



Jan Skolmli

Managing Insurance to Benefit our Customers

An Interview with Jan Skolmli

Jan Skolmli joined the Sea Launch team in 1996 as Corporate Treasurer, playing a key role in the financing of the Sea Launch venture. He also developed and implemented all of the venture's insurance programs. Since 2002, he has been based in the United Kingdom as our Director of Insurance, serving as primary interface with insurance brokers and underwriters. Jan is also a Director of Sales and Marketing, managing a portfolio of satellite operators in Europe and the Middle East.

What are the typical issues involved in risk management?

Risk Management is, as the name suggests, all about managing your risks. You start by identifying and quantifying the risks you face and from that you develop your risk management strategy. Some risks you can avoid or reduce by changing something, some risks you accept, or you lay-off contractually, and for others you buy insurance.

Satellite operators usually buy insurance to cover risks associated with launch and operation of their satellite. The insurance products available to the customer typically identify three phases of coverage: launch, deployment of the satellite and in-orbit operations of the spacecraft.

How would you characterize the insurance coverage of the January launch failure?

The launch itself was insured in the space market by both the customer and Sea Launch. The unsuccessful launch attempt obviously resulted in Total Loss claims under both of those policies. The Launch Platform was insured in the marine market and the cost of the repair and re-certification efforts are being claimed under that policy.

How did the insurance community respond to repairs on the Launch Platform?

The nature of the loss was a surprise to everyone involved, but the insurers responded in a very professional manner. Sea Launch filed the required paperwork to formally declare that an incident had occurred and would result in a claim. The launch policy was settled soon thereafter. All the insurers have now paid their portion of our launch claim.

The marine policy covers the cost of repairing the Launch Platform on a reimbursement basis. We have been working with the marine insurers since the day of the incident to ensure a smooth process. This has been a claim with high visibility in the marine insurance market given the unique aspects of launching from a vessel at sea.

What is your perspective of the current state of the space insurance market?

I believe it's in a pretty good state. The market is still quite soft, which means there is competition for business and continued downward pressure on rates. The insurers will argue that the rates are getting too low but, for the buyers of insurance (i.e. our customers), the rates are definitely moving in the right direction. That said, the rates can't keep going down forever and we might be close to a level where launch rates will flatten out.

The loss of the satellite in January did not turn the market and the downward pressure on rates has, in fact, continued in recent months. The problem, of course, is that launch and satellite losses are typically large and dramatic in nature and the state of the market can change quickly if multiple losses occur.

We don't anticipate future Sea Launch customers will have to pay more for their launch coverage because of the failure. Sea Launch maintains a good reliability record and we expect our launch insurance rates to remain highly competitive. The space insurance market reflects the inherent risk in our products and the market is able to absorb random losses.

What is your most satisfying professional experience at Sea Launch?

It was very rewarding to start from scratch and develop and implement all our insurance programs, be it space, aviation, marine, property, liability, etc. It was also very interesting to work on Sea Launch's first round of financing with the banks, various government entities and even the World Bank. It was rewarding when all of that came together. Recently, I've been enjoying my Marketing & Sales role in Europe and the Middle East.

What is your personal perspective as part of the Sea Launch team?

It has been very interesting to experience how Sea Launch has changed from a small company with a new, unique launch concept into the established launch provider we see today. When I joined Sea Launch in Oslo in April 1996, there were eight of us in the office. At that time the Sea Launch Commander was just some steel plates at a Scottish shipyard and the Odyssey was being rebuilt in Norway. Personally, I continue to enjoy the opportunity to work with such a talented and interesting multinational team.

On The Road

September 3-6

World Satellite
Business Week
Paris

September 18-20

APSCC 2007
Bangkok

September 18-20

AIAA Space 2007
Long Beach, California

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Progress of Mission Recovery

Launch Failure Investigation Concludes

The Sea Launch Failure Review Oversight Board (FROB) concluded its review in June of the findings of an interagency CIS Joint Commission, which investigated the cause of our unsuccessful launch of January 30, 2007. All systems were cleared for operations, pending completion and tests of all repairs on the Launch Platform.

The commission had concluded on March 12 that the failure initiated with the introduction of foreign object debris (FOD) in the liquid oxygen (LOx) turbopump section of the RD-171M main engine. Following an initial FROB meeting in April with the commission, the Sea Launch partners performed internal inspections of already manufactured and tested RD-171M engines. Following an initial FROB meeting in April with the commission, the Sea Launch partners performed internal inspections of already manufactured and tested RD-171M engines, confirming the LOx feed system and pumps were free of any possible debris.

The FROB met again with the commission, May 24-June 1, to review results of the engine inspections and further findings. FROB Chairman Kirk Pysher, vice president and chief systems engineer for Sea Launch, reported that members of the FROB concurred with the commission findings, conclusions and recommendations.

Investigation continues on page 2

Repairs and Recertification Activities on Track

The Sea Launch team is proceeding on schedule with repairs and recertification of the *Odyssey* Launch Platform and associated marine and launch support equipment. The *Odyssey* and the *Sea Launch Commander* were returning to Sea Launch Home Port as this issue went to press. A team of specialists completed heavy industrial repair work and painting on the platform at a shipyard in Victoria, British Columbia, in June and July. The team conducted marine tests before returning to Long Beach to resume work with the installation of a newly constructed gas deflector.

Sea Launch's prime contractor for launch system ground support, the Design Bureau for Transport Machinery (DBTM) of Moscow, Russia, completed fabrication of the new gas deflector, which is expected to arrive in mid-August at Home Port.

Repairs continues on page 2





The 80-foot vent mast, which enables venting of gaseous elements, was repaired, painted and returned to its position at starboard side aft on the Launch Platform.



Work on the hangar included repairs to the roof and doors. Here, the aft hangar doors are re-installed on their tracks.



Activities at the shipyard required large cranes, substantial scaffolding and a variety of specialized work crews.



The Moscow-based Design Bureau for Transport Machinery completed fabrication of a new gas deflector and loaded it onto a cargo vessel, the *Thor Amalie*, for delivery to Sea Launch Home Port.

Investigation continued from page 1

"The FROB resolved that the CIS team, led by Energomash experts, manufacturer of the RD-171M main engine, presented sufficient facts and data to substantiate and justify the Joint Commission's findings and conclusions," said Pysher.

"The FROB concurs that the anomaly initiated within the RD-171M LOx turbopump as the result of a metallic object becoming lodged between the pump's moving and stationary components. This object ignited and burned as a result of friction-induced heat. The combustion of the object set off a string of events that led to the destruction of the LOx pump, RD-171M engine and ultimately the Zenit 3SL."

The commission performed a thorough review of operations on the RD-171M engine, which included the RD-171M return-to-flight engine. This engine performed successfully on a Zenit-2 vehicle in a June 29 launch from the Baikonur Space Center.

The commission found two operations with the potential for introduction of FOD in the LOx feed system. The FROB confirmed that the commission identified the necessary corrective actions to preclude these operations as potential sources for FOD introduction in the future.

"The FROB has conducted an extensive and thorough review of the entire Sea Launch enterprise, through an exhaustive evaluation of all systems and operations that could have contributed to this failure," said Rob Peckham, president and general manager of Sea Launch. "The FROB completed its work with no constraints on hardware production. We are now continuing to move forward to our launch operations in October. I am confident that we have not only identified the cause of the launch failure in January, but that we are also doing everything possible to ensure that this incident will never happen again. I am extremely proud of the professionalism and diligence demonstrated by everyone involved throughout this process and look forward to regaining our launch tempo."

Repairs continued from page 1

A group of experienced contractors will work with the Sea Launch team to install the 280-metric ton steel structure at the stern of the *Odyssey* Launch Platform, beneath the launch pad.

The gas deflector was destroyed during the failed January 30 launch attempt, when a Zenit-3SL vehicle lost thrust and impacted the structure. Also known as a flame deflector, the structure directs engine exhaust away from the platform and controls the acoustic environment of liftoff. DBTM managed construction of the replacement structure near the Baltisky shipyard in St. Petersburg, Russia, where the original deflector was manufactured.

The construction of the gas deflector is considered a major milestone among our recovery activities. Other completed work includes repair and installation of the platform's hangar doors and communication antennas, and replacement of heat-affected wiring and cables. Progress of "Mission Recovery" is posted on the Sea Launch website at: www.sea-launch.com. Following repairs and recertification of all systems, the Sea Launch team will transition to mission operations in preparation for the launch of the Thuraya 3 satellite in October.

New Contracts

MSV Contracts with Sea Launch to Orbit Next-generation Satellite

On May 14, Mobile Satellite Ventures LP and their joint venture partner, Mobile Satellite Ventures (Canada), announced a new contract with us for the launch in 2010 of one of two high-powered, next-generation satellites, designed to provide seamless, transparent and ubiquitous broadband wireless coverage of North and Central America to consumer electronic devices.



"This launch will complete the space segment of MSV's new integrated satellite-terrestrial communications network," said Alexander H. Good, MSV Vice Chairman, Chief Executive Officer and President. "We have teamed with a world-class provider who combined a fair price and program flexibility, allowing us to deliver ahead of our regulatory milestones. Our new spacecraft will usher in a new era in integrated satellite-terrestrial communications where consumers throughout North America can enjoy broadband services at lower costs per bit with the flexibility to support a range of custom IP applications."

"MSV is further demonstrating the industry's confidence in our team and our system," said Rob Peckham. "This commitment represents a significant milestone for us."

The two new MSV satellites, under construction by Boeing, will operate in geostationary orbit over North America from 101 degrees and 107.3 degrees West Longitude. The satellites feature 22-meter diameter, elliptical mesh reflectors that will support L-band communication with conventional handsets through a network based on MSV's patented ancillary terrestrial component technology.

When completed, MSV's network is expected to support communications in a variety of areas including public safety, homeland security, aviation, transportation and entertainment, by providing a platform for interoperable, user-friendly and feature-rich voice and high-speed data services. MSV is majority owned and controlled by SkyTerra Communications, Inc.

For more information, please visit the MSV website at: www.msvlp.com.

Sea Launch Signs Second Contract

We note that the MSV contract is one of two significant launch contracts we have signed recently. Respecting our customer's desire for confidentiality, we have not yet announced the second agreement.

Web Sites

To learn more about Sea Launch and our partners, please visit the following websites:

Sea Launch Company
www.sea-launch.com

The Boeing Company
www.boeing.com

Aker ASA
www.akerasa.com

RSC Energia
www.energia.ru

SDO Yuzhnoye
www.yuzhnoye.com

PO Yuzhmash
www.yuzhmash.com