

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 it's members. The third President, Paavo Komi, was responsible for the organisational 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, Plank 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 laboratories and research groups.

I personally am very proud to be the President of the International Society of Biomechanics, a steadily growing and improving international research society. I hope that we will have success in our program as well as satisfaction and that we can improve the knowledge and understanding in biomechanics.

Benno N. Nigg
President of ISB



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 countries, enjoyed hot, sunny Alberta weather along with two days of scientific presentations and discussion. Four presentations, each one initiating 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 measurements, while Dr. Ned Frederick examined efficiency of running through physiological measurements. All four papers reviewed previous work and made suggestions for future directions 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 landing characteristics in order to minimize potential injuries to the runner. Judging from the proportion of papers submitted, few laboratories are currently concerned with research on the types of playing surfaces, and the interaction between shoe soles and type of playing surface. Concern was expressed over injuries occurring due to high frictional coefficients between the two surfaces.

INSTRUCTIONS TO AUTHORS

In order to facilitate the editing of the ISB Newsletter, we would appreciate 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 CAPITAL LETTERS.
- 4° Subtitles should be written *in italics* and/or underlined.
- 5° Different paragraphs should be separated 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 cooperation.

Jan P. CLARYS

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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.

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 I.S.B. 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.

Personel

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 Franecki, M.Sc. Computer Sciences
Janusz Głuchowski, M.Sc. Numerical Methods
Stanisław Kakietek, M.Sc. Computer Sciences
Łukasz Pruski, Ph.D. Mechanical Eng.
Wiesław Szweryn, M.Sc. Electronics
Antoni Trylski, M.Sc. Electronics
Robert Uklanski, M.Sc. Mechanical Eng.
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 7DS 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 disks stations, XY plotter, 4 alphanumeric terminals and 8-channel A/D interface.

The Department also utilizes other institute equipment as:

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

- * package MUSC(FDP) - for simulation multi-joint, multi-muscle systems
- * package SPORT(PDP) - data base management system for collection and processing data concerning fitness level of Polish elite sportsmen
- * 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 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 weight-lifting (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 on-going 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 muscles 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 (Franecki, Komor, Uklanski)
- * methods of computer analysis and optimization of strategies in selected sports disciplines (Franecki, Pruski)
- * development of new interpretative processing co-system for data base management system SPORT (Franecki, Kakietek)

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

- Laboratory of Biomechanics - Prof. Fidelus, Warsaw,
- Laboratory of Biomechanics - Prof. Bober, Wrocław,

- Biomechanical Unit - Prof. Morecki, Warsaw and with laboratories abroad:
- 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 Simulation Studies. Gdansk, Poland, 1980
- Every-year Scientific Conference on the Research Programme 105 "Science for Practice of Sport" ^{x/}
- Every-year ^{x/} 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. Winiarski, J. Wolf, J. Francki, J. Głuchowski; lower row - S. Kakietek, J. Morawski, R. Uklanski, D. Żyt-kiewicz, A. Komor and A. Trylski

Publications

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Some identification problems of structure and control of human movement. Proc. of the Second International CISMIFToMM. Symposium ROMANSY "Theory and Practice of Robot and Manipulators". Ed.: Morecki et al. Warsaw. PWN-Polish Scientific Publishers: 46-61.

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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.

IJSB Editorial 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 judged contribution of the manuscript to the understanding of sport biomechanics. In the case of research reports, the methodology must meet accepted scientific protocol. 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 pertain 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.

IJSB Contents

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

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. (See the 1974 *Publication Manual of the American Psychological Association* [2nd ed.] and the APA Publication Manual Change Sheet 2 [June 1977] on *Guidelines for Nonsexist Language*.) 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 × 11 in. (21.5 × 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 six following type faces: Letter 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.

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Book Review

Exercise and Sport Sciences Reviews, Vol.10, 1982, American College of Sports Medicine Series, The Franklin Institute Press, Penn., 391 p.

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 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 a 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-glucose 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 CABRI



Congress Announcement

1st 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.

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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
Please cut, complete and return the form below as soon as possible

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.

(Please print in block letters)

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

The 17th Annual Emerald City Sports
Medicine and Conditioning Seminar,
March 16 and 17, 1984, Seattle Sheraton
Hotel, Seattle, Washington.

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**



Address for abstracts/further information:

R. D. G. Webb
Technical Chairman
Toronto '84
P.O. Box 1085, 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

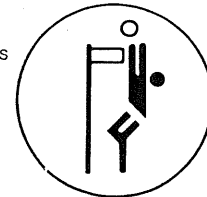
All publicity will be advertised in the 4 issues.

**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

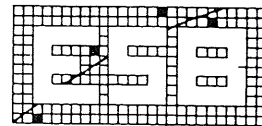
16 — 19 APRIL, 1984,
Free University Amsterdam
The Netherlands

**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: (083) 3 32 55
Telex: 74796 lecd ch
Bank: Swiss Credit Bank, CH-7270 Davos, Switzerland,
Acct. No. 464.421-01 «ESB Conference 1984»

1984 Olympic Scientific Congress
United States Organizing Committee
1479 Moss Street • Eugene, OR 97403



Sport • Health • Well-Being

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 Sports 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.
Sports and Its Effect Upon Work and Activities of Daily Living Movement Patterns.

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,

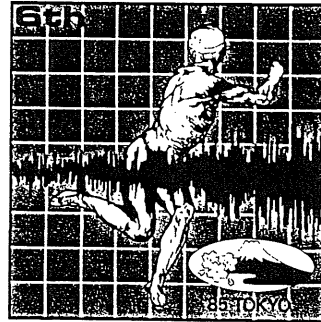
Marlene Adrian
Commissioner for Biomechanics
1984 Olympic Scientific Congress
Scientific Program Commission
Washington State University
Pullman, WA 99164-1512



6th CONGRESS OF
INTERNATIONAL SOCIETY OF
ELECTROPHYSIOLOGICAL
KINESIOLOGY

第6回国際電気生理動作学会

AUGUST 26-29, 1985, TOKYO



CONGRESS OF

isek

Congress Chairman's WELCOME

The 6th Congress of International Society of Electrophysiological Kinesiology is to be held at the Nippon Press Center Hall, Tokyo on August 26 through 29, 1985.

The Congress will be a large-scale scientific meeting mainly aiming at research of Kinesiology from the standpoint of fast growing electro physiological kinesiology. Since the 1st Meeting held in Montreal, Canada in 1968, the congresses of Electrophysiological Kinesiology have contributed internationally to the advancement of this field of science. Moreover, it is my pleasure to inform you that, thanks to the members, The Far East meeting held in Tokyo, Japan in September 1981 was concluded very successfully.

Since Electrophysiological Kinesiology is covered by a wide range of scientific fields, its research scientists are from various fields such as medicine, engineering, electricity, physiology, biology, etc. There are many subjects to be discussed; for example, the theory, principle of each apparatus and its operational method, evaluation of analyzed results, clinical application, etc. I believe that this congress will provide the research scientists meeting under the same roof with important and significant opportunities to exchange their views on the aforementioned subjects.

I sincerely hope that many research scientists from many parts of the world will participate in this congress to make it successful.

Tadaatsu Ito

Tadaatsu Ito, M.D.
Congress Chairman

SECRETARIAT

6th CONGRESS OF ISEK

c/o Japan Convention Services, Inc.
Nippon Press Center Bldg.
2-2-1, Uchisaiwai-cho, Chiyoda-ku,
Tokyo 100, Japan

〒100 東京都千代田区内幸町2-2-1

日本プレスセンタービル

日本コンベンションサービス株式会社内

第6回国際電気生理動作学会事務局 行

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9 th. 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 Fridolia SCHAEFFER from Calgary. His award was presented by the President of the Canadian Society of the Canadian 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 wellknown 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 Irtam, 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 Terenius, 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 Irtam, 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

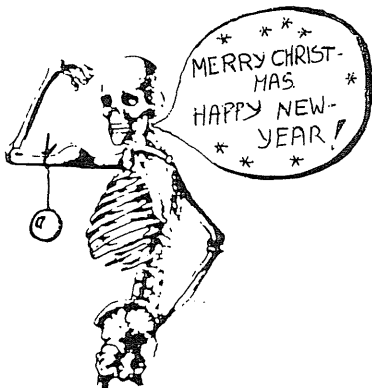
The registration fee paid before May 1, 1984 is \$ 600, after May 1, 1984 S 650, includes admission to all sessions, workbook, three lunches, a welcome reception, an informal get-together in the archipelago of Gothenburg and a banquet.

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. Huijling, Ph.D.
Gert de Groot, Ph.D.

Both biomechanical and medical aspects of swimming are considered in this comprehensive volume which will be available in November of this year. Highlighting the book are the keynote address by L. Lewulis entitled "Research in Swimming: Historical and Scientific Aspects" and a contribution by P. A. Huijling, A. P. Hollander, and G. de Groot on "Efficiency and Specificity of Training in Swimming: An Editorial." In addition, 47 papers are grouped into the following topical areas:

- Medical Aspects
- Basic Swimming
- Methodology and Methods
- Electromyographic
- Propulsion, Drag, and Efficiency
- Oxygen Consumption, Metabolism and Training Effects
- Temperature Regulation, Prolonged Swimming
- Performance and Technique

Biomechanics and Medicine in Swimming is Volume 14 in the "International Series on Sport Sciences," Richard C. Nelson, Ph.D. and Chauncey A. Morehouse, Ph.D., Series Editors. Available November 1983.

ORDER FORM

Biomechanics and Medicine in Swimming will be available in November. The price is \$31.95-U.S. & Canada (\$38.25-Foreign).

- I want to order the volume. My payment in U.S. funds is enclosed.
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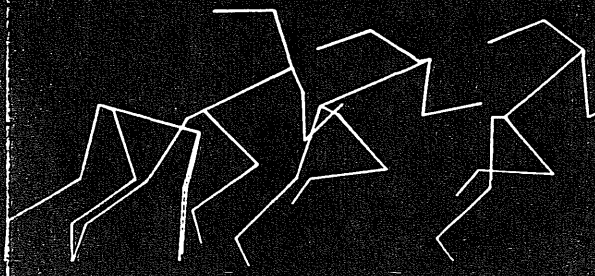
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COLLECTED PAPERS ON SPORTS BIOMECHANICS

Edited by
Graeme A. Wood

University of Western Australia



Collected Papers on SPORTS BIOMECHANICS

Edited by Graeme A. Wood,
University of Western Australia.

ISBN # 0 909751 80 3
230 pages; 14 tables
83 illustrations.

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 those addresses were based.

Contents:

Biomechanics of Sport: An Overview, by James G. Hay.

The Influence of Muscle Fiber Composition on Mechanical Aspects of Muscle Function, by Paavo V. Komi.

Genetic and Environmental Factors Influencing Physical Performance, by Paavo V. Komi.

The Load on the Lower Extremity in Selected Sports Activities, by Benno M. Nigg.

Biomechanical Considerations in Lower Extremity Amputee Running and Sports Performance, by Doris I. Miller.

A System for the Qualitative Analysis of Motor Skills, by James G. Hay.

An Analysis of Skill Acquisition in Swimming, by Robert E. Schleihauf, Jr.

The Morphology and Kinesiology of the Swimmer, by Jan P. Clarys.

Swimming Propulsion: A Hydrodynamic Approach, by Robert E. Schleihauf, Jr.

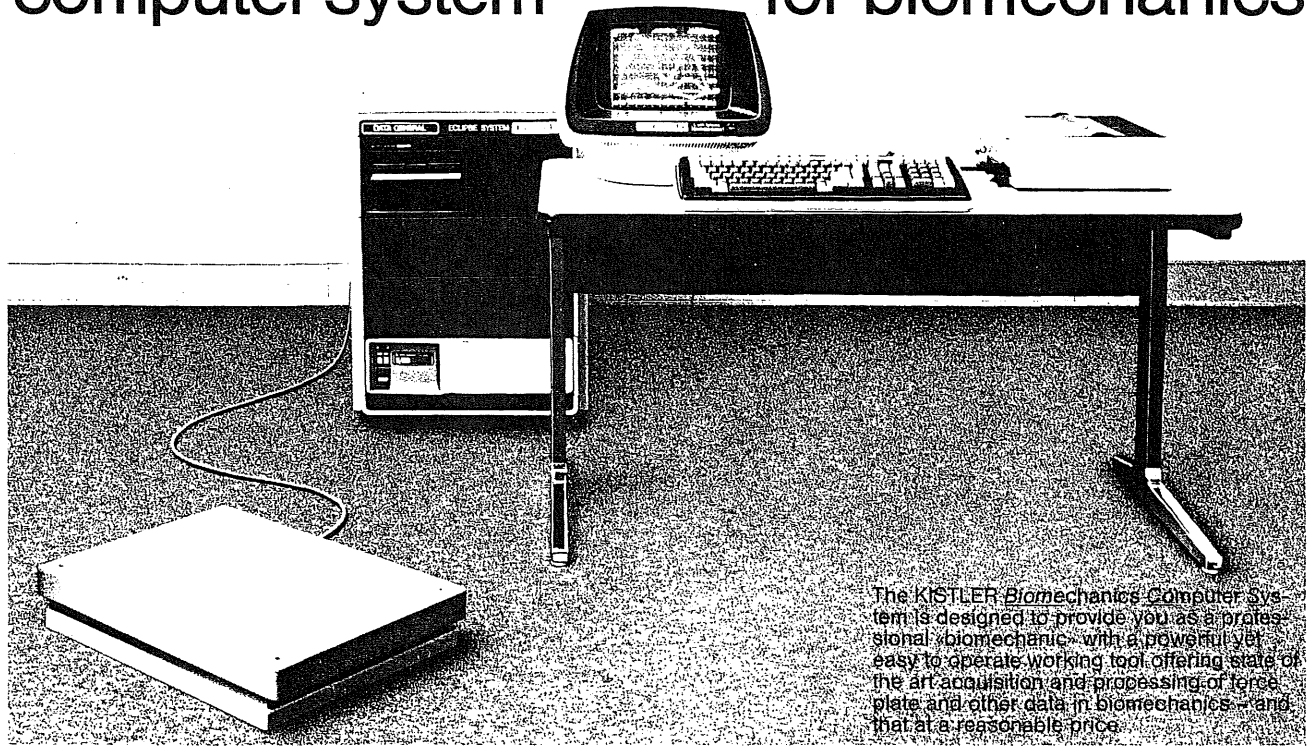
Life Saving Releases: Instruction, Research and Application, by Doris I. Miller.

Biomechanical and Morphological Aspects of Waterpolo, by Jan P. Clarys.

To: The Department of Human Movement Studies, University of Western Australia, Nedlands, Western Australia, 6009.
 Please send ___ copies of "Collected papers on Sports Biomechanics":
 to: _____ (name)
 _____ (institution)
 _____ (address)
 _____ (country/zip)

A cheque to the value of \$___ (\$A15 per copy), made payable to the University of Western Australia, Sports Biomech. Account # 31.3295 is enclosed.

KISTLER-*BiomeCoS* – a professional computer system for biomechanics



The KISTLER *Biomechanics Computer System* is designed to provide you as a professional biomechanic with a powerful yet easy to operate working tool offering state of the art acquisition and processing of force plate and other data in biomechanics – and that at a reasonable price.

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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

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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

Piezo-Instrumentation

KISTLER

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Tel (052) 83 11 11, Tx 76458, Fax (052) 25 72 00

