

The Future of The Space Insurance Policy

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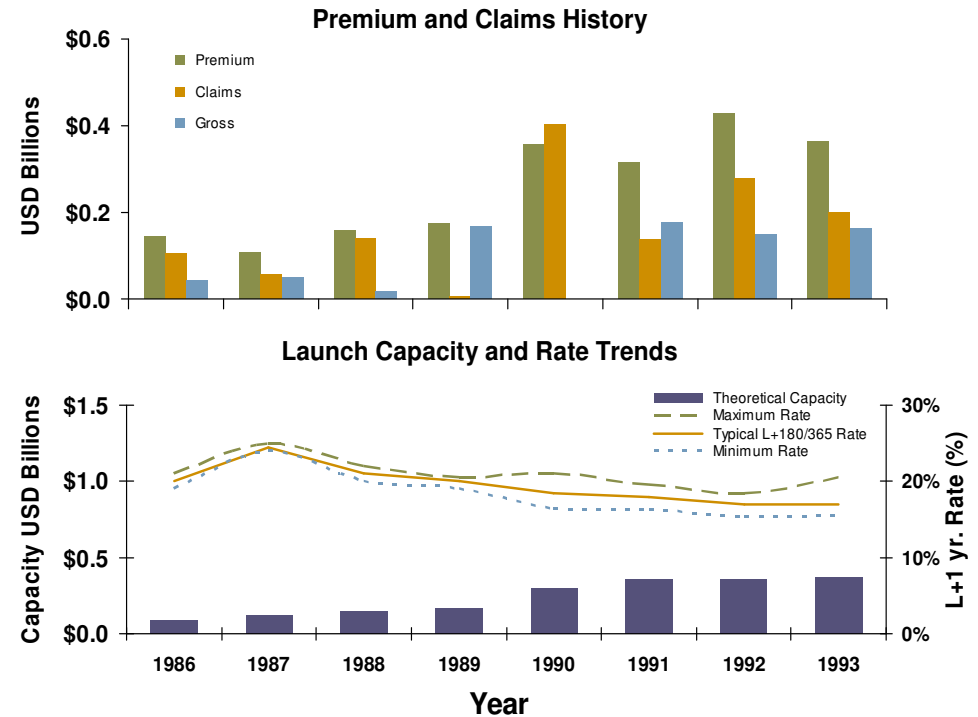


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In the Beginning

- To best understand where we are headed, its important to identify where we began
 - Small specialized market with limited capacity
 - Unstable pricing
 - Limited product line (TLO)
 - Forced risk retention
 - Barrier to the growth of the industry
 - Financially driven underwriting approach



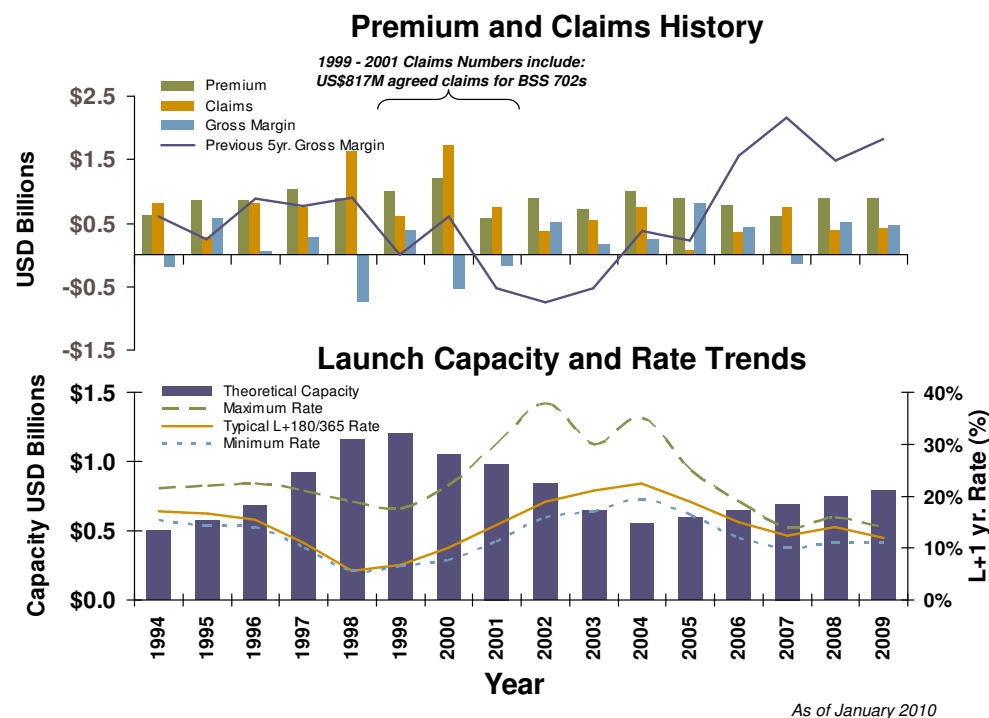
Traditional Space Insurance Products

- Launch Vehicle Flight Only
- Launch + In-Orbit Operations
- In-Orbit (spacecraft or individual transponders)
- Third Party Liability

Maturation of the Space Market

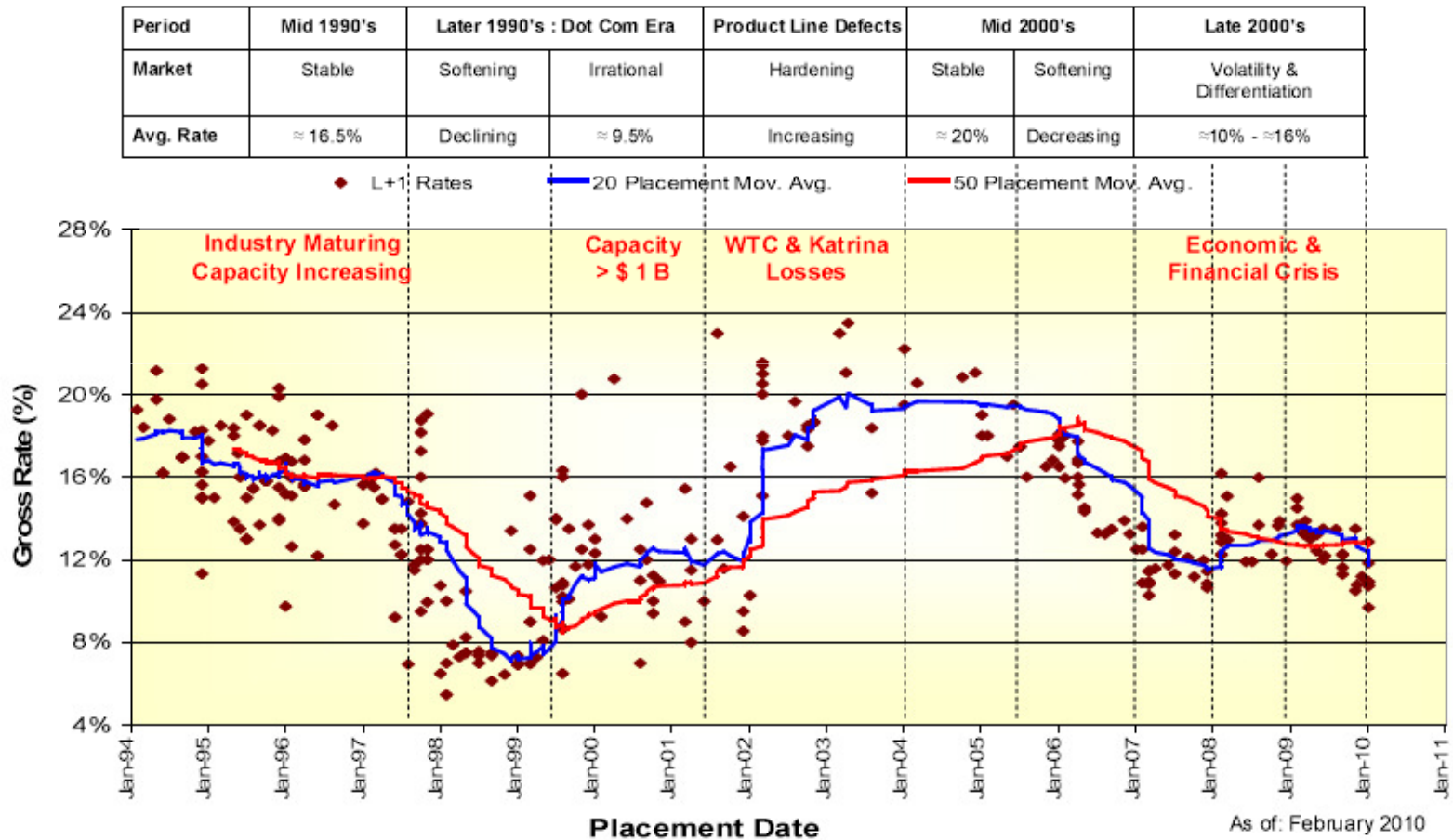
What has changed?

- Buyers of Insurance are more savvy
 - Manufacturers (LRG, IOD)
 - Operators
- Capacity steadily increased over time
- Coverage Terms
 - TLO to Full Coverage
 - Lengthened Coverage Period
 - CTL point increased (50% to 75%/90%)
 - Exclusions evolved (terrorism)
- Expansion of Traditional Coverage
 - Loss of Revenue
 - Business Interruption
- Policy Conditions
 - Greater transparency demands
- More technical underwriting approach



L + 1 Year Insurance Rate History/Forecast

Flight Proven GEO C/Ku Band Satellite Launch Insurance Rates
(Normalized to Launch Plus 1 Year)



Maturation of the Space Market

- What did not change
 - We have seen the evolution of the space insurance product but limited product innovation
 - Catastrophic nature of market drives volatility
 - Premium rates remain heavily influenced by recent underwriting results
 - Insufficient differentiation between insurance buyers

Current State of the Market

- Where the market is now:
 - Robust capacity
 - High level of market profitability – **\$1.8B LAST 5 YEARS**
 - Profits + Capacity + Competition is the fuel of a softening market
 - Technical obligations on the insured are onerous
 - Missing the necessary degree of differentiation amongst buyers
 - Not only financial but technical
 - Ongoing obstacles facing Insureds
 - Limited capacity available for longer term coverage periods
 - Unwillingness to cover known anomalies
 - Individual high valued launches pose risk to serenity of the market

The Future of the Space Insurance Policy

- Insurance products can not only indemnify the Insured for a loss but when structured in a skillful manner, they can add value to the offerings of operators, manufacturers and launch service provider
 - LRG's
 - Investor Protection Insurance
- What will the future of the Space Insurance Policy look like?
 - It will continue to be driven by the results of the market and competition
 - Expansion of space related businesses
- The commercial satellite service market has matured
 - Some of the larger operators have the financial capacity to retain risk a
 - Use of Captives
 - Willingness to Self Insure

The Future of the Space Insurance Product

- Policy issues to be addressed
 - Claims Protocol
 - Claims best practices task force (Space Risk Study Group)
 - Claims coordination committee
 - Designated claims leader
 - Emergency risk contact
 - Ability of the insured to act swiftly to potentially avoid or diminish a loss
 - Due diligence
 - Corrective measures
 - Orbital recovery of spacecraft
- Who will drive product innovation?
 - Insured, Broker or Insurer ?

Product Innovation

- Investor Protection Insurance
- Space Tourism

Investment Protection Insurance (IPI)

- The value of their investment is exposed to technical failure
- Investment into satellite firms is more attractive with a backstop
- IPI protects the investor against the loss of value of their investment in a satellite company following a launch vehicle or satellite failure
 - IPI transfers technical risk from investors to insurers
 - No technical proof for claims (no ITAR or licensing issues)
 - Expansion of insurance market (new market was created)
 - If purchased in conjunction with Operator, new capacity helps manage overall sum insured on high valued programs
 - Can be completed without any assistance from operator
 - Expansion of the insurance market
 - No erosion of capacity that may affect the Operator's primary coverage

Investment Protection Insurance

- Keeps Operator in business post loss
 - Post loss, if all claim proceeds go to investors, operator must obtain additional funding to keep business going
 - IPI allows investors comfort – can take the indemnity post loss and it won't affect the Operator's ability to do business from a cash standpoint as the primary launch policy proceeds would stay with the Operator
- When purchased in the front end of a program, IPI completely changes the financial structure of the program and the requirements sought by investors

Space Tourism

- With the trend leaning towards traveling up to the stars, insurance shall play an important role
 - Opportunities (Futron Corporation study, 2006)
 - 25,000 suborbital space tourism passengers per year by 2021
 - USD 1.26 billion revenue
- Primary Risk Areas providing need for new Insurance Products:
 - Assets (Vehicles) – Proven / Unproven Technology
 - People (Passengers) – Wealth / Numbers
 - Third Party Liability
 - Purchasers of Space Tourism-related Insurance Products may include:
 - Vehicle Manufacturers, Operators
 - Ticketing Companies
 - Pilots, Crew, Space Flight Participants
 - Spaceport Constructors and Operators

Space Tourism

- Insurance Availability
 - Expectation is that there will be asset and liability insurance available from the space (and aviation) markets for Space Tourism
 - Third Party Liability insurance:
 - Regulation driven, stable risk
 - Determined by MPL analysis (FAA maximum USD500M)
 - Asset insurance in the space insurance market:
 - Expected to be available on a case-by-case basis, dependent on proven technology
 - Early Days: Low capacity and/or high premium
 - Industry Maturity: High capacity and/or reduced premium
 - People:
 - Tailored Personal Accident insurance products
 - Space Flight Participant (passenger) – operator liability arrangements:
 - » Early Days: Contractual agreements/waivers,
 - » Space Flight Liability Insurance (available)
 - » Industry Maturity: Higher capacity likely to be available

Space Tourism

- Consider phases of risk from ground to space
 - Aviation or Space Risk?
 - Aviation or Space Insurance Markets?

Conclusions

- Space market is still an adolescent but maturing market
- There are opportunities to expand product offering to address buyer's requirements
- Opportunities to further expand the scope of the product
- Opportunities for individual markets to distinguish themselves through innovation
- Let's listen to the buyers and respond to their needs

Jeff Polisenno CV

Jeffrey Polisenno joined International Space Brokers (ISB) in 2004 and became Chief Executive Officer in August 2008. In addition to ensuring the day to day operations of ISB exceed our client's expectations, Jeff also maintains account responsibilities and customer support activities.

Jeff began his insurance career in 1993 with a specialization in space risk management since 1995. Jeff's experience and expertise is the development and implementation of major space insurance programs including: spacecraft and launch vehicle contractual review and negotiations, insurance policy wording development, insurance program syndication, post-placement servicing and claims handling. Jeff has broad past and current experience working on behalf of Launch Service Providers, Satellite Manufacturers, and Satellite Operators and has provided space risk management due diligence services to the banking and private equity sectors.

Jeff graduated from the University of Massachusetts, Amherst, earning a B.A. in Economics and is currently a member of the United States Department of Transportation's COMSTAC Risk Management Advisory Working Group and the Society of Satellite Professionals.

International Space Brokers Introduction

Part of Aon Corporation, International Space Brokers (ISB) is the leading provider of space risk management services and is the only insurance broker dedicated exclusively to the space industry. The ISB space business professionals create value for our clients with flexible, innovative risk management programs and the most competitive insurance pricing available, all driven by the unmatched breadth of our expertise and depth of our experience.

Through the ISB primary offices located in Washington, D.C., New York, Paris and London (with additional supporting offices in Spain and Asia). ISB professionals provide convenient and efficient access to Aon's far-reaching global network. Backed by Aon's resources, ISB provides optimized risk management programs to clients worldwide, creating tangible bottom line value.



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