FEDERATION AERONAUTIQUE INTERNATIONALE

FAI ASTRONAUTIC RECORDS COMMISSION (ICARE)

MEETING HELD AT THE FAI HEADQUARTERS
24 AVENUE MON REPOS, 1005 LAUSANNE, SWITZERLAND
FRIDAY 30 APRIL 2004

M I N U T E S

Dr Sanz Fernandez de Cordoba	President
Mr Christian Marchal	France, Technical Expert
Dr. John Miles	UK
Mr Michael Collins	USA

In Attendance :

Mr Max Bishop	FAI Secretary General

Apologies :

Mr Antonio Castellani	Italy

1 WELCOME BY THE PRESIDENT AND ROLL-CALL

The President welcomed all delegates to the meeting of ICARE, and invited a minute's silence in memory of Col. Genty, President of Honour of ICARE, and of Mr Jon Harpold, former US Delegate to ICARE.

2 APPROVAL OF THE MINUTES OF THE LAST MEETING (25 April 2003)

The minutes of the previous meeting were approved, subject to the following correction: The first sentence of para 4a (UK report) to read: "The UK governmental space policy still views the cost of conducting research on manned platforms as too high and does not **directly** support **manned** space activities." There were no matters arising from these minutes.

3 FAI GENERAL CONFERENCE

a. The ICARE President presented his report to the Krakow FAI General Conference, October 2003 (***Annex 1***). The FAI Secretary General also reported on the following FAI matters discussed at the Conference:

- New Members (Thailand, Malaysia, Paraguay, Georgia)
- Modification of FAI logo (still under debate)

- Change in method of calculating FAI subscriptions (per capita tax, applicable from 2005)
- FAI Centenary – programme of events described
- Anti-Doping – new WADA-based regulations

A discussion followed on the last two topics:

Centenary: Mr Collins kindly offered to arrange for a FAI artefact to be flown on Soyuz and returned in time for the centenary celebrations. He also mentioned the possibility of obtaining a United Nations stamp, usable in UN post offices only.

Anti-Doping: It was pointed out that the FAI Anti-Doping Rules could not apply to astronauts, who might have to consume certain banned substances for medical, operational and flight safety reasons. NASA would address a letter to FAI confirming that it considered that the scope of FAI's anti-doping rules did not extend to astronauts.

4 ASTRONAUTICS ACTIVITIES AND PROJECTS

a. Reports by Delegates from Member countries

France: Mr Marchal informed delegates that French activity within ESA was reported in full on the ESA website. The launch of the Rosetta comet exploration mission had been successful. The mission would last 10 years. The Beagle Mars lander had unfortunately failed. No water molecules had yet been found on Mars, but observation from space had produced much evidence for the presence of water on the Martian surface. The Planck mission to explore the early universe was in preparation for launch in 2007.

Spain: The ICARE President reported that Spain continued to participate in ESA projects. He pointed out that the new Galileo GPS satellite system had a facility for charging for its use, unlike the original US system. This could in time lead to a "pay-as-you-use policy" in future.

UK: Dr. Miles reported on the UK space tourism project Starchaser (***Annex 2***).

USA: Mr. Collins reported (***Annex 3*** attached) on the missions flown during 2003, the ill-fated STS-107 and ISS Expeditions 6,7,8, and 9, and on future NASA plans, including the return to flight of the space shuttle in spring of 2005.

b. X Prize Project

The Rutan Scaled Composites team was close to attempting a space flight with their vehicle and FAI had to be ready to respond, in order to fulfil its obligations under the MoU. Radar tracking data from Edwards Air Force base, together with GPS datalogger traces should provide ample evidence to demonstrate the geographical start point (even if such a point is above the Earth's surface) and finish point of any flight and the altitude above sea level reached. The main problem would be monitoring the 14 day period between the first and second flights.

Mr Collins (USA) agreed to contact the X Prize chief judge, former NASA astronaut Rick Searfoss, to determine what plan the judges had for monitoring the space vehicle during this period of repair and replacement, so as to ensure that no more than 10% of the mass is replaced.

The FAI Secretary General agreed to liaise with NAA to determine who should be the FAI official observer(s) for the attempt, and to decide how to handle the procedural questions concerning X Prize claims.

It was agreed that all claims for new world records under the "sub-orbital" rules had to be channelled through the NAC of the country concerned, in this case the NAA. The FAI Secretary General agreed to consult the file for Alan Shephard's sub-orbital flight of 5 May 1961 and to make ICARE delegates aware of the values homologated.

(Secretary General's. Note : These are: Altitude Without Earth Orbit: 187 500 metres; Greatest Mass Lifted (to 100km or more) Without Earth Orbit: 1 832.5 kg)

5 FAI SPORTING CODE – SECTION 8 (ASTRONAUTICS)

ICARE agreed to add a note to paragraph 3.9 of Section 8 of the FAI Sporting Code, as follows *(heavy type, underlined):*

> *RECORDS OF MANNED LINKED FLIGHTS OF TWO OR MORE SPACESHIPS WITH CREWS BELONGING TO TWO OR MORE NATIONS*
> *Provided that the spaceships are launched from different countries and all the elements of the flight are manned during at least a part of the mission, the following records apply* ***(to be listed in Category K unless all linked spaceships are aerospacecraft)*** *:……etc*

6 PROPOSALS FOR FAI AWARDS

ICARE approved the following awards:

a. **Yuri Gagarin Gold Medal** : STS 104 crew (posthumous)

b. **Komarov Diploma** : Crew of Expedition 7 to the ISS

c. **Korolev Diploma**: Crew of Expedition 6 to the ISS

ICARE agreed that the question of whether individual medals would be awarded to each member of a crew, or only one member for a whole crew, would be handled on a case by case basis, having regard for the need to fund these medals, and the reluctance of FAI to charge recipient countries or individuals for medals.

PRESIDENT'S NOTE: Soon after the meeting, the NAA submitted to FAI the following Nomination for the FAI Gold Space Medal:

Dr. Sally Ride

Dr. Sally K. Ride became the first American woman to orbit earth when she flew aboard the space shuttle Challenger June 18, 1983. Dr. Ride has undergraduate degrees in English and Physics and a Masters and PhD in Physics all from Stanford University. Accepted into the astronaut corps in 1978, she was an active astronaut logging 344 hours in space on two separate missions. She was selected to serve on the Presidential Commission on the Space Shuttle Challenger Accident in 1986 and subsequently left NASA in 1987 to join the faculty at Stanford University. Since 1989, Dr Ride has been on the faculty of the University of California at San Diego, where she also heads the California Space Institute. Dr. Ride has written a children's book, "To Space and Back", describing her experiences in space, has received the Jefferson Award for Public Service, and has twice been awarded the national Spaceflight Medal. She has also written "Voyager: An Adventure to the Edge of the Solar System" and "The Third Planet: Exploring the Earth from Space". Dr. Ride's unsurpassed achievements in space flight and public service are richly deserving of the FAI Gold Space Medal.

The President, after consultation with the Secretary General, accepted the nomination and invited all ICARE members to express their opinion on the subject. All delegates who responded expressed their approval in clear terms. The President was in agreement with them. Consequently, he forwarded to the Secretary General the following message:

Having no received opinions against the award of the GOLD SPACE MEDAL 2003 as proposed, please be informed that the ICARE Commission endorses the award unanimously.

7 INTERNATIONAL ASTRONAUTIC FEDERATION

There was no report on the 2003 IAF Congress because Dr Sanz Fernandez de Cordoba had, at a late stage, been prevented from attending. ICARE agreed to appoint Dr Sanz Fernandez de Cordoba as official representative to the 2004 IAF Congress, and to authorise him to delegate this appointment to Mr Miguel Angel Llorca Palomera, or another suitable person, if he was unable to attend.

The FAI Secretary General undertook to discuss with the Board whether some funding could be found to help ICARE be represented at this Congress.

9 PRESENT WORLD RECORDS - REPORT

Mr. Marchal reported that no new World Records had been ratified since the last meeting.

11 ELECTIONS

The following were re-elected :

President :	Dr Sanz Fernandez de Cordoba
Vice President :	Mr John Miles (UK)

12 DATE AND PLACE OF NEXT ICARE MEETING

It was agreed that the next meeting would be held on in Lausanne on Friday 29 April 2005 at 09h00.

END

FEDERACION AERONAUTICA INTERNACIONAL

VICEPRESIDENTE

PRESIDENTE DE LA
COMISION INTERNACIONAL DE RECORDS ASTRONAUTICOS(ICARE)

REPORT FROM ICARE PRESIDENT
96th FAI General Conference, Kracow, Poland, October 2.003

1.- Introductory comment

I am sorry to inform the Conference that this was a bad year for Astronautical activities due to the STS-107 Columbia Shuttle accident on February 1, 2003, with the death of all astronauts on board. As a consequence of the accident, the International Space Station (ISS) crew was to go down to two people, and investigation were being carried out on how to reschedule the resupplying of ISS using Russian vehicles only. NASA was already positioning to be ready to fly again by the end of 2003.

The President of ICARE expressed his condolences to the US Delegate and asked her to convey a message of support from ICARE to the families and colleagues of the astronauts killed in the accident.

2.- General Activities of ICARE Committee 2002/2003

The ICARE Committee held its annual meeting on April 25, 2003, at the FAI Headquarters in Lausanne, Switzerland.

In general matters, I am glad to report to the Conference that, after ICARE's decission last year to rename "Absolute Records" the best performance in Chapter 3 of Section 8 of the FAI Sporting Code (just in line with other aeronautic records) one De La Vaulx Medal has been awardedthis year in Astronautics. It correspond to the absolute world record of assembled mass of spaceships linked in flight. Winners of the medal are the international crews of STS 112 (Shuttle) and ISS (International Space Station). Total mass linked amounted to 264,432.8 Kg.

It is to be remarked that this record did not exist a few years ago, and consequently was never held by the mythical Soviet-Ruso MIR Station. Nevertheless, as a deference to that station, the record has not been claimed until now, when the assembled mass has surpassed the total mass of MIR Station.

The Yuri Gagarin gold medal was awarded to Crew Four of the ISS. There were no candidates for the Space Gold Medal.

2.- X Prize

I have been reporting about this private initiative in the last few conferences. Doubtless, it is the most exciting private initiative currently being developed.

Two of the most promising candidates happen to be from UK, and were visited by the delegate of that country. He reported:

-The first group competing for the X-Prize is Bristol Spaceplanes Limited. Their Ascender spaceplane is designed to be the first sub-orbital aeroplane since the X-15, and the first ever to carry passengers to space. A radio controlled model designed to investigate the ærodynamic behaviour of Ascender has already flown successfully.

-The other British group competing for the X-Prize is called Starchaser Industries Limited and consists of an enthusiastic group of young people with dream and passion. Their "thunderbird" is a low cost multi stage rocket designed to carry the crew on short sub-orbital flights into space. The recent test firing of the "Churchill Mark 2" bi-propellant liquid rocket engine was a complete success. The single seat NOVA capsule was recently unveiled in the UK. It has since then been shipped to the USA for manned parachute drop tests from 14,000 feet. The project aims to carry out the first manned flights before the end of 2004.

Our Commission took some further steps to help the initiative by establishing new records on reusable spaceships, a condition established for the X-Prize, that has been highly considered as a major step towards opening space flights.

Dr. S. Sanz Fernández de Córdoba

STARCHASER PROJECT

It is my understanding that interest in the X-Prize continues to be strong in the UK. At least one team, Starchaser Industries Limited, is currently building full-scale engines and vehicles. Substantial and clear progress has been made since we spoke last year. In particular:

- an initial submission for permission to use Australia's Woomera launch site has been made. The company has received notification that pending minor changes, this document will be accepted as a basis of full Space Launch Licence application.
- various Launch Escape System (LES) components have been procured and small thruster test firings are being conducted. All this is leading up to a programme of static LES test firings, followed by a full-scale launch escape test flight, conducted from a UK site.
- The design of the Starchaser 5 booster used for the new X-Prize vehicle is nearing completion.
    - Thunderstar / Starchaser 5 specifications :
      Overall Dimensions:
      Height: 27.15 m (89 ft)
      Diameter: 1,600 mm (5.25 ft)
      Finspan: 4,800 mm (15.75 ft)
      Launch mass: 17,000 kg (37,485lb) max
      Recovery: Parachute
      Propulsion: 2 x Churchill Mk 3 bi-liquid lox / kerosene engines
      Total impulse: 23.544 MNs (5,292,000 lb secs)
      Average thrust: 294.3 kN (66,150 lb)
      Maximum speed: 1323.5 mtrs/sec (2,977.91 mph)
      Max Mach number: 4.25
      Max altitude:
      Capsule: 157,895 mtrs (518,030 ft) (98.11 miles)
      Booster: 127,079 mtrs (416,928 ft) (78.96 miles)
- the Churchill Mk 2 engine was test fired successfully on the 7th, 13th, 14th and 15th October 2003.
- two manned parachute drop tests of the NOVA 2 capsule were successfully carried out at the Red Lake drop zone in Arizona USA on the 22nd and 24th July 2003. The capsule was deployed from the rear cargo door of a Fairchild C123K aircraft at an altitude of 10,000 feet.

UNITED STATES HUMAN SPACE FLIGHT ACTIVITIES FOR 2003

Mission: STS-107

Crew:

Commander: Rick Husband
Pilot: William McCool
Mission Specialist: David Brown
Mission Specialist: Kalpana Chawla
Mission Specialist: Michael Anderson
Mission Specialist: Laurel Clark
Mission Specialist: Ilan Ramon

Launched: 16 January 2003
Landed: Broke up during re-entry on February 1, 2003

Primary Mission Objectives:
STS-107, was a multi-discipline microgravity and Earth science research mission with a multitude of international scientific investigations conducted continuously during the 16 days on orbit.

INTERNATIONAL SPACE STATION EXPEDITIONS for 2003

Expedition 6 - The crew was launched to the International Space Station on STS-113/ISS-11A and was returned to Earth on Soyuz TMA-1.

Crew:

ISS Commander: Kenneth D. Bowersox
Flight Engineer: Nikolai M. Budarin
Flight Engineer: Donald R. Pettit

Launched: 23 November 2002 (STS-113)
Docked: 25 November 2002
Mission End: 3 May 2003 (Soyuz TMA-1)

Expedition 7 - The crew was launched to the International Space Station and returned to Earth on Soyuz TMA-2.

Crew:

ISS Commander: Yuri Ivanovich Malenchenko
Flight Engineer: Edward Tsang Lu (PH.D.)

Launched: 25 April 2003
Docked: 28 April 2003
Mission End: 27 October 2003

Expedition 8 - The crew was launched to the International Space Station and returned to Earth on Soyuz TMA-3.

Crew:

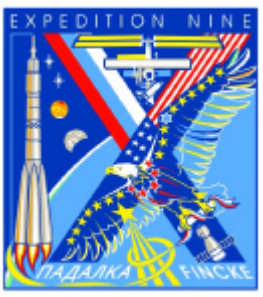
ISS Commander: C. Michael Foale (PH.D.)
Flight Engineer: Alexander Yurievich Kaleri
Flight Engineer: Pedro Duque **(**European Space Agency Astronaut launched with Expedition 8 on the Soyuz TMA-3, and returned with Expedition 7 on the Soyuz TMA-2.)

Launched: Oct. 18, 2003
Docked: Oct. 20, 2003
Mission End: April 29, 2004

Expedition 9 - The crew was launched to the International Space Station Soyuz and will return to Earth on Soyuz TMA-4.

Crew:

ISS Commander: Gennady Ivanovich Padalka
Flight Engineer: Edward Michael "Mike" Fincke
Flight Engineer: André Kuipers (European Space Agency Astronaut) launched with Expedition 9 on the Soyuz TMA-4 spacecraft, and returned with Expedition 8 on Soyuz TMA-3.
Launched: 18 April 2004
Docked: 21 April 2004
Mission End: October 2004 (Planned)



UNITED STATES HUMAN SPACE FLIGHT
NEXT STATION AND SHUTTLE PLANNED ACTIVITIES

Next Space Station Mission: Expedition 10

Crew:

Not officially assigned.

Planned Launch: 9 October 2004

Next Shuttle Mission: STS-114 (Discovery)

Crew:

Commander: Eileen Collins
Pilot: James Kelly
Mission Specialist: Charles Camarda
Mission Specialist: Wendy Lawrence
Mission Specialist: Soichi Noguchi (JAXA)
Mission Specialist: Stephen Robinson
Mission Specialist: Andrew Thomas

Planning window: no earlier than 6 March to 18 April 2005.

Primary Mission Objectives:

Return to Flight test mission. Raffaello Multi-Purpose Logistics Module (MPLM); External Stowage Platform (ESP-2); Remove and replace Control Moment Gyro.

Interesting web sites:

Return to flight information:
http://www.returntoflight.org

Shuttle and Station Program Information:
http://spaceflight.nasa.gov/index.html

Station sighting information:
http://spaceflight.nasa.gov/realdata/sightings/index.html

Latest Mars Rover News:
http://www.jpl.nasa.gov/