FEDERATION AERONAUTIQUE INTERNATIONALE

FAI ASTRONAUTIC RECORDS COMMISSION (ICARE)

MEETING HELD AT THE FAI HEADQUARTERS
24 AVENUE MON REPOS, 1005 LAUSANNE, SWITZERLAND
FRIDAY 27 APRIL 2001

M I N U T E S

Dr Sanz Fernandez de Cordoba	President
Mr Nikolay Bodin	Russia, Vice President
Mr Antonio Castellani	Italy
Mr Michael Collins	USA
Mr Christian Marchal	France, Technical Expert

In Attendance:

Mr Max Bishop	FAI Secretary General
Mr Thierry Montigneaux	FAI Asst Secy General

Apologies:

Dr Federico Casal	Switzerland
Col. Bedel	Honorary President

1 WELCOME BY THE PRESIDENT AND ROLL-CALL

The President welcome all delegates to the meeting of ICARE. Delegates stood for a minute of silence, in remembrance of General Cosmonaut German Titov, who had died in September 2000, being the Russian Delegate in the Commission at that time.

2 APPROVAL OF THE MINUTES OF THE LAST MEETING (14 April 2000)

The minutes of the previous meeting were approved as presented.

3 FAI GENERAL CONFERENCE

a. The ICARE President presented his report to the Linköping FAI General Conference, September 2000 (attached).
b. The FAI Secretary General explained the structural changes that had taken place in FAI (replacement of Council by an Executive Board), and announced the election of a new FAI President, Mr Wolfgang Weinreich.
c. The FAI Secretary General gave a progress report on the World Air Games.

4 ASTRONAUTICS ACTIVITIES AND PROJECTS

a. Reports by Delegates from Member countries

Russia: Mr Bodin reported as attached. He kindly presented the "Star of Blue Planet" medal of the Russian Space Agency to the ICARE President for his contribution to the promotion of Russian space exploration's world achievements and in connection with the 40th anniversary of the first manned space flight, carried out by the Russian cosmonaut Yuri Gagarin.He reported that the MIR was visited during its long life by a total of 104 different Cosmonauts and Astronauts, of which 42 were Russian cosmonauts, and 62 were from a range of other countries.

USA: Mr. Collins reported as attached. He congratulated Russia for their successful MIR programme and for the skilful de-orbiting of the station. He kindly presented to FAI the FAI banner which had been flown on board STS-106, and signed by the astronauts and cosmonauts of that mission.

Italy: Mr Castellani reported that an Italian (ESA) astronaut had flown in the International Space Station. Four Italian modules have been constructed and two have already flown.

France: Mr Marchal reported as attached. Most activity in which France was involved was international (European). In response to the question of whether Ariane could launch a payload to the International Space Station, he replied that Ariane can be launched at any inclination. If it can launch a geostationary satellite, then it can also reach the space station orbiting at 600 km. But neither Ariane, nor any European space vehicle, is designed for a mission to dock wih the ISS. Ariane can take 3 or 4 tons of payload to close proximity of the ISS.

Spain: The ICARE President reported that Spain continued to participate in ESA. CASA, which was the leading company in space matters, has been integrated in EADS and this had created problems since other companies which were their competitors are now parts of the same company amd decisions have to be made on who does what. Programmes had been reshuffled. Some small programmes were now to be taken as subordinate payloads.

b. X Prize Project

ICARE agreed in principle to the creation of the following new record category:

Class K1 Surborbital Spacecraft (with 2 subcategories)
-Suborbital missions-one astronaut
-Suborbital missions-more than one astronaut

Shortest time between flights of a piloted reusable spacecraft

The precise words required to amend the Sporting Code will be worked out by exchange of emails between ICARE delegates. For implementation, it was agreed that unanimity was required amongst the delegates present at this meeting. A deadline of 30 September 2001 was set for reaching this agreement.

The principles to be used as the basis for the agreement were:

- Flight to a minimum altitude of 100km verified by means approved in advance by the FAI Member Organizations
- One or more human occupants must be carried on the flight.
- A flight plan specifying method of crew return and place of intended landing must be filed in advance
- A second piloted flight of the same* vehicle must be made
- Time between flights would be measured from time of first landing to time of second launch.
- The occupants of the vehicle must survive the flights for at least 48 hours after landing.
- To be considered the "same vehicle" not more than 10% of the non-propellant gross lift off mass of the vehicle could be replaced between flights. For purposes of this calculation, payload not associated with the airframe would not be included in the replaced mass.

M. Marchal pointed that there were many opportunities for cheating, especially when big money prizes were available. It was also pointed out that US high altitude research aircraft (X15 type) might be capable of setting this record.

After discussion of the question who should hold the record, it was agreed that it should be the crew commander of the spacecraft on the second flight. The ICARE President agreed to circulate a proposal including:

- Definition of reusability
- Definition of who holds the record.

The Secretary General agreed to investigate current K1 sub-orbital records – there appeared to be none listed in currently published listings. This may be due to suborbital records being deleted from the rules in the late 80's. However, since they were re-established three years ago by the Commission, they need to be listed again, so that new contenders (X-prize or other) know the performance to be beaten

5 FAI SPORTING CODE

SECTION 8 (ASTRONAUTICS)

a. Proposals for amendments

Mr Bodin proposed interpreting the Sporting Code to allow a record to be claimed for the MIR space station, for duration. In support of his proposal for a vehicle to hold a record, he pointed out that altitude and greatest mass records are not really achieved only by the flight crew but by a technical team.

The ICARE President explained that FAI had two methods of recognising achievements: world records, for recognition of human performance in flight; and awards (eg the Gold Space Medal). He considered that the exceptional Mir achievement was very suitable for the award of a medal or diploma, but did not fall into the categories provided for World Records (flight crews only).

Mr. Bodin stressed the need for FAI to record all the most significant achievements in space flight, whether these were technical or human.
The ICARE President stressed that ALL records in the current code were for people who flew in space. Perhaps there was a need for a new category to cover technical achievements, but this did not yet exist and could not be invented and made retroactive. Mr Bodin agreed to consider, and possibly to make a proposal next year for a new chapter in the Sporting Code covering “technical records” for unmanned spaceships, long-duration space stations etc. Russia considers that Section 8 needs to contain definitions for all great achievements in space.

Mr Bodin stressed that the reason for his proposal was to provide an historical record of a remarkable achievement. Recognising the importance of this, ICARE decided as an interim measure to create a list of historically remarkable space flight feats (for display on Internet) . In addition, ICARE decided officially to recognise the time of 5510 days, 8 hours, 31 minutes, 50 seconds as the total flight time of the Mir Space Station (Russia), starting from launch of the first component vehicle (19/02/1986 at 22:35:23 UTC) to impact of Mir in the Pacific after the de-orbit manoeuvre (23/03/2001 at 07:00:13 UTC)

6 PROPOSALS FOR FAI AWARDS

ICARE approved the following awards:

a. Korolev Diploma : Crew of STS – 92.

b. Komarov Diploma : Crew of STS – 97

c. Yuri Gagarin Gold Medal : International Space Station Expedition One. (Note: ICARE agreed to give one copy of the medal to each member of the 3 man crew, it being understood that this is a unique award to three people, since current By-Law 12.9.2.2 allows this medal to be awarded to a crew.)

d. Yuri N Koptev FAI Gold Space Medal, Director General Russian Aerospace Agency, for his contribution to the Mir project.

e. Honorary Group Diploma (see By Law 11.10): Entire Mir team

7 INTERNATIONAL ASTRONAUTIC FEDERATION

Delegates present reported on the 2000 IAF Congress (Rio De Janeiro). Attached is the report sent by the ICARE President for the IAF General Assembly. This report is included in the minutes of the IAF General Assembly. ICARE decided to appoint Mr Sanz Fernandez de Cordoba as official representative to the 2001 IAF Congress, to be held at Toulouse, France, assisted by M. Christian Marchal.

8 ICARE HOMEPAGE ON INTERNET WEB-SITE

ICARE agreed that it was desirable to include on the ICARE webpage the following features:

List of significant historical events in space.
Full list of historical world space records.
Links to NASA, Russian Space Agency, ESA and other suitable websites.Delegates are requested to inform FAI HQ of links they consider interesting and suitable.

9 PRESENT WORLD RECORDS - REPORT

A preliminary claim, for the endurance of the Mir station, had been received. ICARE noted that unfortunately this had to be rejected as a record (see above). One more proposal, for duration in linked flight (STS-102 and ISS), was under consideration.

10 ANY OTHER BUSINESS

Mr Bodin asked whether cosmonauts were sportsmen. The ICARE President ruled that they were, because they required a FAI Sporting Licence to obtain a world record.Cosmonauts and Astronauts must apply to their NAC for issue of the Licence

11 ELECTIONS

The following were elected:

President:	Dr Sanz Fernandez de Cordoba
Vice President	Mr Nikolay Bodin

12 DATE AND PLACE OF NEXT ICARE MEETING

It was agreed that the next meeting would be held on in Lausanne on Friday 19 April 2002

END

FEDERACION AERONAUTICA INTERNACIONAL

VICEPRESIDENTE

PRESIDENTE DE LA
COMISION INTERNACIONAL DE RECORDS ASTRONAUTICOS(ICARE)

REPORT FROM THE FAI DELEGATE TO THE IAF GENERAL ASSEMBLY RIO DE JANEIRO, BRASIL, OCTOBER 2000

The annual meeting of the International Commission of Astronautical Records (ICARE) took place at the headquarters of the Fédération Aéronautique Internationale in Lausanne, Switzerland, on April 14 of the present year.

As far as the matters which may be of interest to the IAF General Conference, I am glad to inform the Conference that we dedicated some time and effort to review the conditions and requested help from the organisers of the X-Prize Competition. The X-Prize, in the words of the organisers,

"Is a $10 million prize to jump start the space tourism industry through competition between the most talented entrepreneurs and rocket experts in the world. Following in the footsteps of over 100 Aviation prices offered between 1905 and 1935 which created today's multibillion dollar air transport industry, the X Prize will be awarded to the first private spaceship capable of lifting three humans to a suborbital altitude of 100 Km on two consecutive flights within two weeks".

The FAI believes this is an initiative of interest for the future development of Astronautics, and is thus making efforts to help it. Several aspects of the prize (such as the private financing of the flights) are of course out of our concern, but some others are of high interest. Consequently, we have taken some steps, like reviving the old records for suborbital flights (which were dropped long ago due to the apparent lack of interest in these type of astronautical flights). We are even considering the establishment of new records on reusability of vehicles, although this is technically a very difficult aspect.

ICARE has inaugurated a new web page http://www.fai.org/ (once there, press Air Sports, ICARE). It is our intention to have in it current information about our activities, current and past astronautical records, recipients of medals and awards, and other information. Please be patient if just now not all that information is available, since we are just building up the site.

The ICARE Commission accepted the new absolute record of accumulated space flight for the Cosmonaut Sergei Avdeyev (747 days and 11 hours; the record is given in exact hours due to round up conditions forced by some problems with reported times, daylight saving time and the intercalar second) beating the previous record of Valery Vladimirovitch Polyakov (678 days, 16 hours, 33 minutes and 6 seconds) by more than 10%. A total of more than two years in space, which certainly deserves our congratulations to Cosmonaut Avdeyev.

S. Sanz Fernández de Córdoba
Delegate, Fédération Aéronautique Internationale

FEDERATION OF COSMINAUTICS OF RUSSIA

R E P O R T

of the Russian Delegation
at the meeting of the FAI Astronautic Records Commission
(ICARE FAI)

April 27, 2001

Lausanne, 2001

INTRODUCTION

43 years ago on October 4, 1957 mankind overcame Earth's gravitation and launched the first artificial satellite into orbit. This event admired around the world became the beginning of the space age and demonstrated the maturity of scientific and technical concepts, and the high level of industrial potential of the Russian State.

At present stage, the major goals of space activities are effectively solving the social and economical tasks as well as implementation of Russia's international interests as space-fairing power. The main branches of space activity for science and national economy are as follows:

- Providing space communication to state control bodies, multi-channel television broadcasting over Russia and CIS territory, navigation support of transportation;
- Environmental monitoring, study of natural resources, data gathering for meteorological forecasting, support of economical activities by space assets;
- Providing fundamental space research in planetology, geophysics, astrophysics, study of Sun and Sun-Earth connections;
- Manned space flight.

MANNED SPACE FLIGHT PROGRAM OF RUSSIA

MIR Space Station

On the 23d of March 2001 after 15-year mission the MIR Space Station was de-orbited and submerged according to the plan, scheduled by the Russian specialists.

At 05 h 59 min 24 s UTC (08 h 59 min 24 s Moscow time) more than 20 tons of unburned elements of the MIR Space Station dropped and sank in the southern part of Pacific ocean - almost in the centre of the predicted safe area of submergence.

“MIR” completely justified its name (in Russian “MIR” means “Peace” and “World”) having accomplished its voyage safely for all mankind.

Russia carried out a unique de-orbits and submerging procedures of the MIR Space Sstation weighing more than 130 tons.

MIR Space Station became as a multi-purpose International Center that for nearly 15 years has been a world-unique space laboratory intended to check and validate the major utilization areas for future manned space stations and complexes ensuring an access of mankind to the wealth and mysteries of the Universe.

During operations new modules were added to the station: an astrophysical module Kvant (April 12, 1987), logistics module Kvant-2 (December 8, 1989), a docking and technology module Kristall (June 11, 1990) which substantially enhanced station capability to support planned research program and use low-consuming flight operation mode. For 1992 to1996 period the Mir complex was completed by adding new Spectr and Priroda research modules (June 3, 1995 and April 27, 1996) respectively which again widened the range of research carried out on board the station including those conducted with instruments and equipment from other countries.

Since 1987 the International research programs have been implemented on the Station. Astronauts from France, Syria, Afghanistan, Bulgaria, Japan, Great Britain, Germany,

Kazakhstan, Austria, USA, Canada and country-members of the European Space Agency took part in the implementation of these programs directly aboard the Station.

Since 1995 through 2000 joint Russian-US activities under the MIR - Shuttle, MIR - NASA programs were conducted at the MIR Station.

The US, German, French, Austrian, Netherlandish, ESA and Russian research equipment was available aboard the Station.

In process of operations of MIR Space Station the technique of medical and biological support for prolonged manned space flight was developed and world records of duration of continuous human stay in space were established:

- Yuri Romanenko - 326 days;
- Vladimir Titov and Musa Manarov - 366 days;
- Valery Polyakov - 438 days.

The most prolonged flights for women were carried out by Elena Kondakova in 1994-1995 (169days) and the American astronaut Shanon Lucid from March to September 1996 (188 days) (Enclosure 1).

MANNED SPACE FLIGHT RECORDS

On the 23rd of March 2001 the Federation of Cosmonautics of Russia marked the duration of active mission the MIR Space Station– 5510 days 08 h 31 min 50 c:

- Launch: February 19, 1986, 22 h 28 min 23 c (GMT);
- Landing: March 23, 2001, 07 h 00 min 13 c (GMT).

On the 26th of March the National Aero Club of Russia sent to the FAI the proposal to register this event as a World record in accordance with the Sporting Code (Section 8, Class K, Sub-class K2, item 4.2.2.1.).

In this case the following candidatures are proposed for the purpose of awarding:

- Yuri N. Koptev – Director General, Russian Aerospace Agency;
- Yuri P. Semenov – President, General Disigner, Korolev Rocket and Space Corporation “Energia”;
- Anatoly I. Kiselev – Director General, Khrunichev State Research and Production Space Center;
- Pyotr I. Klimuk – Chive of Center, Gagarin Russian State Research and Test Center of Cosmonaut Training.

AWARDS

The President of ICARE FAI Segismundo Sanz Fernandez de Cordoba was awarded with the medal of Russian Space Agency “Star of Blue Planet” (No. 59) for his active support for propaganda the Russian astronautics world achievements and in connection with 40th anniversary of the first manned flight, fulfilled by the Russian cosmonaut Yuri Gagarin.

On the 21st of February 2001 in Natianal Aero Club of Russia Sergey Avdeev was rewarded with

the FAI De La Vaulx medal for the established World Record – Accumulated Flight Time.

CERTIFICATE OF COSMONAUT

Since the 14th of April 2000 through the 27th of April 2001 the Federation of Cosmonautics of Russia issued two Certificates of Cosmonaut (FAI) to:

- Boris V. Morukov (No.117) – the cosmonaut of Russia who fulfilled his first space flight as a member of the STS-106 crew to the International Space Station (day of start – the 8th of August 2000);
- - Yuri V. Lonchakov (No.118) – the cosmonaut of Russia who fulfilled his first space flight as a member of the STS-100 crew to the International Space Station (day of start – the 19th of April 2001)

THE 40TH ANNIVERSARY OF FIRST MANNED SPACE FLIGHT

On the 12th of April 2001 Russia and the international community celebrated the 40th anniversary of first manned space flight fulfilled by the Russian cosmonaut Yuri Gagarin.

In this case the Russian Space Agency, the Federation of Cosmonautics of Russia and others space and public organisations realised the memorial events.

The Federation of Cosmonautics of Russia in participation of the Russian Association of International Cultural and Humanity Affairs and International Child Art Gallery realise the Festival of the child art creative work – “Mankind and Space”.

The festival will continue till the end of 2001. The children from the different countries from 4 to 16 ages are invited to participate in this festival. The paintings could be fulfilled in different art technique and send to the Federation of Cosmonautics of Russia. The sizes of paintings should be no more than 50 x 70 sm.

The first exposition of such paintings is held at present time in Moscow. The best paintings will be nominated for prizes awarding.

Then it planes to expose the best paintings in different countries.

_____

Nikolai B. Bodin

Sport Commissar
of the Federation of Cosmonautics of Russia

ENCLOSURE 1

THE MOST DURABLE SPACE FLIGHTS ON BOARD OF MIR STATION

During the MIR Station operation absolute world records of man's continuous on-orbit stay-time were achieved:

- 1987 - Yuri Romanenko (Russia) (326 days 11 h 38 min);
- 1988 - Vladimir Titov, Musa Manarov (Russia) (365 days 22 h 39 min);
- 1995 - Valery Polyakov (Russia) (437 days 17 h 58 min).

In 1995 Valery Polyakov also became an absolute world record-breaker in total on-orbit stay time, in 1999 his achievement was exceeded by Sergey Avdeev:

- Valery Polyakov (Russia) - 678 days 16 hrs 33 min (for 2 flights)
- Sergey Avdeev (Russia) - 747 days 14 hrs 12 min (for 3 flights).

Among women world records of space flight duration were achieved by:

- Elena Kondakova (Russia) (169 days 05 h 1 min) in 1995;
- Shannon Lucid, the USA (188 days 04 hrs 00 min, including a stay-time on the MIR Station of 183 days 23 hrs 00 min) in 1996.

Among foreign citizens the most long-duration flights under the MIR program were performed by:

- Jean-Pierre Haignere (France) - 188 days 20 hrs 16 min;
- Shannon Lucid (USA) - 188 days 04 hrs 00 min;
- Thomas Reiter (ESA, Germany) - 179 days 01 hr 42 min.

EXTRA VEHICULAR MISSION

78 extra vehicular missions (EVA) were performed on the MIR Orbital Station (including three EVA into the unpressurized Spektr module) of a total duration of 359 h 12 min.

EVA were performed by:

- 29 Russian cosmonauts;
- 3 U.S. astronauts;
- 2 French astronauts;
- 1 ESA astronaut (citizen of Germany).

Cosmonauts who performed six and more egresses into space on the MIR Station:

Cosmonaut	Number of Egresses	Total Duration
Anatoly Soloviev	16	77 hrs 46 min
Sergey Avdeev	10	41 hrs 59 min
Alexander Serebrov	10	31 hrs 48 min
Nikolay Budarin	8	44 hrs 00 min
Talgat Musabaev	7	41 hrs 18 min
Viktor Afanasiev	7	38 hrs 33 min
Sergey Krikalev	7	36 hrs 29 min
Musa Manarov	7	34 hrs 32 min
Anatoly Artsebarsky	6	32 hrs 17 min
Yuri Onufrienko	6	30 hrs 30 min
Yuri Usachev	6	30 hrs 30 min
Gennady Strekalov	6	21 hrs 54 min
Alexander Viktorenko	6	19 hrs 39 min
Vasilii Tsibliev	6	19 hrs 11 min