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UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

Distr.
LIMITED
UNIDO/ICD.128
11 November 1977
ENGLISH

REPORT ON THE SEMINAR ON FURNITURE AND JOINERY INDUSTRIES^{1/}

Hold in Lahti, Finland, 1-20 August 1977

by

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Industrial Development Officer
Agro-Industries Section
Industrial Operations Division

^{1/} This document has been reproduced without formal editing.

1. Purpose of the Mission

A staff member of the Agro-Industries Section of the Industrial Operations Division, Mr. Antoine V. Bassili, went to Finland to attend and help conduct the entire sixth UNIDO Seminar on Furniture and Joinery Industries which was held in Lahti, Finland, from 1 to 20 August 1977.

2. Attendance

UNIDO has selected 30 participants to attend the Seminar. Two of these (from Surinam and Jordan) were unable to attend and did not inform UNIDO in time to enable it to inform a standby in time. Because of the late withdrawal of the participant from Jordan, none of its standby candidates could attend. UNIDO was not informed at all that the participant from Surinam would not attend. Consequently only 28 of the 30 selected candidates attended the Seminar at UNIDO's expense. A further two (Messrs. Luis F. Equihua Zamora from Mexico and Mr. Jairo R. Acero from Colombia) attended the Seminar at no cost to UNIDO. The list of participants is given in Annex I (UNIDO document ID/WG. 256/1). One participant arrived the day of the start of the Seminar, having missed a plane connection.

The participant from Libya came to Lahti accompanied by his wife. This did not deter him from participating fully in the Seminar's courses, factory visits, and, to a lesser extent, assignment work.

3. Participants

The group was as homogeneous as those of the previous Seminars. The participants were all of a higher technical level. (This opinion was shared by the Finnish Director of the Seminar, Mr. P. Paavola).

All participants were very keen on getting as much information as possible out of the lecturers, visits and demonstrations and did so continuously.

The participant from Ecuador, Mr. Daniel Eduardo Gutierrez Porro, spoke practically no English, though his ability to understand English was better. UNIDO should investigate with the Resident Representative in Quito how he could obtain a language certificate since he barely would qualify for "o" all along.

Taken as a group, this year's participants were as mature and as eager to learn as any of the previous groups, and even the participants from the lesser developed countries were good. One participant - who was quite good from a purely substantive point of view - was however the rotten apple which affected the others.

This is the sixth such Seminar that UNIDO has organized in collaboration with the Government of Finland, and we have by now a far clearer idea of the level of participants to be expected in any country. If the Seminar will be held again next year - and I strongly believe it should - then we are confident that our selection criteria will be further refined leading to an even better group of participants, provided that governments will nominate the right sort of candidates, i.e. people from industry and not civil servants.

The response UNIDO has received for the six Seminars is such that it can be repeated for several years merely by inviting only those participants nominated in the first six Seminars who would have qualified if more places were available. In the six Seminars held so far 152 participants have attended but a total of 205 would have qualified out of the 373 nominated. Details are given in Annex II. This year participants from 24 countries attended the Seminar. In the six Seminars held so far, participants from 46 different countries have attended.

We have noted that as the Seminar (and UNIDO) is becoming better known by the furniture industries of the developing countries some governments have increasingly nominated industrialists, and persons capable of making a direct impact upon their return, and have refrained from nominating teachers or researchers (or bureaucrats) while others have continued to nominate civil servants. Because of the good response we have had so far, we were able to restrict our selection to the former category who would stand to benefit far more from attending the Seminar.

4. Programme of the Seminar

The programme of the Seminar is given in Annex III. It consisted of 55 hours (54%) of lectures (including 3 hours (3%) of demonstrations), 21 hours (21%) of plant visits, 4 hours (4%) on background information, opening ceremonies, and administrative matters, 7 hours (7%) of panel discussions and 10 hours (10%) of presentation of Seminar assignments.

The lectures were all of the appropriate standard. Whenever appropriate they were complemented with practical demonstrations in the laboratories of the Lahti Institute of Technology. On the last day a possibility was given to participants to visit factories of particular importance to them. They could choose any two from among the following five:

Production of rigid plastic shells for upholstery (9), production of metal and hospital furniture (10), the largest furniture factory in Finland (12), production of parquet (5), production of wood-working machines (3). (The number in brackets indicate the number of participants visiting the plant).

The author gave a one-hour lecture one evening on the work of UNIDO (with special reference to the wood processing industries) and a two hour lecture on a methodology for the selection of wood-working machines for developing countries. Both lectures were well received and he was requested to write up and reproduce his lecture on selection of machines, which he did and distributed to all participants.

Three films were obtained by the Seminar Director and shown to the participants to complement the lectures given. One was on production and utilization of plywood, another on that of particle board and a third on quality control in the furniture industry. Whenever appropriate, audio-visual aids were used by the lecturers.

5. Documentation

The participants were given the revised and printed text of a selection of the lectures presented at the first five Seminars (UNIDO document ID/108 Rev. 1) totalling 382 pages. These were

complemented by the text of four lectures not included in the book were reproduced and handed out to them.

Each participant had to prepare a country paper, and these will be reproduced at UNIDO and distributed to the participants after the Seminar and used as UNIDO background material, other background material consisted of four of UNIDO's guides to sources of information (UNIDO/LIB./SER. D/4Rev. 1, 6, 9 and 18), a study on the production of wooden houses (ID/61), one on low cost automation for the furniture and joinery industries (ID/154), reports of three UNIDO technical meetings (ID/10, 133 and 180) and 17 relevant studies prepared for the technical meetings for selection of wood-working machines (12) and the workshop on wood processing (5). A UNCHBP study on the prefabrication of wooden doors and windows (ST/SOA/117) was also given to all participants.

The following books were also purchased out of UNIDO funds and distributed to the participants:

- 1) Health and Safety at Work - Safety in the Use of Woodworking Machines (HMSO);
- 2) Production Planning and Control (HMSO);
- 3) Timber Drying Manual (HMSO);
- 4) Furniture Literature - A Selected Bibliography on Furniture and Allied Subjects (FIRA) (2 volumes);
- 5) A Handbook of Woodcutting (HMSO);
- 6) Wood Finishing John W. Collier (Pergamon Press);
- 7) Purchasing a Woodworking Machine, R. Stephenson (FIRA);
- 8) Planned Maintenance (FIRA).

6. Seminar Library

Relevant books, abstracts, photocopies of articles, catalogues of equipment, etc. were shipped by UNIDO to Lahti and a "Seminar Library" operated during the entire Seminar. Participants made full use of it, mainly through browsing through the books and catalogues during the breaks, but several participants borrowed books regularly. The possibility of the Lahti Institute of Technology (or the Finnish Government) purchasing some of these books for use at the Seminar and by the Institute should be studied for future Seminars. Trans-

port costs, which are incurred every year, could thus be reduced.

Photocopies of articles of special interest to the various participants were made available upon request. Several participants also requested UNIDO documents dealing with subjects related to the furniture industry, not handed out in the documents listed under 5 above. These will be sent to them from Vienna.

7. Seminar Assignments

At the beginning of the Seminar the participants were requested to indicate their interest in the following ten main fields:

- a) Product development (8);
- b) Product scheduling and purchasing (2);
- c) Production planning (14);
- d) Plant layout (12);
- e) Tool and machine maintenance (9);
- f) Selection of machinery (7);
- g) Low cost automation (5);
- h) Waste and dust removal (4);
- i) Surface finishing (9);
- j) Marketing (7).

The number in brackets indicates the number of participants in each group and also reflects their relative interest in the various topics. Two or three discussion leaders were nominated for each group to coordinate the work and present the conclusions except in the case of production planning for which seven participants were selected. Each group was allocated about one hour to do so.

Participants interested in product development and technical product design actually designed two complete sets of furniture for a hotel suite, and did some of the technical product development work involved. In presenting their results they explained the options that they could have taken and what had motivated their choice. This work was of a high standard.

Those interested in production planning determined the process, the production flow and calculated the bottlenecks based on actual specimens of a table, a chair and a chest of drawers and hypothetical plant layouts for a specially prepared larger plant producing solid-wood and veneered furniture, and a "smaller", less sophisticated plant

producing only solid wood furniture, specially prepared for the Seminar by its Director (Mr. Pekka Paavola).

This called for considerable work by all concerned, but the participants who undertook this assignment were very satisfied that they had learnt a new skill, and some required photocopies of their work for further study. These were sent from Vienna.

Also above the expected level were those assignments on plant layout, surface finishes, low cost automation, waste and dust removal and marketing; while those on selection of machines, product scheduling and purchasing and machine and tool maintenance were below the expected level.

Work on the assignments really started during the first week-end, and the standard was quite high. Most participants devoted considerable time to preparing the assignments and informal discussions were frequently held among the participants. In some cases audience participation and discussions were keen.

For further details on the exact tasks to be accomplished for the assignments see Annex IV.

8. Administrative Matters

The Finnish organizers maintained high standards. Everything was efficiently carried out.

UNIDO was late in printing the text of the lectures, and these had to be air freighted to Finland. Because of this late delivery it was impossible to mail these to the participants selected and consequently it was impossible to assume that they had read the document, and the lecturers had to present the lectures more fully than we had anticipated. Consequently less time was available for discussions than we had hoped we could allocate. This however did not adversely affect the Seminar.

The Seminar Library was also air freighted.

The UNIDO reception was held in the Mukkula Summer Hotel at the end of the Seminar. It was attended by numerous officials, lecturers and managers of the plants visited, and was successful.

UNIDO paid all participants FM 607,50 (the equivalent of US\$ 150) to cover out-of-pocket expenses for the three weeks. This is \$ 50 more than in 1975 and deemed to be sufficient.

The financing of the Seminar was secured from UNIDO General Trust Funds. The UNIDO contribution totalled US\$ 53.353. It covered the cost of transport and out-of-pocket expenses of 28 participants, course teaching material and the travel and per diem of the UNIDO staff member as well as other miscellaneous costs.

Furthermore, two participants (one from Colombia and one from Mexico) attended the Seminar at no cost to UNIDO.

Participants complained that they had not received the MCO for the 10 kg excess baggage for the return flight together with their tickets, and the author had to call UNIDO in Vienna to find out where these were. The local agent of Wagons Lits/Cooks in Helsinki (Messrs. Finland Travel Bureau) did not approach the Seminar to inform us that the MCO's for the excess baggage were ready in Helsinki. These were issued during the Seminar. Bookings for the return flight were made by a local travel agency quite efficiently. However, two participants (from Libya and Sri Lanka) were issued tickets with return flights "closed" on the issuing carrier. This necessitated obtaining endorsements which took some time for the Sri Lanka Participant, and were not given in the case of the Libyan. It would be preferable if in future tickets were issued "open".

One of the participants from Mauritius complained in the evaluation questionnaire of poor service of the local travel agent who issued his ticket.

The Government of Finland's contribution totalled FM 170,000 (US\$ 42,500 approximately). This is an increase of 24 per cent - in Finnish currency - over the 1975 figure. UNIDO's contribution totalled US\$ 53.353; also an increase of increase of 35 per cent over the 1975 figure (US\$ 39,500). The detailed breakdown of both is given in Annex V.

The UNIDO evaluation questionnaire was handed out to all participants and returned by all but one. The response was compiled by the author and analysed with the Seminar Director and the Officials of the Ministry of Foreign Affairs. A detailed tabulation of the answers is given in Annex VI.

9. Press Coverage

The Finnish press (both the local Lahti press and the National press) gave adequate coverage to the Seminar both on the opening day and during its duration. (The national press had articles on the opening day, and a leading national commercial daily published a long article during the course of the Seminar. The local paper had an article with a photo on the opening day, and two longer articles later on). Radio interviews were given by the Seminar Director on the state network.

Copies of some of the press clippings and their translations were sent to UNIDO's information service.

A participant from Indonesia filmed visits, lectures and other activities during the Seminar and promised to send UNIDO a copy of this film after editing it. The author saw some reels, and deemed these to be good enough for use in other UNIDO audio visual material. The film is Super 8; part of it has also a sound recording.

10. Evaluation

A meeting was held at the Department of International Development Co-operation on Monday 22 August 1977, with Mr. Tom Grönberg, Assistant Department Head of this Department in the Chair. Mrs. Elina Visuri, Chief of the Section for Training and Social Development, Miss Selma Honkanen of the same Section, and Mr. Rminen of the Section for Multilateral Development Co-operation and the author also attended.

The author gave his impressions of the Seminar, mentioning its highlights. He felt it to be very successful, though it is difficult to assess immediately the impact. The usefulness of the Seminar was also confirmed not only by the participants' replies to the evaluation questionnaire, but also by the fact that over 100 nominations had been received for the 30 places. It was agreed that 30 represented the ideal number for training and factory visits purposes. He re-iterated his views that consideration should be given to convening two Seminars a year, thus more homogeneous groups could be trained and the programme better adapted to the actual needs of the participants. Mrs. Visuri stated that although this could be a long range aim, the budget of the Ministry for the next year could not allow two Seminars to be held. She stated that the Seminar has been included in the Department's budget for 1978 which will be submitted to Parliament in autumn. Parliament's decision should be obtained late in 1977, and UNIDO

will be notified of the outcome through the Permanent Mission in Vienna.

The author also raised the point that since the Seminars were becoming popular, a letter of intent of the Ministry to UNIDO stating that it would be willing to convene them on a regular basis over the next few years (say five or three) - subject of course to parliamentary approval - would help UNIDO to develop its long range programme in this field. Consideration will be given to this proposal.

He then stated that since UNIDO's share of the cost of the Seminar (expressed in US dollars) had risen more than that of the Finnish Government's, consideration should be given to the Finnish Government paying also the out-of-pocket expenses (presently US\$ 150 per participant, i.e. about FM 600).

One other field where recurring costs could be reduced was for the Ministry and/or the Lahti Institute of Technology to purchase some - if not all - the books transported by UNIDO each year to run the "Seminar Library". The cost of air-freighting these was about FM 1000 (US\$ 250) and with such a sum a good selection of technical books could be purchased which would of course also serve in the Lahti Institute of Technology's Library.

The point whether, if UNIDO were to pay the fees of the lecturers through a funds - in - trust arrangement, the 14 per cent overhead was still changeable was raised. The author explained that this was the case. The Finnish authorities were very satisfied with the printed text of the lectures which UNIDO issued for the Seminar.

In concluding, Mr. Grönberg stated that the authorities were satisfied with the Seminar; and the author replied that he wished to thank the Finnish authorities in the name of UNIDO as well as on his behalf for the assistance given.

Mrs. Visuri then stated that the Finnish authorities are considering hosting in 1978 an in plant training course on the maintenance of machinery used in the forest-based industries, similar to the one hosted in 1975 and organized in co-operation with UNIDO. The organization would this time be entrusted to the National Board of Forestry Education and not Mec - Rastor OY. UNIDO's co-operation might be sought in the following fields:

- (a) Use UNIDO's contacts and experience in inviting and selecting good candidates. (This course will be open to all developing countries and not only to Finland's "favoured countries");

(b) Obtention of relevant training material from other UNIDO in-plant training courses;

(c) Supplying specialized lecturers and/or staff members to help during the course.

It appears that the cost of this course will be borne out entirely by Finland. The Finnish authorities will approach UNIDO officially if this course materializes. The author confirmed UNIDO's willingness to participate in such a course, and, if requested to do so, organize it on a funds-in-trust basis.

During the discussion Mr. Riminen mentioned that there is a possibility of Finland establishing a fund for investment co-operation that would take up shares in sound industrial projects - along the lines of the World Bank's subsidiary IFC. At that time they will be more active in investment promotion.

Some participants felt that the lecture on solid wood contained information which was too elementary, but then, being the Seminar's first lecture, it was difficult to assess the standard of the participants.

The films shown on utilization of wood based panels in the furniture industry were quite good. Participants felt, and the author agreed, that more time was needed for the lecture on glues. As for the demonstration on surface finishes, some participants lost interest because the information was technical, but more addressed to skilled workers than managers.

The lecture on value analysis was very popular as it served as an eye opener to practically all the participants. It is unfortunate that it was given at the end of a long day. The author feels that consideration should be given to including value analysis as a topic for an assignment, and that Mr. Juva (the lecturer) should be approached well before the next Seminar and requested to prepare the "kit" (using a simple product, obviously badly designed, and a simple plant layout with obvious mistakes in the technology recommended for producing the chair).

With respect to the lecture on low cost automation this was very well taken by all concerned. (Some felt however that too much time was devoted to compressors). The author feels that since UNIDO has published a book on this subject (low cost automation in the furniture and joinery industry-ID/154), the lecture should be re-conceived and the time allocation given modified

unconsciously bearing in mind that each participant has received a copy. In giving the lecture on project planning the lecturer was referring to both "hardware" and "software" projects. This confused the participants. What is needed is to deal with "hardware" projects, such as erecting a new plant. The film on quality control - and the lecture - were very well taken by all. Both panel discussions were of a high standard. In the case of the technical discussion the questions should be screened and the more important ones - and the ones of a more general nature - should be dealt with first.

All the visits were very interesting to the participants. Too much time was allocated to visiting ASKO, thus resulting in a long wait for the bus.

The programme of sightseeing in Lahti, Jyväskylä and Helsinki was very well arranged. A highlight was the visit to the studio of Mr. Ilmari Tapiovaara.

It appears from the answers to the evaluation questionnaire that participants would have liked to have more opportunities to participate in some sporting activities and in some cultural performances (folk dances, concerts, etc.) Perhaps something along these lines could be organized for the afternoon of the second Sunday.

13. Acknowledgements

The author wishes to express his gratitude to Mr. Pekka Paavola, the Director, Mr. Jarmo Kivistö, the Administrative Officer, Mrs. Auli Rytökoski, the Interpreter and Miss Vuokko Leihonen, Secretary of the Seminar, for all the assistance given to him during the Seminar and the great pains they went through to assure its success; as well as to all the members of the Lahti Institute of Technology's Steering Committee. Lecturers, managers of plants - who opened their doors to participants, answered numerous questions and provided excellent hospitality - who are too numerous to be listed individually, must find in these lines his thanks for the considerable time and efforts they contributed to assure the Seminar's success.



United Nations Industrial Development Organization

Distr.
LIMITED

ID/WG.256/1
18 August 1977

ENGLISH

Seminar on Furniture
and Joinery Industries

Lahti, Finland

1-20 August 1977

LIST OF PARTICIPANTS AND OBSERVERS

PARTICIPANTS

<u>Country and Name</u>	<u>Function</u>	<u>Mailing Address</u>
<u>ARGENTINA</u>		
Mr. Aldo Lorenzo Juan ROSSO	General Manager Abel Gonzalez S.A.	C. Pellegrini 2805 1640 Martinez
<u>CYPRUS</u>		
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<u>ECUADOR</u>		
Mr. Daniel Eduardo GUTIERREZ PORRO	Production staff Muebles Gutierrez Cia. Ltda.	Rocca 204 P.O.Box 6466 Guayaquil
<u>EGYPT</u>		
Mr. Ahmed Fouad YOUSSEF	Manager, Chair Factory The Egyptian Wood- working Co.	5 Talat Harb Str. Cairo
<u>ETHIOPIA</u>		
Mr. Abera ABEBE	Technical Manager Mosvold Wood Works Co.	P.O.Box 3086 Addis Abeba
Mr. Kinfu DENU	Technical Supervisor Futura Furniture Factory	P.O.Box 1498 Addis Abeba

<u>Country and Name</u>	<u>Function</u>	<u>Mailing Address</u>
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Mr. Melville Menseh GOSWELL	Senior Works Super- intendent Ministry of Works	Banjul
<u>GHANA</u>		
Mr. Timothy Adjei ADJETEY	Managing Director Modern Furniture Ltd.	P.O.Box 6093 Accra
Mr. Timothy TEYE	Manager Carpentry and Joinery Workshops State Construction Corporation	P.O.Box 2582 Accra
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Mr. Kondath DAMODARAN	Scientist Indian Plywood Indust- ries Research Institute	P.O.Box 2273 Tumkur Road Bangalore-560022
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<u>LIBYA</u>		
Mr. Abubaker SHAKSHUKI	Head of the Furniture Committee General National Orga- nization for Industriali- zation	P.O.Box 4388 Tripoli

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<u>NEPAL</u>		
Mr. Padam Bahadur SHRESTHA	Proprietor Bira Furniture	Patan Industrial Estate Kachmandu
<u>PHILIPPINES</u>		
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Function

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Devlet Kerest Fabrikasi

Karacasu
Bolu

WESTERN SAMOA

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YOUNG

Superintendent
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Public Works Department
Joinery & Furniture Workshop

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U.A. Diseno Industria
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C.U. Mexico 21 D.F.

ANNEX II

RESPONSE BY MEMBER STATES TO INVITATION TO PARTICIPATE
IN THE FURNITURE AND JOINERY SEMINARS

	1971	1972	1973	1974	1975	1977	TOTAL
Number of countries invited by UNIDO to nominate candidates	47	42	40	47	53	56	74 ^{1/}
Number of participants nominated by Governments	51 ^{2/}	56	66	61	59	102	395
Number of participants who would qualify to attend	33	43	44	45	36	38 ^{3/}	239
Number of participants who actually attended	19	25	27 ^{4/}	25	26 ^{5/}	30 ^{4/}	152

- 1/ Most countries were invited to nominate participants for all six Seminars.
- 2/ Excluding 13 participants from European countries not acceptable to Finland.
- 3/ The final selection was much stricter since it was done in the presence of the Seminar Director. (In previous years a list of some 15 "candidates recommended less warmly" was sent to him to select some 5, UNIDO having already selected all but about 5.)
- 4/ Including two participants attending at their own cost.
- 5/ Including three participants attending at their own cost.

UNITED NATIONS  NATIONS UNIES
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

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TELEPHONE: 43 500 TELEGRAPHIC ADDRESS: UNIDO TELEX: 77012

SEMINAR ON FURNITURE AND JOINERY INDUSTRIES
Lahti, Finland, 1 - 20 August 1977

PROGRAMME OF THE SEMINAR

Sunday, 31 July 1977

20:00

Arrival at Helsinki airport

Departure for Lahti

Monday, 1 August 1977

9:30 to 10:30

Opening Addresses

Hotel Seuranuone, Congress Hall

Mr. Tom Grönberg, Deputy Director
Department for Development Co-operation
Ministry for Foreign Affairs of Finland

Mr. Antti Kopra
Town of Lahti

Mr. Matti Kaario, Chairman of the
National Committee for UNIDO

Mr. Antoine V. Bassili, UNIDO

Mr. Pekka Paavola, Director of the Seminar
Lahti Institute of Technology

10:30 to 11:30

Information on Finnish Furniture and Joinery Industries
Mr. Christer Antell

11:30 to 12:00

Information on Lahti for participants
Mr. Jarmo Lehtinen, Lahti City Tourist Officer

13:30 to 16:00

Visit to Muurame Ky Furniture Factory
Salpakangas
(Manufacturers of home furnishing)

16:00 to 17:00

Medical Check-up

19:00 to 21:00

Reception of the Ministry for Foreign Affairs

Tuesday, 2 August 1977

8:30 to 11:30

Solid Wood as Raw Material for Furniture and Joinery Industries

Mr. Pekka Paavola, LIT

13:00 to 14:00

Solid Wood as Raw Material for Furniture and Joinery Industries (continued)

14:00 to 17:00

Wood-based Panels

(a) Fibreboard:

Mr. Anjal Kallia, Consultant, Heinola

(b) Plywood:

Technical Sales Representatives of the Manufacturers' Ass.

(c) Particle Board: Ditto

Wednesday, 3 August 1977

8:30 to 11:30

Properties and Use of Glues in Furniture and Joinery Industries

Mr. Jaakko Meriluoto, Helsinki University of Technology

13:00 to 16:00

Visit to Lepokalusto Oy Furniture Factory

Villahde

(Manufacturers of institutional and domestic furniture)

16:00 to 17:00

Information on Seminar Assignments

Mr. Antoine V. Bassili, UNIDO

18:00 to 20:00

Visit to the Lahti Trade Fair

Thursday, 4 August 1977

8:30 to 11:30

Technical Product Design

Mr. Pekka Paavola, LIT

13:00 to 16:00

Visit to Lahden Puutyö Oy Furniture Factory, Lahti
(Manufacturers of institutional furniture)

16:00 to 17:00

Technical Product Design (continued)

19:00

Sauna and High Tea
Mukkula Summer Hotel

Friday, 5 August 1977

8:30 to 9:30

Use of Plastic Laminates in Furniture Industry

Mr. Hannu Lähteenmäki, G.A. Serlachius Oy (interpreted)

9:30 to 11:30

Use of Plastics in Furniture Industry

Mr. Pentti Heinänen, Insinööri Pentti Heinänen

13:00 to 15:00

Product Development

Mr. Asko Karttunen, Asko Osakeyhtiö

15:30 to 17:00

Visit to Asko Showroom

Saturday, 6 August 1977

13:00 to 16:00 Tour of Lahti

Sunday, 7 August 1977

9:30 to 18:00 Tour in South Päijänne area including visit to a paper mill.

Monday, 8 August 1977

8:30 to 11:30 Furniture Technology

Mr. Pekka Paavola, LIT

13:00 to 16:00 Visit to Rauma-Repola Oy Joinery Factory, Lahti

16:00 to 17:00 Furniture Technology (continued)

19:00 Sauna and High Tea
Mukkula Summer Hotel

Tuesday, 9 August 1977

8:30 to 11:30 Furniture Technology (continued)

13:00 to 15:00 Surface Finishing

Mr. Kaarlo Ilonen, School for Small Scale Industry and Teachers
Training, Lahti (interpreted)

15:00 to 17:00 Value Analysis
Mr. Arto Juva, AJ Consultants Oy, Vääksy

Wednesday, 10 August 1977

8:30 to 11:30 Production Management

Mr. Ervi Sirviö, Oy Mec-Rastor AB

13:00 to 15:00 Tool Maintenance

Mr. Peter Wagner, Insinööri-toimisto P A Wagner

15:00 to 16:00 Maintenance of Carbide Tipped Tools

Mr. Peter Wagner, Insinööri-toimisto P A Wagner

16:30 to 17:30 Visit to Teräteos, Lahti

(Manufacturers of woodworking tools)

17:30 to 19:00 Selection of Woodworking Machinery

Mr. Antoine V. Bassili, UNIDO

Thursday, 11 August 1977

8:30 to 11:30 Low-cost Automation

Mr. Osmo Koilanen, LIT (interpreted)

Thursday, 11 August 1977 (continued)

- 13:00 to 16:00 Visit to Varjonen Puunjalostus Ky Furniture Factory
Uusikyla
(Manufacturers of solid wood chairs)
- 16:00 to 17:00 Low-cost Automation (continued)

Friday, 12 August 1977

- 8:30 to 9:30 Project Planning
Mr. Arto Juva, AJ Consultante Oy, Varkky
- 9:30 to 11:30 Plant Lay-out
Mr. Pekka Paavola, LIT
- 13:00 to 15:00 Plant Lay-out (continued)
- 15:00 to 16:30 Packaging for Export
Mr. Olli Aaltonen, Paperituote
- 16:30 to 18:00 Visit to Isku Oy Particle Board Factory, Lahti

Saturday, 13 August 1977

Preparation of Seminar Assignments

Sunday, 14 August 1977

Free

Monday, 15 August 1977

- 8:30 to 10:30 Quality Control of Inputs and finished Products
Mr. Pekka Paavola, LIT
- 10:30 to 11:30 Furniture Design
Mr. Ahti Taskinen
- 13:00 to 14:30 UNIDO Activities
Mr. Antoine V. Bassili
- 18:00 Sauna and High Tea
Mukkula Summer Hotel
- 20:00 to 22:00 Slide Show on Development of National Design Characteristics
from Folkloric to Modern Finnish Design
Mr. Ilmari Y. Tapiovaara

Tuesday, 16 August 1977

8:30 to 11:00

Visit to Peem Oy Furniture Factory, Lahti
(Manufacturers of upholstered furniture)

13:00 to 17:00

Furniture Production
Panel Discussion

19:00 to 21:00

Furniture Design and Dimensioning for Serial Production
Mr. Mauri Laatikainen

Wednesday, 17 August 1977

8:30 to 11:30

Visit to Metsäliiton Teollisuus Oy Joinery Factory,
Väikky

13:00 to 16:00

Marketing of Furniture and Problems of Export Trade
Panel Discussion

Thursday, 18 August 1977

8:30 to 11:30

Factory Visits in small groups (in accordance to
individual wishes)

- (a) ASKO Oy (large furniture plant)
- (b) Koso Firm (plastic shells for upholstering)
- (c) Jovi (metal-furniture)
- (d) Riihimaen (parquet)
- (e) Manko (woodworking machines)

Presentation of Seminar Assignments

13:00 to 17:00

Friday, 19 August 1977

8:30 to 11:30

Presentation of Seminar Assignments (continued)

13:00 to 16:00

Presentation of Seminar Assignments (continued)

19:00

Reception of UNIDO

Saturday, 20 August 1977

8:30

Departure to Helsinki

15:00 to 19:00

Sightseeing tour in Helsinki

Sunday, 21 August 1977

Departure from Helsinki for home countries.

TOPICS FOR SEMINAR ASSIGNMENTS

1. Product development: Design of a hotel room for a tourist resort. Design should be producable by the furniture industry in developing countries, and if possible incorporate "native" motives - not another room of an intercontinental hotel chain. It should use as little as possible fancy products not existing in developing countries. Production drawings of the furniture, cutting specifications of the inputs and if possible colour schemes should be prepared. Care should be taken not to waste material.
2. Product scheduling and purchasing: Draw up raw material specifications and quantity lists for a production of 1000 tables and 4000 chairs. Plan purchasing methodology and schedule deliveries. Schedule also the flow of unseasoned timber through the kiln.
 - a) through large plant
 - b) through small plant
3. Production planning: Production planning for 1000 tables and 4000 chairs (serial production) to be manufactured in factory with a given plant layout. The bottlenecks in the production are to be determined and flow of every component through the plant shown. Manufacture planning cards are to be completed. Scheduling of production is to be determined, and total time needed to produce all the items determined.
 - a) through large plant
 - b) through small plant
4. Plant Layout: Plan the layout for extensions and/or improvement of a given existing plant of one of the participants.

Care should be taken in assessing the number and types of machines, the storage facilities between the machines, the safety and social requirements, etc.

5. Tool and machine maintenance: The methodology for introducing preventive maintenance in a plant is to be exposed:
 - the importance of maintenance,
 - the problems of purchasing and storage of spare parts,
 - the determination of maintenance schedules in machines.Also checking the accuracy of reconditioned machines is to be dealt with.

With respect to tool maintenance cover the determination of need to sharpen tools and saws, how it should be done, what care should one introduce in the storage of tools and their handling.

The need and advantages of central maintenance contracts as against a "do it yourself" approach for each plant are to be discussed.

- a) for large plant
- b) for small plant

6. Selection machinery: The following matters should be covered and discussed:

- the types of machinery most useful to producers in developing countries,
- the identification of the criteria to be used in selecting them,
- the prerequisite for mechanization, low-cost automation and by and large the introduction of a new technology in a factory.

The merits of new versus second hand machinery should also be discussed.

7. Low-cost automation: The following topics should be covered:

- when to automate
- what to automate
- how to automate

for processes used in the furniture industry of the developing countries, using as example the small plant layout given.

8. Waste and dust removal: Design a chip and dust extraction system for a set of 3 machines:

- table band saw
- thickness planer
- spindle moulder

plus one outlet for removal of sawdust and chips from the shop floor.

Calculate the diameter of the pipes, the curvature and angles of the joints, design the fan and determine the horsepower of the motor needed to drive the installation.

9. Surface finishing: The various options available for surface finishing furniture are to be outlined giving the pros and cons of each and then select the processes and materials most suitable for the production of a chair, a table and a chest of drawers.

10. Marketing: Problems of marketing on the local market are to be discussed

- marketing channels
- quality labels and guarantees
- marketing policy and range of products
- product life.

With respect to export marketing, discuss ways to enter a foreign market enumerating the alternative channels. The need for market surveys, packaging, etc. for export markets is to be stressed. Also the possible pros and cons of exporting through local associations to foreign markets are to be discussed. Take as example a production of simple 1000 tables, 1000 reproduction chairs per quarter.

SEMINAR BUDGET

A. Contribution of the Government of Finland

	<u>FM</u>	<u>US\$ (APPROX.)</u>
1.1. Participants' travelling	7.200	1.800
1.2. Lecturers' travelling	2.500	625
1.3. Other travels (Paavola e.g.)	5.000	1.250
2.1. Housing/Makkula Summer Hotel	27.600	6.900
2.2. Meals	42.000	10.500
2.3. Hotel in Helsinki	1.700	425
3.1. Planning team	3.000	750
3.2. Seminar Director	7.603	1.900
3.3. Seminar Assistant	3.750	938
3.4. Seminar Secretary	6.000	1.500
3.5. Lecturers	16.000	4.000
3.6. Interpreter	5.000	1.250
3.7. Demonstrations	2.000	500
3.8. Setting (lab. etc.)	2.500	625
3.9. Social costs	6.210	1.552
4.1. Files	1.500	375
4.2. Reproducing, photocopies	4.000	1.000
4.3. Literature	1.000	250
4.4. Other materials	2.500	625
5.1. Health, etc.	6.000	1.500
5.2. Insurances	2.500	625
5.3. Reception	5.000	1.250
5.4. Office	4.000	1.000
5.5. Miscellaneous	5.437	1.360
	<u>FMK 170.000</u>	<u>42.500</u>

B. UNIDO Contribution

	US\$
16-00 UNIDO staff travel, round trip	1.553
30-00 30 international travel including one way excess baggage, out-of-pocket expenses and miscellaneous	<u>51.800</u>
	<u>53.353</u>

N.B. To this sum must be added:

Salary of a professional staff member for three weeks in Finland	p.m.
Reproduction of documents	p.m.
Supply of UNIDO publications	p.m.
Administrative support	p.m.

UNITED NATIONS  NATIONS UNIES

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

LERCHENFELDER STRASSE 1. A-1070 VIENNA, AUSTRIA

P.O. BOX 707, A-1011

TELEPHONE: 43 800 TELEGRAPHIC ADDRESS: UNIDO TELEX: 76012

EVALUATION - GROUP TRAINING PROGRAMMES

Number of Participants: 30 (29 forms received)

Programme: Seminar on Furniture and Joinery
Industries, Lahti

Host country: Finland

Year: 1977

I. PRE-COURSE INFORMATION:

1. How was the introductory information you received in your home country about: (please mark an x in the suitable column)

	<u>Sufficient</u>	<u>Not sufficient</u>	<u>Missing</u>
Aim of the training	<u>24</u>	<u>3</u>	<u>0</u>
Content of the programme	<u>21</u>	<u>5</u>	<u>1</u>
Level of the programme	<u>18</u>	<u>4</u>	<u>3</u>

What, if any, other information do you feel should have been

- included:
- Objectives of each of the topics of the programme;
 - Facts on Finland;
 - Possibilities on exhibiting photos, slides and showing films of our production;
 - Country reports by former participants should be sent.

2. How many weeks before the beginning of the training programme did you receive the following information:

Information about the programme	1 2 3 4 6 8 12	weeks	16 20
	5 5 1 3 3 4 3		2 1

Being accepted to the programme	5 9 4	weeks
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- Comments:
- Acceptance notice too short to prepare country paper;
 - Acceptance should be 3 (or 6) months before start;
 - Please invite only through associations. They can screen the participants.

II. PROGRAMME CONTENT AND ORGANIZATION:

3. What is your opinion of the total duration of the course:

Too long 6

Just right 17

Too short 7

If not "just right", what, in your opinion, would be the most suitable duration for the course?

weeks

1	2	4	6	8	12
1*	4	3	2	1	1**

Please comment:

- (1) More details for factory visits;
- (2) Too long, we are manufacturers and have families (3 persons);
- (3) Programme is tight. Breakfast and dinner should be in same place;
- (4) Lunch hours too short - not enough time for studying.

4. State your opinion about the daily schedule:

Too heavy 6 (one of which: too heavy first 2 weeks)

Heavy 2

Just right 18

Too light 1

Comments: Lectures mornings only (2 persons). People are not used to so long lectures. Days with lectures only have too tight a programme. Translated sessions should be shorter. No lectures after factory visit. No lectures after 5 p.m.

5. Would you suggest any changes in the general nature of the

training programme? Possibilities to visit also factories that produce pallets, caravans, boats, etc. - More slide shows and demonstrations of items we can make and use - Surface finishing should deal with problems of tropical climates - Concentrate more (with more details) on low cost automation (2 persons) - More visits to smaller factories (2 persons) - Discuss country papers - Give case studies from developing countries - Fewer subjects with more time allocated to each - Possibility to specialize in one field (2 persons) - More time for practical work - Divide the people by level of knowledge - More open discussions on specific subjects (2 persons).

* 3 one week seminars instead of present format, on raw materials, technology and management;

** of which 9 weeks of in plant training in a specific field (such as product development, low cost automation, etc.).

6. Do you feel that the training corresponded to your professional needs?

To a very large extent	[6]
To a large extent	[5]
To a sufficient extent	[12]
To a small extent	[3]
To a very small extent	[1] (Ecuador - who spoke no English)

Please comment:

7. Please give your opinion about the study visits (if any):
Most visits were to big and automated firms, not really applicable to us - Visits very educational (5 persons) - Emphasize smaller factories (4 persons) - Very valuable and very important - Quite helpful - I gained a lot from visits - Some visits were too short - Factory staff very co-operative - Language problem in discussing with factory staff (2 persons).

Please suggest other study visits that might have been valuable:
Visits to design offices (Mexican designer) - Low cost automation (2 persons) - Visits to machinery manufacturers - More visits - Visits to study also administrative problems - Visits to smaller factories - Visits to wood based panel plants and a Research Institute (India).

8. What do you think of the general level of the training?

Much too high	[]
Too high	[1] (Mauritius)
Adequate	[23]
Too low	[3]
Much too low	[]

Comments:
Some lectures of too low a level (3 persons) - Reading of text by lecturer should be avoided - Approach excellent - Too fast - Seminar very full.

9. Which subjects of the programme did you find most valuable?
(please state reason; for example new subject, my speciality, relevant to my work, new information, etc.)

<u>Subject</u>	<u>Reason</u>
All (2 persons) - Plant layout (6 persons) - Production planning, Value analysis, selection of machines, product development (5 persons each) - Furniture technology, factory visits, low cost automation (4 persons each) - Tools and tool maintenance, marketing, technical product design (2 persons each) - Glues, surface finishing, packaging for export, film shows, project planning, quality control, design, production management (one person each).	

10. Which subjects of the programme did you find least valuable?
State why (for example too elementary, inadequate instruction, irrelevant to my work, etc.)

<u>Subject</u>	<u>Reason</u>
None (2 persons) - Tapiovaara's lecture - Low cost automation (2 persons):	too theoretical, not enough time dealt too much with compressors
Solid wood (2 persons):	too elementary
Surface finishes (4 persons):	too elementary
Plywood manufacture and utilization:	too elementary
Packaging for export:	slide show irrelevant
Furniture design (4 persons):	inadequate level - no principles mentioned (designer)
Marketing:	too elementary - inadequate
Furniture technology (2 persons):	irrelevant, we have wood
Use of plastics:	too theoretical
Tool maintenance:	too theoretical

11. Were there in your opinion any relevant subjects that were not adequately covered in the programme?

Yes 14

No 12

If yes, what did you miss? Time - one hour for a subject is too short;
Costing (2 persons) - More time for low cost automation (3 persons) - Standard times - Joinery, especially production of fixed louvre doors (2 persons) - Safety - More on: management - production planning - value analysis - product design - tool maintenance - ;
The use of knock-down fittings (with demonstrations);
Market information (how to get it, use it, prices, tendencies, etc.);
Design for school, hotel and restaurant furniture;
Rattan furniture manufacture - labour intensive production methods - ;
Preventive maintenance - prefabricated housing - ;
Role of furniture associations and designers in Finland.

12. Which changes would you have preferred in the method of instructions?

	<u>no changes</u>	<u>more</u>	<u>less</u>
a) lectures	<u>12</u>	<u>4</u>	<u>6</u>
b) group work	<u>11</u>	<u>11</u>	<u>3</u>
c) demonstrations	<u>8</u>	<u>15</u>	<u>1</u>

Comments:

Translation (language) problem for lectures;

Getting together difficult for group work;

Demonstrations: within factories - new machining techniques

More visits to small factories.

13. How did you find the general standard of the instructor with respect of:

	i) <u>command of English</u>	ii) <u>method of instruction</u>
Very good	<u>9</u>	<u>10</u>
Rather good	<u>14</u>	<u>10</u>
Fair	<u>8</u>	<u>4</u>
Poor	<u>2</u>	<u>1</u>
Very poor	<u> </u>	<u> </u>

Please comment:

The Interpreter's English is very good;

Translated lectures more difficult to follow;

Pace of lectures too slow for someone with some basic knowledge;

Excellent preparation and presentation;

No loopholes;

Great variation between lectures.

14. Did you have sufficient time for professional exchange of views with:

	i) <u>the programme staff</u>	ii) <u>fellow-participants</u>
Yes	<u>21</u>	<u>19</u>
No	<u>7</u>	<u>7</u>

15. How much did you benefit from these exchange of views with:

	i) <u>the programme staff</u>	ii) <u>fellow-participants</u>
A great deal	10	2
Much	15	9
Somewhat	2	10 1/
Little		3 2/
Not at all	2	2 3/

Please comment:

1/ Not all were qualified

2/ Because of tight programme

3/ There was insufficient time and it was not possible to discuss common problems with people who are not technical managers

Encourage less talkative members!

III. RELEVANCE AND APPLICABILITY:

16. Did you find the contents of the programme relevant to conditions in your company (institute)?

To a very great extent	4
To a great extent	10
To a sufficient extent	11
To a small extent	3 (Level of Mexico is good) (Mauritius)

Please state why:

17. Do you feel that by participating in this training programme you have benefitted professionally?

To a very great extent	9
To a great extent	9
To a sufficient extent	8
To a small extent	1
To a very small extent	

Please state why:

18. Do you think you will have an opportunity to apply your newly acquired knowledge and experience in your present job?

- | | |
|------------------------|----|
| To a very great extent | 6 |
| To a great extent | 10 |
| To a sufficient extent | 10 |
| To a small extent | 1 |
| To a very small extent | |

What difficulties, if any, would you expect to meet?

- Difficulty in procuring tools and parts locally;
- Lack of more details; and once I return lack of machines and bibliography.

19. Will you be in a position to transfer your acquired knowledge to others in your home country?

- | | |
|------------------------|----|
| To a very great extent | 4 |
| To a great extent | 12 |
| To a sufficient extent | 10 |
| To a small extent | 1 |
| To a very small extent | |

20. How will this transfer be done?

- | | |
|---|----|
| a) In day-to-day work to colleagues and subordinates | 18 |
| b) In specific training activities inside present employment | 14 |
| c) In specific training activities outside present employment | 7 |

What difficulties, if any, would you expect to meet?

- Level of education of employees;
- Lack of technical training facilities;
- Lack of similar raw materials;
- Lack of expertise;
- We would like to hold similar seminars but we need experts to assist us;
- My movie film will be of great use.

IV. SOCIAL ASPECTS OF THE PROGRAMME:

21. Please state your opinion about the leisure time activities organized by the programme staff: Excellent (2 persons) - Very good (6 persons) - Good (3 persons) - Sufficient (1 person) ;
Should meet more important people;
Sauna (3 persons);
High teas (2 persons);
Tours;
Noise on sauna nights a problem;
High teas should be on week-ends;
Very limited;
Assignment work more interesting than tourism.

What additional activities would you have appreciated?

- Folklore shows with national costumes (5 persons) - Sports (4 persons) - Cultural activities (concerts, etc.) (3 persons) - More group work -
- More leisure time - week-end camping, fishing, boating trip to a summer home - All has been thought of -;
- Participants should bring movies of their countries.

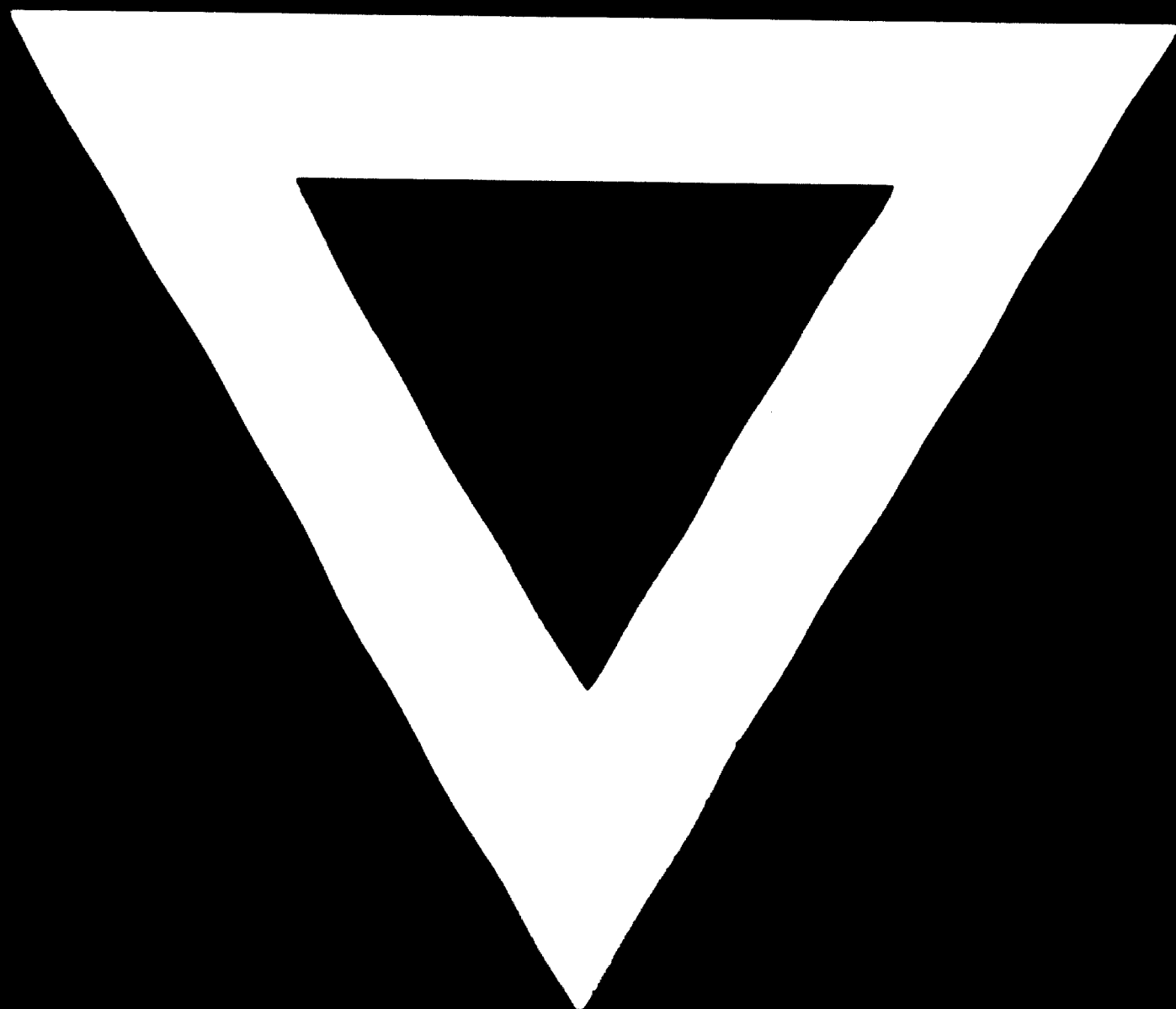
22. Please give any comments you choose on aspects not adequately

covered by this questionnaire:

- We spent too much time on food, having lunch at LTI and dinner at Mikkula;
- More social activities with local plant managers;
- Lecturers from developing countries (2 persons);
- Discussions with students studying design over week-end;
- More guidance on contents of country papers;
- Please send future invitations to associations;
- No complaints, very pleased;
- Hotel accomodation very poor (Malta);
- Presentation of the companies.

cc: Mr. G.P. Veliky
Mr. G.S. Gouri
Mr. G. Dobos
Mr. M.M. Aref
Mr. A. Vassiliev
Mr. A.W. Sisingh
Mr. K. Prousser
Mr. E. Strohal
Mr. L. Kinney
Mr. Paavola Keisalo (Finnish Embassy, Vienna) (2)
Mr. T. Grönberg (Helsinki)
Mrs. E. Visuri (Helsinki) (2)
Mr. M. Kaario (Helsinki)
Mr. E. Lipponen (Helsinki)
Miss S. Honkanen (Helsinki)
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Registry

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