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SPACE INSURANCE AND HOW STARSHIP WILL CHANGE THE INDUSTRY FOREVER

**Abstract**

As rocket payloads increase in capacity, the space insurance industry is confronted with a new level of complexity. The advancement in payload capabilities means that a single payload now carries significantly more risk than before, requiring insurers to reevaluate their underwriting strategies, risk management practices, and sharing risk through reinsurance. This shift is primarily driven by the increasing value and complexity of payloads, including entire satellite constellations, scientific instruments, and even future space habitats, which demand higher insurance coverage.

The increased payload capacity of rockets like New Glenn and Starship have dramatically reduced the cost per lb ratio and in turn have expanded the space industry markets. Asteroid mining, space tourism, satellite refueling, and space tugs are all emerging private markets that will require underwriting. Reinsurance is becoming increasingly common in the insurance industry. The loss of one starship sized payload could infer a payout to the launch contractor close to 10 billion dollars (assuming a \$30,000 per lb satellite cost and a LEO payload capacity of 300,000 lbs). Reinsurance allows that 10 billion dollar risk to be split between multiple underwriters.

Complexity also arises from the shift away from government agency self-insured spacecraft and to private companies. Privately built craft introduce a greater degree of variability in terms of design, manufacturing processes, qualification, and risk profiles. To navigate this evolving landscape, insurers are adopting innovative approaches, such as leveraging advanced analytics, modeling techniques to assess and mitigate risks. Additionally, the industry is exploring new types of coverage, such as cyber insurance for space assets, to address emerging threats.

The increasing capacity of rocket payloads is reshaping the space industry and the insurance industry within, necessitating a reevaluation of traditional practices and the adoption of new strategies to effectively manage the heightened financial risks involved.