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ASSISTANCE IN FURNITURE PRODUCTION TECHNOLOGY

SI/MAL/88/802

MALAYSIA

Terminal report\*

Prepared for the Government of Malaysia  
by the United Nations Industrial Development Organization  
acting as executing agency for the United Nations Development Programme

Based on the work of a team of five experts

Backstopping officer: Antoine V. Bassiii  
Industrial Management and Rehabilitation Branch

United Nations Industrial Development Organization

Vienna

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\* This document has not been edited.

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## 1. INTRODUCTION

As a result of a request for technical assistance made by the Malaysian Timber Industry Board (MTIB), endorsed by the Economic Planning Unit and their letter of 25 May 1987 and UNDP, in their letter of 12 June 1987 and cable of 27 April 1988, UNIDO provided three man months of expert services under a project entitled 'Assistance in Furniture Production Technology' (project number SI/MAL/88/802).

Two teams of experts were fielded, the first comprised:

Antoine V. Bassili, a UNIDO staff member, who acted as team leader and covered topics of basic woodworking operations, production planning and control, plant layout, production flow and machine selection, product development, design for industrial production, packaging technology, and materials procurement and inventory control.

Horatio P. Brion, a consultant in design and use of jigs who covered topics of tooling and tool maintenance, design for industrial production, low cost automation, design and use of jigs, value analysis, computerization and documentation for industrial production.

Sinan Cinar, a consultant in production planning who covered topics of production planning and control, quality control and computerization.

They spent three weeks in Kuala Lumpur, from 15 January to 5 February 1989.

The second team comprised:

Jose Luis Albaidejo, a staff member of the UNCTAD/GATT International Trade Center, who covered aspects of marketing of furniture and stayed in Kuala Lumpur for one week, from 3 to 7 April 1989. He covered aspects of marketing of furniture and export trade, and provided statistical information on world trade in furniture, market information and information on distribution channels and contacts for new customers.

Peter C. Valk, consultant in export marketing of furniture who covered aspects of marketing of furniture in Europe. He stayed in Kuala Lumpur for two weeks from 3 to 14 April 1989. Mr. Valk covered aspects of pricing of furniture for export, markets for contract furniture and provided information on marketing channels in Europe, as well as advice on contacts for new customers.

The UNCTAD/GATT International Trade Centre provided the services of two of its consultants, Mr. Arthur Raymond, consultant in export marketing of furniture to the USA market, and William St. George Vernon, consultant in furniture production technology. Mr. Raymond

covered aspects of determining key design points for potential Malaysian exporters, and advised on marketing of semi-manufactured products; furniture components; requirements of the USA market, including specifications for knock down residential furniture; finishing refinements and market research.

Mr. Vernon also covered the aspects of determining key design points for potential Malaysian exporters and advised on production and cost control.

MIDA (the Malaysian Industrial Development Authority lectured on 'comparative analysis of Malaysia in the production of furniture'.

During the stay of the first team, they visited a total of 21 furniture manufacturers, in the area (two in Johore State and one in Penang), diagnosed problems they encountered and provided ad hoc advice.

The lists of firms visited and persons met is given in Annex I.

They also provided assistance to some ten technicians from various plants during ad hoc meetings at the MIIB headquarters, including advice to future tenants of the OIAK LEMPIT 'furniture village' (a specialized industrial estate) being established at Oiak Lempit. This covered mainly aspects of plant layout and machine selection-including selection of kilns.

The team also lectured at two modules of a one week Workshop on Furniture Production Technology. The first module was aimed at supervisors, and the second module at production managers and production controllers.

Because of the success encountered, a programme for a third week was organized at short notice by MIIB. The programmes for all these activities are given in Annex II.

The lists of persons who attended the two modules are given in Annex III. Attendance at the lectures during the third week varied between 15 and 25 and changed daily.

The second team lectured on marketing aspects. The programme is also given in Annex II. The list of persons who attended this portion of the overall programme is also given in Annex III. (Both are referred to as 'module III'.)

At the request of the Marketing Director of MIIB, a lecture on Market Research was given by Mr. Valk on 10 April 1989.

Messrs. Valk and Albaladejo (assisted by Messrs. Raymond and Vernon) provided ad hoc assistance to the individuals from 16 firms listed in Annex I.

## 2. PRESENT SITUATION OF THE FURNITURE INDUSTRY

In the recent past (last 3-4 years) there has been a relatively rapid development in Malaysia's furniture industry. Not only has there been an increase in the number of firms engaged in production, but also the exports of furniture (both wood and rattan) have been increasing, as shown in Tables I and II hereunder:

Table I: Malaysian export of wooden furniture  
(million Ms)

1982	1983	1984	1985	1986	1987
15.1	10.7	10.5	12.5	20.5	45.3

Source: Statistics Department

The major two clients in recent years were the United States of America and Singapore, each representing about 25 percent of the above figure, followed by Australia and the United Kingdom (each about 10 percent).

Table II: Malaysian exports of rattan furniture  
(million Ms)

1982	1983	1984	1985	1986	1987
2.2	1.7	4.2	5.5	7.0	11.

Source: Statistics Department

Major clients were Singapore, Australia, the United Kingdom and Sweden.

The ten year industrialization plan, covering the period 1986-1995 foresees an increase of furniture exports to attain Ms 400 million by 1995. For this target to be achieved, Government authorities have, in the past few years, devoted more attention to providing assistance to the sector. For example, MTIB's emphasis in the past was to transfer information and know-how on marketing furniture to potential exporters. Recently they have recognized that in order to enter an export market, the Malaysian exporter has to have an acceptable product (sound construction, involving technology, be aesthetically pleasing, be of good quality - within its price range - and, last but by no means least, be produced using appropriate technologies, in sufficiently large series and with a high productivity resulting in it being sold at a competitive price). To this effect they have held a one week international seminar on furniture production in August 1988, held the Workshops on furniture production technology, object of this project, as well as organized Malaysia's first furniture design competition. Six man years of technical assistance has also been obtained from Italy in furniture production technology, design and surface finishing technology.

In the past few years MTIB has organized and sponsored a Malaysian stand at Europe's largest furniture exhibition, held in January of each year in Cologne, Federal Republic of Germany. Of a total of eleven firms that exhibited at the 1989 Cologne Furniture Fair, no less than ten availed themselves of this opportunity and participated in the stand sponsored by MTIB and only one had an independent stand. According to a report on the results of the Malaysian participation, orders totalling M\$ 11 million were secured.

Another major development is the decision of the Forest Research Institute of Malaysia (FRIM), situated in Kepong, to involve itself with testing of furniture. To this effect they have already acquired the basic testing equipment, and were installing it at the time of the missions.

The authorities have realized that most of the industry is at a 'mechanized craft' level, and to this effect they have developed a specialized industrial estate ('furniture village') at Olak Lempit, and encouraged industrialists to move to it. Many existing companies are seriously considering relocating, while newly created ones will also establish their production facilities there.

All the above are positive measures taken by the authorities to help the industry. Unfortunately, the latter are, in many instances, still thinking as craftsmen, willing to produce any product in any quantity and have not yet realized the benefits of serial production, a technically qualified work force (especially at the middle management and supervisory levels), sound layout, good internal transport and, above all, collaboration between firms, be it in production or marketing.

One positive development by the industry has been their acceptance of rubberwood (*Hevea Brasiliensis*) as a raw material for furniture - often replacing Ramin which has out-priced itself of the lower cost products market. To succeed in this they have mastered the problems related to its successful processing, namely those related to its preservation and drying.

Many more firms have entered the export market, and it represents an increasing percentage of their turnover, but many of these have not yet specialized, accepting to produce any product from among a wide range, resulting in their investing in a wide range of small capacity machines, a good portion of which are unutilized.

### 3. FINDINGS

The majority of the industry is still at a 'mechanized craft' level, not because of the range and sophistication of equipment installed but because of small series, lack of specialization, lack of planning production and controlling it, poor layout, low utilization of installed capacity, etc.

Generally speaking, working conditions for assembly are poor, too few work stations are used and pneumatic aids (including low cost automation) virtually non-existent. Similarly limited use is made of production jigs, and even less of assembly jigs.

Another point that needs correction relates to safety: most machines do not have the safety devices mandatory in developed countries.

Quality control still tends to be done by inspectors at given points in the flow. The industry must realize that quality is built into a product and that there is no point in continuing to add value to a product which in the end will be rejected. Quality control therefore should be the responsibility of each and every machine operator.

Layout in many factories is still haphazard: there is considerable cross-flow, and not sufficient storage spaces for intermediate components where it is needed.

Similarly, internal transport is also not well organized. It exists in some factories, while in others certain components are transported on pallets while others are transported manually.

Technically qualified middle management and supervisors are to all intents and purposes non-existent.

Preventive maintenance of machines seems to be more the exception than the rule.

Batches are small resulting in uneconomic production runs.

Costing is not accurate and wastes of sawnwood are very high.

Not enough importance is given to saving sawnwood at the crosscut by cutting all components having the same cross section needed over a period of time. This allows more permutations and combinations for each plank length and results in larger savings of sawnwood. Management has not realized the potential savings that can be achieved in this work station and consequently invariably has not invested in more sophisticated tables at the cut-off saw nor placed more qualified operators to man this strategic work station.

Similarly, rough cuts have too large allowances, be they in sawnwood, wood based panels or veneers.

Surface finishing is not sophisticated: a very limited range of finishes is used and equipment used tends to be of the simplest types. (None of the twenty one plants visited during the first mission had a curtain coater.)



Supervisory personnel has not recognized the importance of wood drying - especially for use in products that will be exported to other, dryer, climates.

In many factories 'housekeeping' is poor (floors are dirty, offcuts lie on the floor, etc.) and illumination in some work stations is insufficient to ensure the production of quality furniture.

Sanding is often done only manually, without the use of pneumatically or electrically vibrated pads (or even hand pads).

While dowels are increasingly used, workers do not understand the principles involved, resulting in possible weak joints. Dowels are invariably made of Ramin or Rubberwood, irrespective of the strength and density of the species being jointed.

Products are developed and marketed individually. No attempt is made to utilize components from one product in producing another, nor are products analyzed before production begins to ensure that they can be simplified. The result of this policy is that production planning (where it exists) is more complicated than it could have been had more components been used for more than one product.

In many plants, costing is rudimentary, for example no value is allocated to offcuts from panels, the components obtained bear the full cost of the panel; if the offcuts are stored and re-used they will be fully priced again.

Among the inputs used, only sawnwood and plywood are commonly checked for quality and quantity. Members of the mission noted that surface finishing materials are accepted and used in production with no checks being made as to quantity, viscosity and solids content. No statistical analysis methods are used for any quality control.

In factories that veneer panels, no checks are made on the quantity of glue applied, resulting in wastage.

#### 4. RECOMMENDATIONS

##### A. Addressed to the Malaysian Timber Industry Board (MTIB)

1. MTIB should follow up its assistance to the industry that it provided under this project through specialized courses, of varying duration, addressed to future specialists and/or skilled craftsmen from industry in the following fields:

- (a) low cost automation;
- (b) Design and production of jigs and work stations;
- (c) Production planning and control;
- (d) Product design and development for industrial production;
- (e) Quality control for serial production;
- (f) Time study.

The above are to be mainly theoretical courses, which would nevertheless need some plant visits and demonstrations.

The following two topics, however, call for in-plant training since practical work plays a predominant role:

- (g) Modern surface finishing techniques;
- (h) Tool maintenance.

2. MTIB should continue sponsoring national furniture design competitions. Eventually, well known foreign furniture designers, active in the markets that Malaysia wishes to penetrate, should also be included in the Jury.

This occasion should also be used to serve as venue for a short course on design of furniture for industrial production, accessible to all participants in the competition, and to outsiders.

3. MTIB should continue sponsoring a national stand of Malaysian furniture at leading international furniture fairs in the markets it wishes to penetrate.

4. MTIB should compile appropriate documentation including written publications on all aspects of industrial production of furniture and disseminate it to the industry.

5. An MTIB technical staff member should be trained in equipment classification and selection, and a data bank covering these topics as well as auxiliary materials used by the furniture industry should be compiled and made available to the industry.

6. Similar data banks should be created by MTIB to cover surface preparation and finishing materials, hardware fittings and marketing of furniture for export.

7. MTIB should organize study tours to large international specialized woodworking machine fairs (such as the biennial LIGNA in Hannover, INTERBIMALL in Milan and the shows in Atlanta and Nagoya) for technical managers from the Malaysian furniture industry. Such tours should be conducted by competent, impartial, internationally recruited consultant(s) to provide members participating in the study tour with guidance on equipment best suited to Malaysian conditions, and be available to advise in any negotiations.

8. MTIB should conduct a census of the country's furniture manufacturers to better identify their problems and potentials for development. Such a survey could help pin-point problems and their relative perceived (and real) importance, and lead to a more effective utilization by MTIB of its resources in its programme to assist the industry.

International expertise would be needed to help elaborate the questionnaire and then, once circulated and the returns have been compiled by MTIB's staff, international expertise would again be needed to assess the results.

9. Because design seems to be the major problem for many starting Malaysian furniture exporters, the MTIB should put more effort in collecting market information from the main importing markets in the USA and Western Europe (FRG, UK, the Netherlands, France), such as Trade journals, mail order catalogues, leaflets, flyers, etc., on a regular basis.

This information should be up to date.

Therefore a continual contact with, for instance, trade organizations or consultants could be very effective.

Staff members of MTIB responsible for this task should be able to read fluently this market information or journals in foreign languages, such as German, French and Spanish.

10. Since the furniture village of Olak Lempit is operational, MTIB could encourage the participants in setting up a Joint Marketing Company. Establishing a marketing company is very complex, but should start at the initial phase of the village and before individual export efforts are made. Support and assistance of experts with a long experience in joint marketing and export combinations are a prerequisite for the success of this company.

B. Addressed to the Forest Research Institute of Malaysia (FRIM):

1. FRIM should pursue its work on the machining and finishing characteristics of the commercially less acceptable Malaysian species to facilitate their acceptance and use by the industry.

2. FRIM should, in close collaboration with MTIB and SIRIM (Standards and Industrial Research Institute of Malaysia), establish national standards for furniture and its inputs.

3. Once the furniture testing laboratory has been established at FRIM, and national standards for furniture have been enacted, steps should be taken to establish a national quality label for furniture.

C. Addressed to the industry:

1. The two existing furniture manufacturers associations should take a more active role in catering for the needs of the industry and in representing it vis-a-vis the various government bodies responsible for its regulation and development.

2. The Associations should establish a data bank of potential subcontractors to other firms from among its members. This should contain information on existing excess capacity for each operation, and conditions of making it available to other firms. This information once compiled should be kept up to date and circulated at regular intervals to all the Association's members.

3. The industry should recognize that it has to rely on a motivated, educated and technically competent technicians and supervisors at the middle management level. To this effect, it should recommend to the government the modification of its vocational training programme to train machine woodworkers (as against carpenters/joiners) and corresponding supervisory staff. Since this is a long range programme, and because of moral commitments to existing staff at all levels, they should also organize (or have organized by government bodies for them) intensive courses in topics of special interest for these categories of personnel, and release them from their normal tasks to enable their attendance. (See recommendation No. 1 addressed to MTIB.)

4. Increased use should be made of free-lance furniture designers be they Malaysians or foreigners.

5. Many Malaysian furniture exporters try to export a wide range of products instead of concentrating on one or two products, or product groups. It is impossible to be competitive in garden furniture and dining rooms and bedrooms and upholstered furniture and kitchen utensils. Concentration on one product group will be advantageous. It is much easier for customers abroad to identify a supplier for his collection and quality if this supplier offers a small and compact product range.

## ANNEX I

## LIST OF FIRMS PROVIDED WITH AD HOC ASSISTANCE AND PERSONS MET

A. During the first mission (15 January to 5 February 1989)

<u>Name of firm and town</u>	<u>Range of products</u>	<u>Name of person</u>	<u>Function</u>
Prai Malaysia Rattan and Wood Industries Sdn. Bhd. 13600 Prai (Penang)	Kitchenware (bowls, etc.)	Syed Azhar Barakbah Wong Tan Fong Ms. Diana Choi	Manager Corp. Affairs Production Mgr. - " -
Kim Teck Lee Timber Trading Sdn. Bhd. 58200 Kuala Lumpur	Doors, occasional furniture, shelves etc.	Lee Lum Seng	Director
Cheong Hing Bros. Inds. (M) Sdn. Bhd. 47100 Petaling Jaya (Selangor)	Folding stools KD folding chairs	Hung Chi Yuen	Production Mgr.
Asman Sdn. Bhd. 68100 Batu Caves (Selangor)	Contract furniture (to order)	Haji Tshak Haji Abdul Ghani	Managing Director
Mutex Sdn. Bhd. 72200 Batu Kikir (Negri Sembilan)	Furniture components & mouldings	Mansur Bin Yunis Razali Bin Haji Ismail	Factory supervisor Assistant factory supervisor
Syarikat Super Wood Products 42000 Pelabulin Kelang (Selangor)	Household furniture (dining & living room sets)	Sunny Tee Soon Peng	Owner/manager
SPPIK Kayu Nilai Sdn. Bhd. 70450 Seremban (Negri Sembilan)	Occasional furniture	Ahmed Suradi Adnan	Manager
Len Cheong Furniture Sdn. Bhd. 70450 Seremban (Negri Sembilan)	Dining rooms, components, doors and balusters	Lo Siew Koon Richard Seah	Managing Director Office Assistant
Woodlink Furniture Sdn. Bhd. 41050 Kelang (Selangor)	Panel furniture (bedroom sets)	K. M. Chong Ms. Leong	Managing Director Office staff

Practiwood Sdn. Bhd. 41050 Kelang (Selangor)	Chairs and bed- room sets	Tommy Thong	Managing Director
Hamid Perusahaan Tukang Pahat (Johore)	Furniture	Ibrahim Mahid	Technical Advisor
Multination Sdn. Bhd. Klang (Selangor)	Chairs	Ng Kck Chan Ng Kok Wing Danny A. Ng	General Mgr. Production Mgr. Marketing Mgr.
Hentuc Industries Sdn. Bhd. 81100 Johor Baru (Johor)	Panel furniture	Simon A.Y. Lee Teh Kok Teong	General Mgr. Managing Director
Yeh Bros. Woodworks (M) Sdn. Bhd. 81707 Pasir Gudang (Johor)	Components for coffee and side tables	Kuo Chi-Hsin	Executive Director
Danstil 68100 Selayang Baru (Selangor)	Desk accessories Garden furniture	Danny Chin	Owner
Confur (Selangor) Sdn. Bhd. 47300 Petaling Jaya (Selangor)	Kitchen furniture Shoe racks Video racks	Jensen Tan Ms. Angeia L.C.Lee	Factory Co- ordinator Public rela- tions/projects
Woo Wai Kee Enterprise Sdn. Bhd. 43207 Cheras (Serangor)	Chairs and outdoor furniture	Woo Chark Kum	Managing Director
Perangsang Delima Sdn. Bhd. 42009 Port Klang (Selangor)	Household furni- ture	Teo Leng Seng Jaafar Ismail Mohamed Jani Bin Din	Production Mgr. Operations Mgr. Operations Exe- cutive
General Lumber Furni- ture Sdn. Bhd. 41400 Klang (Selangor)	Doors, Beds, occasional tables	Ong Seng Guam G. Sugumaran	Production Mgr. Personnel Officer
Wan Rahim & Co. (Desa Cane) 60000 Kuala Lumpur	Rattan furniture	Helmi Mohamed	Owner

Penchala General  
Trading Co.  
Kuala Lumpur

Rattan furniture

Mahat Bin Wane

Managing  
Director

LIST OF FIRMS PROVIDED WITH AD HOC ASSISTANCE AND PERSONS MET  
DURING THE SECOND MISSION (3-12 April 1989)

Firm name	Person met
Seni Dian Kraft Sdn. Bhd	Zahari Bin Ayub
Diong Loh (Lim Eng) Sdn. Bhd.	Lim Lee Him
Afiah Sdn. Bhd.	K. K. Wong
Malayan Ind. & Engineering Co.	Mohd. Yusof B. Abd. Mutalib
OTP Akitek	Ooi Theam Poh
Commercial Interiors Shd. Bhd.	Steven Tay Seng Hong
Sppik Kayunilai Sdn. Bhd.	Ahmad Suradi
Setron Timber Inds.	Roibert T. L. Quah
MK Furniture Sdn. Bhd.	Ahmad Yusri B. Md. Amin
Desa Cane	Helmi Amin
Malruwood Sdn. Bhd.	G. Krishnan
Freesiakraft	Zainul Akmar Bte Ahmad
	Mohamad Fauzy Abd. Wahab
Zek Cane Trading	Haji Zainal Shukor
Guthrie Malaysia Trading Corp.	Osman Haji Ismail
Tawei (M) Sdn. Bhd.	Sunny Ter Soon Peng
General Lumber Wood Ind. Sdn.Bhd.	Wahab Abdul Razak



United Nations Development Programme

David Thorup, Deputy Resident Representative

Richard van den Berg, UNIDO Junior Professional Officer

Malaysian Timber Industry Board (MTIB)

Baharuddin Haji Ghazali, Director General

Chew Lye Teng, Director, Technical Services

Lim Choon Liat, Technical Services

Malipar Atan, Technical Services

Abdul Aziz Jamaluddin, Technical Services

Kamaruddin Othman, Technical Services

Khairi Abdul Karim, Technical Services

Roslan Hassan, Technical Services

**WORKSHOP ON FURNITURE PRODUCTION TECHNOLOGY**

**MODULE 1** : FURNITURE PRODUCTION TECHNOLOGY FOR SERIAL PRODUCTION  
**DATE** : 23RD JANUARY 1989 - 28TH JANUARY 1989  
**VENUE** : HING ROOM 3, HOTEL HING COURT (Please take note that the venue for the programme on 28th January 1989 will be at MTIB's Conference Room, 1st Floor, Bangunan Sateras, Jalan Ampang, Kuala Lumpur).  
**TARGET GROUP** : SUPERVISORS

TIME	23/1/1989 MONDAY	24/1/1989 TUESDAY	25/1/1989 WEDNESDAY	26/1/1989 THURSDAY	27/1/1989 FRIDAY	28/1/1989 SATURDAY
8.00 - 9.00	Registration	Lecture 4 Basic Woodworking Operations (Including Machinery, Equipment & Process Flow)	Lecture 5 Design For Industrial Production	Lecture 7 Design And Use Of Jigs (Production & Assembly)	Lecture 8 Tooling And Tool Maintenance  Speaker: S.Cinar N.Brien (UNIDO)	Lecture 11 Quality Control  Speaker: S.Cinar (UNIDO)
9.00-10.00	Opening Ceremony					
10.00-11.00	Lecture 1 Solid Wood As A Raw Material In Furniture Production (Including Exhibition) Speaker: L.T.Chee (MTIB)	Speaker: A.Bassili (UNIDO)	Speaker: N.Brien A.Bassili (UNIDO)	Speaker: N.Brien (UNIDO)	Lecture 9 Machine Maintenance  Speaker: K.S. Ho (FRIM)	Lecture 12 Packaging Material and Technology (Including exhibition) Speaker: A.Bassili (UNIDO)
11.00-12.00						
12.00- 1.00						Closing Ceremony
1.00- 2.00	Lecture 2 Wood Drying Speaker: K.T.Chee (FRIM)	Visit 1 Furniture Production Using Solid Wood & Panels (Machinery, Equipment & Process Flow) (ROBERT NEWTON LUMBER PRODUCTS SDN. BHD)	Lecture 6 Production Planning And Control	Workshop 3 Group Work On a) Process Flow, Production Planning And Control b) Jigs	Lecture 10 Surface Finishing (Including Demonstration) (COSMAR ENTERPRISES SDN. BHD.)	
2.00- 3.00						
3.00- 4.00	Lecture 3 Panel Products As Raw Materials In Furniture Production (Including Exhibition) Speaker: W.C. Wong (FRIM)	Coordinator: MTIB S.Cinar (UNIDO)	Speaker: A.Bassili (UNIDO)	Coordinator: N.Brien A.Bassili (UNIDO)	Speaker: John Wong (Miretone)	
4.00 - 5.00						

PROGRAMME

ANNEX II

**WORKSHOP ON FURNITURE PRODUCTION TECHNOLOGY**

**MODULE II : FURNITURE PRODUCTION MANAGEMENT**  
**DATE : 23RD JANUARY 1989 - 28TH JANUARY 1989**  
**VENUE : MING ROOM 4, HOTEL MING COURT (Please take note that the venue for the programme on 28th January 1989 will be at MFIB's Conference Room, 1st Floor, Bangunan Sateras, Jalan Ampang, Kuala Lumpur).**  
**TARGET GROUP : PRODUCTION MANAGERS AND PRODUCTION CONTROLLERS**

TIME	23/1/1989 MONDAY	24/1/1989 TUESDAY	25/1/1989 WEDNESDAY	26/1/1989 THURSDAY	27/1/1989 FRIDAY	28/1/1989 SATURDAY	
8.00 - 9.00	Registration	Visit 1 Plant Layout, Process Flow And Machinery Selection (PERANGSANG BELIM, SON. MD.)	Lecture 4 Production Planning And Control	Lecture 5 Surface Finishing (Including Demonstration) (COMBAT ENTERPRISE SON. MD.)	Lecture 7 Materials Procurement And Inventory Control	Lecture 10 Quality Control	
9.00 - 10.00	Opening Ceremony					Speaker: N. Brian A. Bassili (UNIDO)	Speaker: S. Cinar (UNIDO)
10.00 - 11.00	Lecture 1 Product Selection And Development						Lecture 11. Packaging Material and Technology (Including exhibition)
11.00 - 12.00	Speaker: A. Bassili (UNIDO)		Coordinator: N. Brian S. Cinar (UNIDO)		Speaker: S. Cinar (UNIDO)	Coordinator: John Wong (Miretone)	Speaker: A. Bassili (UNIDO)
12.00 - 1.00					Lecture 9 Industrial Hygiene Speaker: (Fosh. Abd. Halid (MACHINERY Dept.)	Closing Ceremony	
1.00 - 2.00							
2.00 - 3.00	Lecture 2 Plant Layout, Process Flow And Machinery Selection	Lecture 3 Low Cost Automation	Workshop 1 Group Work On Production Planning And Control	Lecture 6 Product Costing			
3.00 - 4.00					Panel Discussion		
4.00 - 5.00	Speaker: A. Bassili (UNIDO)	Speaker: N. Brian (UNIDO)	Coordinator: S. Cinar (UNIDO)	Speaker: Ahmad Nazree (Corinthian Ind.)	Coordinator: MFIB N. Brian A. Bassili S. Cinar (UNIDO)		

**WORKSHOP ON FURNITURE PRODUCTION TECHNOLOGY**

**PROGRAMME OF ADDITIONAL LECTURES**

**DATE:** 30 January to 4 February 1989

**VENUE:** MTLB, CONFERENCE ROOM, 1st FLOOR BANGUNAN SATERAS  
JALAN AMPANG, KUALA LUMPUR

**TARGET GROUP:** PARTICIPANTS OF MODULES I & II

TIME	30.1.89 MONDAY	31.1.1989 TUESDAY	1.2.1989 WEDNESDAY	2.2.1989 THURSDAY	3.2.1989 FRIDAY	4.2.1989 SATURDAY
0900 to 1000		Plant layout, process flow and machinery selection	Visit to Perangsang Delima Sdn. Bhd Lecutre on jigs  Speaker: H.P.Brion	Overall review covering wood drying kiln specifications, gluing, construction techniques, production planning, etc.	Computerization in the furniture industry	
1000 to 1015						
1015 to 1215		Group work on design of jigs		Speaker: A.V.Bassili	Speakers: H.P.Brion S. Cinar	
1215-1400						
1400 to 1600	Visit to FESTO DIDACTIC: Introduction to courses given	Group work on design of jigs	Documentation for industrial production	Value analysis		
1600 to 1615						
1615 to 1730	Speaker: John Chong	Presentation of group work	Speaker: H.P.Brion	Speaker: H.P.Brion		

N.B. All day, 1.2.1989 at Perangsang Delima. All day on 2.2. lectures A. V. Bassili, a.m., H. P. Brion p.m.

**WORKSHOP ON FURNITURE PRODUCTION TECHNOLOGY**  
- JOINTLY ORGANISED BY MTIB & UNIDO

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**MODULE III : Marketing and Market Promotion**  
**DATE : 3rd. - 5th. April 1989**  
**VENUE : MTIB's Conference Room**  
 1st floor, Bangunan Sateras, Jalan Ampang  
 Kuala Lumpur

TIME \ DATE	3/4/89 MONDAY	4/4/89 TUESDAY	5/4/89 WEDNESDAY
8.30 - 9.00	Registration	Lecture 4 Furniture markets in Western Europe Speaker: P.J. Valk	Lecture 7 Key design points for Malaysian furniture exporter Speaker: A. Raymond W.S.G. Vernon
9.00 - 10.00	Opening Ceremony Enzik Baharuddin		
10.00 - 11.00	Lecture 1 Comparative advantages of Malaysia in the production of furniture Speaker: Ooi Seng Hock	Continuation of Lecture 4	
11.00 - 12.00	Lecture 2 Marketing and export Trade in furniture (World analysis and existing opportunities) Speaker: J.L. Albaladejo	Lecture 5 Market Research Speaker: J.L. Albaladejo	Continuation of Lecture 7
12.00 - 1.00		Joint Export Marketing	
1.00 - 2.00			
2.00 - 3.00	Lecture 3 Pricing of furniture for export Speaker: P.J. Valk	Lecture 6 Documentation for export Speaker: K.H. Tong	PANEL DISCUSSION
3.00 - 4.00			Closing Ceremony
4.00 - 4.30	DISCUSSION	DISCUSSION	

## ANNEX III

LIST OF PARTICIPANTS  
 MODULE I - FURNITURE REPRODUCTION TECHNOLOGY FOR SERIAL PRODUCTION  
 (23 - 28 JANUARY 1989)

<u>Organization</u>	<u>Name of participant</u>
Creation Furniture Manufacturing Sdn. Berhad Lot 17485, Jalan Dua, Taman Selayang Baru 68100 Selayang SELANGOR DARUL EHSAN  Tel.: 03-6180499	Eu Hong Chew
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Seni Dian Kraft Sdn. Berhad Kawasan Perindustrian Nilai 71800 Nilai N. Sembilan Darul Khusus  Tel.: 06-691988	Nik Fadzil Nik Mohammed
Tiga Segi Sdn. Berhad 62-3C, Batu 2 1/2, Jalan Kelang Selangor Darul Ehsan  Tel.: 03-7175072	S. Sundaresan
Multi Nation Sdn. Berhad Lot 313, Kampung Batu Belah Selangor Darul Ehsan  Tel.: 03-3420597	Ng Sing Ban

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Ting How Neing

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 MODULE III - MARKETING AND MARKET PROMOTION  
 (3 - 5 APRIL 1989)

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- Ms. Khong Lgn Fong, Assistant Director of Marketing (Market Intelligence)
- Datin Zaleka Ahmad, Assistant Director of Marketing (Domestic Trade)
- Mr. V. Duangratana, Planning Division

On request of the Marketing Director of the MTIB a lecture on Market Research was prepared for Monday, 10 April 1989, covering the following items:

1. Nature and scope of market surveys
  - country survey
  - market survey for products
  - survey of marketing variables
2. Screening market potential
3. Preparing a survey - methods of collecting primary data
4. Collecting data by questionnaire
5. Exploratory survey and analysis of secondary data
6. Preparing data for analysis
7. Analysis and interpretation of organized data and information
8. Writing a survey report
9. National institutions conducting market surveys

LIST OF WORKSHOP PARTICIPANTS WHO  
REQUESTED POST WORKSHOP CONSULTATION  
AND ITS NATURE

1. Zahari Bin Ayub, of Seni Dian Kraft Sdn. Bhd (technical advice)
2. Lim Lee Kim, Diong Loh (Lim Eng.) Sdn. Bhd. (export and production)
3. K. K. Wong Afiah Sdn. Bhd. (market information)
4. Mohd. Yusof B. Abd. Mutalib, Malayan Industrial and Engineering Co. Sdn. Bhd. (marketing of semi-product and furniture component)
5. Coi Theam Poh, OTP Akitek (marketing specification to export furniture to the USA particularly on CKD furniture for residential)
6. Steven Tay Seng Hong, Commercial Interiors Sdn. Bhd. (marketing channels in Europe)
7. Ahmad Suradi, SPPIK Kayunilai Sdn. Bhd. (marketing in USA: a) type of product (b) finishing, (c) market research)
8. Robert T. L. Quah, Setron Timber Industries (looking for new markets, production control, cost control)
9. Ahmad Yusri B. Md. Amin, MK Furniture Sdn. Bhd
10. Helmi Amin, Desa Cane (distribution channels)
11. G. Krishnan, Malruwood Sdn. Bhd. (marketing advice and contacts for new customers)
12. Zainul-Akmar Bte Ahmad, Freesiakraft (furnishing, moulding, joinery, designing)
13. Mohamad Fauzy Abd. Wahab, Freesiakraft (ditto)
14. Hj. Ishak Hj. Abdul Ghani, Azman Sdn. Bhd.