



Special Interest Articles:

- Walter Kistler and
LTS
- Commercial Space
and ISDC 2006 P3
- NASA Lunar
Exploration
Strategy Workshop
P 3



Editor
Linda Kenny Sloan

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17701 S. Avalon #407
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Lunar Transportation Systems (LTS) and Walter Kistler

Lunar Transportation Systems, Inc was founded last year with Walter Kistler's vision to "go back to the moon to stay". The company is co-founded by Kistler and Bob Citron who are no strangers to the space community. Both founded Kistler Aerospace and other companies such as SPACEHAB. The architecture's approach is to build the equivalent of

a two-lane highway between Low Earth orbit (LEO) and the lunar surface.

The Lunar Transportation Systems (LTS) system elements include two reusable spacecraft – a lunar Lander and a propellant transporter. The both use a single small LOX/hydrogen rocket engine

redesigned to use replaceable cryogenic fuel tanks, the key to the reusability of these systems.

Assisting these reusable vehicles are two transfer vehicles used for moving payloads and propellant. All system elements can be launched using existing expendable launch vehicles (ELVs).

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From the editor

As this premier issue of Space Flight Insider is released, I am certain there will be changes to both this newsletter and to the commercial space industry it represents.

For now there will be industry coverage of important industry issues including the regulatory environment, federal and state activities and actions affecting the industry and, hopefully, international commercial space issues covered within these pages. You

will also find profiles of industry executives and other interesting personalities in our field. These are my hope for this newsletter.

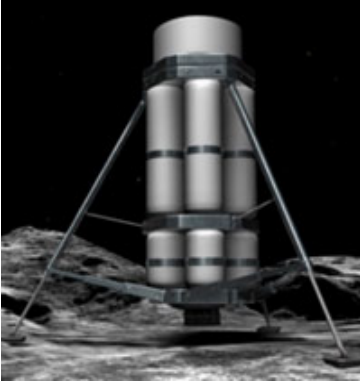
To keep in touch with readers there will be a feedback / survey page to keep the focus on the needs of the industry and newsletter readers. As mentioned above, if the industry or the readers' needs change then so will the newsletter.

This newsletter will grow to include new materials and ads, some paid, others free for Information Universe clients. No full-page ads will be accepted.

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Kistler and LTS, continued



"It is inevitable that colonies will be established on the Moon"

Walter Kistler .



The LTS transportation system will require the use of six emerging autonomous technologies including:

- Rendezvous and docking
- Payload transfer
- Propellant tank transfer
- Propellant tank tapping
- Lunar landing
- Payload offload

Because the system relies on existing technologies and ELVs, the development cost can be held down and have a shorter development schedule. The system's lunar payload capabilities range from 800 kg to 6 metric tons from LEO to the lunar surface using a Delta II heavy lift launch vehicle. NASA will be LTS's primary customer in order to fund development of the system. In the future LTS hopes to offer lunar transportation services to commercial clients.

The LTS system's mission profiles are flexible as refueling stations can be established at various stable orbits between LEO and the Moon. These include:

- Medium Earth Orbit (MEO)
- L1 Lagrange point
- Lunar orbit

Establishing the refueling stations will increase the Lunar Lander's payload capacity to its maximum of 6 metric tons. Also among these profiles is a Lunar-Earth payload return option.

Once LTS is operational, the scalability of the system will also affect the payload capacity. The use of a Delta IV ELV or a Falcon 9 would increase both the size and capacity of the Lunar Lander. The maximum capacity when using the refueling stations is 30 metric tons.

Kistler commented on the future for lunar settlement, "It is inevitable that colonies will be established on the Moon." He wants the LTS system to help make lunar colonies possible. To explore this system concept in more detail [click here to go to the LTS web site](#) or go to <http://www.lunartransportationsystems.com>

- Editor

ISDC 2006 and Commercial Space

Thursday's Space Venturing Forum is a who's who of commercial space entrepreneurs. A number of these people will be speaking during the Friday and weekend sessions. If you can, try to get to their sessions. The commercial space industry may well be NASA's backup plan for operations in all of Earth's orbits, beyond low earth orbit and eventually to the Moon.

Here is a list of the speakers you should watch for.

Eric Anderson
David Masten
Chuck Lauer RocketPlane
Rex Ridenoure
Edward Wright
A.C. Charania
Randa Milliron
James A. Muncy
Sam Dinkin
John Powell:
Jules Ross
Colonel Rick Searfoss
Jeff Greason

Granted I have not included keynote speakers such as Burt Rutan, Elon Musk, Buzz Aldrin and others who often get top billing and publicity at space conferences such as this.

These people are well known. Most of you will or have already heard them speak their mind and their ideas for commercial space. Let us learn from all of them on how to help develop and settle the space beyond planet Earth.

-Editor



Random image: SpaceShipOne...in space!

NASA Lunar Exploration Strategy Workshop

NASA held its invitation-only Exploration Strategy Workshop in Washington, DC last week, the first step in a process that will continue through the year, culminating in the Integrated Global Lunar Exploration Strategy

OVERVIEW

After a day of background briefings, everybody was assigned to one of seven multi-disciplinary breakout teams for two days. Each team was chartered with the same tasks (summarized):

-Identify the breadth of objectives that could be

accomplished as part of a lunar exploration strategy - Develop a list of the policy, technical, legal and other issues, enablers and constraints that participants believe require further research as part of the development of a lunar exploration strategy

It's important to note we were not asked to discuss how to execute a lunar exploration strategy, but rather to focus on why we are going to the Moon and what we should do upon arrival.

RESULTS

What was initially planned as a primarily NASA-only small workshop became, at

Administrator Mike Griffin's direction, this workshop for obtaining non-NASA, non-govt. input... and NASA got an earful.

The results were astounding! Since 1988 the Foundation has been working to change the conversation about space, and its core message permeated this workshop. Every one of the seven breakout teams determined that NASA's lunar exploration strategy and architecture must include, at the outset, processes to ensure that commerce/economic development and permanent settlement are part of an international endeavor.

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From the editor, Continued

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NASA Exploration Strategy Workshop, Continued

It was understood that this is the only way to have unending science and exploration on a massive, and ultimately solar system, scale.

One of the planners of the original small workshop told me how valuable this larger workshop was,

because it generated ideas that could not have come from within NASA. Similarly, all the teams emphasized that these ideas must not be lost within NASA, and that NASA alone cannot champion the ideas created outside the organization. Considering the comments of NASA

Deputy Administrator Shana Dale, Deputy Assoc. Administrator for Exploration Systems Doug Cooke, and other NASA managers, I am very hopeful that NASA has truly reached a turning point in its acceptance of the Foundation's themes.

Courtesy, Space Frontier Foundation, J. Krukin

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17701 S. Avalon Blvd. #407, Carson, CA 90746

Lksloan@informationuniverse.com

(310) 515-0618