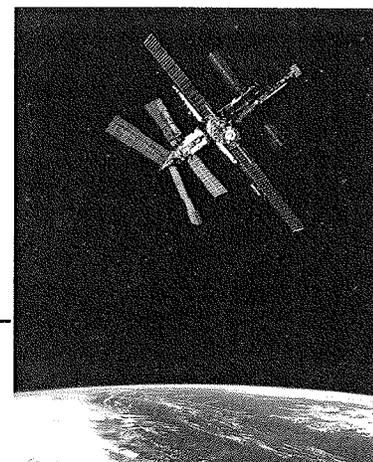


# Space Insurance Law—with a Special Focus on Satellite Launch and In-Orbit Policies

By Pamela L. Meredith



During the first months of 2007, *Space News* reported as follows:

Imaging satellite operator GeoEye expects to file a \$40 million insurance claim for what is now expected to be the total loss of its OrbView-3 satellite, whose main camera malfunctioned without warning March 4, [2007] company officials told financial analysts March 19.<sup>1</sup>

The first launch of 2007 by Sea Launch Company LLC ended in failure when the Zenit 3SL launch vehicle carrying the SES New Skies NSS-8 telecommunications satellite was destroyed as it was lifting off from the company's mobile launch platform in the Pacific Ocean.<sup>2</sup>

The two quotes illustrate the significance of space insurance. GeoEye, of Dulles, Virginia, and SES New Skies, of The Hague, the Netherlands, are both satellite operators. GeoEye's satellite failed in orbit after less than four years of operation;<sup>3</sup> SES New Skies' satellite was destroyed during launch. The benefit of insurance is obvious in the face of such losses, and any loss suffered by the launch vehicle operator, Sea Launch, of Long Beach, California.

Leaving aside these particular actors and their respective insurance arrangements, the purpose of this article is first, to explain what space insurance is and, second, focus on satellite launch and in-orbit insurance, explain how such insurance is obtained and on what terms.

## Categories of space insurance

Insurance is available to cover satellite loss or damage during the following phases of the satellite project: manufacturing and prelaunch activities, launch into space, and in-orbit life. Insurance during the manufacturing and prelaunch phase is generally taken out by the spacecraft manufacturer. Launch and in-orbit insurance typically is obtained by the satellite operator, and the policy is referred to as a "satellite launch and in-orbit policy." It is a first-party property insurance policy. The spacecraft manufacturer, in addition, may have product liability coverage on the satellite.

Insurance is also available to cover the expendable launch vehicle and/or reflight or refund guarantees, which the major launch providers routinely offer to their

satellite customers in the event of a launch failure. Satellite customers have the option under such launch services agreements of paying a "premium" to the launch provider for a reflight or a refund guarantee. The launch provider, in turn, may insure that risk.

Insurance is also available to cover third-party liability in the event of injury, loss, or damage to innocent bystanders resulting from the launch.<sup>4</sup> This insurance is generally taken out by the launch provider and typically covers, as additional insureds, the satellite operator and manufacturer and other parties that are involved in launch operations. For U.S. launch companies, such insurance coverage is mandated by the Commercial Space Launch Act of 1984, as amended.<sup>5</sup> U.S. launch companies must obtain this insurance as a condition of the launch license granted by the Federal Aviation Administration (FAA).<sup>6</sup>

In a recent development, insurers are also being asked to respond to the needs for insurance of prospective commercial human spaceflight operators.<sup>7</sup> Suborbital human spaceflights have been licensed by the FAA,<sup>8</sup> and such flights may become commercially available in the near future. These spaceflight operators, or "spacelines," will need insurance solutions to protect against liability to passengers, referred to as "space flight participants," or their survivors or financial sponsors, among other risks and liabilities. Spaceflight operators should not rely solely on contractual waivers of liability<sup>9</sup> or other exculpatory clauses,<sup>10</sup> statutorily based "informed consent,"<sup>11</sup> or state-based legislative initiatives<sup>12</sup> to protect themselves against liability.

## Obtaining satellite launch and in-orbit insurance

Satellite launch and in-orbit insurance is provided by the world insurance market. Because of the large insurance amounts involved, no single insurer will provide the insurance. Satellite insurance may cover the value of the satellite, the launch, and the insurance premium, in all often in excess of \$150-200 million for a geostationary communications satellite. Or it may cover only the value of the satellite or a portion of it.

Major space insurers include Munich Re of Germany; Swiss Re of Switzerland; Lloyds of London; Bermuda-based XL Aerospace and ACE Group (both with offices in the United States); Global Aerospace of the United Kingdom (also with offices in the United States); La Reunion Spatiale, SCOR, and SpaceCo Group AGF of France; and Tokio Marine of Japan. These insurers may participate in foreign place-

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**Financing for satellite ventures may not have been possible were it not for insurance.**

ments through local or otherwise licensed subsidiaries and they may reinsure all or part of the risk. Insurers, for example, in India and China, participate in their respective national markets. They in turn reinsure the risk.

Insurance is obtained through the use of specialized space insurance brokers. The broker, in conjunction with the satellite company and its counsel, helps design the insurance coverage and draft the policy. The satellite insurance policy thus is "broker manuscripted," although several of the policy clauses have become fairly standardized. The precise language still often varies from one policy to the next, even for the standard clauses. The policy is usually preceded by a "slip," a brief outline of the risk and certain key terms, prepared by the broker.

The broker requests premium quotes from prospective insurers and negotiates policy terms on behalf of the insured. Once the terms are agreed, interested insurers subscribe to the insurance placement by signing on to separate, but usually virtually identical, policies.

### **The satellite launch and in-orbit insurance policy**

#### *Scope of the policy*

A satellite launch and in-orbit insurance policy generally covers the risk of loss of, or damage to, the satellite during launch and the first year of in-orbit life.<sup>13</sup> The term may be longer than one year, depending on the particular satellite, the insurance market at the time, and the insured's needs and willingness to pay the premium. Otherwise, the policy is subject to renewal on an annual basis.

#### *Key policy clauses*

Following is a discussion of some of the key clauses in the satellite launch and in-orbit policy. The discussion is based on a typical policy; individual situations may vary.

Risk attaches under the policy at launch or on intentional ignition of the launch vehicle engines. From that moment on, the insurer assumes the risk under the policy of satellite loss, damage, or defect and will indemnify the satellite operator, subject to all of the policy terms, conditions, and exclusions. Risk terminates at the end of the policy period, as determined by the insurance policy, for example, after two years, or when the satellite is declared a total loss or constructive total loss, or when partial loss payments together equal the sum insured, whichever occurs first. After termination of risk, the insurer no longer bears the risk of loss of or damage to the satellite.

Like any other insurance, space insurance is issued on the basis of the information the insured provides to the insurer. It is in reliance upon this information that the insurer makes its risk assessment and decides whether

to assume the risk. It is, therefore, critical that the information be accurate, complete, and up-to-date. This is especially important in satellite insurance because the statistical database is relatively small, compared, for example, to life or home insurance. Moreover, key information on the particular satellite is not otherwise available to insurers, due to the proprietary nature of the information and due to national export controls that restrict access to technical data.<sup>14</sup>

If the insured fails to provide materially accurate or complete information,<sup>15</sup> it cannot recover for the loss, pursuant to the misrepresentation clause in the policy. The clause prohibits misrepresentation<sup>16</sup> or concealment, in writing or otherwise, of material facts or circumstances relating to the policy or the insured satellite.<sup>17</sup> The misrepresentation must be material, which in some jurisdictions means that the insurer would not have issued the exact same policy had it known the truth.<sup>18</sup> In some jurisdictions, for example, New York, the misrepresentation may be innocent.<sup>19</sup>

To ensure that the information provided by the insured remains up-to-date, satellite insurance policies contain a so-called "material changes" clause. Keeping the information current is important because the policy is often issued several months before the launch of the satellite, when risk attaches. The clause requires the insured to inform insurers when it becomes aware of a material change to the information previously provided to insurers. The material change test is objective. The insurers have the option to renegotiate the policy if the change results in a material increase in risk.<sup>20</sup> If the insured fails to notify of a material change, it cannot later recover for a related loss. The insurer does not need to show that it, in fact, would have renegotiated the policy had it been informed.

While many other insurance policies issued today cover the insured even for its own negligence, this is not the case with satellite launch and in-orbit insurance. The policy imposes a "due diligence" obligation on the insured satellite company requiring it to exercise due care with respect to the insured satellite.<sup>21</sup> There are several reasons for this requirement: The satellite is a high-value asset; insurers do not have access to it and cannot inspect all the relevant technical documentation, which is proprietary and export controlled; and, last but not least, once the satellite is launched, it cannot be retrieved for repair. Therefore, the insurer needs to be able to rely on its insured to take reasonable care of the insured property. If the insured fails to comply with the due diligence requirement, it cannot recover for its loss.<sup>22</sup>

The policy requires that the loss occur between attachment of risk and termination of risk. The policy does not cover a loss when the insured knows prior to attachment of risk that the loss has occurred or inevitably will occur.<sup>23</sup> This is a requirement for fortuity.<sup>24</sup> The very "purpose of [an] insurance policy is to protect against a fortuitous event."<sup>25</sup>

Insurers are only required to pay a loss when the insured has satisfied all of the policy conditions, and if and when the

insured has shown that the condition of the satellite meets the policy definition of partial loss, total loss, or constructive total loss, as the case may be. The insured has the burden of proving that the loss suffered is covered by the policy.<sup>26</sup>

## Conclusion

From the beginning of space insurance in 1965<sup>27</sup> until today, insurance has played a critical role in the development and sustained growth of the commercial satellite industry in the United States and the world at large. As with other high-risk enterprises involving high-value assets, financing for satellite ventures may not have been possible or forthcoming were it not for the availability of insurance. Insurance is a key condition in bond covenants for satellite companies and in satellite asset-based transactions. Insurance provides the satellite owner and its financiers with the piece of mind that if the launch or satellite fails, the asset value is protected as provided in the insurance policy.

## Endnotes

1. Clinton Parks, *Hope Fades for OrbView-3 Recovery*, SPACE NEWS, Mar. 23, 2007, [http://www.space.com/spaceneews/remotesensing/OV3lostweb\\_032307.html](http://www.space.com/spaceneews/remotesensing/OV3lostweb_032307.html).

2. Lon Rains, *Sea Launch Failure Destroys NSS-8 Satellite*, SPACE NEWS, Jan. 30, 2007, [http://www.space.com/spaceneews/launchindustry/SeaLaunch\\_013007.html](http://www.space.com/spaceneews/launchindustry/SeaLaunch_013007.html).

3. Parks, *supra* note 1.

4. Launch trajectories over unpopulated areas and flight termination systems minimize the risk of such incidents.

5. 49 U.S.C. §§ 70101-70121 (2004); *see id.* § 70112(a) (2004).

6. 14 C.F.R. § 440.9(a)-(b) (2006).

7. U.S. operators are, in addition, required to obtain third-party liability insurance. 49 U.S.C. § 70112(a) (2004); *see id.* § 70105a(h)(i) (2004) (applying the requirement also to permits).

8. *See* [http://www.faa.gov/about/office\\_org/headquarters\\_offices/ast/launch\\_data/historical\\_launch/](http://www.faa.gov/about/office_org/headquarters_offices/ast/launch_data/historical_launch/) (last visited Sept. 13, 2007) (indicating SpaceShipOne licensed launches in 2004). *See also* FAA Web site, [http://www.faa.gov/about/office\\_org/headquarters\\_offices/ast/launch\\_data/permited\\_historical\\_launch](http://www.faa.gov/about/office_org/headquarters_offices/ast/launch_data/permited_historical_launch) (last visited Sept. 13, 2007) (indicating experimental permits to Blue Origin and Armadillo Aerospace).

9. Compare 49 U.S.C. § 70112(b)(1) (indicating liability waivers between the launch provider and its "customers," which includes the satellite customer). No such waivers are required between the "spaceline" and the passenger, or so-called spaceflight participants, as they are not considered "customers." 14 C.F.R. § 440.3(2) (2006). A financial sponsor presumably could be considered a "customer" and require a waiver if it is deemed to have "procured" the flight for the passenger. 14 C.F.R. § 440.3 (2006) (defining "customer" to include "any person . . . [w]ho procures launch or reentry services from a licensee or a permittee").

10. *See, e.g.,* Ash v. NYU Dental Center, 564 N.Y.S.2d 308, 310 (N.Y. App. Div. 1990) (citations omitted) (requiring "sufficient specificity and clarity" for exculpatory clauses to be enforced); Gross v. Sweet, 400 N.E.2d 306, 308 (N.Y. 1979) (citations omitted) (a party cannot exculpate itself for gross negligence); Martin Marietta Corp. v. Intelsat, 991 F.2d 94, 100 (4th Cir. 1992) (same); and N.Y. Gen. Oblig. Law § 5-326 (2007) (declaring "void and unenforceable" any "[a]greements exempting [recreation] and similar establishments from liability for negligence . . .").

11. *See* 49 U.S.C. § 70105(b)(5)(A)-(C) (2004); 14 C.F.R. § 460.45(a)-(f) (2007) (requiring that a spaceflight participant provide written informed consent after being informed of the risk). This is at most an assumption of risk inherent in spaceflight; it is not a waiver of liability for enhanced exposure due to carelessness. *See, e.g.,* Applebaum v. Golden Acres Farm and Ranch, 333 F. Supp. 2d 31, 35 (N.D.N.Y. 2004) (where the court found that the assumption of risk only pertained to inherent risks).

12. VA. CODE ANN. § 8.01-227.8-227.10 (Michie 2007) (exculpating a "space flight entity" from liability for passenger injury "resulting from the risks of space flight activities," where the passenger has given informed consent).

13. Satellite insurance policies traditionally have been *valued* policies. A valued policy is "one in which the measure of the value of the property insured is agreed upon by both parties [in the insurance policy] . . . , so that in case of a total loss it is not necessary to prove the actual value." JOHN A. APPLEMAN & JEAN APPLEMAN, INSURANCE LAW & PRACTICE § 3827 (Bender 2003).

14. *See* U.S. International Traffic in Arms Regulations, 22 C.F.R. §§ 120-130 (2006) (considering satellites and satellite technical data "munitions" and restricting their access accordingly).

15. *See, e.g.,* New England Life Ins. Co. v. Taverna, 2002 U.S. Dist. LEXIS 10747, at \*20 (S.D.N.Y. 2002) (an applicant for life insurance has a "duty to disclose . . . every fact bearing on or pertaining in any way to the insurability of [his] life, especially where specific questions are put to the applicant calling for such information") (citations omitted).

16. Under New York law, "failure to disclose is as much a misrepresentation as a false affirmative statement." Fernandez v. Windsor Life Ins. Co., 372 N.Y.S.2d 357, 361-62 (N.Y. Sup. Ct. 1975) (citing Sommer v. Guardian Life Ins. Co., 24 N.E.2d 308, 311 (N.Y. 1939)). Contrast concealment, which requires fraud. Aetna Cas. & Sur. Co. v. Retail Local 906 AFL-CIO Welfare Fund, 921 F. Supp. 122, 132 (E.D.N.Y. 1996) ("[W]here the nondisclosure, as to a matter which the insured has not been directly asked, constitutes fraud, the insurance policy may be voided.").

17. Misrepresentation also may be a statutory coverage defense. *See, e.g.,* N.Y. INS. LAW § 3105(b) (2007).

18. *See, e.g.,* Vella v. Equitable Life Assurance Soc'y, 887 F.2d 388, 391 (2d Cir. 1989) ("had [the insurer] known the truth it would not have issued the exact same policy it did issue") (citations omitted).

19. *See, e.g.,* McLaughlin v. Nationwide Mut. Fire Ins. Co., 777 N.Y.S.2d 773, 774 (N.Y. App. Div. 2004) (a "material misrepresentation, even if innocent or unintentional, is sufficient . . .") (citations omitted).

20. *See also* Liss v. United States Fid. & Guar. Co., 169 N.Y.S. 1027, 1029 (N.Y. App. Term 1918) (the material change clause saved for the insurer the right to determine whether there had been an increase in risk).

21. *See* McCormick v. Potomac Ins. Co., 174 N.E. 689, 690 (N.Y. 1931) (due diligence means "the diligence and care which one of ordinary prudence would exercise under the circumstances").

22. *See id.* ("The plaintiff failed to carry out the agreement [to use all diligence and care] and cannot, therefore, under the terms of the policy, require the defendant to make good his loss.").

23. Nat'l Union Fire Ins. Co. v. Stroh Cos., Inc., 265 F.3d 97, 109 (2d Cir. 2001) (citing City of Johnstown v. Bankers Standard Ins. Co., 877 F.2d 1146, 1152 (2d Cir. 1989)).

24. Even without a requirement in the policy, fortuity is prerequisite to coverage in occurrence-based policies in New York. Consol. Edison Co. v. Allstate Ins. Co., 774 N.E.2d 687, 692 (N.Y. 2002).

25. 80 Broad St. Co. v. United States Fire Ins. Co., 389 N.Y.S.2d 214, 215 (N.Y. Sup. Ct. 1975).

26. *See, e.g.,* Morgan Stanley Group, Inc. v. New England Ins. Co., 225 F.3d 270, 276 (2d Cir. 2000) ("a policyholder bears the burden of showing that the insurance contract covers the loss").

27. *See* S. COMM. ON COM., SCI. AND TRANSP., 110TH CONG., INS. AND THE U.S. COM. SPACE LAUNCH INDUS. 8-10 (Comm. Print 1988) (providing a history of space insurance).

