

FEDERATION AERONAUTIQUE INTERNATIONALE

FAI MEDICO-PHYSIOLOGICAL COMMISSION COMMISSION INTERNATIONALE MEDICO-PHYSIOLOGIQUE (C.I.M.P.)

Scientific and Plenary Meetings held in Rome, Italy
May 29-31 & June 1st 1997
Hosted by the Aero-club of Italy

Introduction

Scientific Papers and General Discussions

KEY WORDS

- | | |
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| 1. Head protection | - accidents
- secondary prevention |
| 2. "96" FAI General Conference | - helicopter safety |
| 3. Alcohol and Drugs | - doping policies |
| 4. Cardiology Update | - revascularisation techniques
- FAA and JAA policies |
| 5. Human Performance and Flight Safety | - human factors |
| 6. Pilot Error- CHIRP | - confidential reporting of human error incidents |
| 7. World Air Games | - WAG Turkey |

Plenary Session

- A. Presidents welcome
- B. Minutes of the 1996 meeting in Poland / Doping policy
- C. Meeting Reports: Europe Airports, Austria, United States, Switzerland
- D. National reports. FAI update
- E. Specialist reports:
 - 1. What every pilot should know about vision and correcting lenses
 - 2. Flight safety program
 - 3. Insulin dependent glider pilots
 - 4. Post aerobatics spinal mobility disorders
- F. First world Air Games
- G. Conclusions and recommendations
 - 1. Flight safety
 - 2. Disabled pilots
 - 3. CIMP doping policy
 - 4. Pilot certification following coronary artery bypass surgery.
- H. ELECTION OF OFFICERS 1997/1998
- I. Suggested subjects for 1998 meeting
- J. CIMP Meeting 1998

Introduction

Were present:

In the Chair: Dr. Colm Killeen, President of CIMP (Ireland)

Austria	Dr. Bernhard Schober, Delegate
Czech Republic	Dr. Oldrich Truska, Delegate
Finland	Dr. Eero Vapaavuori, Delegate
France	Dr. Thierry Villey, Delegate
Germany	Dr. Ernst J. Hollmann, Delegate
Italy	Prof. Antonio dal Monte, Vice-President & Delegate
Poland	Dr. J. Janusz Marek, Delegate Prof. Krzysztof Klukowski, Alternate Delegate Dr. Andrzej Gebuza, Observer Dr. Bogustawa Kubiak, Observer
Russia	Dr. Valdemar Traman, Vice-President & Delegate
Slovakia	Dr. Oliver Dzvonič, Delegate
Spain	Dr. Pedro Ortiz, Delegate
South Africa	Dr. Albert Van Der Merwe, delegate
Sweden	Dr. Hans Hjort, Vice-President & Delegate Mr. John Grubbstrom, CIA Rep to CIMP
Switzerland	Dr. Rene Maire, Delegate Dr. Dominique Weibel, President of Honour
Turkey	Dr. Cern Seref Bediz, Delegate Dr. Cudi Canoruc, Delegate
United Kingdom	Dr. R. Peter Saundby, Delegate
United States of America	Dr. John P. McCann, CIMP Secretary & Delegate Dr. Jack Rubino, Alternate Delegate
FAI	Mr. Max Bishop, FAI Secretary General

1. Twenty-eight Delegates and Observers representing : Austria, Czech Republic, Finland, France, Ireland, Germany, Italy, Netherlands, Poland, Russia, Slovakia, Spain, South Africa, Sweden, Turkey, United Kingdom and United States.

Apologies were received from Brazil and Slovenia.

Dr. Colm Killeen of Ireland was re-elected as President with Dr. John P. McCann of the United States as Secretary.

Dr. Antonio Dal Monte of Italy, Dr. Hans Hjort of Sweden and Dr. Rene Maire of Switzerland were elected as Vice-Presidents.

2. Dr. Killeen gave tribute and special thanks to Dr. Dal Monte, the Aero Club of Italy, the School of Sport of the Italian National Olympic Committee (CONI) and the Italian Airforce Experimental Flight Department plus the Aeronautical and Space Medicine Research Department at Practica di Mare for the excellent 1997 CIMP meeting.

3. Special recognition was also given to our many hosts including Prince de Merode of the International Olympic Committee, Dr. Mario Pescante, President of C.O.N.I., Avv Mario Testa, President of the Aero club of Italy, Mr. Giorgio Santilli, FMSI President, General Tricarico, General Vittorio Zardo, Professor Dott. Leone-Dino Zingales, Colonel Demarchis, Flight Surgeon Luca Urban and all the staff members who gave of their time and energy to make the meeting so very successful.
- On Friday May 30th, a visit was made to the Italian Air Force Experimental Flight Facility where the Aeronautical Space Medicine Research Department is also located. A comprehensive review of on going research projects together with flight line demonstrations were provided. In the afternoon, further scientific sessions were held at the Aero Club of Italy headquarters.
- Saturday May 31st was devoted to an in depth review of research activities taking place in Professor Dal Monte's laboratories located at C.O.N.I. School of Sport. Attendees were most impressed with the in-house research capabilities and the wide range of sport medicine topics under study.

These included ergonomics, exercise physiology, human factors assessment and personal equipment design. Of particular interest were the special research facilities available to study human performance in environments ranging from under water to aerospace.

A visit was also made to the Italian National Olympic Committee headquarters where we were welcomed by C.O.N.I. and Aero Club of Italy President Testa.

Scientific Session

Saturday, May 31, 1997

Introduction:

The reports of the Scientific Sessions of May 31st have in many cases been combined with similar topics receiving further discussion during the Plenary Session held on Sunday, June 1st 1997. Minutes from both meetings therefore provide a more comprehensive reflection of the subject material that was presented.

1. Professor Dr. Antonio Dal Monte presented a paper on head protection . This included data on a shoulder supported helmet with a quick release feature. This item of personal equipment could be of major value to those flying ultra lites.
2. Dr. Killeen gave a summary of the "96" FAI General Conference held in Slovenia plus the S.A.A.M.E. Meeting in Aberdeen much of which was devoted to helicopter flight safety in the north sea operations.

Max Bishop expanded on the General Conference report to indicate that proposals were made to amend FAI Statutes to allow the FAI President to remain in place for four years with the possibility of a further two year extension if 66% percent of the members supported such action.

3. Alcohol and Drugs

Discussions were largely devoted to potential problems that may arise when participants in sporting events are taking medications for the treatment of on going health problems.

No specific recommendations were made regarding a solution to the problem other than the fact that each individual case would need analysis before any final action was taken.

4. Cardiology Update

Dr. Maire presented a historical review of coronary artery bypass surgery since its inception plus the more recent procedure involving angioplasty, stents and lasers. He included comments on both FAA and JAA policies concerning fitness to return to flight status after such procedures.

5. Human Performance and Flight Safety

This is an on going subject primarily led by Dr. Hjort and covered in more depth during the plenary session.

6. Pilot Error- CHIRP

The confidential reporting of human error incidents in aviation had its origin in the military. Over the years, this has become a valuable educational tool. As such, a more formal use of the concept in general and sport aviation is warranted. With the advent of the Internet and the worldwide web communications system, this appears to be an excellent time to initiate the program throughout all aspects of aviation.

7. World Air Games

The delegates from Turkey submitted the following paper and supporting visual aid material.

The Turkish Aeronautical Association was awarded the organization of the 1st World Air Games on June 6, 1995 at the Council meeting in Montreal. The 1st World Air Games is a multi sporting event to be organized in the same country and within the same time period. The 1st World Air Games will be realized between the dates of September 13-21 1997 at eight different regions as 17 different championships. As the organizer, I would like to give you brief information about the Turkish Aeronautical Association. THK was established by the founder of the Turkish republic M. Kemal Ataturk in 1925 in order to promote and spread aviation in our country. Educating the Turkish youth in different kinds of aviation disciplines such as parachuting, aeromodeling, hanggliding, paragliding, gliding and microlight since its foundation. THK is not only very important for the Turkish aviation history but also being the organizer of this magnificent event - the 1st WAG. THK also proves to be of great importance for the whole aviation world. Upon the start for the WAG preparations, THK established its organization, obtaining essential governmental support and formed a supportive committee headed by the Ministry of Transportation. In addition, a consultant group was formed consisting of important businessmen. The preparatory works for World Air Games continued in 1995 and 1996 resulting with the realization

of the test competitions for gliding, parachuting, aeromodelling, hang-gliding, paragliding, microlights, ballooning and air rally.

During the preparatory period, we were in close contact and cooperation with the FAI experts and we will continue to do so. No effort will be spared to make this event a successful one, with high competition performance and unforgettable experiences. Therefore all protective and medical facilities are established. Our preparations in this matter is to ensure that all the participants leave our country in good health and with good memories.

Up to now, 2500 participants from 54 countries have made registration for the 1st World Games. Entering the 3rd millennium, the 1st World Games will add a third dimension to the sporting activities in the world, which till now was executed in two dimensions. By entering the Games, all the participants will carry the honor of being part of this historical event. It will be a pleasure for us to welcome you and your countries' sportsmen to Turkey.

Plenary Session

Sunday, June 1, 1997

- A. President Dr. Colm Killeen opened the session and again thanked Professor Dal Monte and his staff for hosting the 1997 meeting in Rome with seventeen countries represented.
- B. Minutes of the 1996 meeting in Poland were reviewed and accepted, after revision of paragraph C , which was to read as follows:

"Doping policy

Max Bishop, FAI Secretary General, reported that doping control procedures shall be implemented at FAI sporting events if imposed by the regulations of the host country.

When there are no national regulations, Air Sports Commissions may decide whether or not to instigate doping controls."

[Note] the previous paragraph C was deleted.

- C. Meeting Reports

Peter Saundby of the U.K. provided the following:

Europe Airports - this is the coordinating body of airports in Europe. It was set up to present the unified views of national aero clubs and the Joint Aviation Authorities.

It works in close cooperation with the FAI and technical meetings were held 12/96 in Paris and 4/97 in Freidrichshafen with the following issues resolved:

- There should be a policy of devolution to non-governmental bodies concerning aircraft design, aircraft maintenance, pilot training and standard medical fitness.

The question to be addressed is how is medical fitness best established under a deregulated system.

- United Kingdom - "improvement of medical organization"

Medical advisors now appointed for each airport organization

1. British Balloon and Airship Club
2. British Gliding Association
- 3.. British Microlight Association
4. British Hang & Para Gliding Association

There is a twice yearly meeting in the medical department of U.K. Civil Aviation Authority which can make recommendation and Peter Saundby represents national views to Europe Airsports.

Austria

Accident investigation now includes aviation medical input from the aviation medical center at the Army Hospital in Vienna.

United States

The medical procedure for certification of insulin dependent diabetics was discussed as well as an update on aids as it relates to aviation.

Switzerland

With the required adoption of JAR medical criteria in July of 1999, the cost of expanded medical exams is causing considerable concern.

D. National reports

Finland

Cost containment has limited the growth of a number of aviation projects in recent years. The strategy out to the year 2000 and beyond includes concentration on:

1. Young people
2. Competitive sports
3. Instruction
4. Collaboration with authorities in the bush flying association to emphasize Lapland flying using skis in the winter and floats in the summer and a handbook regarding same to be made available.
A survival course has already been started on this subject and JAA rules relating to vision have now been implemented.

Netherlands

Increasing attention to aviation sports medical requirements is occurring with concentration of activities at Soesterberg Airbase.

All medical exams are done at one location with no private examiners appointed to the present date.

South Africa

South African aviation regulations have been completely revised for implementation in 1998. A fourth class license has been included, namely the noncommercial recreational pilot - medical requirements and standards, as well as frequency of examinations.

Poland

"National Report 1996" in 1996, we were:

- Preparing/translation, adaption to meet Polish requirements/JAR-MED regulations for implementation in 1998.
- Management of the general inspectorate of civil aviation - working out rules of the activity of airports.
 - Establishing the programme for flying medical personnel including nurses on basic courses in aviation medicine.
 - Preparing the programme of a basic course in aviation medicine for sports physicians who decide whether the candidate is fit for participation in aviation sports.
 - Establishing the rules and fields of collaboration between the Centre of Aeromedical Examination-Wroclaw, Polish Airforce Institute of Aviation Medicine, the Board of Transport Hygiene and the Polish Aero-Club.

Problems were:

- Amendment to the instruction concerning the studies of flight accidents in civil aviation.
- Analysis of flight accidents and mishaps involving sports in 1996 - prepared for the conference of flight safety.
- Summary of the studies/3 years/concerning spine load syndromes in pilots involved in aerobatics.
- Amendment to the programme of specialization in aviation medicine to include jar-med and agard-nato requirements/standards.

In 1996, the Polish aviation authority issued the following :

Booklets:

1. Outline of health service organization standard on the territory of airports from vi to ix category.
2. Basis for the organization and methodology of examining flight accidents in civil aviation of the Polish republic.
3. Analysis of flight safety and parachute jumps conditions in civil aviation for 1996 flight safety.

Russia

In the year under review, we have finished our work over new recommendations on the medical examination of aircsportsmen: aircraft pilots, balloon pilots and parachutists.

The draft of these recommendations has been submitted to special medical research institutes for their conclusion. The final version of the recommendations is to be approved by the Ministry of Public Health before being applied in sports activities. In these days' practical activities, the most attention is paid to the medical support of the progress of training our sportsmen for the 1st World Air Games to be held in Turkey this September.

Italy

Parachuting now involves routine aeromedical input. Specialty certification is now offered in sport medicine. Accident rates reflect a downward trend. Pilot medical certification is now a civilian activity versus only military.

Bureaucratic controls still restrict growth of private flying. Ultralites are enjoying considerable popularity due to their relatively low cost.

Turkey

The first World Air Games are to be held in Turkey September 14 - 21. They will be held at 8 different sites and consist of 18 competitive events with participation from fifty-four countries.

Spain

Dr. Ortiz recommended a permanent committee in C.I.M.P. to address the medical certification concerns relating to handicapped pilots. This subject to be on the agenda again in 1998. He also made a brief presentation on his new book that addresses the subject of aviation medicine and aviation sports.

The book is titled "Medicina Aeronautica & Aviation Deportiva" and is available through Aero Club of Spain for U.S. \$16.50 plus shipping costs.

Contact: Real Aero Club de Espana
Tel. 34-1-576-3952
Fax. 34-1-575-6709

FAI Update

Max Bishop, Secretary General FAI, provided an informative review of several happenings within FAI. These included the increasing use and dependence on Internet for communication. A monthly publication of FAI developments via Internet is under consideration. He also encouraged each of the CIMP members to get to know the delegates of other Commissions so as to enhance the overall input of all parties. He also presented an update of the upcoming World Air Games in September this year. In regards to doping controls, they will be implemented in upcoming events in Finland, France and Germany. Dr. Hollman is to assist the FAI Secretary General in selection of a CIMP delegate to participate as a member of the doping committee in Germany.

E. Specialist reports:

1. What every pilot should know about vision and correcting lenses
Dr. Eero Vapaavuori of Finland presented a summary of his excellent article on this subject. The article is addressed to individual airman to assist them in

understanding the functional aspects of vision and the measures that can be taken to protect and correct visual performance. Copies of this article are attached.

2. Flight safety program

Dr. Hans Hjort of Sweden presented an updated and near final edition of "Flight Safety Program" designed for the use of aero clubs and individual pilots.

It provides an excellent review of human factors in accident causation and a "check list" to assist the pilot in understanding those factors and avoiding them. A multi-colored booklet and checklists were given to each attendee with the request to review and submit critiques prior to final publishing.

The final product will be available later this year and available at a nominal cost. It should be a valuable resource for all airmen, FAI Commissions, aero clubs and general aviation.

3. Insulin dependent glider pilots

Dr. Peter Saundby presented an excellent review of glider pilots who were insulin dependent. Although the total number of such individuals was small, there was no evidence that they represented a greater hazard to glider flying safety than other glider pilots.

The entire article has been submitted for publication in the journal of aviation, space and environmental medicine. Copies were provided each attendee.

4. Post aerobatics spinal mobility disorders

Drs. Klukowski and Marek from Poland presented the results of a 3 year follow-up study reflecting the values of pre and post flight physiotherapy. The abstract is as follows:

A pilot performing aerobatic flights is exposed to substantial static-dynamic spinal loads. Therefore, the objectives of the studies were: -evaluation of the effect of occurring in aerobatics +/-gz acceleration value variables on spine function in sports pilots; -evaluation of the efficacy of the applied physiotherapeutic methods in reducing spinal mobility disorders after aerobatic flights and defining the purposefulness of applying various physiotherapeutic techniques before aerobatic flights as preventive measures form spinal function disorders. 62 subjects ages 21-39 were examined {mean age was 26,7} - participants in Polish championships in aerobatics in the years 1994-96. Antropometric and spondylometric studies of pilots performing 10 min. Flights on zlin 50 aircraft consisted of 3 stages, considering therapeutic procedures. The results showed significant , spinal mobility restriction after the aerobatic flight. The applied physiotherapeutic procedures/classical spine massage and spinal mobilization both before and after the aerobatic flight reduced the effects of the occurring variable -gz spinal loads.

F. First world Air Games

See Turkey national reports and general session

G. Conclusions and recommendations

1. Flight safety

The C.I.M.P. recommends the Swedish flight safety program consisting of three checklists designed to alert airmen to the potential of pilot error.

The recommendation includes the use of a questionnaire for the collection of further data regarding pilot error in incident/accidents which in turn is to be subjected to further analysis.

2. CIMP supports flying by all disabled people within their capabilities. Individual disability such as deafness will prohibit the use of aural radio transmissions and instruction of others when verbal and audio abilities are required.
3. A letter further expanding on the C.I.M.P. doping policy recommendation relating to sporting events is to be drafted by CIMP for submission to FAI.
4. CIMP agrees with current standard cardiology investigative procedures for pilot certification following coronary artery bypass surgery.

H. ELECTION OF OFFICERS 1997/1998

President : Dr. Colm KILLEEN (IRELAND)

Vice-President : Prof. Antonio DAL MONTE (ITALY)

Vice-President : Dr. Hans HJORT (SWEDEN)

Vice-President : Dr. Rene MAIRE (SWITZERLAND)

Secretary : Dr. John McCANN (UNITED STATES)

I. Suggested subjects for 1998 meeting

1. Accommodation of the deaf pilot and all other handicaps.
2. Human performance/flight safety.
3. Medical requirements for commercial ballooning.
4. Doping.
5. Cardiology/CABG.
6. Diabetes - United States experience.
7. Sport injuries.
8. Pilot personality assessment.
9. Illusions in flight.
10. ECG in flight.
11. Hypoxia in glider pilots.
12. FAI General Conference in France.
13. Asthma in glider pilots.

J. CIMP Meeting 1998

Stockholm/Helsinki - June 5th & 6th

Alternate - Paris

John P. McCann, M.D.
Secretary, CIMP – 1997