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MEDICAL PHYSICS WORLD

Bulletin of the International Organization for Medical Physics

Adhering National Organizations 1996

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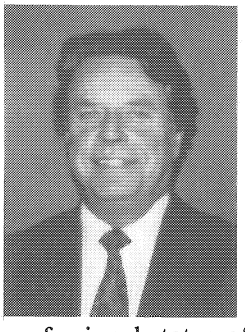
President's Message



Dear Fellow Member of IOMP,

Twelve months after this letter is being written (and even less when it is being read!), we will hopefully meet in Nice at the World Congress. I hope our members in the Northern Hemisphere have enjoyed a relaxing summer holiday and wish those in the Southern Hemisphere a similar happy time in the near future.

This letter is shorter than usual to allow space for an important letter to be reproduced which should assist professional recognition of our members, particularly those in some Developing Countries. At the Rio Conference, the problem of achieving recognition of the professional status of Medical Physicists was a recurrent theme, particularly among Developing Countries. Evidently, a major source of difficulties was that the profession 'Medical Physicists' is not specifically identified in the International Standard Classification of Occupations (ISCO-88), published in 1988 by the International Labour Office (ILO). Consequently, this issue was identified for action in the communication with the ILO, the Director of the Bureau of Statistics recorded the intention of the ILO to include the profession as a separate category in a future edition of ISCO. Publication of the next version of ISCO is a major and time-consuming task and is not immediately imminent. Consequently, the letter from the Director expressing ILO's intent provides a clear statement that can be used now. A copy will be sent to the President's of national societies but can also be obtained by individual members from the Secretary-General of IOMP. I hope it will prove of assistance.

Dear Professor Boddy 28 August 1996

Your letter of 21 August 1996 and its attachments have been examined with great interest by our specialist in occupational classification at the ILO Bureau of Statistics.

Indeed, the profession *Medical Physicist* is not explicitly mentioned in ISCO-88, though it would, in principle, be covered by *occupational code 2229 Health professionals (except nursing) not elsewhere classified.*

Given the importance of the profession of *Medical Physicist,* pointed out in your letter, the ILO Bureau of Statistics has the intention to include this profession as a separate category in a future edition of ISCO, following an in-depth examination of the issue. We may need further information from your organization, in particular concerning the level of qualifications required to practice this profession. Meanwhile, we shall circulate to a selected number of national experts, for comments, the draft occupational title and description of tasks and duties, submitted with your letter. We shall then proceed with an analysis of the results in the course of 1997.

I thank you for your concern in improving the ILO International Standard Classification of Occupations.

With best regards.

Yours sincerely,
Farhad Mehran, Director,
Bureau of Statistics
International Labour Office
4 route des Morillons
CH-1211 GENEVE 22

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Table of Contents

Secretary-General's Report

New Members

The Ecuadorian Association of Medical Physics, and the Association Marocaine de Physique Medicale have applied to be members of the IOMP. The Officers of the IOMP have with great pleasure approved the applications. The applications will be presented to the IOMP Council during the Nice meeting in 1997 for ratification.

Nice Meeting 1997

I have been informed by Dr. P. Aletti (IOMP-Chairman of the Organizing Committee) and Dr. J. C. Rosenwald (IOMP-Chairman of the Scientific Committee) that the preparations are successful. About 100 topics have been identified in Medical Physics and Biomedical Engineering. Each topic will be dealt with in 3-4 sessions. Each session starts with an invited speaker. The rest of the time is filled up by proffered papers. The deadline for submission of abstracts is February 1997. It is estimated that each topic generates as many as 20 papers, and the target therefore is about 2000 papers.

Each topic is organized by a small group which in general consists of an appointee from France and 1-3 colleagues from other countries. I had the pleasure, in connection with a recent scientific conference, to meet with two of these topic groups and could conclude that this structure is functioning well. The congress also includes meetings by five national and international scientific societies inside the congress and in addition at least three other activities (workshops and training courses) either direct before or after the main meeting. Over 3,000 participants can be expected. This congress should certainly be of great interest to you!

New Officers of IOMP 1997

During the congress the Council of the IOMP should meet. One important task is to elect a new Vice-President and Secretary-General. The National societies have recently (September 1996) been asked to suggest nominees to the President of IOMP who is chairing the nominating committee. Still, when this *MPW* issue reaches you, it is possible to make suggestions. The bylaws of the IOMP states:

> "The purpose of the Nominating Committee is not to inhibit the Delegates' choice of Officers but to ensure that suitable nominations are made by individuals or national bodies, that those nominated are willing to stand and, if too many nominations should be made, to act as a preliminary filter. The Committee shall put forward (with the consent of the nominees) not less than two names nor more than four for each of the two offices of Vice-President and Secretary-General.
>
> All nominees should be known internationally for the distinction in the field, for the organizing ability, and for their ability to serve as Officers for two terms. The nominees should preferably cover a range of nationalities."

New Directory

A new directory was send out during the Spring 1996. This directory is based on questionnaires at different occasions in 1995. It is of great importance for the IOMP that the directory is up-dated continuously. Please keep me informed on changes in your society.

Hans Svensson, Ph.D.
Secretary-General, IOMP

Continued from page 1

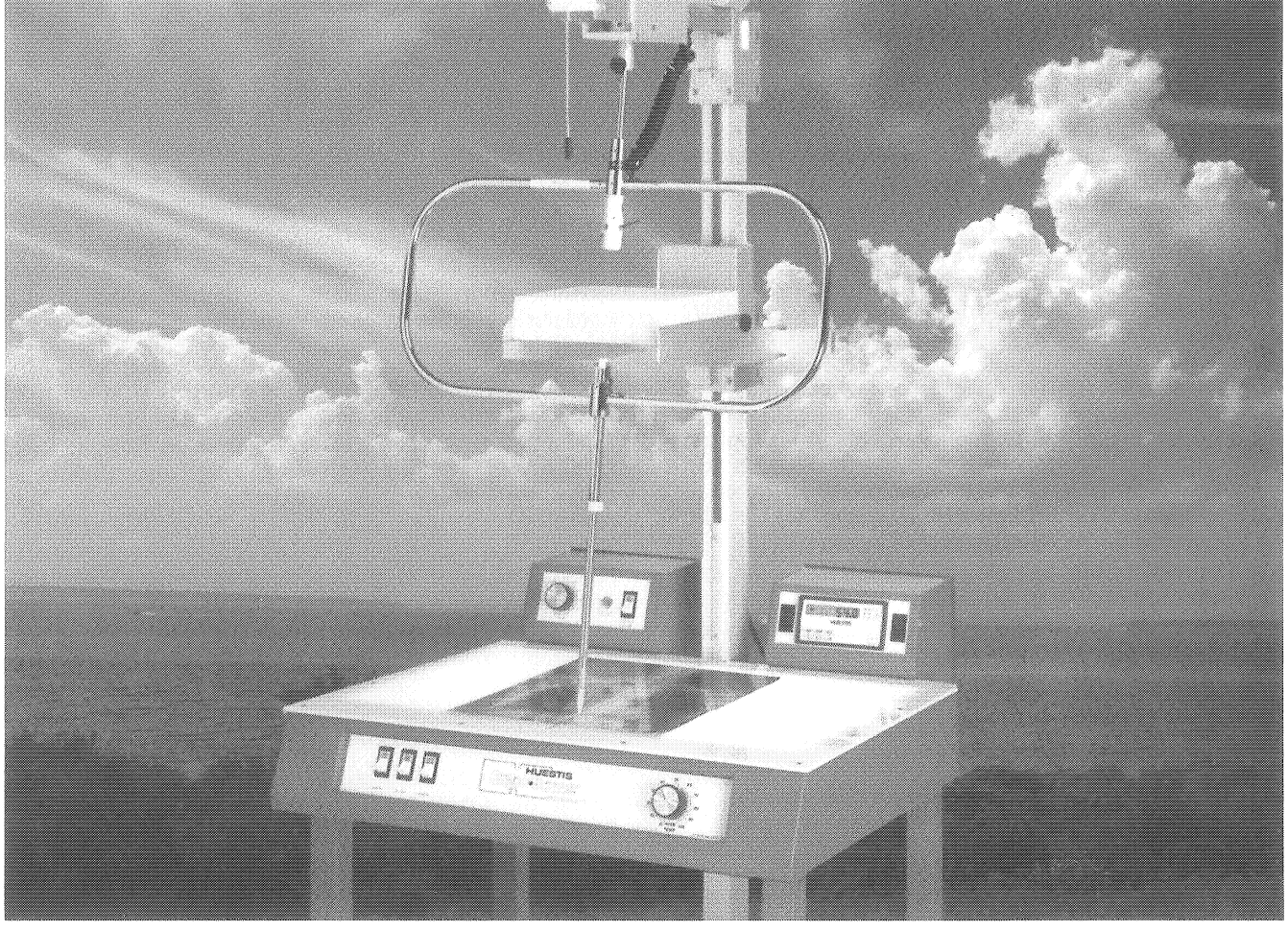
The Group, chaired by the Vice-President, continues its struggles to raise funding amid world-wide nadir of resources. A special plea has been sunbitted to two national organizations in the UK for financial assistance to provide a partial contribution, for at least, some members from Developing Countries to facilitate their participation in the World Congress. Even if successful, our resources will still be very limited but we will do what we can. Any application for assistance, endorsed and prioritized by the national organization, should be 'pump-priming' or 'topping-up' in its nature as only modest partial support is likely to be available.

In the meantime, I send you very best wishes for the festive season and, particularly, a very Happy New Year during which I hope to see you in Nice.

Keith Boddy, D.Sc.
President, IOMP

Officers and Council of the IOMP

IOMP correspondence should be addressed to Dr. Keith Boddy and Dr. Hans Svensson. Advertising Information should be addressed to Dr. Ali Meigooni. Events Information should be Addressed to Dr. Geoffrey Ibbott. Medical Physics World correspondence should be addressed to Dr. Azam Niroomand-Rad or Dr. Rodica Alecu.



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Honorary Treasurers Report

Perhaps I should have bought 20 UK national lottery or scratch card tickets this year instead of wasting time, energy and money on postage stamps writing what I believed to be persuasive letters to 75 companies requesting assistance for IOMP. The result might have been both more exciting and rewarding. I had hoped to boost the IOMP coffers just a little to assist physicists from the developing countries to participate in the World Congress on Medical Physics and Biomedical Engineering in Nice in 1997, but sadly to little or no avail. They obviously do not consider us to be a worthy cause!!!

"You don't approve of your Treasurer gambling" I hear you say, well what is the difference between that and throwing good money away on postage stamps eh! Perhaps I should propose a motion along these lines for adoption in Nice — I would be interested to know what odds you would give me on succeeding. I might even put a small personal wager on with William Hill (UK bookmaker who will allow bets on the most unlikeliest of events!!!)

Now to more serious matters, the joint IOMP (UK and USA) balance sheet as at 30 September 1996 stood at US $42,080, see below for details.

Summary of IOMP Accounts as of 30th September 1996 (US$)

Item	Balance	Comments
UK Account	$19,930	of which $7,460 is held on Deposit Account
USA Account	$22,150	excluding a loan of $15,000 made to Societe des Electriciens et des Electroniciens to support the World Congress in Nice in 1997
Expected Income -	($ 7,150)	Outstanding subscriptions for 1996 from Country and Corporate members which amounts to around 25% of expected total income.
TOTAL	($49,230)	

Summary of major contributors and expenditures during the year 1st October 1995 - 30th September 1996

Item	Income	Expenditure	Comments
IUPEM		$3,770	Membership Fees
Journals		$4,125	Support of Libraries in the Developing Countries Programme
Training Course		$6,450	Training courses for the following countries: Turkey, South Africa, Italy and Morocco
Corporate Members	$ 6,235		Donations and Subscriptions
Country Members	$16,508		Subscriptions

Subscription fees have been received from a total of 35 countries and a reminder has now been sent to the 22 countries who have yet to renew their membership. This year we have a total of 14 Corporate Members who continue to support the activities of the IOMP and its work for the developing countries. These members are:

Gammex/RMI Wisconsin, USA
IOP Publishing Ltd., UK
Keithley Instruments Inc., USA
Magnox Electric plc., UK (formerly Nuclear Electric plc., UK
Med-Tech
Medical Physics Publishing, USA
Multidata Systems International Corporation, USA
Neutron Products Inc., USA
Nuclear Associates, USA
Nucletron Corporation, USA
Theratronics International Ltd., Canada
TSG Integrations, India
United Kingdom Nirex Ltd., UK
Varian Medical Equipment Mktg., USA

and without their valued assistance the two main activities of supporting the libraries and the training courses held in various countries as well as assisting delegates to attend conferences both in their own countries and overseas, would be very much poorer.

Delegates from the developing countries who are seeking financial support to attend the World Congress in Nice in 1997 must first complete an application form (available from myself or Hans Svensson), which must then be submitted to their national association for approval. Where several applications are received from any one country the national association will be asked to prioritise these applications before submitting them to myself. Completed application forms should be with me by 31 December 1996 and there after a panel of IOMP officers will decide on merit which applicants to support. This of course will be very much dependent on the finances the IOMP has at its disposal at that time. I shall endeavour to inform applicants of the outcome by around 20th February 1997 or earlier if possible.

Dr. Azam Niromand-Rad continues to work hard on behalf of IOMP by attracting sufficient advertising to *Medical Physics World* to support the cost of its publication and distribution around the world.

TWINNING

Applications for twinning have been received from the following centres or hospitals:

Developing Countries:

Juan P. Garratian Paediatric Hospital, Buenos Aires, Argentina
S. N. Medical College, Agra, India
NIMTS Hospital, Athens, Greece
Tanzania Tumor Centre, Dar-es Salam, Tanzania
Mohan Da Oswal Cancer Treatment & Research Foundation, Ludhiana, India
Institute Rotary Cancer Hospital, Ansari, Nagar, New Delhi, India
St. Stephens Hospital, Tiz Hazari, Delhi, India
Dakshin Kesari Muni Mishrilaji Maharaj, Aurangabad, India
AAMP, Algeria
Division of Radiation Oncology, Bangkok, Thailand

Developed Countries

St. James Hospital, Dublin, Ireland

except a completed questionnaire is still awaited from the last five centres.

As you can see I need more applications from the developed countries before this programme can be launched. So if you would like to be twinned with any of the above named centres or wish to join the programme then Twinning Programme Questionnaires and additional information can be obtained directly from myself. I look forward to hearing from you.

Ann Dixon-Brown
Treasurer, IOMP

IOMP Libraries Program Report

Since the last issue of *Medical Physics World,* we have added new libraries in the following cities: Ludhiana, India; Montego Bay, Jamaica; Wroclaw, Poland; and Dalat, Vietnam. Additionally, library questionnaires are now in process for Ankara, Turkey, and Rabat, Morocco. A very special welcome to all of these libraries.

I would like to make a very special thanks to all of the individual donors to this program. In order to support the large number of participating libraries, it takes a continual supply of resource materials. We could not possibly have succeeded as we have if it weren't for the many, many individual donors. These professionals have not only donated some wonderful resources, but they have laboriously packaged and shipped their donations during their valuable personal time. They are the backbone of the supply end of this program and should be highly commended for their efforts.

The *Medical Physics* complimentary subscription program through the AAPM is now in place. Shipments of 1996 journals have been sent to 33 libraries, and will be renewed annually, depending on availability. It is anticipated that more donated subscriptions will be recruited in the future. A special thanks to the AAPM, particularly Perry Sprawls and Andrea Hoopes, for its continuing efforts in this program.

At this writing, complete sets of AAPM Publications are being packaged and shipped to 29 libraries who have never received these sets in the past. This is the third time that AAPM has so generously approved such a donation. A big thanks should go to the AAPM.

If you are interested in creating a new regional library, please let me know. You will be provided with a questionnaire which should be completed and returned to me in order to initiate a library. Since we do not have unlimited donations, you are encouraged to develop a regional library whereby the medical physicists in your region can equally access the materials.

Catherine Alckhteyar, MS
Curator, IOMP/AAPM Libraries Program

Calendar of Events

2-6 June 1997: Second International Workshop on Electron and Photon Transport Theory Applied to Radiation Dose Calculation, Seattle Washington, (David Jette, Lanzl Institute, 3600 15th Avenue, W., Seattle, WA 98119, [Tel: 206-286-0241, Fax: 206-286-0231, E-mail: dave@lanzl.com, www: http://sequoia.lanzl.com/secondworkshop]).

16-20 June 1997: AAPM/IOMP International Scientific Exchange Course/Workshop, Co-sponsored by the Cancer Research Center, Academy of Medical Physics of Russia, Moscow, Russia, (Azam Niroomand-Rad, Chair, ISEP, Georgetown University, Washington, DC, [Tel: 202-784-3320, Fax: 202-784-3323] or Valery Kostylov, President, AFM of Russia, Cancer Research Center, 24 Kashirskoe Shosse, Moscow, Russia, [Fax: 095-324-10-44]).

27-31 July 1997: 39th Annual Meeting, American Association of Physicists in Medicine, Milwaukee, WI, (Lisa Rose Sullivan, Projects Manager, AAPM, One Physics Ellipse, College Park, MD 20740-3846, USA, [Tel: 301-209-3350, Fax: 301-209-0862]).

14-19 September 1997: 11th Triennial Conference, International Organization for Medical Physics, Nice France, (Prof. H. Svensson, Radiation Physics Department, University Hospital, 90185 Umea, Sweden, [Tel: 46-90-103891, Fax: 46-90-101588]) and **World Congress on Medical Physics and Biomedical Engineering,** Nice, France, (NICE '97, SEE, 48, rue de la Procession, F-75724 Paris Cedex 15, France, [Tel: 33-1-44496060, Fax: 33-1-44496044, E-mail: nice97@univ-paris12.fr]).

Effective Dose and Equivalent Dose Are Unnecessary

Radiation protection quantities, effective dose and equivalent dose were developed after World War II. They seemed reasonable at the time they were defined. However, with the wisdom of hindsight, it is clear that their only use is for bureaucractic purposes to control radiation exposures, originally to radiation workers and later to both workers and the public. It is clear that neither quantity is of any use for making a clinical judgment in the case of an over-exposure. The attending physician would base clinical decisions on patient symptoms and laboratory studies.

Both quantities have undergone minor changes in their names and definitions. Dose equivalent became Equivalent dose and the name and symbol of the biological constant to calculate it changed from Quality Factor (Q) to Radiation Weighting Factor (WR). Effective dose equivalent became Effective dose and continued to use the Tissue Weighting Factor (WT) but the values of the WT changed. The lack of scientific validity for both quantities is demonstrated in NCRP reports.

In 1990 NCRP Report 104 on Relative Biological Effectiveness of Radiation of Different Quality was intended to improve the value of Q (now WR) by reviewing RBE values in the scientific literature. The committee concluded that it was not possible to give a value for Q (now WR) because of the wide range of experimental results. It recommended choosing an appropriate value. Three years later NCRP Report 116 (1993) continued to use equivalent dose with the old Q values re-labeled WR values, even though NCRP Report 104 stated that Q (now WR) values could not be determined.

The NCRP did not assign a committee to evaluate the scientific validity of tissue weighting factors. However, ICRP published modified values of WT in 1991 when they changed the name of the quantity to effective dose. The changes in WT do not seem extreme but they had a significant effect in calculating the Effective dose based on a dosimeter worn at the neck outside of a protective apron for persons doing fluoroscopy. NCRP Report 122 (1996) explains how to calculate both the effective dose equivalent (using its 1977 WT values) and the Effective dose using its 1991 WT values. In the first case you divide the badge reading in Sv by 5.6 and in the second case you divide it by 22. There is a decrease of 375% from 1977 to 1991! Since Effective dose equivalent and Effective dose are both estimates of radiation risk, a difference of 375% suggests a significant error in one or both sets of WT values.

NCRP Lecture No. 15 (1992) When is a Dose Not a Dose by Victor Bond points out that radiation protection is a public health concern. Radiation risk can only be calculated on the basis of epidemiological studies. Risks for a population cannot be used to estimate risks to an individual because of the large variability among humans. He also recommends the use of collective imparted energy as the appropriate quantity for the measurement of this risk. Based on the increase of cancer among a-bomb survivors with doses greater than 0.5 Gy, he shows that a collective imparted energy of about 3.5kJ is necessary to induce one fatal cancer. This is about ten times greater than the LD-50 imparted energy. A-bomb survivors with doses less than 0.5 Gy did not show statistically significant increase in cancer.

Unfortunately it will be difficult to eliminate these radiation protection quantities. However, scientists in radiation protection should be aware that they represent poor science.

John Cameron, Ph.D.
Univ. of Wisconsin-Madison

Vice-President's Report

Firstly, let me congratulate the medical physics societies of Ecuador and Morocco on their election to IOMP membership (see Secretary-General's Report). Welcome.

Our colleagues from Morocco are already off to a fast start as IOMP Members having hosted an IOMP/AAPM regional medical physics workshop, September 30-October 4, 1996, in Rabat, which I am informed was a great success. Another meeting partly sponsored by the IOMP was the Seminar on Quality Control and Quality Assurance held in Lusaka, Zambia. The IOMP was represented at this meeting by Prof. Andries van Aswegen, South Africa. We are indebted to Prof. van Aswegen for devoting his valuable time and energies to this worthy event. His report appears elsewhere in this issue. Incidentally, as part of his presentation, he showed a set of slides describing the IOMP and its various activities. If anyone else wishes to borrow this set of slides for presentation at a meeting, I will be pleased to provide them. Another IOMP-sponsored workshop is being planned for Islamabad, Pakistan, next March 15-18 on the topic of Radiotherapy Physics.

In my last Vice-President's Message, I asked for help to develop an IOMP Home Page for the Internet. Several people have offered their support and I am especially pleased to acknowledge the significant efforts of Dr. Kwan Hoong Ng, Malaysia, who has initiated the development of an Electronic Medical Physics World (EMPW), which will serve as the WWW Home Page of the IOMP. Prof. John Cameron, past Secretary-General of the IOMP, has agreed to be the Honorary Editor of our Home Page. For those readers able to access the WWW, I urge you to visit our Home Page at:

http://www.biostat.wisc.edu/medphys/empw/epmw.html

Even though this is still in the early stages of development, I think you will be impressed. Congratulations Kwan and many thanks to the University of Wisconsin, Madison, for offering to be our host computer center.

Finally, I hope that many of you will be making plans to participate in our World Congress next September. I look forward to seeing you there.

Colin G. Orton, Ph.D.
Vice-President, IOMP

Medical Physics On the Internet
Medical Physics Books and Journals On-Line

More information is becoming available on the internet everyday. More medical physicists are obtaining e-mail service and more "home pages" are beging established. For those not familiar with internet terminology, a "home page" is much more than a "page." It can contain a great deal of useful information. For example a new home page at the University of Wisconsin-Madison is *"Medical Physics Books and Journals."* Its address is http://www.biostat.wisc.edu/medphys/mpbj.html. It is a Bibliography of Books and Journals in Print in Medical Physics and Related Fields. It is an electronic successor to the bibliography published by Medical Physics Publishing (MPP) for some years. The new version is much less expensive to produce and maintain. At present it will only be available electronically but anyone with internet service can download and print any or all of the bibliography. This service will be maintained with donated funds at the University of Wisconsin Department of Medical Physics. The "Page Managers" are Prof. John Cameron of the University of Wisconsin (e-mail:jrcamero@facstaff.wisc.edu) and Assoc. Prof. Kwan-Hoong Ng from the University of Malaya, currently at the University of Wisconsin (e-mail: kngl@facstaff.wisc.edu).

Prof. Cameron, Univ. of Wisconsin-Madison

REQUEST FOR SUPPORT

INTERNATIONAL SCIENTIFIC EXCHANGE PROGRAM

THE PHYSICS OF RADIATION THERAPY
Moscow, Russia — June 16-20, 1997

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E-mail: gorl@gorl.msk.su

IUPESM Award of Merit

IOMP and IFMBE members at large may not be aware of the IUPESM Award of Merit which is being given to a distinguished Medical Physicist or Biomedical Engineer once in every three years at the time of World Congresses. The first award was given to Prof. John Mallard of the U.K. during the 1988 World Conference at San Antonio, Texas, U.S.A. The next recipients were Dr. J. A. Hopps (Canada) during the 1991 at Kyoto, Japan and Prof. Rune Walstam (Sweden) in 1994 at Rio de Janerio, Brazil. Nominations are solicited for the awardees during the forthcoming 1997 World Congress at Nice, France. Two Merit Awards will be given. Henceforth, one for Medical Physicist and the other for a Biomedical Engineer.

The primary criteria for nominating an Awardee are:

1. The nominee should have exerted a significant impact upon the science and scientific practice of Medical Physics or Biomedical Engineering.
2. The nominee has significantly influenced the development of the profession of Medical Physics or Biomedical Engineering, and
3. The nominee's activities in national and/or international organization for Medical Physics or Biomedical Engineering have been meritorious.

The award will consist of a plaque and expenses to travel to the World Congress to present an address.

Members of IOMP and IFMBE affiliated countries may send nominations through Secretary/President of their National Societies to the addresses given below. Each nomination should accompany a Curriculum Vitae not exceeding five typed pages and prepared with special attention to the criteria mentioned above.

For Medical Physics
Prof. John Cameron
2571 Porter Road
P.O. Box 405
Lone Rock, WI 53556, U.S.A.
Fax: 608-262-2413

For Biomedical Engineering
Prof. Jean P. Morucci
INSERM Unit 35
Biomedical Technology Research & Industrial Transfer
Hotel Dieu, 31052
TOULOUSE, Cedex, FRANCE

The nominations should reach the above indicated persons as soon as possible.

Udipi Madhvanath
Chairman, IUPESM Award of Merit Committee

MEDICAL PHYSICS WORLD

BULLETIN OF THE INTERNATIONAL ORGANIZATION FOR MEDICAL PHYSICS

PUBLISHED FOR IOMP

EDITORIAL COVERAGE

- Information exchange between medical physicists worldwide, including IOMP member nations.
- Reviews of medical physic national organizations and activities.
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- Comprehensive Calendar of Events in the International Medical Physics Community.
- Reports from IOMP Officers, Committees, etc.
- Technical reports and advertisements.

CIRCULATION

- Distributed to all medical physicists in the 64 IOMP member nations plus over 14 other non-member countries.
- Total circulation 12,500 copies per issue.

News items, calendar events and advertising inquiries should be directed to Azam Niroomand-Rad, Ph.D. at the address below.

Azam Niroomand-Rad, Ph.D., Editor/Medical Physics World
Department of Radiation Medicine, L. L. Bles Bldg., Georgetown University Medical Center
3800 Reservoir Road, N.W., Washington, D.C. 20007 U.S.A.
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Rev. 11/96

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Medical Physics World

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December Issue: October 1st 1997

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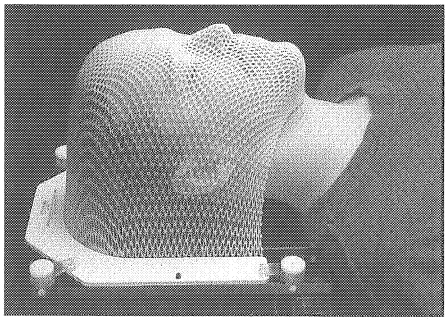

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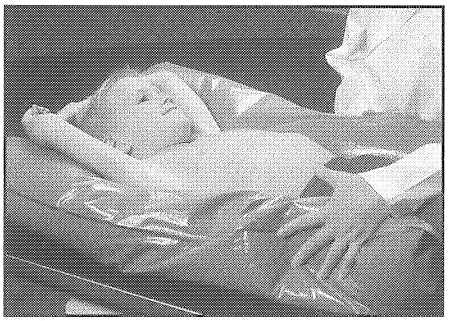

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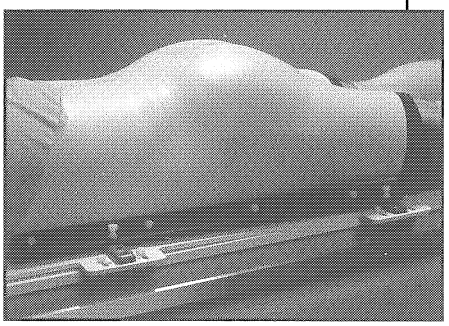

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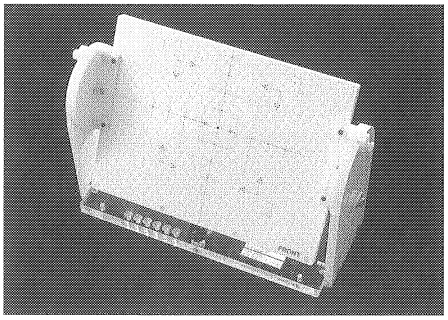

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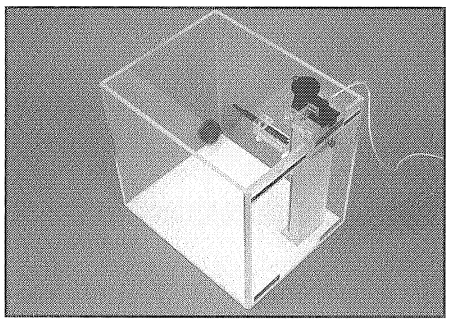

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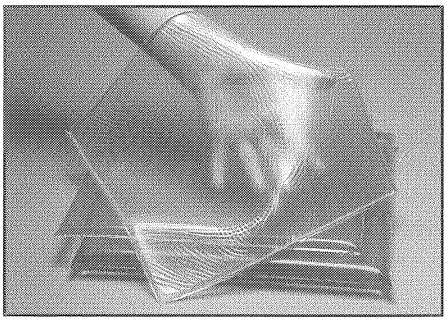

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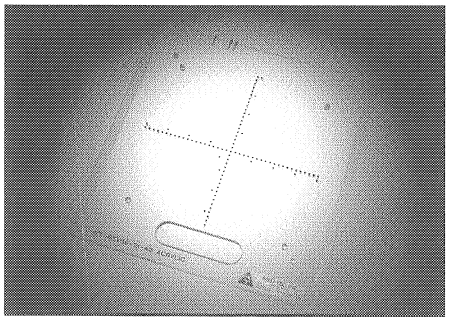

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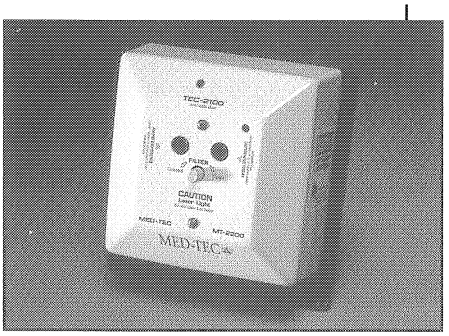

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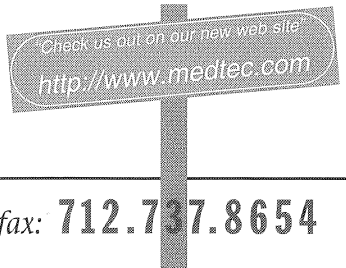

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Report From AAPM International Scientific Exchange Programs

Course/Workshop in Morocco
September 30 - October 4, 1996

The fifth* AAPM Scientific Exchange Course/Workshop in Radiation Therapy Physics was held successfully in Rabat, Morocco during September 30 - October 4, 1996. The Course/Workshop was co-sponsored by the International Organization for Medical Physics (IOMP) Education and Training Committee. The objectives of this course/workshop were to exchange information concerning medical physics profession and to present advanced radiation therapy physics to clinical physicists in Morocco.

This Course/Workshop was offered in collaboration with the Moroccan Association of Medical Physics, AMPM at the National Institute of Oncology in Rabat. Mr. Ahmad Ibn Seddik, President of AMPM, the Host Director and Dr. Bouchaib Rabbani, Consultant for Morocco, organized this Course/Workshop. The AAPM faculty members were: Drs. Leroy Humphries, Faiz Khan, Azam Niroomand-Rad, Bhudatt Paliwal, James Purdy, Bouchaib Rabbani, Nisar Syed, and Theodore Thorson. About 30 medical physicists and radiation oncologists attended this Course/Workshop.

The Course/Workshop also contained chamber calibration. A total of 25 of Khan's books, with author's discount, were also donated to certain physicists and major radiation therapy centers in Morocco. Certificates of Participation were presented to the participants and Certificates od Appreciation were presented to the faculty members. The certificates were signed by Drs. Paliwal, AAPM President, Azam Niroomand-Rad, AAPM ISEP Chair, Keith Boddy, IOMP President, and Mr. Seddik, Host Director.

The local expenses were supported by AMPM, IOMP, local officials, and Host Institution. The travel expenses of the faculty were financed by funds provided by AAPM and vendors. **Corporate Sponsors (+ $1,000)** were CNMC Company, Computerized Medical System, Multidata Systems Int'l Co., and Varian Associates. **Supporters ($500-$999)** were Frank Barker Associates and Nucletron-Oldelft. **Contributors ($100-$499)** was Best Industries, Inc. **Donors (< $100)** was Argus Software. We are grateful to these companies for their generous contributions. We also wish to acknowledge Mr. Seddik's commitment and effort in the past few years in organizing and implementing this Course/Workshop in Morocco as well as the effort of the local organizing committee. We also like to thank the AAPM faculty members for their time and effort in this endeavor.

Azam Niroomand-Rad, Ph.D., Chair
AAPM International Scientific Exchange Programs

*Pakistan (1992), Poland (1993), Iran (1994), Turkey (1995)

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Electronic Medical Physics World - EMPW

The Page Managers for "Medical Physics on Internet" (See Page 8) are forming a new home page to serve medical physicists worldwide, called Electronic Medical Physics World - EMPW. Its internet address is: http://www.biostat.wisc.edu/medphys/empw/empw.html.

The EMPW may eventually be adopted as the IOMP Home Page if IOMP representatives agree at their meeting in Nice, France in September of 1997. EMPW will provide information about the IOMP and all of its affiliated medical physics associations. It will serve as a means of communication of the officers of the IOMP. We hope that it will eventually contain the names and addresses of essentially all medical physicists in the world. It will have links (connections) to many other home pages of interest to medical physicists. It will also give information of how to join list servers of interest to medical physicists.

Medical physicists may submit information to any of the editors of EMPW for inclusion in the appropriate section of the EMPW home page. Medical physicists may submit brief articles and announcements for publication in EMPW. The Commentary section, akin to the extended 'letter to the editor,' welcomes comments or current issues and topics related to medical physics.

We have created a novel educational section in the EMPW called "Ask Your Medical Physicists" where readers are invited to submit concise questions on various topics to our panel of experts. The responses will be posted in the page and archived.

This EMPW is meant as a cooperative project between the editorial staff and the users of the service. Any user who has advice and suggestions for improving the home page should send them to one of the editors. As we have just started, we hope that it will evolve in an orderly and professional manner.

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Report from Moldova Association of Medical Physicists

November 26-28, 1991, G. S. Zakharchenko participated in work first constituet conference of the Association of Medical Physicists of the Soviet Union, which took place in the town of Obninsk (Russia). During March 1992 G. S. Zakharchenko received letter (Feb. 22, 1992) from Physical Society of Russia with suggestion to create Society of Medical Physicists of Moldova, which must be a member of Association of Medical Physicists. This Association must be a regional international organization, which will unite Medical Physicists of independent countries on territory of the former Soviet Union. This Association will undertake to secure the joining of the Society of Medical Physicists of Moldova with the IOMP. In conformity with letter dated March 24, 1992 we organized Moldova Association of Medical Physicists consisting of three members (G.S. Zakharchenko, N. N. Bass and S. S. Rabinovich) and corresponding documents were sent to Moscow to the Bureau of the Association of Medical Physicists. On July 20, 1992 we received a letter from Secretary-General of the IOMP, Colin G. Orton (dated June 29, 1992) about prelimenary acceptance of the Moldova Association of Medical Physicists as members of the IOMP. So our organization is a part of the Medical Physicists of Russia. In our activities we adhere to regulations of the Association of Medical Physicists of Russia. On August 24, 1994 in Rio de Janeiro our organization was accepted officially as members of the IOMP by its General Assembly.

History of Radiotherapy in the Republic of Moldova

First information about therapeutically use of radiation in Moldova concerns to 1923-1924 years, when in Kishinev were installed two X-ray therapeutic units, which were used for diseases of a leather. During 1935-1940 clinical practice with kilovoltage deep X-ray therapy was introduced. Since 1945 radiotherapy development in Moldova was somewhat connected to the dynamics of its development in USSR. At 1949 surface Mould Brachytherapy by means of Radium techniques started, and since 1953 use of radioactivity sources for Intracavitary Brachytherapy and Interstitial Brachytherapy began. The progress of radiotherapy in Moldova is closely connected to the introduction of new equipment: 1956 — static telegamma device GUT-Co-400 (USSR) with Co-60 source; 1966 — rotation-convergent telegammatherapeutical apparatus ROCUS (USSR) and static gammatherapeutical apparatus LUCH - 1 (USSR); 1969 — Intracavitary Brachytherapy ensuring maximum protection from radioactivity effects and convenience in work; 1974 — static accelerator BETATRON-B5M-25 (USSR) for electronics generation (E = 9, 13, 18, 22 Mev) and for gamma beam generation (E = 25 Mev); 1974 — Intracavitary Brachytherapy unit AGAT-V (USSR) with seven Co-60 sources on 3, 7 Gbk each; 1980-1988 — gammatherapeutycal units ROCUS-M and AGAT-R (USSR) and Intracavitary Brachytherapy for remote afterloading units AGAT-V2 (HDR) and AGAT-V3 (HDR) (USSR) with fifteen Co-60 sources by activity 11,1 Gbk each; 1990 — Intracavitary Brachytherapy unit SELECTRON - LDR (Netherlands; 1991 — rotation gammatherapeutical unit AGAT-R1; 1995-1996 — Intracavitary Brachytherapy unit AGAT-VU (USSR) for pulsed HDR therapy with three Co-60 sources, 37 Gbk each. In 1950-1960 services of medical physicists,

(Continued on page 14)

IEC Standard For Radiotherapy Equipment

IEC 1217: *Radiotherapy equipment — coordinates, movements and scales* is a new standard that applies to equipment and data related to the process of teleradiotherapy. These include patient image data used in relation with radiotherapy treatment planning systems, radiotherapy simulators, isocentric gamma-beam therapy equipment, isocentric medical electron accelerators, and non-isocentric equipment when relevant.

It defines a consistent set of coordinate systems to be used throughout the process of teleradiotherapy, defines the marking of scales (where provided), spells out the movements of equipment used in this process, and facilitates computer control when used.

A primary goal of the new standard is to avoid ambiguity, confusion and errors which could be caused by using different types of equipment. Radiotherapy is performed in medical centres where a variety of equipment from different manufacturers is usually concentrated. To plan and simulate the treatment, to set up the patient and to direct the radiation beam, such equipment can be put in different positions and, in the case of moving-beam radiotherapy, can be rotated and translated while the patient is being irradiated.

It is essential that the position of the patient, and the dimensions, directions and qualities of the radiation beam prescribed in the treatment plan, be set up or varied with accuracy and without misunderstanding by programmes on the radiotherapy equipment. Standard identification and scaling of coordinates is required for equipment used in radiotherapy, including radiotherapy simulators, because differences in the marking and scaling of similar movements on the various types of equipment used in the same department may increase the probability of error.

In addition, data from equipment used to evaluate the tumour region, such as ultrasound, X-ray, CT and MRI should be presented to the treatment planning system in a form which is consistent with the radiotherapy coordinate system. Coordinate systems for individual geometrical parameters are required in order to facilitate the mathematical transformation of points and vectors from one coordinate system to another.

One of the major values of a standard coordinate system is its contribution to safety in radiotherapy treatment planning. The scales that are demonstrated in IEC 1217 are consistent with these coordinate systems. Users may employ other scale conventions. It is anticipated that manufacturers will normally use the scale conventions of this standard for new equipment.

If manufacturers provide other optional scale conventions when requested by users, such as matching existing equipment in a user's facility or complying with local conventions or regulations, such equipment cannot be said to comply with this standard. It is also anticipated that manufacturers may provide, as options, scales to convert a user's existing equipment to the scale conventions of this standard.

(Continued on page 14)

MOLDOVA

(Continued from page 12)

rontgen-topometry study, laboratory clinical dosimetry and radiating safety, technical group for maintenance of equipment were developed. The dosimetry were conducted by devices at the metrological laboratories of Moscow and St. Peterburg. The training of the staff (radiation therapists, radiation therapy technologists, medical physicists) were executed in central institutes of Moscow and St. Peterburg.

Since 1971 the Republic of Moldova worked on creation of programs changing the intensity of statical and mobile beams of rotation telegammatherapeutic unit using stationary beams with different assemblers of formatting blocks and filters. In 1991 new succession of technological action in external beam radiotherapy was offered.

Radiotherapy in Moldova was also developed in oncology. The details of this development are described by the permanent director of Oncologycal Institute from Moldova Honelidze G.B. in publications *"Page of a History"* and *"The Oncologycal Service in Moldova"* (Conferenta IX oncologilor din Moldova, Chisinau, 1955, pp 5-23).

G. S. Zakharchenko
Chairman, MAMP

IEC STANDARD

(Continued from page 12)

Other IEC standards from the same family as this one — IEC 601-2-1, IEC 601-2-11, IEC 601-2-29, IEC 976, IEC 977, IEC 1168 and IEC 1170 — also include equipment movements and scale conventions. A number of changes and additions have been made in IEC 1217, summarized in an annex.

The new standard does not address non-isocentric equipment and pitch and roll movements of the radiation head, due to limited clinical use. Future amendments will address the following: patient coordinate system; three-dimensional radiotherapy simulators; CT type radiotherapy simulators; and non-isocentric equipment.

IEC 1217 was prepared by Sub-committee 62C (Equipment for radiotherapy, nuclear medicine and radiation dosimetry) of IEC Technical Committee 62 (Electrical equipment in medical practice). This standard is issued as a publication separate from the 601 series of safety standards. It is not a safety code and does not contain performance requirements. Thus the present requirements will not appear in future editions of the IEC 601-2 series, which deals exclusively with safety requirements.

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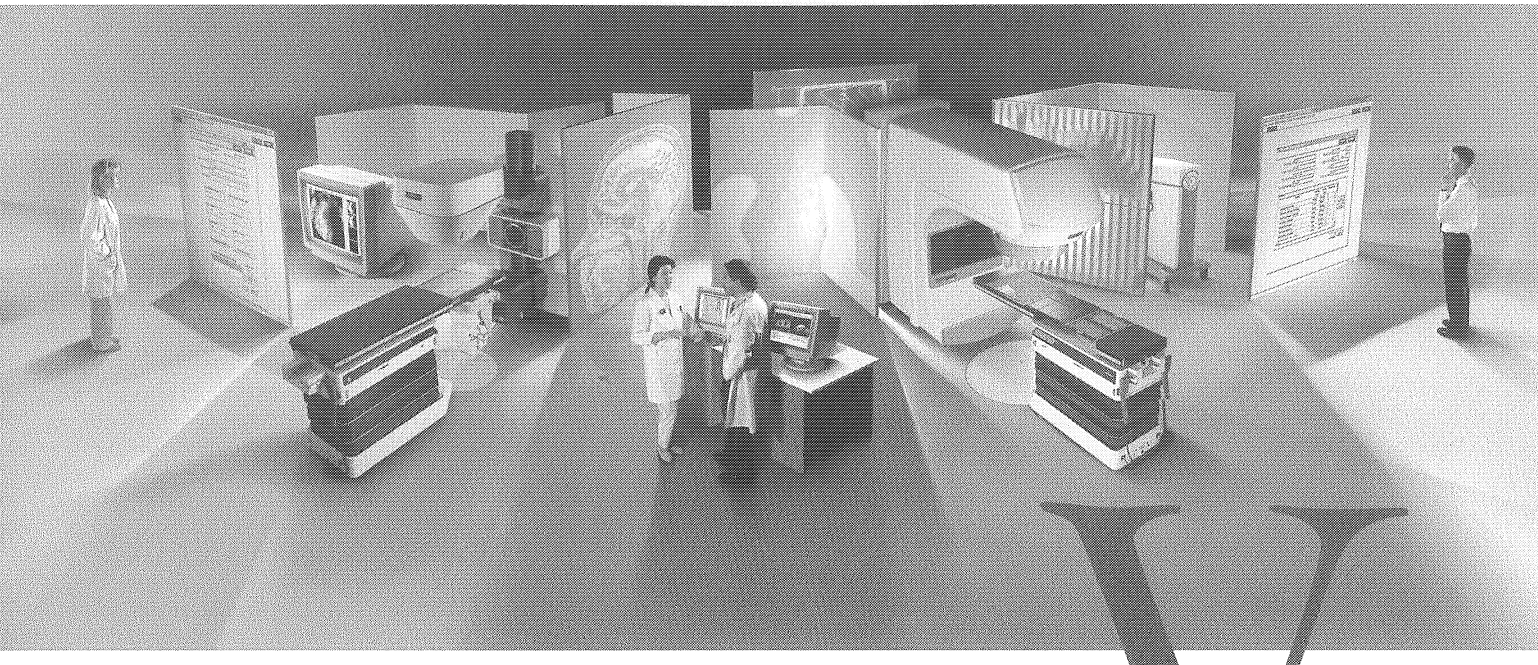

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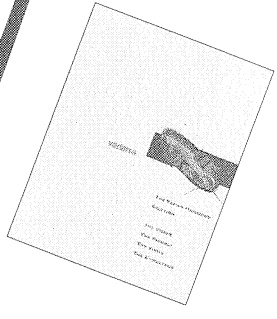

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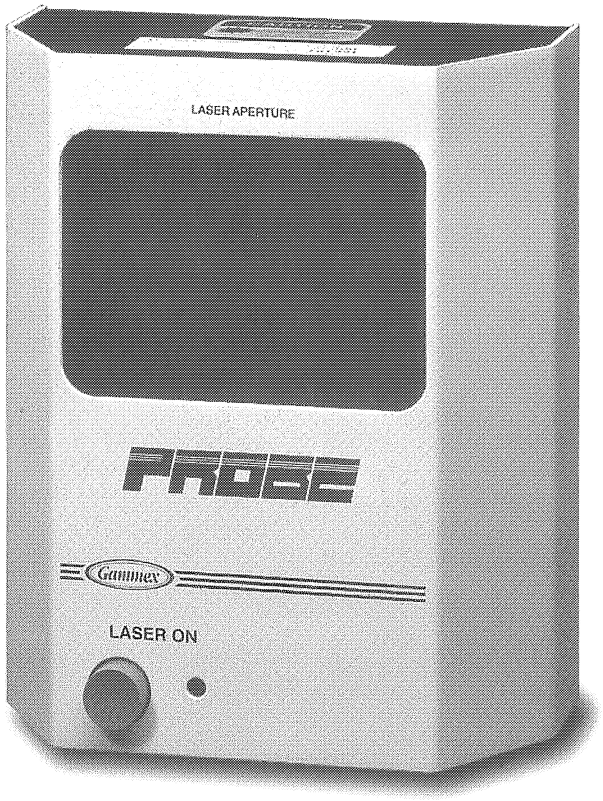

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