications involving the training of 44,179 workers.

The Interest Grant For Mechanisation (IGM) Scheme

The scheme was introduced in December 1980 to encourage and assist companies and firms to invest in new machinery/equipment which will result in a substantial reduction in labour requirements, significant increase in output/worker, and the introduction of more sophisticated or skilled operations.

A sum of S\$30 million has been set aside for the IGM scheme. Companies or firms requiring term loan or hire purchase financing for the purchase of such machinery or equipment can apply for an interest grant to help reduce the interest cost.

The amount of the interest grant will be equal to:

- (i) one-half (50%) of the actual interest cost incurred and paid by the applicant or
- (ii) the full amount of interest computed at the rate of 7% per annum on a six-monthly equal instalment basis, whichever is the lower.

To encourage adequate and substantial investment in new machinery and equipment, only financing obtained for a principal sum exceeding S\$30,000 will be eligible for consideration. There is no upper limit for eligibility but the interest grant will be computed on a maximum of S\$5 million in principal sum borrowed.

As at 31 March 1982, S\$13.15 million had been committed in grants for 210 applications. The investment in machinery and equipment generated by these grants amounted to S\$96 million, giving an average ratio of grants committed to investment generated of 1:7.3.

The Development Consultancy Scheme

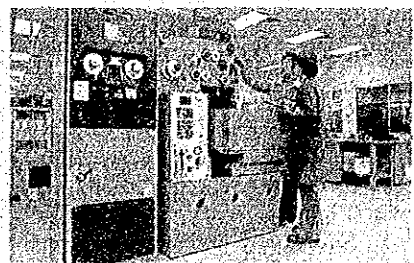
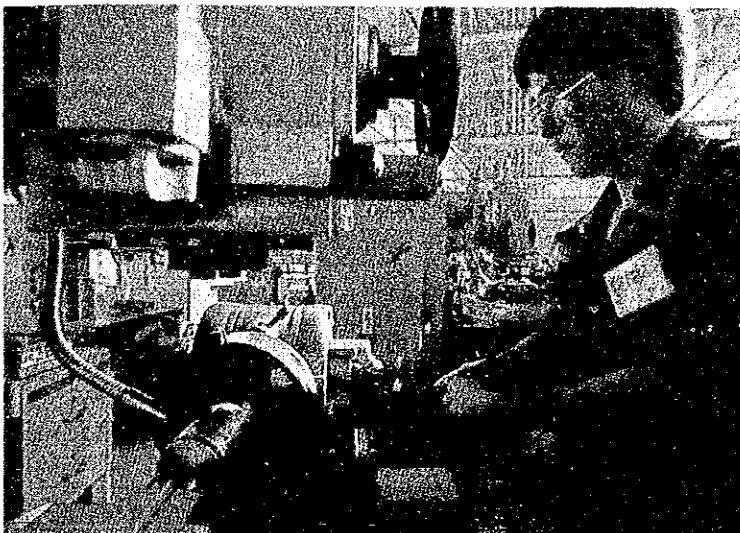
The scheme was introduced in August 1981 to encourage and assist local companies in recruiting external consultants to help upgrade their business operations and training plans. Under this scheme, the SDF will provide a grant to reduce the cost of engaging such external experts for short-term

assignments. A sum of S\$30 million has been set aside for allocation as grants under the scheme.

Applications for grants from trade, professional or employers' associations and trade unions for development work of benefit to their respective sectors are also considered. The scheme, however, does not cover the cost of implementing the recommendations of the experts.

The level of grants depends on the scope and depth of the short-term assignments as well as on their relevance to the objective of restructuring. Grants are generally based on 30%, 50% or 70% of allowable costs, subject to a maximum of S\$250,000 per company. In the case of multiple applications from the same company, the aggregate of all grants awarded shall not exceed S\$250,000. For development work undertaken by a trade, professional or employers' association, or trade union, the maximum grant per application is S\$500,000. The allowable costs consist of the fees paid to the external consultants and the return airfares and accommodation expenses (if any) in Singapore.

As at 31 March 1982, a sum of S\$1.38 million had been committed in development consultancy grants to 37 applications.



development of sensitive industries. In coordination with the Manpower Division, the Division administers the Permanent Residence Scheme and evaluates applications for investment of deposit funds under the scheme into various industrial projects. It conducts evaluation of SDF applications by industry and assesses eligibility by manufacturers to qualify for the use of the Monetary Authority of Singapore Export Rediscounting Scheme. The Division works closely with other Government authorities on policy issues concerning utility tariffs, land rentals, customs duties, and other matters affecting industry.

MANPOWER DIVISION

The main function of the Manpower Division is to ensure that the continuing skilled manpower needs of new industries in Singapore are met through intensive industrial training. Since late 1979, the Division has also been administering the Skills Development Fund which is aimed primarily at retraining workers to upgrade their skills for improved production techniques and processes. In addition, the Division is responsible for promoting a climate conducive to good industrial relations by playing an intermediary role between employers and the trade unions. This is done through close liaison with the Ministry of Labour, employer associations and the trade unions. In order to perform these tasks, the Division is organised into four units — Training, Immigration, Manpower Promotion/Planning and the Skills Development Fund.

Training Unit

This Unit administers four training schemes set up by the Board for the development of industrial skills. These are the Joint Industrial Training Scheme and the Institutes of Technology.

Immigration Unit

The Immigration Unit liaises closely with the Immigration Department to assist foreign investors, expatriate employees and their families in obtaining Employment Passes and permanent residence in Singapore. The Unit also assists the Work Permit Office in implementing the Work Permit Scheme for Foreign Workers.

Manpower Promotion/Planning

This Unit liaises closely with the Industry Division to study and project the skill requirements of various industrial sectors being actively promoted for development in the next few years.

Skills Development Fund Secretariat

The Unit serves as the Secretariat for the Skills Development Council which is an advisory body for the administration of the Skills Development Fund. It evaluates applications for grants under the SDF and makes recommendations for the consideration of the Council. It keeps close liaison with the Ministry of Finance in the administration of the Fund.

ADMINISTRATION DIVISION

This Division, divided into the Secretariat and the Finance Unit, provides operational support and administrative services for the Board. The Secretariat is responsible for all personnel matters while the Finance Unit is responsible for budgetary control and management accounting of the EDB and the Industrial Training Schemes.

Personnel Management

In the formulation of key personnel policies, staff welfare and benefits, the Administration Division works in close collaboration with the Staff Committee, Finance Committee and the EDB Recreation Club Committee.

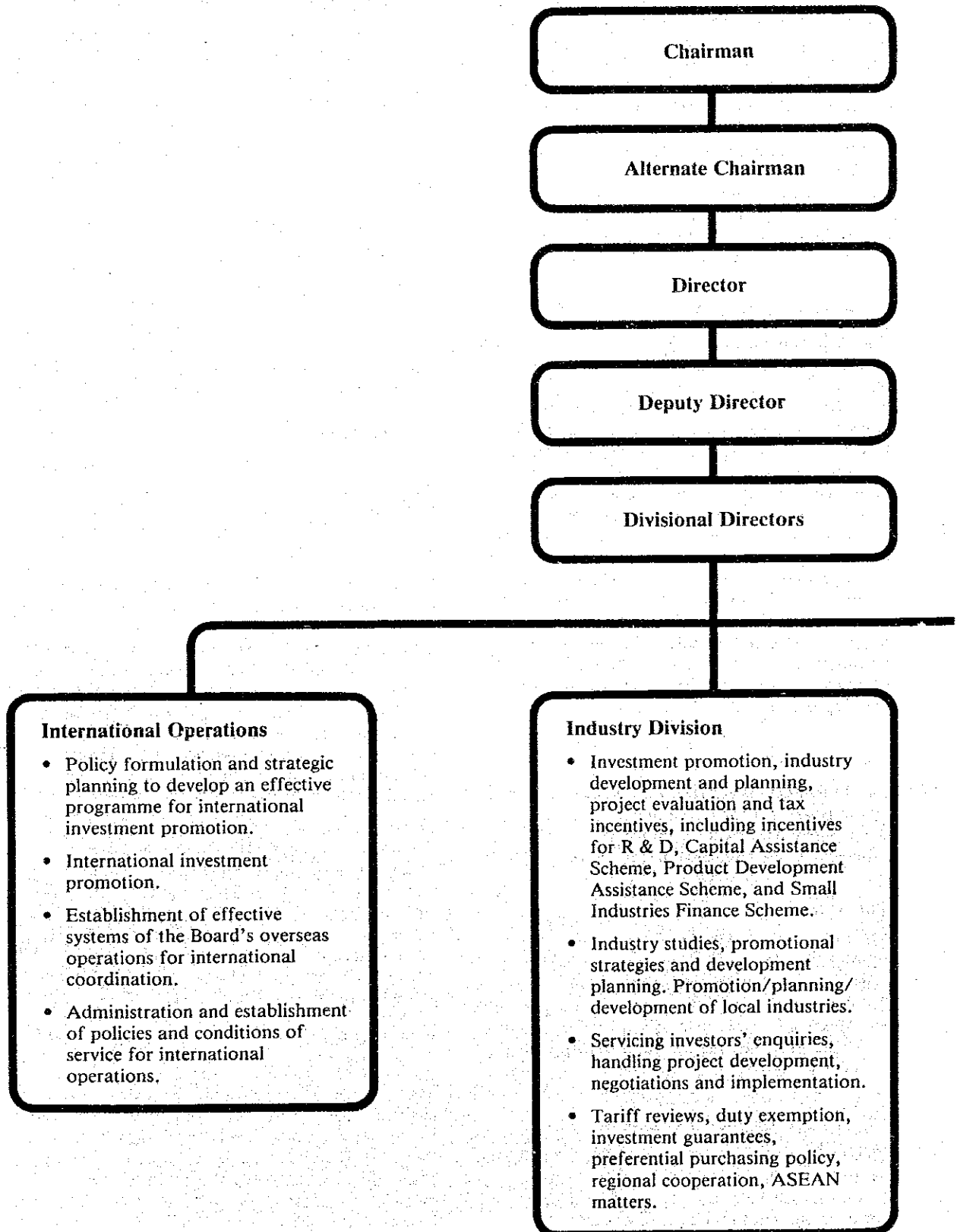
During the year, the Secretariat prepared itself to be more aggressive and independent in the development of personnel policies in view of the Government's decision that Statutory Boards could, within their budgets, administer and establish their own schemes of service. It looked into improvement and implementation of attractive staff remuneration packages. This is particularly important for staff in our training institutions who will train the new generation of skilled technical manpower for Singapore's industries.

In line with the government's emphasis on good human relations and effective personnel management, this Division convened regular monthly Staff and Administration (SAM) meetings with the Board's Management and Divisional Directors to discuss and formulate new staff schemes on career development and training, welfare benefits, productivity and related subjects as well as on administrative matters.

Staff Position

In view of the increase in workload arising from the establishment of more training centres and institutes, the growth of the activities of the Skills Development Fund, and the expansion in the Board's activities, 21 Senior Officers were recruited during 1981/82, bringing the total staff strength in the EDB proper to 217 as at 31 March 1982. However, the recruitment of junior supporting staff

EDB Functional Organisation Chart



Report of the Chairman

The blueprint for the development of vocational training programmes is provided by the broad projections of the July 1982 Report of the Council on Professional & Technical Education (CPTÉ). Based on a projected annual requirement for 11,800 skill workers for the 1980's, the Council envisaged the need for an enrolment of 30,900 in VITB by January 1986. The beginning of FY 81 therefore saw the Board facing several issues surrounding the implementation of the plan for skilled manpower development. The principal one was to confirm the availability of sufficient school-leavers as a training resource. The second concern was the ability of the Board to attract the projected number of school-leavers under a voluntary system of education and training. This implied that while the Board has initiated developmental projects to build up its capacity, it has at the same time to improve the attractiveness of its training system and recognise the preferences of school-leavers. The gap between demand and preferences would have to be bridged by being responsive to the needs of industries and intensified promotional efforts directed at the premature school-leavers and their parents. Another aspect was the appropriateness of the Board's courses and curriculum in relation to the academic attainments of the principal target groups of school-leavers expected under the New Education System. It also became apparent that whilst the Board's major programmes are concentrated at the skilled trades, the tapping of academically better entrants into skills training is equally important not only to prepare for a skilled workforce but to minimise the loss of a limited resource.

These considerations led the Board to undertake a number of studies during the year. One of these was the availability of school-leavers for vocational training. The findings indicated that there would be three groups leaving school. First would be those completing the GCE 'O' levels successfully. There would be more than adequate numbers from among this group who do not proceed for tertiary education to apply for the planned post-secondary courses of the Board leading to the Diploma, Industrial Technician Certificate (ITC) and Certificate in Business Studies (CBS). The studies also discovered that there would be a sizeable pool of students possessing two or more GCE 'O' level passes who would be available for direct entry into the skilled level NTC 2 programmes. The second group would be those completing secondary school in the Secondary Normal (SN) Stream, the majority with passes in one or more subjects at the Certificate in



Dr Tay Eng Soon

Secondary Education (CSE) level. These would comprise the main source of intake for the full range of skill courses under the National Trade Certificate (NTC) system, leading to NTC 3 and NTC 2. The third group would be a sizeable number of students completing eight years of Extended or Monolingual Primary Education (P8E and P8M). The study established that subject to achieving a "capture rate" of the order of 70 per cent in respect of the P8M, P8E and premature secondary school-leavers and up to one-third of the CSE and GCE 'O' level target groups, the Board would be able to sustain training at the levels envisaged by CPTÉ. To achieve this, an effective mechanism to facilitate progression from the schools and placement in the VITB is necessary.

A factor that affected the Board's development was the decision of the CPTÉ to shelve the establishment of a third Commercial/Service Polytechnic proposed in its Report. As a result, the Board was called upon to expand the Diploma in Applied Arts programme at the Baharuddin Vocational Institute by two classes in April 1982. The courses at the Hotel & Catering Training School were completely revamped, and the training facilities upgraded to cater for trainees under a new Singapore Hotel Association (SHA/VITB) Apprenticeship Scheme from July 1982.

As a result of another study, the CPTÉ accepted the recommendation of the Board to defer the phasing out of the Industrial Technician Certificate (ITC) courses as these were found to be highly popular, relevant and meet the needs of employers.

At year-end, an expert committee including representatives from industry was appointed to examine the further development of the ITC programme.

Places for the Basic Engineering (BE) were doubled. This programme provides a one year exposure in a number of trade skills in preparation for further training at the semi-skilled NTC 3 courses. Originally targeted for Secondary 1 and 2 school-leavers, the Board decided in January 1982 to admit the first group of Basic 4 pupils to BE on a pilot basis. This was a significant attempt as it created an alternative avenue to the Junior Trainee Scheme which would have placed them in employment without training. With effect from October 1981, the construction trades training facilities at the Ponggol Vocational Institute were assigned exclusively to the trainees from the Construction Brigade.

In terms of future development, the Board examined the training needs of the Primary 8 Monolingual (P8M) and Extended (P8E) Streams. Development through vocational preparation was seen as the key to their successful integration into the workforce as productive workers. The Board together with the Ministry of Education examined in-depth a proposal for their progression to the VITB on an automatic basis. It is proposed that P8E pupils be admitted to BE followed by NTC 3 training. The Board will offer P8M pupils a one-year Pre-Vocational Training (PVT) programme, after which those who do well can be admitted to BE and NTC 3. The others may proceed to apprenticeship programmes with companies or seek employment under the Junior Trainee Scheme.

The problem of staff recruitment and development to meet the needs of projected increase in trainee enrolment was a matter of high priority. A Personnel & Staff Development Division was created during the year. By intensive recruitment both locally and abroad the Board successfully raised its establishment from 1,476 at the beginning of the year to 1,634 at year-end. A new VITB Instructor Training Centre (VITC) commenced courses at Cairnhill in July 1981 to provide pedagogic training for serving and newly recruited training staff. The Board also adopted a comprehensive Staff Development Plan incorporating formal and informal programmes abroad and locally, planned in-plant attachments and management and supervisory training.

In terms of long-term infrastructural development, the most important project under action was the Resource and Staff Training Centre (RSTC). When completed in December, 1983, this \$6.3m facility at Ayer Rajah Road will have four

functions integrating curriculum development, instructional media production, a learning/resource centre and instructor training. The RSTC will provide the technical and professional support for development of vocational training. It will eventually serve the VITB's institutional requirements, training conducted by employers and Continuing Education & Training (CET).

With the increasing support of the Skills Development Fund (SDF) the year saw continued employer interest in industry-based training. The Board granted "Approved Training Centre" status to five more centres bringing the total to 11, enabling them independently to run courses leading to VITB certification. The Board sees the partnership of industry-based training with industries as a vital component of the vocational training system, catering for those school-leavers who need to enter direct employment after school and those who have completed PVT and NTC 3 in VITB. Success in this sector will determine the actual extent the Board needs to build up institutional capacity. In the long run, training for the job is best done by the employer with the VITB providing broad-based initial pre-employment foundation.

The thrust in CET was in the expansion of industrial skills development courses, particularly NTC 2 courses and ad hoc programmes tailored to the needs of workers. The Board's Foundation Programme for Workers continued to attract good response. The Board will be increasingly called upon to assist in the upgrading and retraining of the existing workforce within the framework of economic restructuring. This is a monumental task for which the government, unions and employers have an equal role to play as highlighted by the NTUC Seminar on "Meeting the Challenges of New Technology in the 1980's" held in April 1982. With the assistance of the Board, the NTUC has launched its Basic Education for Skills Training (BEST) programme in July to upgrade the literacy and numeracy of its members whose proficiency is below Primary Six. Looking ahead, new training courses will have to be developed to meet the needs of those who successfully complete the BEST programme and wish to learn a new trade.

In terms of performance the year saw net gains in operations, which are reported in detail in the accompanying chapters of this Annual Report. While total number of applications by the first choice for VITB courses was 13,058 compared to 15,137 in the year before, the total intake was 7,873, compared with 7,246 in FY 80. Year-end enrolment was 10,089, an increase of 6 per cent. Total output of those completing training however was 5,630 compared to 6,113 in FY 80, a decrease of 8 per

cent. The overall dropout rate was 14 per cent compared to 20 per cent in FY 80, a significant gain in performance. The total number of apprentices stood at 5,871, an increase of 14 per cent, with the number of firms participating being 377 compared to 270 in the year before. Continuing Education and Training registered a cumulative intake of 32,649 a growth of 12 per cent, while public trade test candidates increased by 2 per cent to 7,209. The overall cost of training per trainee per annum was \$3,619 compared to \$2,880 in FY 80, a 25 per cent increase largely accounted for by increases in wages.

As the Board further develops its training resources to meet the projected needs of skilled manpower, the following are seen as some of the critical issues facing the Board ahead :

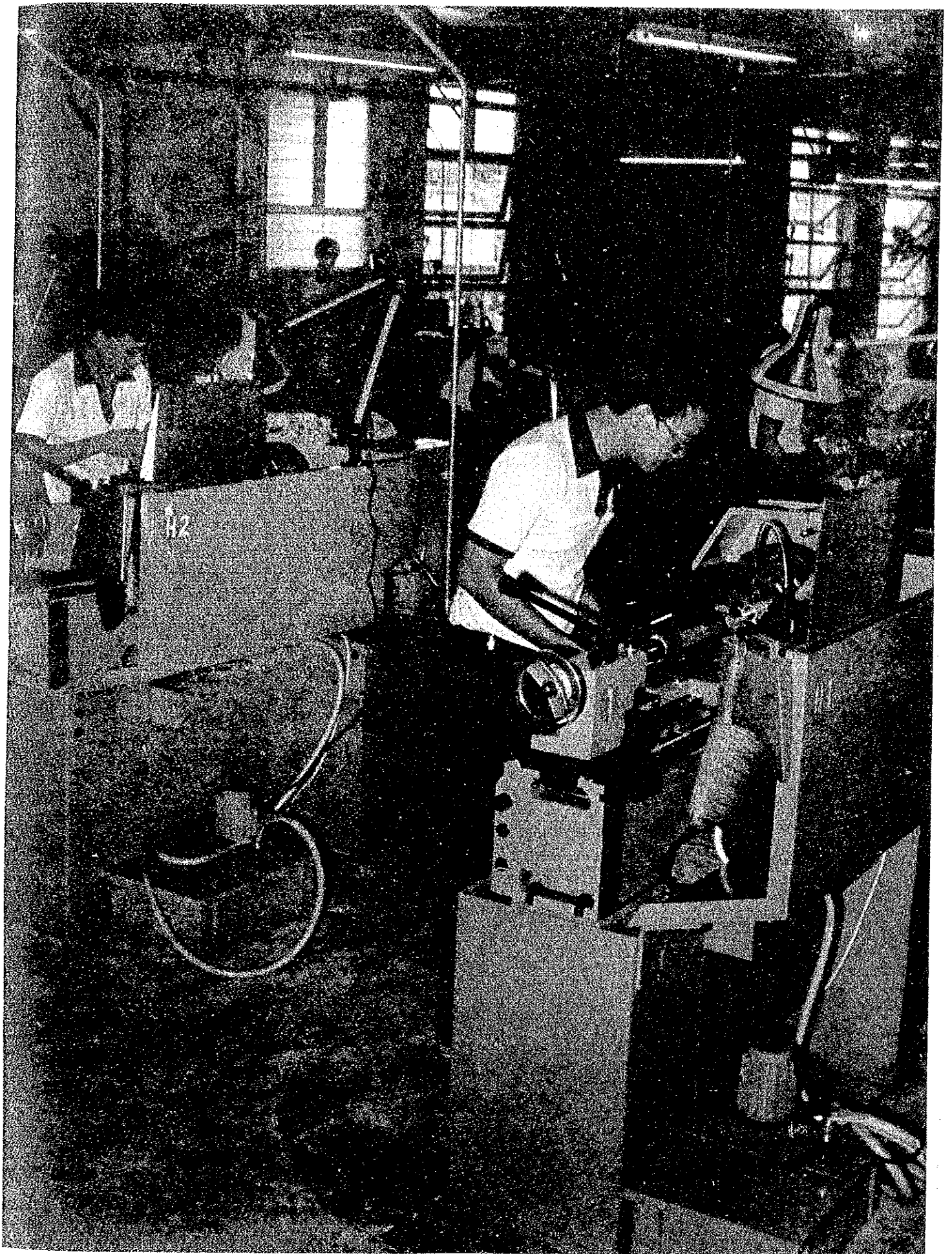
The need to develop a flexible system of training which is sufficiently attractive to the different targeted groups of premature school-leavers who would otherwise be lost to the workforce without acquiring any basic skills. The problem of mismatch between the declared availability of training places and demand by applicants at intake exercises will need close monitoring to reduce wastage of training resources. It is not possible to achieve a perfect match but where possible, losses due to vacancies and dropouts have to be identified and minimized.

A mainstay of an attractive training system is the quality of its staff, curriculum and facilities. The development of the Resource and Staff Training Centre (RSTC) is viewed as a major step towards the objective of upgrading the quality of training. Revised salary scales for VITB administrative and training staff following salary changes adopted by the Civil Service and the Ministry of Education will enhance the Board's ability to attract and retain experienced and better quality staff.

The output (graduates) of the Board must meet the needs of industry. Very close liaison with industry will be necessary to ensure that curriculum, training and types of courses are relevant in an environment of rapid economic restructuring. Through its visits to industrial sectors and network of Trade Advisory Committees the Board will continue to maintain the relevancy of its training.

Dr Tay Eng Soon
Chairman

A view of the Ayer Rajah Vocational Institute Machine Shop. Photograph shows NTC 3 Metal Machining trainees operating the lathes.



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