



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

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Statement of
THEODORE E. LIU
Director
Department of Business, Economic Development & Tourism
before the

**HOUSE COMMITTEE ON ECONOMIC REVITALIZATION, BUSINESS,
& MILITARY AFFAIRS**

Tuesday, February 17, 2009

8:30 a.m.

State Capitol, Conference Room 312

in consideration of
HB 994
RELATING TO TOURISM.

Chair McKelvey, Vice Chair Choy, and members of the Committee. The Department acknowledges that this measure has merit; however, given the current fiscal difficulties, it would not be prudent to pursue enactment at this time.

The effort to establish an international commercial spaceport in Hawaii builds upon the recent development of innovative "spaceplanes" that take off and land at airports like commercial jet planes, but also use onboard rockets to carry these vehicles (and their cargo of satellites, experiments and tourists) to space. Rocketplane Global is one of several companies that have approached our state to request permission to launch these types of vehicles from Hawaii as early as 2011. Its business plan projects initial intra-state launch trajectories (launching from and returning to Honolulu), with future trans-Pacific flights between Hawaii,

Japan, and the continental U.S. – initially generating approximately \$200 Million in annual gross revenues from user fees.

Rocketplane Global also plans to develop a terrestrial space-themed education and training center in the Kalaeloa district on Oahu that will provide opportunities for both tourists and local residents to experience “virtual reality” simulations of space flight and exploration missions to the moon and Mars, as well as 2-3 day “space camp” experiences involving “zero-G” flights simulating interplanetary space travel.

In order for spaceplanes to launch and land from Hawaii’s airports, our state must apply for and receive a commercial space transport license from the Federal Aviation Administration (FAA).

Thank you for the opportunity to testify on this bill.

George R. Ariyoshi
999 Bishop Street, 23rd Floor
Honolulu, HI 96813

TESTIMONY

February 5, 2009

Re: SB222 and HB994

Dear Members of the Twenty-Fifth Legislature:

I am writing this testimonial in strong support of two timely and visionary bills that have been introduced to help position Hawaii as both a competitive and globally recognized leader in the aerospace industry – SB222 and HB994.

This legislation addresses a very promising opportunity for aerospace in Hawaii – the development of commercial space launch capabilities. To date, over several billion dollars have been invested nationally in developing innovative (e.g., smaller, more fuel-efficient, and safer) technologies to facilitate the launch of satellites, scientific payloads, and tourists to both sub- and low-earth orbits. One outstanding example is the “XP Spaceplane” under development by Rocketplane Global, which takes off and lands at an airport like a commercial jet plane, but also uses an onboard rocket engine to carry this vehicle (and its cargo of satellites, experiments and tourists!) to space.

Rocketplane Global has approached our State requesting permission to launch this vehicle from Hawaii by the year 2011. Its detailed business plan projects initial intra-state launch trajectories, launching from Honolulu International Airport and returning to HNL and/or Kona International Airport at Keahole. Long-term buildout (five to ten years after initial operations) will include trans-Pacific flights between Hawaii, Japan, and the continental U.S.

Over \$200 million in annual gross revenues are projected through this plan from launch fees paid by tourists and by universities, private companies and the U.S. Dept. of Defense launching research/remote sensing experiments and payloads. In addition, Rocketplane is planning to develop a terrestrial space-themed education and training center in the Kalaeloa district that will provide opportunities for both tourists and local residents to experience “virtual reality” simulations of space flight and exploration missions to the moon and Mars, as well as two to three day “space camp” experiences involving “zero-G” simulated spaced flights.

SB222 and HB994
February 5, 2009
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In order for spaceplanes like the Rocketplane XP to launch from Hawaii's airports, our State needs to obtain a commercial space transportation license from the Federal Aviation Administration. The funding requested through this legislation will help support the environmental and safety studies required to secure this license and make both spaceplane and other commercial space launch operations in Hawaii possible.

The potential scientific, educational and economic development opportunities afforded by this enterprise are truly substantial. Suborbital spaceflights facilitated by spaceplanes will expand and enrich our visitor industry by adding a completely new dimension to this experience – space tourism! It also will provide low cost and frequent access to space for our academic and private sectors, enabling new R&D opportunities for the development of innovative drug, biotech, and materials science applications by both university researchers and entrepreneurial companies.

Microsats launched aboard spaceplanes will support remote sensing operations to facilitate oceanographic surveillance, pollution monitoring and terrestrial resource management. The development of a spaceport visitor's center at Kalaeloa in tandem with spaceplane operations also will provide unique aerospace education opportunities for both visitors to Hawaii and local residents.

Finally, spaceplane operations will generate new high-paying employment opportunities for local residents, and tax revenues from spaceport operations will quickly help recapture the State's upfront investment in a space transportation license (the only major public sector investment that will be required to realize income from suborbital space flight operations).

Our State is uniquely poised to partake of the tremendous scientific, economic and educational opportunities and benefits afforded through space exploration. I applaud the Legislature's efforts to support this vision through these two bills, and urge you to pass this legislation.

Thank you for the opportunity to provide these comments.

I know the difficult financial circumstances facing our State Government but we must not overlook the opportunities that are before us. This happens to be one of those that Hawaii cannot afford to pass up.

Sincerely,



George R. Ariyoshi

GRA:khy



February 7, 2009

Members of the 24th Legislature
State of Hawaii
Hawaii State Capitol
415 South Beretania Street
Honolulu, HI 96813

RE: S.B. 222 and H.B. 994 Space Transportation License Bill

Dear Members of the Senate and House of Representatives:

I am writing to offer support for the above referenced appropriations bill and to commend the Legislature for taking this visionary step and continuing work on bringing new aerospace jobs, economic development, and new space business opportunities to Hawaii. We understand fully that the current state budget situation is extraordinarily challenging, and making an investment in the development of a new industry in this budget climate is very difficult.

Market studies over the last five years have validated the concept that space tourism can become a billion dollar industry over the next ten years, with thousands of people from all over the world flying to space in new reusable suborbital spacecraft in order to experience the unique views of the Earth from space and the thrill of acceleration and the feeling of weightlessness. Hawaii's unique geographic position will draw customers from all around the Pacific Rim to be able to see the entire chain of islands and the beauty of the blue planet from 100 kilometers altitude. Since last year when we submitted testimony there have been some very encouraging developments in our industry, most notably the FAA / AST Office of Commercial Space Transportation beginning a new initiative to develop international cooperation and licensing standards to facilitate the future growth of long distance suborbital point-to-point transportation systems. There is now an official International Programs Officer at AST, and discussions are underway right now about the licensing of international spaceports that could in the future provide direct 90 minute flight connections to Hawaii from Asia.

Rocketplane Global is committed to becoming an anchor tenant for Spaceport Hawaii as soon as a Spaceport Operator's License is approved by FAA / AST. Our experience in dealing with this agency during the licensing process for the Oklahoma Spaceport was extremely positive, and much of the work that was done for that license will also be applicable to the licensing effort for Spaceport Hawaii. The Programmatic Environmental Impact Statement that was prepared by the FAA / AST office for the horizontal takeoff and landing class of suborbital launch vehicles (including the Rocketplane XP) will also be applicable for licensing the existing airport infrastructure in Hawaii as dual use airport / spaceport facilities. Because the physical infrastructure to

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support space flight operations is already in place on Oahu and Kona, the state can enter the spaceflight business without any public sector investment beyond the cost of the licensing effort. This will provide a strong competitive advantage to Spaceport Hawaii, augmented by the climate and natural beauty that the state is already famous for. In contrast, New Mexico is now spending over \$200 million in state taxpayer money to develop and build NEW infrastructure that when completed will not even be close to the existing airport infrastructure base in Hawaii. Hawaii is in essence investing in intellectual property to bring an entire new category of economic activity to its existing world-class airport and tourist infrastructure.

In addition to space tourism, microgravity research, remote sensing applications and the affordable launch of small satellite payloads are all significant business opportunities for Rocketplane Global spaceplanes operating from Spaceport Hawaii. The ability to launch payloads in any direction from an existing runway without any noise or environmental impact associated with ground-based expendable rocket launches will open up significant new markets for both civil and government small satellite payloads, as well as provide new space test capabilities for the Pacific Missile Test Range. The USAF "Operationally Responsive Spacelift" initiative and other DoD programs would also find additional markets and opportunities in Hawaii once a licensed commercial spaceport is available.

We believe that there are also significant terrestrial space-theme tourism development opportunities associated with the spaceport development. With proper planning and design, the Spaceport Hawaii Visitor's Center could become one of the top tourist attractions on Oahu as well as being a world class immersive space education facility for residents. Promoting educational opportunities, seeing real spaceflights, and hands-on participation by students from across the state will be an additional benefit of the development of Spaceport Hawaii.

Second generation spaceplanes with much greater speed and range should begin to enter service within five to ten years of the start of space flight operations in Hawaii. These vehicles will have the ability to fly from Japan or the mainland US to Hawaii in an hour or less. By entering service as a commercial spaceport now, Hawaii is also positioning itself as a key node in a global spaceport network. In the future, suborbital spaceplanes will allow people and cargo to move anywhere on Earth in about two hours, and Hawaii will benefit greatly from this increased global ease of access. The FAA / AST new initiatives to encourage international spaceport development under a single global safety, environmental and operations standard will only serve to bolster Hawaii's place as a major node in a future global spaceport network.

There are now six licensed commercial spaceports in the US and another 8 being proposed. In addition, commercial spaceports in Europe, the Middle East and Asia are now in development. These locations will form the backbone of a global network of spaceports which will provide access points to long range hypersonic travel. Hawaii can be a critical node in this network connecting the US to Asia. Transportation has long been a driver in new economic development activity, and the development of Spaceport

Hawaii will position the state for this growth, both now using first generation spaceplanes and into the future with long range hypersonic transportation.

We encourage the Legislature to approve this appropriation, and look forward to working closely with the state in a spirit of public / private partnership to create new jobs and economic activity.

With Warmest Regards,

ROCKETPLANE GLOBAL, INC.

A handwritten signature in black ink, appearing to read "G. French, Jr.", written in a cursive style.

George D. French, Jr.
CEO

Committee on Economic Revitalization, Business & Military Affairs

Monday February 17, 2009

The Testimony of Elliot Holokauahi Pulham

Chief Executive Officer

Space Foundation

Re: HB 994

Aloha and good afternoon Chairperson McKelvey, Vice Chairperson Choy, and members of the House EBM Committee. I thank the committee for not only holding this hearing but also for allowing me to present testimony on HB 994. I commend committee for their vision in wanting to discuss such an interesting and non-conventional topic for legislation.

We have now seen the first fifty years of the space age come and go. This was an age where large government investment was the only means to have access to space. Launch vehicles, satellites and later human spaceflight were activities that only super power nations could conceive and implement. Efforts in space were often a surrogate forum of competition and gaining prestige. That age, as important and momentous as it was, has passed. As I speak to you now, we are inaugurating a new space age.

While yes, government expenditures for space activities are still sizable and important to the overall global space economy, what has been developing at a fantastic rate over the past two decades is the expansion of commercial space activities. Space activities undertaken by non-government entities and companies for the creation and development of space business opportunities is what is driving the expansion of the global space economy.

The Space Report, which is published by the Space Foundation, estimated that the global space economy has grown to over \$251 billion. The majority of this is in the form of commercial space activities. While commercial satellite communications is the largest player in the commercial sector, a growing portion of commercial space does focus on the personal space flight experience, or also known as 'space tourism' as cited in the legislation.

The most dramatic example of space tourism in terms of scope but also in terms of cost is the number of people willing to spend tens of millions of their own money to buy rides on Russian Soyuz craft to fly to the International Space Station. All while this is going on, dozens of companies are working on developing their own, privately developed vehicles that will take people to the edge of space. Virgin Galactic is the most high profile of these efforts with their development of Space Ship Two.

One of the most interesting outgrowths of this sector of the space economy is that these sub-orbital vehicles are different from conventional launch vehicles that have large, dangerous rocket stages that drop off during ascent. Since these space tourism vehicles are initially only going to the edge of space, they do not require rocket stages, and thus if you do not have to worry about spent rocket stages falling down on

population centers below, you can operate these vehicles more akin to aircraft. This allows many different locales as potential operating centers for these vehicles.

Where Florida once dominated space launch in the United States, followed by California, many states are beginning to assess whether they should look at trying to become a player in the space launch business. The concept of operations being discussed by companies like Virgin Galactic allows for many locations, once thought inoperable for access to space, to be viable locations.

HB 994 correctly highlights the critical role that the Federal Aviation Administration is playing in the development and certification of new launch sites. As such, many other states realize the potential benefit of having a robust space tourism sector to their own economy. It is commendable that the state of Hawaii is looking seriously at what it would take to develop itself into a credible player in this burgeoning sector of the space economy.

Just as air travel at first was only for those wealthy enough to afford it; space tourism will initially be the province of the well-to-do. As time progresses and the space tourism industry matures, prices will become more reasonable and the vehicles even more capable. Now is the time for serious discussions by policymakers like you to determine the merit in whether Hawaii wants to play a role in this industry.

I stand ready to answer any questions your committees may have as you review this important issue. Thank you.

About Elliot Holokauahi Pulham

Mr. Pulham was named president and chief executive officer of the Space Foundation in 2001. Pulham leads the premier team of space and education professionals providing services to educators and students, government officials, news media, and the space industry around the world. He is widely quoted by national, international, and trade media in their coverage of space activities and space-related issues. Before joining the Foundation, he was senior manager of public relations, employee communication, and advertising for all space programs of Boeing, serving as spokesperson at the Kennedy Space Center for the Magellan, Galileo, and Ulysses interplanetary missions, among others. He is a recipient of the coveted Silver Anvil Award from the Public Relations Society of America - the profession's highest honor. In 2003, the Rotary National Awards for Space Achievement Foundation presented him with the coveted Space Communicator Award, an honor he shares with legendary CBS News Anchor Walter Cronkite and CNN News Anchor Miles O'Brien. Pulham is a member of the national board of advisors of the RNASA Foundation, a member of the national board of advisors of the Institute for Space & Security Studies, and a member of the Chief of Staff of the U.S. Air Force Civic Leader Advisory Group.

About the Space Foundation

Our mission: *To advance space-related endeavors to inspire, enable, and propel humanity.*

In 1983, a small group of visionary leaders in Colorado Springs saw a need to establish an organization that could, in a non-partisan, objective and fair manner, bring together the various sectors of America's developing space community and serve as a credible source of information for a broad audience - from space professionals to the general public. The Space Foundation was founded March 21, 1983, as an IRS 501 (c)(3) organization "to foster, develop and promote, among the citizens of the United States of America and among other people of the world ... a greater understanding and awareness ... of the practical and theoretical utilization of space ... for the benefit of civilization and the fostering of peaceful and prosperous world."

As the global space community has evolved, so has the Space Foundation - embracing all facets of space - commercial (including telecommunications and other satellite-based services), civil, and national security. In fact, the Foundation is one of few space-related organizations that embraces the totality of this community rather than focusing on a narrowly defined niche.

In the 25 years since its founding, the Space Foundation has become one of the world's premier nonprofit organizations supporting space activities, space professionals and education. The Foundation's education programs have touched teachers in all 50 U.S. states and Germany. It conducts two of the top three conferences for space professionals anywhere in the world today: the National Space Symposium and Strategic Space and Defense.

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HASTIC NPO

301 Akai-Mansoin Hokudai-Mae, N-10, W-4, Kita-ku Sapporo 001-0010 Japan

February 8, 2009

Members of the 24th Legislature
State of Hawaii
Hawaii State Capitol
415 South Beretania Street
Honolulu, HI 96813

RE: S.B. 222 and H.B. 994 Space Transportation License Bill

Dear Members of the Senate and House of Representatives:

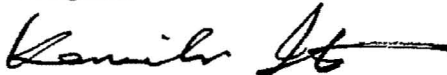
The Hokkaido Aerospace Science & Technology Incubation Center (HASTIC) commends the Hawaii Legislature for your initiative to create a commercial spaceport in Hawaii and we offer our support and encouragement of these bills. HASTIC has been working on the development of a similar commercial spaceport in the Tokachi district in eastern Hokkaido and we believe that Spaceport Hawaii and the Hokkaido Spaceport can become "Sister Spaceports" to encourage the development of high speed trans-oceanic suborbital flights between our locations.

HASTIC is also involved in R&D activities in support of small satellite development, microgravity life science, combustion and fluid physics research, and the development of new high performance hybrid rocket motors that can be used as upper stage propulsion for low cost microsatellite launch. We believe that there are strong synergies between our activities and the future business activities of Spaceport Hawaii. We see Hawaii's unique geographic position as a bridge between the mainland US and Japan as well as the ability to safely launch satellites in any direction as crucial business advantages that will bring new high technology business opportunities to both Hawaii and Hokkaido.

Japan and Hawaii have long-standing cultural, business and tourism linkages and the development of a commercial spaceport in Hawaii will provide HASTIC with opportunities to develop our own international business connections with the US. In the long term, we see the potential for one hour-suborbital flights between Hokkaido and Hawaii as the next phase of space tourism development.

We encourage the Hawaii Legislature to pass these bills and put Hawaii on the map as a key node in the development of a global spaceport infrastructure. We are considering to being able to come to Hawaii to sign a Sister Spaceports Agreement with your Office of Aerospace Development near future.

Best Regards,



Kenichi Ito, President, HASTIC

Judith Fox-Goldstein
1236 Moku Place
Hilo, Hawaii 96820

February 6, 2009

Re: SB222 and HB994

Dear Members of the Twenty-Fifth Legislature:

I am submitting this testimony in support of SB224 and HB994, because I believe it to be imperative that we position Hawaii to be a global leader in the aerospace industry and in the field of innovative and technical tourism.


As we continue to experience this economic tsunami, we need to keep focused on the fact that our state is well-positioned to take a leading role in innovative tourism which could stand as a national model for creativity and ingenuity. We should not hesitate to support the development of commercial space launch capabilities. We should be *running*, not just walking, behind this bill because we need to be out in front, in terms of innovative tourism, and taking a leadership role in this industry. We need to look at creative ways to generate significant dollars, small business and an increased number of visitors to our beautiful islands and commercial space tourism fits the bill... literally and figuratively!

Having been in the business of educational tourism for over twenty years, I can testify to the fact that we are now in significant competition for tourism dollars from competing "sand and surf" destinations. Hawaii CAN take the lead here in both educational tourism and techno tourism. We literally need to *reach for the stars* here and build this industry. With opportunities for both tourists and local residents to experience 'virtual reality' simulations of space flight and exploration missions to the moon and Mars, we can expand our litany of extraordinary 'hands-on' science experiences for visitors. Adding to our incredible edu-tourism activities such as volcanology, astronomy and marine science, the added value of space tourism activities has such significant potential that we must embrace and support this initiative.

In addition to the added attraction for visitors, the economic development opportunities are also quite substantial in terms of employment, research and private sector development.

Thank you for the opportunity to provide these comments.

Sincerely,



Administrative Director, Hawaiian EDventure &
University of Hawaii at Hilo Conference Center