Table of Contents

Editorial : The President's Comment ....................... 2
Instructions to Authors .................................. 3
Congress Reports : Sport Shoes and Playing Surfaces, Calgary ...... 3
August 1983
Laboratory Feature : Departement of Bilocybernetics and Body .... 4
Motion Techniques, Warszawa, Poland
International Journal of Sport Biomechanics ............... 8
Book Review ............................................ 9
Congress Announcements ................................ 10
Membership of ISB ..................................... 13
Announcement : Spinal Disorders 1984, A Major International 14
Course
Advertisements .......................................... 15
Editorial

The President's Comment

It is the final duty of the Acting President to thank everybody who contributed to a successful conference and to the development of the ISB during the past 2 years. Paavo Komi has done that and has included the organisers of the Waterloo Conference, who did an excellent job, as well as our past President, Dick Nelson, who is mainly responsible for the development of the ISB during the last decade.

It is my first duty, but also my personal wish, to thank the resigning President for everything he did for the benefit of the ISB. Paavo Komi's main contribution was to steer the ISB ship on a straight course and to straighten out all the organizational problems that such a young society has. I personally am very happy that Dick Nelson, as well as Paavo Komi worked so hard for the development of the ISB and I think I can speak in the name of all the members of the ISB when I thank both of them very much for their outstanding contribution.

The ISB was founded in 1973 and the first President was Juerg Wartenweiler. To him goes the credit of having taken the initiative to found the International Society of Biomechanics and to lead the Society in the first couple of years. He is also responsible for me entering the field of biomechanics and I therefore would like to ask Mrs. Wartenweiler to accept the thanks of the Society, as well as my personal thanks, for his contribution to the development of biomechanics.

If we look back in the history of the ISB and to main contributions of the three former Presidents, I think it can be summarized that the first President, Juerg Wartenweiler, was mainly responsible for the idea and the foundation of the International Society while the second President, Dick Nelson, was responsible for the Society becoming really international and yet remaining a family. I know very few international societies which have such a strong personal contact among its members. The third President, Paavo Komi, was responsible for the organizational work. If we look at this development it seems that for the fourth President, there is nothing to be done. However, I define the goal for the next 2 years for myself, as well as for the Council, to continue to improve the quality of our work in biomechanics. We are all interested in increasing our knowledge and understanding of biomechanics and I will therefore try to support everything in the area of biomechanics which increases this knowledge and which contributes to the improvement of the quality of the work done in this area. I suggest that we forget that we compete against one another from point of view of findings and that we cooperate in order to get the best possible results out of what we are doing. If we, for instance, look to probably the most productive development in the field of physics at the beginning of this century we can learn from that development that there was strong cooperation between researchers in physics such as Einstein, Bohr, Sommerfeld, Planck and others. I propose that we try to do the same thing and that we
exchange ideas and try to help wherever we can and forget the competition between laborato-
ries and research groups.

I personally am very proud to be the Presi-
dent of the International Society of Biomecha-
nics, a steadily growing and improving inter-
national research society. I hope that we will have success in our program as well as satis-
faction and that we can improve the knowledge
and understanding in biomechanics.

Benno N. Nigg
President of ISB

INSTRUCTIONS TO AUTHORs

In order to facilitate the editing of the ISB Newsletter, we would appreci-
ate receiving any material according to the following criteria:

1° All material should be typewritten single spaced.
2° Typewrite within a frame of 10 cm width.
3° The title should be written in CAP-
ITAL LETTERS.
4° Subtitles should be written in sta-
shes and/or underlined.
5° Different paragraphs should be sepa-
rated by double spacing.
6° Try to use the whole text-face. There should not be any margins inside the frame.

Thank you in advance for your coopera-
tion.

Jan P. CLARYS
Fak. Geneeskunde & Farmacie
Experimentele Anatomie
Laarbeeklaan 103
B-1090 BRUSSELS (Belgium)

P.S. The ISB Newsletter is published quarterly. Material and articles
should reach us prior to February 10 for the Spring issue, May 10
for the Summer issue, August 10 for the Autumn issue and November
10 for the Winter issue.

Congress Reports

International Symposium on the Biomechanical Aspects of Sport Shoes and Playing Surfaces,
Calgary, Alberta, Canada, August 4-6, 1983.

Sixty-three participants, representing 13 coun-
tries, enjoyed hot, sunny Alberta weather along
with two days of scientific presentations and
discussion. Four presentations, each one ini-
tiating a session, were followed by 18 papers on research being conducted on sport shoes or
on athletic playing surfaces. The keynote
lectures by Drs. Benno Nigg, Paavo Komi, Peter
Cavanagh concentrated on biomechanical measure-
ments, while Dr. Ned Frederick examined effi-
ciency of running through physiological measu-
rements. All four papers reviewed previous
work and made suggestions for future direc-
tions and measurements.

The majority of the research papers were
concerned with the football characteristics of
distance runners and how to decrease the shock
of landing, or how to suit the shoe to the lan-
ding characteristics in order to minimize poten-
tial injuries to the runner. Judging from
the proportion of papers submitted, few labo-
atories are currently concerned with research
on the types of playing surfaces, and the in-
teraction between shoe soles and type of play-
sing surface. Concern was expressed over inju-
ries occurring due to high frictional coeffi-
cients between the two surfaces.
Participants were welcomed by a wine and cheese reception and bade farewell by the traditional Western dinner and small rodeo. The team of four from Switzerland won the calf riding contest followed by mainly unsuccessful attempts at riding the "mechanical bull" (powered by 3 cowhands). One injury was recorded - Rodano, of Italy.

Judging from reactions during the conference and subsequent feedback, the Symposium was seen as being successful both scientifically and socially. By and large the papers were well-presented and received; the material covered was new and offered valuable information or ideas. The size of the audience allowed for several individuals to enter into the discussions affording feedback.

The Proceedings may be obtained by sending a money order or cheque made out to The University of Calgary, for $15.00 (CDN) to the Symposium Chairman:
Dr. Benno Nigg
Faculty of Physical Education
The University of Calgary
2500 University Dr. N.W.
Calgary, Alberta
Canada T2N 1N4

SCIENTIFIC ADVERTISEMENTS

On request of ISB members and on condition that there is no relation with a commercial circuit, all scientific advertisements will be published free of charge.

CALL FOR PAPERS

We would appreciate if ISB members could participate more active in this Newsletter. Please send us material: short papers, letters to the editor, laboratory features,... etc.

Laboratory Feature

Name of Laboratory
Department of Biocybernetics and Body Motion Techniques

Institution
Institute of Sport

Mailing Address
ul. Cegłowska 68/70
01-809 Warszawa
Polska

Telephone Number
340471 int.85, 88

Purpose and Objectives of Laboratory

Basic research directed towards:
- learning more about mechanical structure of body motion,
- identification of body motion control patterns within neuromuscular system,
- application and development of advanced methods and techniques of simulation and optimization of body motion,
- applying the above knowledge in sports, physical education, rehabilitation, etc.

Personnel
Dr. Andrzej Komor, M.Sc., Ph.D. Biomechanics
Head of Department

Research interests in all fields of the Dept.

Associate Prof. Janusz Morawski, M.Sc., Ph.D. Automatic Control, Research Consultant

Research interests in all fields of the Dept.

Associates
Jarosław Pranecki, M.Sc. Computer Sciences
Janusz Głowowski, M.Sc. Numerical Methods
Stanisław Kukielak, M.Sc. Computer Sciences
Łukasz Pruski, Ph.D. Mechanical Eng.
Wiesław Szeweryn, M.Sc. Electronics
Antoni Trylski, M.Sc. Electronics
Jan Wolf, M.Sc. Mathematics

Technicians
Janusz Winiarski, M.Sc. Electronics
Mrs. Danuta Żytkiewicz

Student Population

The activity of the department does not include direct academic teaching. However a number of M.Sc. and Ph.D. studies have been supervised, consulted or tutored by the department staff.

Organisational and Funding Structure

The Department is a part of the Institute of Sport, the main research center for the General Committee of Physical Culture and
Sports. Research activity is conducted with main funds provided by the Polish Government through particular users such as: Polish Sports Associations, Academies of Physical Education, Polish Olympic Committee. Some specific grants result from cooperation with national medical centres, technical universities, etc.

Historical Development

The Department was formed in 1977 as an unit enclosed to the Academy of Physical Education, Warsaw. Since 1978, when the Institute of Sport was established the Dept. became a part of the Institute and reached its present size of staff. The first head of the Dept. was Dr. Janusz Morawski. It is necessary to mention about fruitful participation of Prof. K.Fidelus and Prof. A.Morecki in early works of the Dept. Their support and advice many times proved to be essential for the development of the Dept.

Description of Facilities

The main data collection and processing equipment consists of:

- two Kistler force platforms type 9281 A in specially designed mounting base
- film motion analyzer NAC with Universal Graf-pen System and direct access to computer
- RACAL TDS 7-track magnetic tape recorder
- EAI 2000 analog computer with parallel logic and MACS terminal, XY plotters, 32 analog input/output channels and Tektronix 5115 Storage Oscilloscope
- FDP 11/34 digital computer with RT 11 and RSX 11M operating systems, 256 kB of main memory, dual DX floppy and DL hard disk stations, XY plotter, 4 alphanumeric terminals and 8-channel A/D interface.

The Department also utilizes other institute equipment as:

- 6-channel DISA EMG Processor
- Device for measurement of torque characteristics of main muscular groups in static conditions (Institute of Sport design and patent).

Specialized film operators staff is hired from Sport Supporting Center for field filming. All data collection equipment is directly connected to both computers via standard or specially designed interfaces. The new FDP class computer will be installed in the Dept. in next few months.

The following main software packages for data processing and simulation purposes were developed:

- package ANK (FDP) - cinematography analysis with:
  - calibration, correction, absolute coordinate determination, filtering
  - joints and C.G. of each body segment
  - kinetics
  - segments and total body energies
  - net joint moments
- package OPT (FDP) - for solving selected optimization problems

- package MUSC (FDP) - for simulation of multi-joint, multi-muscle systems
- package SPORT (FDP) - data base management system for collection and processing data concerning fitness level of Polish elite sportmen
- several analog packages (EAI) for:
  - simulation of motion techniques of pole-vault, javelin throw, high and long jump, kayak rowing
  - EMG processing
  - body motion coordination skills evaluation

Current and Past Projects

The main topic of the department's activity is a complex analysis of human motion with special stress put on identification and analysis of neuromuscular control action. An application of advanced cybernetic methods and applied control theory let simulate and optimize motion techniques in several sports disciplines as well as develop unique training methods. An important stress is also put on formulation of technical assumptions of new measurement equipment and training aids for particular sport applications. A part of attention covers problems of analysis of decision making processes in sport and development of data base management systems for various sports applications.

Up to now several projects were completed. The main of them were:

- simulation and optimization of motion techniques in pole-vaulting (Morawski et al., 1980)
- simulation and optimization of motion techniques in weightlifting (Komor et al., 1981)
- simulation of javelin dynamics (Wolf, 1980)
- analysis and simulation of muscle cooperation in single joint under dynamic conditions (Komor et al., 1982)
- new computer-aided measurement equipment for body motion coordination skills analysis (Morawski et al., 1982)

The main ongoing projects are as follows:

- identification of the transfer function parameters of human neuromuscular control system in some tracking tasks (Morawski, Komor, Wolf)
- investigation and simulation of muscle cooperation in multi-joint system under dynamic conditions (control and load analysis) (Komor et al.)
- development of computer compiler for automatic formulation of motion equations of biomechanical multi-link dynamic systems (Franek, Komor, Uklanski)
- methods of computer analysis and optimization of strategies in selected sports disciplines (Franek, Pruski)
- development of new interpretative processing co-system for data base management system SPORT (Franek, Kakietek)

Several projects have been realized in cooperation with other laboratories in Poland:

- Laboratory of Biomechanics - Prof. Fidelus, Warsaw
- Laboratory of Biomechanics - Prof. Bober, Wroclaw
- Biomechanical Unit - Prof. Morecki, Warsaw
- Karl University, Prague - Prof. Sukop,
- Laboratory of Biomechanics, ETH Zurich - Prof. Nigg.

The detailed documentation of main past and present projects is presented in Publications as current reports of the Institute of Sport.

Bibliography of Published Works

See separate sheets enclosed. The names of members of the dept. staff have been distinguished by blocking letters. The list is far from complete. Number of works published in Polish have been omitted.

Conferences of Workshops Hosted or Planned

- International Training Course on Hybrid Simulation in Sport, Warsaw, Poland, 1980
- A Two-day Seminar on Pole-Vault Simulator Studies, Gdańsk, Poland, 1980
- Every-year Scientific Conference on the Research Programme 105 "Science for Practice of Sport "
- Every-year Schools on Methods of Sport Training

x/ the meetings organized by all departments of the Institute of Sport

From left to right: upper row - J. Wiarsiński, J. Wolf, J. Franecki, J. Głuchowski; lower row - S. Kadietek, J. Morawski, R. Uklanski, D. Żytkiewicz, A. Komor and A. Trylski

Publications

MORAWSKI, J. (1961)


MORAWSKI, J. (1973)

MORAWSKI, J. (1973)

MORAWSKI, J. (1974)

MORAWSKI, J. (1974)

Fidelus, K. and KOMOR, A. (1977)
Effectivity criteria of motion techniques in weight-lifting. Abstracts, VIIth International Congress of Biomechanics, Copenhagen.

KOMOR, A. and Ubukata, O. (1977)


KOMOR, A. and BUCKA, J.* (1978)

KOMOR, A. (1978)

MORAWSKI, J. (1978)

MORAWSKI, J., BUCZEK, M., WIKLIK, K.* and Sliwinski, M. (1978)

MORAWSKI, J. and WIKLIK, K.* (1978)


Human Kinetics Publishers is pleased to announce a new journal.

INTERNATIONAL JOURNAL OF SPORT BIOMECHANICS

Editor
Richard C. Nelson, Ph.D.
The Pennsylvania State University

Editorial Board
Editor: Richard C. Nelson, Ph.D.
The Pennsylvania State University

Partial List of Editorial Board Members
Wolfgang Baumann, West Germany
Jan Clarys, Belgium
Charles Dillman, USA
Robert Gregor, USA
James Hay, USA
Pawel Komi, Finland
Mitsumasa Miyashita, Japan
Chauncey Morehouse, USA
Benno Nigg, Canada

IJSB Specifications
Frequency: Quarterly (February, May, August, November)
First Issue: August 1984 (Volume 1 will contain only two issues; thereafter all volumes will contain four issues.)
Official Language: English

Subscription Price

<table>
<thead>
<tr>
<th></th>
<th>Individuals</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foreign</td>
<td>Foreign</td>
</tr>
<tr>
<td></td>
<td>U.S. (surface)</td>
<td>U.S. (air)</td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>Foreign</td>
</tr>
<tr>
<td></td>
<td>U.S. (surface)</td>
<td>U.S. (air)</td>
</tr>
<tr>
<td>Volume 1 (2 issues only)</td>
<td>$12</td>
<td>$15</td>
</tr>
<tr>
<td>Volume 2 (4 issues)</td>
<td>$24</td>
<td>$30</td>
</tr>
<tr>
<td>Special Introductory Offer</td>
<td>$30</td>
<td>$39</td>
</tr>
</tbody>
</table>

*Special offer valid until August 1, 1984.

IJSB ORDER FORM

☐ I want to subscribe by mail 45 days before the first issue is released.
☐ I want to subscribe at the time of publication, charge my credit card (see below).
☐ I am interested. Send me an order form before the first issue is released.

Name

[ ] Charge my Visa, American Express, or MasterCard [circle one]

Account No.

Exp. Date

Signature

Address

City

Zip

Country

IJSB Call for Papers

Individuals are encouraged to submit papers to the Editor immediately. The first issue of the Journal will be released at the Olympic Scientific Congress in Eugene, Oregon, July 1984. Submit papers to the Editor: Richard C. Nelson, Ph.D., IJSB, Biomechanics Laboratory, The Pennsylvania State University, University Park, PA 16802.

IJSB Author Guidelines

Style

The American Psychological Association Style Manual is the official reference for all questions of style. This style is used in Biomechanics VIII and in most behavioral science publications. If authors lack access to these sources, write to the Editor for an author style guide.

Article Submission

Submit a clean original and two copies of the paper. All papers must be in English with a 75-100 word abstract. Manuscripts should not exceed 20 pages, typed doublespaced, with 25 lines per page. This 20-page limit applies to the complete manuscript, including text, illustrations, tables, photographs, and references.

The manuscript should be typed on 8.5 x 11 in. (21.5 x 27.9 cm) white, unlined paper. Only one side of the paper should be used, leaving 1.5 in. (4 cm) margins on all sides. Authors are encouraged to have their manuscript typed using one of the following types: Lettre Gothic 12, Prestige Elite 12, OCR B, Courier 12 & 72, Pica 10. These faces can be optically scanned, eliminating the need to re-keyboard the text for editing and typesetting.

Illustrations

Illustrations should be functional, and none should repeat material presented in tables or text. All illustrations must be cited in the text and the approximate placement of each in the text must be indicated. All figures must be professionally prepared and camera-ready; freehand and typewritten lettering will not be accepted. Photographs must have a glossy finish with sharp contrast between black and white areas. Color photographs are not accepted.

IJSB Contents

* Editorials
* Original Research Reports
* Book Reviews
* Abstracts of Other Articles
* Notes and Comments
* Special Features

IJSB Editor Policy

The International Journal of Sport Biomechanics serves to stimulate and communicate research and scholarly inquiry. The Journal accepts the submission of original research reports and also encourages the submission of review and theoretical papers. IJSB will include abstracts of recent articles of interest to sport biomechanists, book reviews, research notes and comments, and other special features. The Journal also will contain an editorial section serving as an international forum for new and stimulating ideas of interest to scholars in the field.

Individuals are invited to submit manuscripts for any of these sections of the Journal. Criteria for acceptance of articles is based on the judgment contributed of the manuscript to the understanding of sport biomechanics. In the case of research reports, the methodology must meet accepted scientific standards. To be considered appropriate subject matter for the Journal, articles must pertain to the study of the forces that act on the performer and the consequences of these forces as they relate to sport and exercise, broadly defined. Studies of basic as well as practical aspects of human movement in sport are encouraged. Equal consideration will be given to biomechanical studies of movement by performers of all abilities and disabilities. Reports of research using biomechanical methods to study the learning or performance of motor skills also are appropriate for submission.

Sport biomechanics is now an integral part of the training and development of athletes in many countries. The field is recognized as an important scientific discipline within physical education and the sport sciences. The remarkable development of sport biomechanics throughout the world over the past decade has created the need for a new scholarly journal in this field. Research reports and professional articles have increased significantly, but this literature is scattered throughout many journals and proceedings, none of which is specifically devoted to sport biomechanics. Thus, the Editor and Publisher are pleased to announce the establishment of the International Journal of Sport Biomechanics. IJSB is being launched to serve as an international source for disseminating sport biomechanics research and scholarly inquiry through the common bond of the English language.
Book Review


Exercise and Sport Sciences Reviews is an American College of Sports Medicine journal, published once per year, in which reviews of research concerning clinical, physiological, biomechanical, and behavioural aspects of exercise science appear.

In the tenth volume of 1982, the first review concerns the influence of muscle use on amino acid metabolism, in which it is stated that about 17% of the body's potential energy is found in protein, much of which is located in skeletal muscle in the forms of actin and myosin. Dynamic changes during muscle work occur although in a small percentage—During the later stages of exercise, when glycogen is depleted, amino acids may become an more important source of fuel for the working muscle.

The influence of muscle use on protein synthesis and degradation is studied in the following article, in which the authors suggest that a change in muscle protein synthesis is more important than a change in degradation causing adaptive alterations in the level of protein response to a change in muscular usage.

In the "Anaerobic Threshold" the concept and the use of the anaerobic threshold and the ventilation threshold are being debated. The authors cannot close this debate for more knowledge regarding the linkage between mechanics controlling muscle biochemical processes, oxygen delivery, and acid-base changes during exercise is needed.

The following review deals with the physiological consequences of reduced physical activity during bed rest, where the physiological changes regarding body composition, physical work capacity, insulin-glucos intolerance and hormonal interactions and calcium loss have been studied.

In the "Contemporary Sport Psychology" article summaries of selected areas in sport psychology have been presented in an attempt to characterize the contemporary nature of this field. Furthermore an elaboration is made on the research paradigms and theoretical frameworks that have guided inquiry in the field of sport psychology, and a prescription has been established for the future, offering selected solutions and alternatives to many of the problems inhibiting the orderly progress of research.

Fiber architecture and muscle function are the following subjects of the Exercise and Sport Sciences Review. This paper characterizes the basic arrangements in which muscle fibers are placed in various animal - and notes some of the major benefits and costs of these arrangements. The analysis confirms that muscles should be treated as arrays of motor units of different properties and that the characteristics of the sarcomere and the resulting length-tension and force-velocity curves provide the basis for architectural analysis.

The major cardio-vascular complications of exercise, described in "Cardio-vascular hazards of physical activity", are cardiac arrhythmias, myocardial infarction and sudden death. The underlying cause of these hazards is usually atherosclerotic cardio-vascular disease. Despite the attention that is given to death during exercise, it is a very rare event with a frequency among middle-aged joggers of one death per 7,620 joggers per year.

In the "Motivation in Sport" review a tracing of a theoretical framework envisioning a different perspective of achievement motivation and sport behavior has been proposed that is generally utilized in sport literature.

Breath-hold diving in terrestrial mammals is, according to the authors of this paper, a research field where valuable lessons in respiratory and cardio-vascular physiology can be taken from. Potential oxygen conservation mechanisms are present in humans, but their effectiveness, depending on the ability to segregate certain tissue beds from the rest of the circulation, is minimal.

In the "Data Smoothing and Differentiation Procedures in Biomechanics" review, a number of numerical methods for data smoothing and differentiation are proposed to overcome error during continuous process observations measured at discrete points in an attempt to explain the nature of the underlying process.

The last paper of the Exercise and Sport Sciences Reviews deals with the biomechanics of postural control, on the basis of a cursory examination of the literature. It becomes apparent that posture and movement are inexorably intertwined, and that to consider them as independent is a convenience rather than a reality.

Jan CABI

MERRY CHRISTMAS
AND HAPPY NEW YEAR ??

ISB
Congress Announcement

Official Congress of the
INTERNATIONAL SOCIETY
OF BIOMECHANICS

ISB

X International Congress of Biomechanics
June 15-20th, 1985
Umeå, Sweden

X International Congress of Biomechanics will be held in Umeå, Sweden, June 15-20th, 1985, hosted by the Research Department of the Swedish National Board of Occupational Safety and Health.

Organizing Committee
Bengt Jonsson, Congress Chairman
Mats Hagberg, Congress Vice Chairman
Gudrun Hedberg, Congress Vice Chairman
Inga-Märit Hegner, Congress Vice Chairman
Kjell Niemi, Congress Secretary

Congress Secretariat:
X International Congress of Biomechanics
Work Physiology Division
National Board of Occupational Safety and Health
Box 6104
S-900 06 Umeå
Sweden
Telephone: (46-90) 165060

The International Society of Biomechanics
Founded August 30, 1973

The purpose of the International Society of Biomechanics is to promote and stimulate the development of biomechanics at the international level. Its membership includes scientists from a variety of disciplines including anatomy, physiology, engineering, orthopaedics, rehabilitation medicine, sport science, ergonomics, electrophysiological kinesiology and others. The Society holds an official International Congress every two years. In previous years this has been held in Pennsylvania, Jyväskylä, Copenhagen, Warsaw, Nagoya and Waterloo. The first three Seminars on Biomechanics were held in Zurich, Eindhoven and Rome.

Deadlines
December 1st, 1984 - Receipt of Abstracts
March 1st, 1985 - Notification of Accepted Papers
April 15th, 1985 - Receipt of Manuscripts
April 15th, 1985 - Late Registration Starts

Publication of Proceedings
Selected presented papers will be published in Biomechanics X. Author's kits and manuscript specifications will accompany notice of acceptance of abstracts. Manuscripts will be in English.

Topics
The aim of the Congress is to report research in the area of biomechanics of human movement. The Congress will include invited lectures and free communications (oral and poster). Papers are invited in the following areas:
- Basic Research in Biomechanics
- Occupational Biomechanics
- Orthopaedic Biomechanics
- Rehabilitation Biomechanics
- Sports Biomechanics
- Electromyography and Neuromuscular Control
- Instrumentation and Methodology

Official Language
The Official Language of the Congress is English.

For preliminary registration

I am interested in participating in the X International Congress of Biomechanics in Umeå, Sweden, June 15-20th, 1985. Please include me on your mailing list for future announcements.

Name: ___________________________________________
Affiliation: _______________________________________
Mailing Address: ___________________________________
Telephone: _______________________________________

Please indicate if you intend to present a paper: ☐ No ☐ Yes
Intended title: _______________________________________

I am an ISB member ☐ I want to become an ISB member ☐

Announcement

Theme: Sports Medicine and the 1984 Olympics

For registration information contact: Beverly Richdale, Program Coordinator, Northwest Sports Medicine Foundation 1551 Northwest 54th, Suite 200 Seattle, Washington 98107 Tel: 206-782-3383
INTERNATIONAL CONFERENCE ON OCCUPATIONAL ERGONOMICS AT HARBOURCASTLE HILTON HOTEL TORONTO, CANADA 7, 8, & 9, MAY, 1984

TORONTO '84 MAY 7 - 9

Address for abstracts/further information:
R. D. G. Webb
Technical Chairman
Toronto '84
P.O. Box 1065, Station 'B'
Rexdale, Ontario
Canada M9V 2B3
Telephone: (416) 675-2235

When individual members have a change in a mailing address, it is important to send the new address to the Treasurer so that you are certain to receive copies of the Newsletter and dues notices.

ISB Treasurer:
C.A. Morehouse
109 Sports Research Bldg.
Penn State University
University Park, PA 16802
U.S.A.

COMMERCIAL ADVERTISEMENTS
The Newsletter is open for commercial publicity at:
100 US dollar per full page
50 US dollar per half page
25 US dollar per quarter page
All publicity will be advertised in the 4 issues.

SEX-ROLES AND CO-EDUCATION IN SPORT
AN INTERNATIONAL SYMPOSIUM ORGANIZED ON THE OCCASION OF THE 50TH ANNIVERSARY OF THE INTERNATIONAL KORFBALL FEDERATION

For further information, write to:
General Secretary
Mr Fred Troost
International Korfball Federation
P.O. Box 1000
3700 BA Zeist
The Netherlands

Second announcement and call for papers

16 — 19 APRIL, 1984,
Free University Amsterdam
The Netherlands

Fourth Meeting of the European Society of Biomechanics in Collaboration with the European Society for Biomaterials
September 24 – 26, 1984

Davos, Switzerland

FIRST ANNOUNCEMENT AND CALL FOR PAPERS

CONFERENCE SECRETARIAT
Laboratory for Experimental Surgery
Attn.: Miss Vreni Geret
CH-7270 Davos-Platz/Switzerland
Phone: 08313285
Telex: 74786 locd ch
Bank: Swiss Credit Bank, CH-7270 Davos, Switzerland,
Acct. No. 464.421-01 ESB Conference 1984
Please accept this invitation to attend a program planning committee meeting for the Olympic Scientific Congress 1983 Biomechanics Sessions (July 19-26, 1984). Your name has been given to me by the Executive Board or President of one of the professional organizations in biomechanics as a person who can make a significant contribution as a member of this ad hoc committee.

As Program Commissioner for these sessions I have scheduled a meeting during the conference of the International Society of Biomechanics at Waterloo, Canada. This meeting will be held on Tuesday, August 9, 1983, at the University of Waterloo, Village 2, South 102 Lounge, from 1:15 to 2:45 pm. You are cordially invited to attend.

My goals for this meeting are as follows:

1. Select topics for invited speakers.
2. Obtain a listing of potential speakers/topics — (partial funding for speakers is available).
3. Secure members for a scientific papers review committee. (More than 80 papers will be presented as free communications.)

Since the Congress is designed to consist of presentations which provide information to enhance the health and well-being of the athlete, the topics might be such ones as:

Biomechanics and Sports Safety
Enhancement of Sport Performance Through Better Sport Equipment.
Improvement of Technique via Biomechanics Research
Mechanical Efficiency in Sport
Prediction of 'The Best Technique'
Biomechanics and Sport Development
Biomechanics for the Elite, Young, Old, Handicapped, etc.

Should you have speakers or topics to suggest, or names for the reviewers, but are unable to attend this meeting, please write to me as soon as possible, or telephone me early morning or late evening at (509) 332-4808. I want to have world representation for the speakers and reviewers therefore desire your suggestions.

Sincerely,

Marlene Adrian
Commissioner for Biomechanics 1984 Olympic Scientific Congress Scientific Program Commission Washington State University Pullman, WA 99164-1512
Membership of ISB

KEAST, David  #803
Dept. of Microbiology
The University of Western
Australia
The Queen Elizabeth II
Medical Center
Nedlands
WESTERN AUSTRALIA 6009

BAKER, Daniel L.  #804
Oxford Orthopaedic Engr.
Ctr.
University of Oxford
Nuffield Orthopaedic Ctr.
Headington, Oxford OX3 7LD
UNITED KINGDOM

PEARCY, Mark J.  #805
Oxford Orthopaedic Engr.
Ctr.
OCSE, NOC, Univ. of Oxford
Headington, Oxford
UNITED KINGDOM

McLeod, William D.  #806
6262 Hamilton Road
Columbus, Ga 31995

Riach, Cindy  #807
Physical Education
McMaster University
Hamilton, Ontario, Canada

Anglim, John  #808
Dept. of Human Movement
& Recreation Studies
University of Western
Australia
Nedlands, W.A., 6009
AUSTRALIA

Vachranukunkiet, Theerasakdi  #809
Moss Rehabilitation Hospital
12th Street & Tabor Rd.
Philadelphia, PA 19141

ISB CHANGE OF ADDRESSES:

MCGINNIS, Peter M.  #609
c/o Biodynamics,
P.O. Box 3157
Eugene, Oregon 97403

Cho, Hyo Gu  #674
Institute of Health
The University of
Tsukuba
Sakura-Mura Mihari-
Gun
Ibaraki 305
JAPAN

9th. CONGRESS OF THE ISB
Waterloo, CANADA, August 7 - 12, 1983

Paavo KOMI presenting a special award to Richard
NELSON, making him an honorary member of the ISB.

Mrs. WARTENWEILER presenting a $500 award to
Maurice YEADEN, Loughborough, England. He was
one of the co-winners of the New Investigators
Award.

Other winner was Fridolfa SCHAEFFER from
Calgary. His award was presented by the
President of the Canadian Society of the Cana-
dian Society of Biomechanics.
Announcement

SPINAL DISORDERS 1984
A MAJOR INTERNATIONAL COURSE

An update on diagnosis, treatment and rehabilitation of common disorders on the whole spine, including trauma. Thirty internationally well known experts have been selected to collaborate with the faculty from the University of Gothenburg to provide a multidisciplinary audience with the first comprehensive state of art course on this subject to be held in Europe.

The course will be held in Gothenburg, Sweden, June 24-29, 1984, under the direction of Alf Nachemson, Professor and Chairman, the Department of Orthopaedic Surgery I, the University of Gothenburg. The following areas will be covered by the course: Applied Basic Science, Neck Problems, Scoliosis and Kyphosis, Fractures of the Spine, Pain and Psychology and Low Back Problems. There will be several social events with the faculty to provide for personal discussions.

Program

The program starts Monday, June 25, with applied basic science, featuring the following speakers; Albert Schultz, Ann Arbor, Marvin Tile, Toronto, Augustus White, Boston, and Alf Nachemson. Those addressing neck problems are William Fielding, New York, Henry La Rocca, New Orleans, René Louis, Marseille, Richard Rothman, Philadelphia, Edwards Simmons, Buffalo, Gunnar Andersson, Carl-Axel Carlsson, and Anders Nordwall.

Speakers on Tuesday, June 26, addressing the problems of scoliosis and kyphosis are the following experts: John Hall, Boston, Rae Jacobs, Kansas City, Henry La Rocca, New Orleans, John Lonstein, Minneapolis, Gordon Robin, Jerusalem, Albert Schultz, Ann Arbor, Edward Simmons. Buffalo, Robert Winter, Minneapolis, Klaus Zielke, Bad Wildungen, and Alf Nachemson. Modern treatment of fractures of the spine will be addressed by Rae Jacobs, Kansas City, Vert Mooney, Dallas, Raymond Roy-Camille, Paris, Marvin Tile, Toronto, Carl-Axel Carlsson, Lars Iristam, and Anders Nordwall.

Wednesday, June 27, will cover additional topics on the thoracolumbar spine by Henry La Rocca, New Orleans, Raymond Roy-Camille, Paris, Edward Simmons, Buffalo, Bertil Stener, and Alf Nachemson. A special section on pain and psychology features Wilbert Fordyce, Seattle, John Loeser, Seattle, John O'Brien, Oswestry, Lars Tenerius, Uppsala, Tommy Hansson and Bjorn Rydevik.

Thursday, June 28, and Friday, June 29, are devoted to the low back problem, where the speakers include Mark Brown, Miami, Wilbert Fordyce, Seattle, Malcolm Jayson, Salford, John Loeser, Seattle, René Louis, Marseille, Vert Mooney, Dallas, John O'Brien, Oswestry, Richard Rothman, Philadelphia, Raymond Roy-Camille, Paris, Dan Spengler, Nashville, Marvin Tile, Toronto, Hendrik Weber, Oslo, Augustus White, Boston, Klaus Zielke, Bad Wildungen, Gunnar Andersson, Lars Iristam, Margareta Nordin and Alf Nachemson.

The course, under the direction of Alf Nachemson, Professor and Chairman, Department of Orthopaedic Surgery I, University of Gothenburg, is sponsored by the Department of Orthopaedics, the University of Gothenburg, and AB Volvo.

Registration

The registration fee paid before May 1, 1984 is $600, after May 1, 1984 $650, includes admission to all sessions, workbook, three lunches, a welcome reception, an informal get-together in the archipelago of Gothenburg and a banquet.

Fees do not include cost of hotelroom, which are relatively inexpensive at this time of the year in Sweden.

You will find Gothenburg, centrally located in Scandinavia, to be a delightful experience in the month of June with a pleasant climate and the sun above the horizon almost around the clock.
Gothenburg has direct flight connections from many European cities as well as from New York. Scandinavia Airlines System is the official carrier.

For further information please write to Spinal Disorders 1984, c/o Dr. Alf L. Nachemson, Department of Orthopaedic Surgery I, Sahlgren Hospital, S-413 45 GOTHENBURG, Sweden.

Order Now...

Biomechanics and Medicine in Swimming
Proceedings of the Fourth International Symposium of Biomechanics in Swimming and the Fifth International Congress in Swimming Medicine
Editors: A. Peter Hollander, Ph.D., Peter A. Huijing, Ph.D., Gert de Groot, Ph.D.

Both bones, tissues, and muscles of athletes of swimming are considered in this comprehensive volume, which will be available in November of this year. Highlighting the book are the keynote addresses by G. Levitt entitled "Swimming: Historical and Scientific Aspects" and by P. A. Huijing, "Swimming: Muscle Mechanics and G. de Groot on "Swimming: Spectroscopy of Training in Swimming: An Editorial." In addition, 45 papers are grouped into the following topical areas:

- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview
- Swimming: An Overview

ORDER FORM

Biomechanics and Medicine in Swimming will be available in November. The price is $31.95 in U.S. & Canada (S$6 - 25 foreign).

1. I want to order the volume. My payment is enclosed.
2. I want to order the volume. At the time of publication, place my credit card type below and indicate the amount of publication. (Visa or MasterCard will be accepted as well as money orders)

Return to: Human Kinetics Publishers, Inc. Box 5076, Champaign, IL 61820

COLLECTED PAPERS ON SPORTS BIOMECHANICS

Edited by Graeme A. Wood
University of Western Australia

During July-August of 1981 a group of eminent sports biomechanists was invited to Australia to present a series of lectures, seminars and workshops on the application of mechanics to the study of human movement, with special emphasis on sports technique. This book contains much of the resource material upon which these addresses were based.

Contents:

- The Influence of Muscle Fiber Composition on Mechanical Aspects of Muscle Function, by Paeo V. Komi.
- Genetic and Environmental Factors Influencing Physical Performance, by Paeo V. Komi.
- The Load on the Lower Extremity in Selected Sports Activities, by Jan P. C. Ceelen.
- Biomechanical Considerations in Lower Extremity Amputee Running and Sports Performance, by Doris L. Miller.
- A System for the Qualitative Analysis of Motor Skills, by James G. Bay.
- The Morphology and Biomechanics of the Swimmer, by Jan P. C. Ceelen.
- Life Saving Releascs: Instruction, Research and Application, by Doris L. Miller.
- Biomechanical and Morphological Aspects of Waterpolo, by Jan P. C. Ceelen.

For the Department of Human Movement Studies, University of Western Australia, Nedlands, Western Australia, 6009. Please send copies of "Collected Papers on Sports Biomechanics" to: (a) (institution) (address) (country/zip)

A cheque for the value of $ (US$15 per copy), made payable to the University of Western Australia, Sports Biomech. Account # 517290, is enclosed.
**KISTLER-BiomeCoS** – a professional computer system for biomechanics

**Instant video monitoring no waiting for display**
An automatic and instant precision video graphics display makes monitoring easy and eliminates the need for compiling unnecessary data. Real time processing and instant display allow efficient work at a speed hitherto unknown in such systems. Hardcopies and display of additional parameters as well as zooming in on details are available through single keystroke commands thus offering a comfort far beyond the capabilities of a digital storage oscilloscope.

**Fast data acquisition with automatic trigger**
Up to 16,000 measurement data per second can be acquired with less than 0.05% error. With one force plate this corresponds to 2000 force vectors, points of force application and torques per second. Pretriggering works from any of the 3 force components and does not require external triggering devices, a great advantage in applications such as gait analysis and sports. The system therefore offers the features of a sophisticated transient recorder as well.

**Easy to operate and user friendly**
No specialized computer knowledge is required to learn how to operate BiomeCoS within a few minutes. The charge amplifiers and interface electronics are completely remote controlled by the computer. Most tasks are initiated by a single keystroke. A self-explanatory query guides the user and makes setting the measurement parameters and display functions straightforward. Zero-offset correction, range selection and internal calibration are automatically performed in real time, unnoticed by the user.

**Large storage capacity yet fully mobile**
A rugged, sealed and field proven Winchester hard disk offers ample capacity to store and retrieve large amounts of data in seconds without annoying waiting times. Measurements can be taken in at a rapid rate by the dozens and are automatically stored in negligible time. Through a high density flexible disk drive data may be quickly transferred to and from the system. The sturdy and compact unit can easily be carried around.

**Professional scientific computer system**
BiomeCoS is based on the ECLIPSE S/20, the newest generation of scientific 16 bit microcomputers from Data General Corp. It is one of the fastest, most advanced and cost efficient systems available today. The 128 kilobyte memory is expandable to 2 Megabytes, the 5 Megabyte hard disk can be extended to 15 or 50 Megabytes. The floppy disk has 1.2 Megabytes, and a cartridge tape drive is available, too. Professional service for the hardware is assured by Data General's worldwide service organization. The remote controlled charge amplifiers are directly mounted in the computer housing. The KISTLER developed software is optimized in Assembler language and will continuously be upgraded.

**BiomeCoS can keep pace with your future needs**
The system can normally be fitted with one or two 8-channel charge amplifier units and can be used with one or several force plates. Additional data such as EMG, video data, synchronization signals and so on may be fed into the system which in turn can produce digital and analog outputs for various purposes. BiomeCoS is usually powerful enough to serve as the main computer. If need be it can readily communicate with larger units. An IEEE interface is also available as an option. The user may write his own additional programs in FORTRAN V, PASCAL or BASIC. An optional superfast hardware floating point processor may then be useful.

Over 400 KISTLER force plates are used by leading institutions in 30 countries around the world.

Please ask for detailed information.

Systems will be shown at:
IX ISB Congress Waterloo, August 1983

Kistler Instrumente AG
Eulachstrasse 22
CH-8408 Winterthur, Switzerland
Tel (052) 831 1111, Tx 76458, Fax (052) 25 72 00