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Apr 28th, 8:00 AM

Panel Session V - X-Prize & Zero-G Briefing to the 4F1 Space Congress

Peter Diamandis
Chairman, X-Prize Foundation

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X PRIZE & ZERO-G Briefing to the 41st Space Congress



Dr. Peter H. Diamandis
Chairman/CEO
peter@xprize.org
Tel: 310-399-1976
Tel: 314-533-2002
www.xprize.org

APRIL 2004



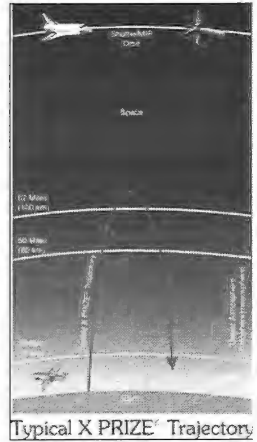
WHAT IS THE X PRIZE?

An international competition that will award a \$10 Million cash prize to the first team to:

- Privately finance, build & launch a ship
- Carry 3 people to 62 miles (100 km)
- Two flights within 2 weeks (same ship)

The X PRIZE is:

- The largest cash prize ever;
- The NASCAR of space;
- Speed, innovation, performance; and,
- A high profile, global event.
- The Ultimate drama...



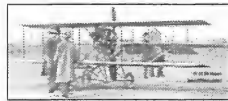
Typical X PRIZE Trajectory



Aviation History

1903 - 1908

- Wright Brothers Flew in 1903
- By 1908 Only ten pilots had flown



1909 - 1912

- Diverse concepts tried, 'nonsense' became 'breakthroughs'
- Entrepreneurs drove development
- Belief, in 1909: "I can do that."
- Thousands of pilots were trained
- Hundreds of aircraft types in 31 countries
- Not risk adverse
 - 35 of first 1000 pilots died in accidents (3.5%)
- 50 MS industry in Europe (nearly a billion yr2003\$)
- More than 40 cash prizes, some for "impossible feats"
- Major Air shows
- Applications, and safety came later

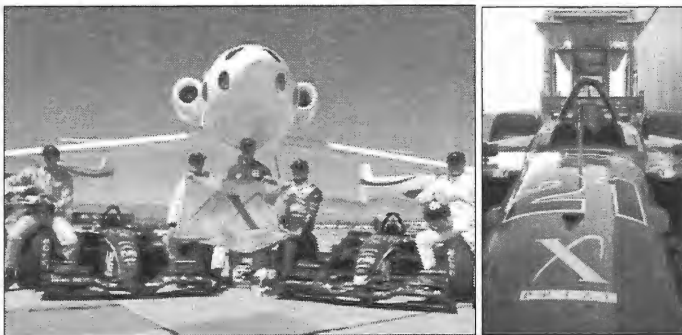


1927 Orteig Prize: New York - Paris

- 1919 Orteig puts up a \$25,000 challenge.
- 9 Teams register to compete
- They spend \$400,000 to win the prize
- Underdog, 25 year old Lindbergh wins!
- 30x increase in passenger traffic
- 4x aircraft... 3x pilots...
- Aviation Stocks skyrocket!



Presented by Champ Car

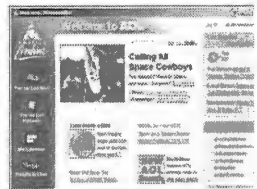
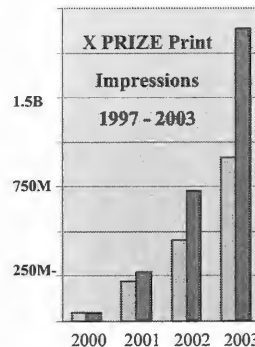


X PRIZE MEDIA REPORT

Total Print Impressions:

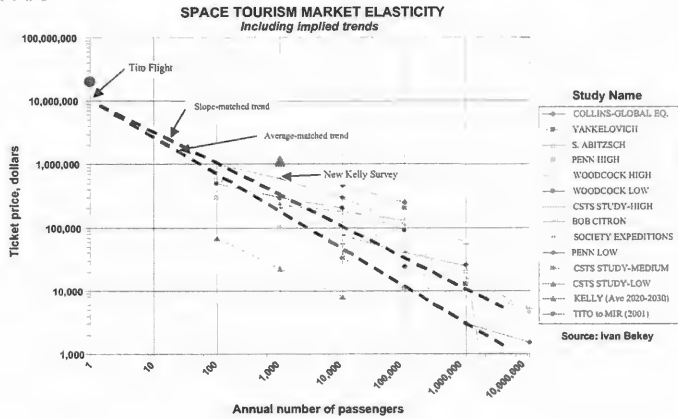
May'96 - Jan'04 >2.0 Billion

Newspaper articles...	4,000
Radio shows...	300
Magazine articles...	250
TV appearances...	150
Documentaries...	25

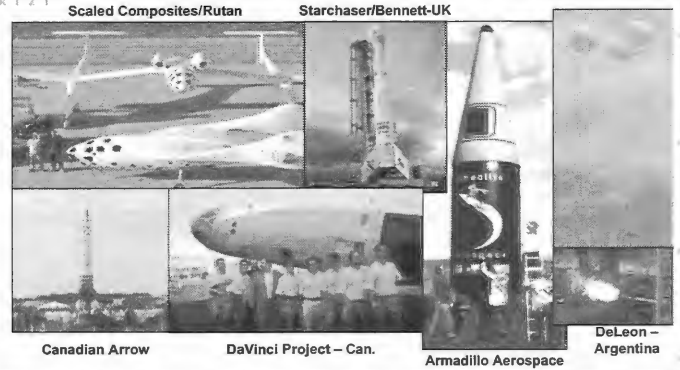




Numerous studies have sought to forecast or measure market demand for space tourism ...



>20 TEAMS FROM 7 COUNTRIES



>20 teams, from 7 countries, have thus far registered to compete. More teams are expected. Each team is spending \$2M - \$20M to win the coveted X PRIZE.

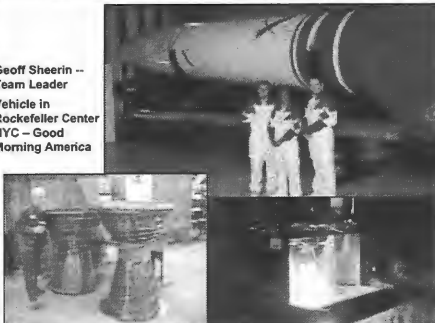


Canadian Arrow
Canada



LAUNCH METHOD: Vertical takeoff from coastal launch site
PROPULSION: First Stage: Alcohol and liquid rocket engine
 Second Stage: Solid Rocket Propulsion
LANDING METHOD: Parachute Landing

Geoff Sheerin --
Team Leader
 Vehicles in
Rockefeller Center
NYC -- Good
Morning America



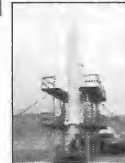
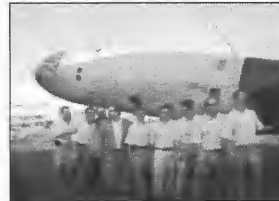
The daVinci Project
Canada



LAUNCH METHOD: Rocket is tethered to a balloon and launched from 80,000 ft altitude
PROPULSION: Liquid oxygen/kerosene rocket system
RECOVERY: High drag re-entry ballute and parachute combined with inflatable airbag



Prototype Completed in Feb 2001.
Team Leader: Brian Feeney



Full-scale mockup and successful rocket motor tests completed in 2002.



Pablo DeLeon & Associates
Argentina



LAUNCH METHOD: Vertical launch
PROPULSION: Hybrid (Liquid/solid) rockets
LANDING METHOD: Parachute landing system

Half-scale Vehicle Test scheduled for December 2002



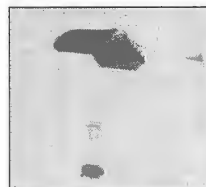
Clean room Ops Testing Space Suit Scale Capsule drop test from 96,000 feet



Starchaser Industries. Ltd.
United Kingdom



LAUNCH METHOD: Rocket Powered Vertical Takeoff
PROPULSION: Hybrid Rocket Motors
LANDING METHOD: Parachute



Team Leader: Steve Bennett
Britain's #1 Rocket Developer



Bennett's 40 foot tall Nova launched from England in Nov 2001



Hot fire rocket engine tests in Oct 2002.

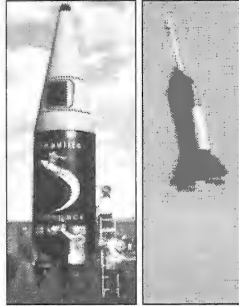
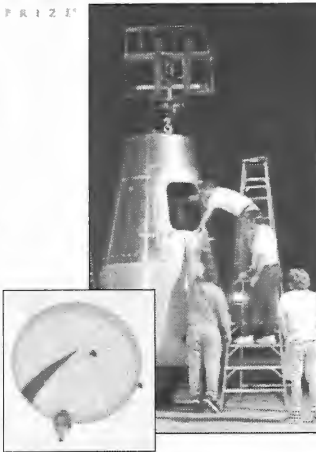
Parafoil pilot training in advance of Nova capsule drop tests in early 2003.



Armadillo Aerospace
Dallas, Texas, USA



LAUNCH METHOD: Vertical Takeoff
PROPULSION: Hydrogen Peroxide Engines
LANDING METHOD: Parachute/Crushable Nose



Leader John Carmack - Software Guru, creator of Quake and Doom leads technical design and funding of Armadillo.

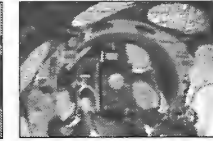
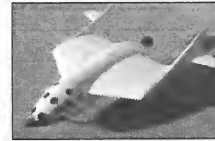


Scaled Composites, Inc.
California, USA



Team Leader Burt Rutan
Designer of Voyager non-stop round-the-world aircraft

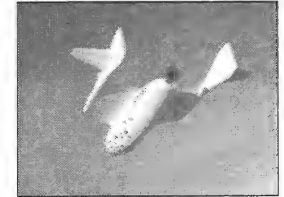
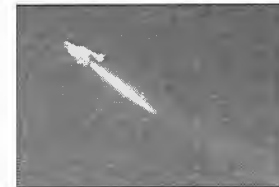
LAUNCH METHOD: Runway & air launch
PROPULSION: Hybrid - N2O2 Engine
LANDING METHOD: Horizontal Runway



Additional SS1 Images



Additional SS1 Images



What is the X PRIZE CUP?



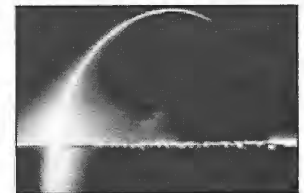
X PRIZE Follow-On: High visibility, high revenue, & high value. Benefiting teams and spaceports, involving the public



What is the X PRIZE CUP?

- After the X PRIZE is won...
- Each year, X PRIZE Teams from around the World are invited to a single location to race and set new records.
- During a 14 day period, teams launch as often as they can...
- Teams are scored in 5 categories:

- Category 1: Turn Around Time
- Category 2: Max PAX
- Category 3: Total PAX
- Category 4: Max Altitude
- Category 5: Fastest Flight Time



- Combined Category Score = **X PRIZE CUP Champion**

X PRIZE CUP VENUE - RFP

- X PRIZE has issued an RFP to U.S. spaceports.
- Four spaceports have provided proposals:
 - California
 - Florida → FLORIDA
 - New Mexico → NEW MEXICO
 - Oklahoma
- One Location will be selected by May'04
- First CUP planned for Summer 2005 (exhibition) & 2006 (competition)

ZERO GRAVITY CORPORATION

CUSTOMER BRIEFING
2004

Zero gravity
Weightlessness
The ultimate freedom
Now available to everyone

ZERO GRAVITY CORPORATION
2708 3rd Street * Suite No. 5 * Santa Monica, CA 90405
Ph: (310) 399-1976 * Fax: (775) 942-3544 * www.zerogcorp.com



Company Overview

An overnight success after 11 years of hard work...

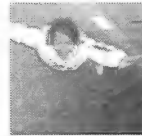
ZERO-G has already obtained Patents (#5,971,319), Trademarks and FAA Supplemental Type Certificates (#ST01051LA) to protect its leadership position.

ZERO-G's goal: Make the excitement and unique environment of space accessible to the general public and the commercial marketplace in a safe and cost-effective fashion.



Executive Management

ZERO-G management includes a world-class team of professionals from NASA, the FAA, and executives from the aerospace, tourism and educational arenas.



Peter H. Diamandis
Chairman/CEO & Founder

B.S., M.S., M.I.T., Aerospace Engineering.
M.D., Harvard Medical School
Founder, Managing Director, Int'l Space University
Chairman & President, X PRIZE Foundation
Co-Founder, Space Adventures.



Byron K. Lichtenberg
President & Founder

B.S., Aerospace Engineering, Brown University
M.S. ScD/Bio/ Mechanical Engineering, M.I.T.
Space Shuttle Astronaut: STS-9; STS-45
3000 hrs in military jets; 8,000+ hrs in 737 type rating
Pilot for major U.S. Airlines
Founder, President, Payload Systems, Inc.



Key Management, Directors & Advisors



McDowell

➤ **Rick Searfoss** – (VP) – NASA Shuttle Commander and Pilot. Airforce test pilot. Motivational speaker.



Rick Searfoss

➤ **Alan Ladwig** – (COO) – Previous NASA Associate Administrator of Policy & Plans.

➤ **Noah McMahon** – Chief Marketing Officer

➤ **Robert Ward** – Director, Aircraft Operations

➤ **Mike McDowell** – (Director) – Co-Founder, Space Adventures; Quark Expeditions. Leading adventure travel entrepreneur.



Ladwig

➤ **Gloria Bohan** - President, Omega World Travel a \$500M/year leisure travel company.

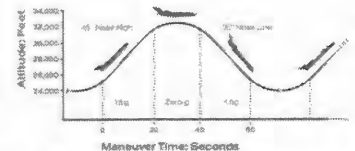
➤ **Ted Ellett** - Hogan & Hartson, FAA General Council under President Reagan & Bush.

➤ **Astronaut Advisors** – ZERO-G has numerous Astronaut Advisors who will fly with the Customers.



Parabolic (Zero-G) Flight

- Only method to create weightlessness on Earth.
- 25-30 seconds of zero gravity during each parabola.
- NASA has flown over 140,000 parabolas over the past 30 years without incident.
- NASA uses a 45 year old Air Force KC-135 aircraft.
- Before ZERO-G, parabolic experiences were not available to the General Public in the U.S.

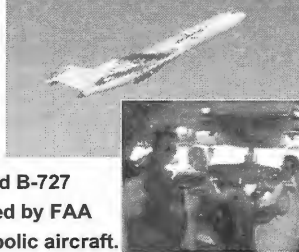




ZERO-G's Boeing 727



Successful FAA Test Flight



- ZERO-G uses a specially modified B-727
- Aircraft mods have been approved by FAA
- Same body size as NASA's Parabolic aircraft.
- B-727 offers a better quality parabola than NASA's aircraft.
- Large fleet of 727 and easy access to maintenance facilities offers high assurance of aircraft availability.
- Operated under Part-121 of the Federal Aviation Regulations, the highest standard for aircraft safety.

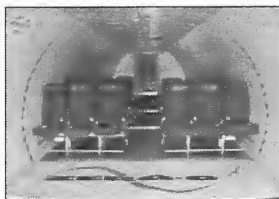
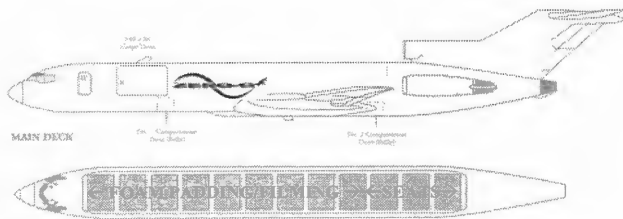


Mechanical STC #ST01051LA

- ZERO-G was required by the FAA to demonstrate the normal operations of every subsystem, or to modify systems for normal ops in parabolic flight.
- ZERO-G conducted extensive engineering and verification work, including the creation of a 60,000 node FEM (Finite Element Model) in conjunction with strain-gauge measurements during flights.
- The following systems were tested in flight and data obtained to demonstrate normal operations:
 - Fuel System and fuel procedures
 - JT8D Engines
 - Constant Speed Drives
 - Air Cycle Machines
 - Structures Analysis
 - Flight Operations Procedures
- The following modifications were made as part of the "Mechanical STC" to allow for safe operations during flight:
 - Avionics/Gauges
 - Hydraulic System
 - Continued Airworthiness Program
 - Approved interior



Interior Configuration



- Pallets and large cargo door allow rapid configuration between 'Cargo' and 'Zero-G' operations.
- Clients can pre-configure their experiments, film sets, etc. on pallets for easy loading onboard.
- 12 Pallets - 3 Pallets holding 30 seats;
9 Pallets for foam padding.



AMERIJET INT'L AIRLINES

ZERO-G has selected Amerijet Int'l Airlines, a Florida-based, Part-121 Boeing 727-200 operators. Amerijet provides:

- **AIRCRAFT:** Access to one or more specially modified Boeing 727-200 cargo aircraft.
- **MAINTENANCE:** In strict adherence of the FAA's Continued Airworthiness Program.
- **CREWS:** Experienced & specially trained Flight & Ground Crews
- **INSURANCE:** Hull, 3rd Party and Liability protection plus \$1M/client.
- **PRICING:** Fixed Charter/ACMI price/Hr



Operations Plan

ZERO-G and its aircraft are based in Miami, Florida. Regular operations will take place from there, but ZERO-G is able to relocate the aircraft anywhere a client wishes to fly with the addition of a ferry charge.

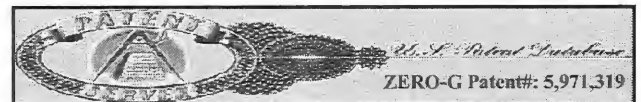
Future plans include using Las Vegas, Nevada as an additional base in order to capture more of the individual adventure market.



Barriers & Competition

Multiple Effective Barriers to Entry

- (1) Patent (#5,971,319)
 - Business Model (the use of a cargo aircraft)
 - Engineering modifications
- (2) Trademarks
 - ZERO-G®
 - Question Gravity™®.
- (3) FAA Approvals -- Supplemental Type Certificate (#ST01051LA).



Competition -- No U.S. competition

- NASA KC-135 -- not allowed to compete with ZERO-G (by law).
- CNES Airbus 300 -- costs >\$150,000 per flight (can not fly public).
- Russian IL-76 -- military aircraft located in Russia/not FAA certified.



Pricing Strategy

Corporate and Individual Pricing:

- Retail Ticket Price \$2,950
- Full Flight Price (27 flyers) \$79,500

Entertainment Flight Price \$65,000

Research/ Education Flight Price \$59,500

Government Flight Price TBD

NOTES: Current price for ZERO-G Flights in Russia is \$7,000 (excluding travel and hotel).



Markets

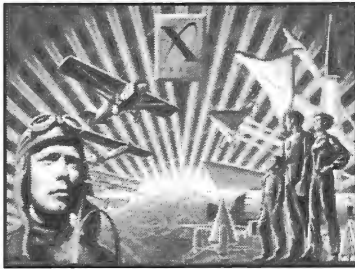
ZERO-G has identified five robust markets for its services:

1. Entertainment / Film Production
2. Individual Adventure Travel
3. Corporate / Incentive
4. Research/ Education
5. Government



THANK YOU!
www.xprize.org

“The best way to predict the future is to create it yourself.”



Dr. Peter H. Diamandis
Chairman/CEO
peter@xprize.org
Tel: 626-379-9000
www.xprize.org