

INTERNATIONAL ERGONOMICS ASSOCIATION

MINUTES OF THE EXECUTIVE COMMITTEE MEETING HELD AT 5 LINCROFT GARDENS, HOUNSLOW, ENGLAND ON 26 AND 27 JANUARY 1979

PRESENT: A Chapanis - President
J Rosner - Chairman Congress Organising Committee
H Scholz - Treasurer
R G Sell - Secretary

EC/79/1 Minutes for the council meeting of 29/30 July 1978. There were no amendments to these minutes by Executive Committee members.

EC/79/2 Matters Arising

(C/78/3) The President reported that based on further discussions he had had with Mr Gertzburg he felt it was unlikely that the proposals for IRA Foundation co-operation with the IEA would get much further. The best hope was that an Israeli Ergonomics Society would be formed.

(C/78/3) The Secretary reported that the book which resulted from the "Ergonomics and Job Satisfaction" meeting was now set by the printers and should be published during the next 3 months.

EC/79/3 Financial Report

The Treasurer reported that the income of the Association was just about in balance with expenditures. It was difficult to consider new activities without the prospects of new funds. The President said it was necessary to invest money to obtain more income.

The Secretary said that thought would need to be given to the level of subscription which would apply for 1980-82. It was difficult to forecast international levels of inflation, to know what activities the IEA will be doing, and the number of subscribing members which will be attracted. In the next period the Chairman of the Congress Organising Committee will be Japanese and if his fares to attend Executive Committee and Council meetings have to be paid out of IEA funds this will cause financial problems. The Treasurer will write to the Japanese Society to see what the likely position will be. If there are no increases in calls on IEA funds the Treasurer's initial thoughts were for an increase from 1.0 to 1.50 Swiss francs per individual, per year.

EC/79/4 Fund Raising

The President said that he had written to about 100 people in American industrial organisations. In each letter to an official he referred the recipient to those members of the Human Factors Society who worked in their organisation. At the same time he wrote to Human Factors Society members in the organisations asking them to put pressure on the officials. He had not raised any members yet but he was hopeful (Secretary's Note: Since the meeting AT & T have agreed to become sustaining members).

Action
Treasurer The Treasurer said he would sign the letters to German companies. He had intended to send standard Xerox letters to everyone but it was agreed that a personalised approach was better. Since the President has access to a word processing system, he agreed to have the letters typed in his university, and to have the typed letters sent to the Treasurer for signature and posting.

Rosner reported that 674 postcards expressing interest in attending the Congress had been received. They were distributed as below: (figures are approximate)

<u>Totals for Large Geographical Areas</u>	<u>Sub-Divisions of that Area</u>
364 Western Countries	74 West Germany 62 USA 46 France 39 United Kingdom 27 Japan
201 Poland	
109 Other Socialist Countries	34 Hungary 31 Czechoslovakia 19 Bulgaria 23 German Democratic Republic

Action
Rosner

The next notice giving registration details had not yet been sent out due to bad weather in Poland that held up all activity for 2 weeks. Rosner hoped it would be sent out immediately.

Eight of the authors of invited papers and Chairmen of round table sessions had sent their papers. These were

<u>Titles</u>	<u>Speakers</u>
Ergonomics as Factor of Economic Development	A Chapanis, W. Munipov
Ergonomics and Non-Vocational Activities	Grandjean
Ergonomics for Health Services	M J Karvonen, St Kozlowski
Pioneers of Ergonomics	H Monod
Ergonomics and Plant Design	A Wisner and one other

Shackel was consulted during the meeting. He said he was 6 weeks behind with his work due to illness. He hoped, however, to produce something by the end of February. It was possible that some of the speakers might not produce their papers in advance and some doubts were expressed as to whether they might even all appear in Warsaw.

Metz had been in Warsaw for the week before this meeting to help the Polish organisers arrange the programme of contributed papers. A total of 220 contributed papers had been received. A number of these were rejected mainly because they were not considered to be related to Ergonomics and the Congress. A total of 178 had been accepted and these have been grouped as below:

- | | | | |
|---|---|----|-----------------|
| 1 | Past, present and future developments of Ergonomics | -- | nine papers |
| 2 | Anthropometrics, bio-mechanics and body postures | -- | thirteen papers |

3	Physical work load and climatic loads	--	sixteen papers
4	Experimental psychology and psychophysiology	--	nine papers
5	Mental load, laboratory investigations	--	eight papers
6	Mental load, field studies	--	nine papers
7	Physical and inspection tasks	--	eleven papers
8	Ergonomics and occupational health and safety	--	twenty two papers
9	Night and shift work	--	five papers
10	Ergonomics of the elderly and handicapped	--	four papers
11	Ergonomic design and evaluation of equipment and products	--	eight papers
12	The application of ergonomics in different industrial settings	--	twenty one papers
13	Ergonomics in driving and transport	--	nineteen papers
14	Works systems analysis and design	--	six papers
15	Ergonomics and the organisation of work	--	twelve papers
16	Education and training in ergonomics and human factors	--	six papers

According to country these were distributed as below (approx figures)

Poland	32
Finland	15
France	15
German Democratic Republic	12
UK	12
Switzerland	11
Japan	10
Rumania	9
USA	9
German Federal Republic	8
Bulgaria	6
Canada	5
Hungary	5
Yugoslavia	5
Czechoslovakia	4
Netherlands	3
USSR	3
Sweden	3
India	2
Norway	2
Australia	1
Belgium	1
Denmark	1
Egypt	1

During the meeting the abstracts and the invited papers were handed over to representatives of Taylor and Francis for printing in Ergonomics. It was agreed that the offer of Taylor and Francis to put pressure on those authors who had not yet responded should be accepted.

Action
Rosner

The Secretary asked for confirmation that the IEA payments for the copies of Ergonomics would be returned from Poland in hard currency before the calculation of the surplus as outlined in his letter of 19 September 1978 to the President.

The refund to those participants who were already subscribers to Ergonomics would be in zlotys.

EC/79/6 VIII Congress 1982

The official invitation to hold this congress in Tokyo had been received from Professor Oshima and accepted by the President.

EC/79/7 Other IEA Meetings

(a) Proposed IEA/Nordic Society Meeting

Action
Secretary

The proposal for a meeting on "The Propagation of Ergonomics Knowledge to the Workplace" was tabled and accepted with some reservations regarding the budget (see Appendix 1). The registration fee was felt to be high and the Secretary was asked to query two high cost items: (1) payment is not usually made for speakers expenses and (2) the cost of \$16,000 for technical arrangements was felt to be high unless this included simultaneous translation facilities.

(b) Proposals by the Ergonomics Society

Action
Secretary

These were tabled (see Appendix 2). The main proposal was for IEA co-operation with the meeting on "Ergonomics and Transport". Although this is planned for September 1980, it was felt that the potential audience for this would be different from that for the Nordic Society meeting and so the closeness in time of the two meetings would not be too much of a disadvantage. The IEA would like to support this meeting and would be prepared to consider financial support with a share in the surplus (if any). There was a need to bring Ergonomics to a wider audience than ergonomists and a topic-related meeting like this would be a useful way to do it. Swansea was felt to be a long way from an international airport for a meeting which was hoping to encourage international support and the Secretary was asked to bring this point to the attention of the meeting organisers to see if they would consider re-locating it or making some special effort to overcome the disadvantage. The IEA would also be prepared to sponsor other meetings on the ES list if they could be considered international in scope.

(c) Applied Ergonomics Meeting

Action
Treasurer

The Secretary reported that Dr Zen Novak of International Publications Corporation Science and Technology Press, the publishers of Applied Ergonomics, were proposing to hold a biennial series of international meetings in the United Kingdom starting in December 1980 and would like IEA support. It was agreed that the IEA must maintain a professional stance and could only work through federated societies. It would give publicity to the meeting but could only support it if a federated society was involved.

(d) Other Suggestions

No other proposals have been received. The Secretary was asked to have a note put in the Newsletter to encourage other societies to make offers.

Action
Secretary

EC/79/8 Membership of the IEA

The Secretary reported that the Treasurer and he had had discussions in Budapest with Dr Zeleny regarding the position of the Czech Committee for Scientific Management and it now appeared clear that they have never really been members because official state approval had never been obtained. He had sent to Dr Zeleny a draft of the letter to the head of their international departments but had not received any comment so far. He was asked to send the letter without waiting any longer.

Action
Secretary

The Secretary reported that he and the Treasurer had also had discussions in Budapest with Dr Munipov. He was very interested in getting his Institute of Industrial Design as a member of the IEA. It was, however, a government sponsored employer and could not be considered as a Society. Since there is a Russian Psychological Society, presumably an Ergonomics Society could be formed. Alternatively, the Psychological Society could become an associate member or set up an Ergonomics Division which could become a full member.

A letter had also been received by the Secretary from Dr Hau Lien-tsang reporting that a branch of the Chinese Psychology Society was planning to form an Ergonomics Society which it was hoped might become a member of the IEA.

EC/79/9 Future IEA Activities

The Secretary again pointed out a need for the IEA to bring ergonomics to the attention of non-ergonomists, perhaps by the organisation of a meeting devoted to the application of ergonomics to a particular subject. He was asked to make this point in the Ergonomics International news item on sponsored meetings.

Action
Secretary

Ergonomics in developing countries was thought to be a topic which might also excite ILO interest. The Secretary was asked to contact Dr Wisner to sound out the idea.

Action
Secretary

EC/79/10 Newsletter

The first 2 Newsletters were to be printed free by Taylor and Francis in exchange for a half-page advertisement. The first one had been published, the second would go out when the information from this meeting was forwarded to the Editor. The second one will have a wider circulation because the Secretary had restricted the distribution of the first issue on account of a major error in it concerning the date of the 1979 congress. He had sent a cheque for £70 to Mr Anderson to cover the costs of postage and typing for the first issue.

The Secretary had had a meeting on 22 January with Dr Novak of IPC Science and Technology Press. Dr Novak had offered to print free the third and fourth issues of Ergonomics International and to distribute one of them to all the individual members of the Federated Societies in exchange for their membership lists and a one page advertisement for Applied Ergonomics. The Secretary thought distribution might encounter a problem as some societies, like the

Ergonomics Society, had not in the past released their lists on principle and others are likely to fail to provide them by default. Dr Novak suggested it might be possible for IPC to print one issue per year for distribution to all members on this basis. Over lunch, Mr Dawes of Taylor and Francis had suggested that it might be prepared to print the Newsletter in Ergonomics and supply run on copies for distribution to non subscribers. The Secretary said that he was still in contact with the German Marshall Fund but had not yet received a decision. The President offered to contact the Fund to see if he could help resolve the uncertainty. It was agreed that the offer of IPC Science and Technology Press would be accepted for issues three and four, ie to send one of those issues to all those individual members for whom addresses could be obtained.

Action
President

Action
Secretary

EC/79/11 History of the IEA

Stansfield was offering a paper on the pre-history of the IEA for the Warsaw Congress and this would be a start on which the Secretary would build when he retired from his present office.

EC/79/12 Honours Committee

Nothing to report.

EC/79/13 Publications Committee

Nothing to report.

EC/79/14 Officers of the IEA 1979-82

The Treasurer confirmed he was willing to carry on for another term as the rules allow.

Rosner said that the Polish Ergonomics Society were proposing that he became President of the IEA and this was welcomed.

Action
Secretary

After discussion it was agreed to recommend to the Council that Kvalseth be appointed as Secretary General.

Action
Secretary

Rosner was concerned that there should be some continued US involvement in IEA management on the retirement of Chapanis because of the importance of the fund raising activity in that country. It was suggested that Harry Davis, who ~~would also be President of the HFS~~, should be asked to take over the major fund raising role.

Action
Secretary

The President raised the problem of continuity should one of the officers die or become incapacitated in office and recommended that some thought be given to that contingency. The Secretary said there was also a need for a permanent address and agreed to see if the HFS would be prepared to act as an agent for the IEA. He also agreed to look at commercial agencies and to see what charges these various organisations would make.

EC/79/15 Contact with ISO WHO ILO

The Secretary said that he was following the decision made at the council meeting (C/78/18) to invite the appropriate Federated Society to take on co-ordinating roles with ISO and has had agreement from SELF to look after both sub-committees in their area. He had attended the European Regional Meeting of the WHO held in London in September but had found little of interest to the IEA, although some contacts might be useful in the future.

There had been no further contact with ILO but EC/79/9 above might lead to something.

EC/79/16 International Directory of Programmes in Ergonomics

The proposals by Pearson were tabled (Appendix 3). The costs were agreed but the Secretary was asked to write to Federated Society Secretaries to see if they would like to pay for more copies. The deadline for deciding how many to print was 1 April. The cost for sale, which would be printed on each copy, would be 10DM but societies would be free to give away or sell as they think fit to applicants for information.

EC/79/17 Voting Rights for Officers at Council Meetings

The Secretary said that his aim was to avoid voting at Council meetings but this was not always possible. He was uncertain whether the officers were entitled to a vote. It was agreed that since the rules did include Officers as members of Council, they therefore had a vote.

EC/79/18 Any Other Business

The Secretary reported that he and the Treasurer represented the IEA at the Comecon Ergonomics Commission meeting in Budapest which was attended by about 550 participants from the Eastern European countries. This indicated a great interest on the part of engineers and ergonomists in these countries and should lead to increased membership of the IEA from that area.

EC/79/19 Date and Place of Next Council Meeting

This will be on Sunday 26 August 1979 in Warsaw with the meeting of the new Council to be held later in the week after the General Assembly. Rosner will arrange a meeting room for the Sunday and the later date when known.

Action
Rosner.

NOTE #2
RE JOINT NES/IEA CONFERENCE

by T O Kvalseth

December, 1978

NATO Support

The suggestion of approaching NATO for some financial support was discussed during the last Council meeting of the Nordic Ergonomic Society (NES) in Lindköping, Sweden. There was a strong feeling among the majority of the Council members that this was not a good idea since such a connection with NATO may carry certain undesirable political implications. Thus, it has been decided that NES together with the Norwegian Ergonomics Committee (NEU) will share all economic risks associated with the conference and consequently share any profit that may result. The exact risk/profit distribution between NES and NEU will be decided during the next Council meeting of NES.

IEA Support

It is the general feeling among the Council members of NES and the members of NEU that the support from the IEA would be particularly desirable concerning promotion and advertising as well as advice and council regarding topics and suggestions for speakers. Furthermore, it is suggested that IEA be responsible for any publications. Thus, in line with the recent recommendation by IEA's Publication Committee, it may perhaps be appropriate that IEA has the responsibility of publishing edited proceedings and that the abstracts of all presentations appear in a pre-conference issue of Ergonomics. IEA would then receive the eventual profits resulting from the publication.

Conference Committees

The Program Committee consists of the following individuals:

Lars Sjøflot
Tore Benjaminsen
Tarald O Kvalseth
Brian Shackel
Alphonse Chapanis

The work load will mainly be carried by the first three members of the Committee, while the role of Shackel and Chapanis will primarily be an advisory one.

The technical arrangements will be handled by other members of the Norwegian Ergonomics Committee. Assistance will also be sought from a firm providing professional conference service.

Preliminary Budget

The following highly preliminary budget is based on 200 participants, which is probably a conservative estimate for the number of participants.

Income from registration fees* (\$150x200)

US \$ 30.000

Expenses:

Specially invited speakers (1 from US, 2 from Europe)	\$ 5.000	
Rent of technical facilities	" 2.000	
Printing and mailing of programs etc	" 4.000	
Committee meetings	" 2.000	
Technical arrangements by congress service	" 6.000	
Lunch (3 days)	" 8.000	
Coffee (3 days)	" 1.200	
Miscellaneous conference material	" 1.300	" 29.500

Profit

\$ 500

*The registration fee includes three lunches and coffee.

- Chairman of Membership Committee* R J Feeney, Dept. of Human Sciences, University of Technology, Loughborough, Leics. LE11 3TU. 0509 63171
- Chairman of Meetings Committee* G Simmonds, 8 Claybrick Avenue, Hockley, Essex. Basildon 402636 (office)
- Hon. Meetings Sec.* I A R Galer, Dept. of Human Sciences, University of Technology, Loughborough, Leics. LE11 3TU 0509 63171
- Hon. Conference Sec.* Dr G J Gillies, APRE HFU MVEE, 12 Firtree Close, Little Sandhurst, Near Camberley, Surrey. 0990 23366 (Office)
- Chairman of Industrial Committee* G A Simpson, Ergonomics Branch, Institute of Occupational Medicine, NCB, Ashby Road, Stanhope Bretby, Burton-on-Trent, Staffs, DE15 0QD 0283 216161
- Chairman of Publications Committee* Dr H G Maule, Ergonomics Unit, University College London, Wates House, 22 Gordon Street, London WC1H 0QB. 01-387 4168
- Chairman of Practitioners' Division Committee* D M Anderson, 47 Park Road, Camberley, Surrey. 0279 32931 (Office)

8 Claybrick Avenue,
Hockley,
Essex.
17th October, 1978.

Mr. R. Sell,
5 Lyncroft Gardens,
Hounslow,
Middlesex. TW3 2QT

Dear Reg,

Would the IEA be interested in joining in the sponsoring of any of the meetings we have in the pipeline? The main meeting for which we currently plan to have an international appeal is on Transport; it is scheduled for 8 - 12 September 1980 in Swansea. I enclose a list of the symposia convenors so far.

Other meetings being planned are:

- Human error
- Agriculture
- Protective clothing
- Visual inspection
- Social systems
- Training
- Joint with Technical University of Berlin.

Please let me know if you are interested in joining with us or if you would like further information.

Yours sincerely,



Gordon Simmonds
Chairman
Meetings Committee

For ES Meetings Committee 29/9/78

INTERNATIONAL CONFERENCE

ERGONOMICS & TRANSPORT

PROGRESS REPORT

The following have, so far, agreed to convene a symposium.

<u>NAME</u>	<u>POSITION</u>	<u>SYMPOSIUM</u>
Don Anderson	Director of Maritime Ergonomics Univ, Cardiff	Maritime ergonomics
Ted Lovesey	Flight Systems Dept, RAE	Aviation ergonomics
Norman Ashford	Professor of Transport Planning, Loughborough	Transport for the elderly and handicapped
Ira Jacobsen/Larry Richards	University of Virginia	Passenger comfort
John Michon	University of Groningen	Driver behaviour
James Reason	University of Manchester	Motion Sickness
Mike Griffin	University of Southampton	Vibration
Mike Bryan/Bill Tempest	University of Salford	Noise
Etienne Grandjean	Swiss Fed Inst Tech	Seating

In addition we have a partial symposium on pedestrian behaviour.

Taylor & Francis have expressed interest in publishing the proceedings.

D J Osborne
J Levis

January 10, 1979

MEMO TO: Al Chapanis, President

FROM: Dick Pearson, Council Member RSP

SUBJECT: International Directory of Educational Programs in
Ergonomics/Human Factors; Printing Budget - Decision

At your meeting of the IEA Executive Committee in London at the end of this month I hope you will push for and obtain agreement on a budget amount for printing of the directory; it is of paramount importance that I have this agreement soon - waiting until August would be most unfortunate. I presume that there will be an IEA information booth in Warsaw, and it would be propitious to have the new directory on display for distribution to academicians, students, and others.

As you know the Human Factors Society has agreed to fund a half share of a printing of up to 3000 copies. The cost estimates were:

1000 -	\$ 850
2000 -	1049
3000 -	1229

As one can note, relative costs per 100 copies decrease after the basic order of 1000. I strongly recommend that the Executive Committee commit to 3000 copies; the IEA share of 1500 copies would cost about \$615.00. In discussion with Marian Knowles I learned that the 3rd edition of the HFS directory, printed at 500 copies and first available in October 1977 (15 months' ago), is already out of print. She had recommended a printing of 1000 for that edition. A printing of 1500 copies would probably last three years at today's rate of inquiries and distribution.

As to IEA distribution I can easily see a need for 1500 copies. As to how these should be distributed, I suggest you discuss this in committee. My thinking is (a) in proportion to membership, or (b) according to the number of members (votes) on Council, eg 3 votes = 150 copies; 2 votes = 100 copies; 1 vote = 50 copies. The latter approach would use up about 1000 copies according to my estimates; then I plan to mail about 100 copies to contributors to the directory; that leaves 400 copies for IEA reserve.

You might wish to note for your committee that postage and correspondence (printing) costs involving the IEA share of this effort to date have been "bootlegged" by, me, and that HFS has already contributed its share of postage and correspondence costs.

Finally, I'd appreciate your entering into the minutes (for Council members' attention) that several countries are lagging or delinquent in their response to me - especially Japan. In this regard I attach a listing of those programs, by country, for which I have contacts and/or replies. Reg may want to copy this for distribution to council members.

Finally, I attach a description of the proposed format of the directory. The comments of your committee are welcomed. I plan to send a copy to Brian Shackel whose comments have been most helpful to this effort. Your views on the directory and other communications I might pursue are also solicited.

Best wishes for an enjoyable and productive meeting!

cc Reg Sell
Brian Shackel

Dick Pearson
Industrial Engineering, Box 5511
NC State University
Raleigh, N C 27650

Proposed Format: International Directory of Educational Programs

Cover: Title; IEA and HFS logos, date, editor

Inside Cover: Commentary on the field of ergonomics, IEA, and list of member societies, officers.

Introduction: Remarks addressed to students/applicants

- 1 When to inquire/apply; catalog and application; apply to several schools.
- 2 How to select program; visits to campus
- 3 Financial assistance inquiries; teaching and research assistantships; fellowships
- 4 Fees and tuition
- 5 Inquiring about history of programs, graduates, number of students in program and department, research interests, faculty strengths.
- 6 Special admission requirements; grade point average; references; special tests, eg Graduate Record Examination (GRE), Test of English as a Foreign Language (TOEFL), etc.
- 7 Following-up; phone calls
- 8 Joining a national society

History: By country, alphabetically; US programs will be listed in terms of major programs (undergraduate, masters only, and doctoral-level) and other, related programs offering HF/ergonomics courses but whose main thrust is not our field.

Format will be:

- 1 University name
- 2 Address of program/department for inquiries (listing of individual's name to be discouraged).
- 3 Program title and degrees/diplomas offered
- 4 Program requirements/prerequisites for admission - entry into program (eg background preparation, degrees, special tests, academic qualifications) - limit to 25 words.
- 5 Character of the program (limit to 30 words) - areas of program emphasis/specialization; class size; number of full-time students; special program features, eg research facilities, practicums and internships, degree requirements, time to complete degree, etc.

Inside rear cover: Acknowledgements; IEA and HFS support.

Tentative Listing of Ergonomics Programs and Courses (1-79)

- | | | | |
|---|---|----|---|
| 1 | AUSTRALIA

The University of Sydney
University of Adelaide
Monash University
University of New South Wales
University of Queensland
Ballarat Coll, Victoria
University of Melbourne | 9 | ENGLAND

Birkbeck College, University of London
Cranfield Institute of Technology
Royal College of Art, London
University of Aston in Birmingham
University of Birmingham
University of Hull
University of Nottingham
University of Technology, Loughborough
University College, London |
| 2 | BANGLADESH

University of Dacca | 10 | FINLAND

Helsinki University of Technology
University of Industrial Arts, Helsinki |
| 3 | BELGIUM

Katholieke Universiteit te Leuven
Universite Catholique de Louvain
Universite Libre de Bruxelles
University of Liege | 11 | FRANCE

Centre d'Etudes Bioclimatiques Strasbourg
C H U Pitie-Salpetriere
University of Paris, I, V, IX, XIII
University of Toulouse
University of Aix-Marseille
University of Strasbourg
Conservatoire National Des Arts et Metiers |
| 4 | BULGARIA

Sofia University | 12 | GERMANY

Technische Universitat, Munchen
Institut fur Arbeitswissenschaft, Darmstadt
Institut fur Arbeitsphysiologie, Dortmund |
| 5 | CANADA

University of Waterloo
University of Windsor | 13 | HONG KONG

University of Hong Kong |
| 6 | CZECHOSLAVAKIA

The Czech Technical University
Katedra Techniky Prostredi,
Praha | 14 | HUNGARY

Budapest Technical University
Chemical Industry - Technical University
Heavy Industry, Ministry Univ |
| 7 | DENMARK

University of Copenhagen
The August Krogh Institute
The Technical University,
Lundtofte | | |
| 8 | EGYPT

Al-Azhar University | | |

X
No response: Argentina, Brazil, Greece, Italy, Spain

- | | | | |
|----|--|----|--|
| 15 | INDIA | 24 | SCOTLAND |
| | Madras College of Engineering
Calcutta University | | Napier College of Commerce
and Technology |
| 16 | IRELAND | 25 | SWEDEN |
| | Queens University | | Lulea University of Technology |
| 17 | ISRAEL | 26 | SWITZERLAND |
| | Beersheva University
Technion - Israel Institute
of Technology | | Federal Institute of Technology
University of Geneva
Eidgenoss Technische Hochschule,
Zurich |
| 18 | JAPAN | 27 | TURKEY |
| | University of Tokyo | | Technical University of
Istanbul |
| 19 | NETHERLANDS | 28 | USSR |
| | University of Technology Delft
University of Technology
Eindhoven
University of Technology
Twente
University of Tilburg
University of Utrecht
The Free University,
Amsterdam
Agricultural University,
Wageningen | | Lenigrad State University
Yaroslavl University
Moscow University
Institute of Psychology,
Moscow |
| 20 | NEW ZEALAND | 29 | WALES |
| | University of Otago | | University of Wales, Institute
of Science and Technology |
| 21 | NORWAY | 30 | YUGOSLAVIA |
| | Norwegian Institute of
Technology
The Norwegian Institute of
Agricultural Engineering
University of Trondheim | | University of Beograd
Faculty of Physical Culture,
Zagreb
Faculty of Mechanical
Engineering Sarajevo
Faculty of Mechanical
Engineering, Zagreb
Faculty of Mechanical
Engineering, Beograd
Faculty of Economic Sciences,
Beograd
Faculty of Philosophical
Sciences, Beograd
Faculty of Philosophical
Sciences, Zagreb |
| 22 | POLAND | | |
| | University of Cracow
Warsaw Polytechnical School
Central Institute of Labour
Protection Warsaw | | |
| 23 | ROMANIA | | |
| | Institute of Psychology,
Bucharest
Bucharest University
University of Cluj | | |