



Implications for the Insurance Industry

The September 11 Terrorist Attack: Analysis of the Impact on the Insurance Industry

Mere words cannot convey the horror of the terrorist attack on the World Trade Center and the Pentagon. At Tillinghast – Towers Perrin and Towers Perrin Reinsurance, our hearts go out to all those directly affected by this tragedy. As members of an industry that will be on the front line of our country's recovery, we believe one contribution we can make is to offer the following assessment of the disaster's impact.

While our industry will be severely tested, it will survive and in large measure perform well. Massive numbers of people and businesses will receive their policy benefits. The industry has already mobilized substantial resources to begin the claims settlement process and put money in people's hands.

All sectors of the insurance industry, including property/casualty, life/health and reinsurance, are certain to be severely affected by the terrorist attack on the World Trade Center and the Pentagon, as well as the airplane crash in Pennsylvania. The uninsured and economic losses of the event also are huge, but we have restricted our analysis to the costs that will be borne by the insurance industry.

We first provide an analysis and estimate of the loss magnitude. Please recognize that estimating losses at this early stage is more art than science. Second, we provide commentary on the short- and long-term overall impact for both the primary and reinsurance markets, for various property/casualty, life and health insurances. We conclude with the lessons learned from Hurricane Andrew, until now the largest single-event catastrophe. Andrew may very well be a harbinger of what the industry faces next.

Executive Summary

Estimated insurance loss is between \$30 billion and \$58 billion. Based on information available as of this writing, we estimate the range of insured loss to be between \$30 billion and \$58 billion. This is the largest single-event loss in history, easily eclipsing Hurricane Andrew and rivaling in magnitude the total insured liabilities estimated from environmental claims. Only the insured cost of asbestos liabilities exceeds the cost of the terrorist attack.

A loss of this magnitude will test the industry in a manner not seen before.

Reinsurance and other pooling mechanisms are designed to spread catastrophic losses broadly across the industry. Given the magnitude of the loss, some of these mechanisms will not work as expected. Some primary companies will find that their reinsurance

protection is inadequate; some reinsurers will find that their retrocessional protection is inadequate; there will be arguments between the parties over coverage terms; and a few of the less well-capitalized companies may fail. The issue of "spiraling" may impact the industry as the claims work themselves through the web of the reinsurance network, potentially rendering retrocessional protection inadequate.

Going forward, primary insurers may face greatly reduced reinsurance capacity. After a mega-catastrophe, primary insurers reevaluate their reinsurance needs and often seek greater protection. Ironically, at the same time, reinsurers implement tighter risk controls, which tend to reduce the capacity they are willing to offer. We are already seeing the signs of a looming reinsurance capacity shortage. Primary insurers may find

the amount of reinsurance available in the coming months inadequate to meet their needs. Commercial property and aviation markets will be particularly affected, but the issues will permeate all markets. Coverage terms may also be a major concern, as reinsurers can much more easily insist on terrorist exclusions than can primary insurers, who often must obtain regulatory approval of changes in policy language.

Reinsurers have additional worries. To the extent that reinsurers rely on retrocessional protection, they will experience a similar capacity crunch. Absent continuing commitments from their retrocessionaires, reinsurers may find themselves virtually unable to do business in certain market segments. Again, imposition of new restrictions on coverage terms may be a major factor.

The life insurance sector will be much less directly affected than the P/C sector. Adequacy of reinsurance may be an issue; group life underwriters may experience losses greater than their catastrophe coverage. The greatest long-term earnings impact in the life sector will be for those involved in variable products, as the equities market continues to drop. This may cause more insurers to rethink or reprice guarantees they offer on variable products. Certain coverages may also experience limited or increasingly costly reinsurance.

The health insurance sector should be the least directly affected. This loss will have a minimal direct effect on the sector, even for the most exposed companies. However, catastrophic reinsurance availability and cost and terrorist exclusions may be an issue here as well.

Workers compensation markets will continue to harden. Profitability for this line was poor before this event. While we expect the increase in reported loss ratios will exacerbate a bad situation, employer self-insurance will temper the strain on the system. However, catastrophe reinsurance

will be a problem in the future; here as elsewhere we expect a contraction in reinsurance capacity.

The property and business interruption markets will also continue to harden.

This is especially true for companies in the worst quartile of risks that are already using the reinsurance market heavily to provide capacity and coverage. Underwriting standards will tighten, especially for high-rise commercial properties. Adjusting business interruption claims will be a major challenge in terms of both quantifying losses and interpreting coverage language.

The aviation market may be affected the most. This product line was already unprofitable. Claims arising from the terrorist attack will challenge how the aviation industry finances its losses in the context of bigger planes and increased liability. In particular, we expect that the aviation industry will need to come together to find a solution to augment what commercial insurers may be willing to provide.

The liability losses following the attack could be staggering. The biggest question is if and where to assign liability.

Third-quarter financial reports are one of the greatest immediate challenges. Companies in the U.S. must file their third-quarter financial reports with the SEC and state insurance departments by mid-November. Assembling loss estimates and the associated disclosures will pose a challenge.

Capital-raising transactions may be difficult in the near term. This is because of the uncertainties regarding the ultimate cost of the September 11 event and continuing concerns about terrorist exposure.

Calls for governmental mechanisms will occur. If terrorist activities or similar catastrophic events are deemed beyond the ability or willingness of the insurance industry to finance, governmental mechanisms may be required.

Insured Loss Amounts

Our current estimate of the cost of insured losses is \$30 billion to \$58 billion on a combined basis for both property/casualty and life/health insurance. These costs include both policy benefits and claim adjustment costs. The table below summarizes the estimates by major product category.

These estimates are based on the information available approximately one week following the event. We used information on the numbers of people killed or injured and the status of damage to property. As this underlying information changes, so will our estimate of the insured losses.

The degree of precision in our estimates varies by line of insurance. Information on deaths, injuries and property damage permits estimation of insured losses for some lines

with a reasonable degree of confidence. For other lines (particularly liability and business interruption), information is more limited and estimation is more speculative. We have included estimates for all lines to give a reasonably complete picture of the impact on the industry. In every line, but especially in liability, actual losses could ultimately turn out to be lower or higher than our estimates. (See the discussion of liability on page 9.)

Our estimate reflects a top-down analysis of the exposure in each area of coverage, and an estimation of the likely extent of insurance coverage. We also have compiled a tally of losses reported by individual insurers and reinsurers. As of this writing we have identified approximately 60 insurers who have publicly reported losses totaling roughly \$20.0 billion. Historically, early estimates of catastrophic losses have been low, with substantial upward revisions occurring as better claims information became available. For example, early estimates of industry losses from Hurricane Andrew and the Northridge earthquake were each less than one half of their final tallies. We expect that the terrorist attack will be no different. Our estimate is a prediction of the ultimate cost, after losses have fully developed.

Overall Impact

It is clear that the terrorist attack will be the largest insured single-event loss in history. Our estimate is substantially greater than the inflation-adjusted \$19.7 billion property insurers paid for Hurricane Andrew in 1992. While the losses will be paid globally, a significant portion will be borne by U.S. property/casualty insurers, who have over \$300 billion in statutory surplus.

The loss estimate also rivals those for the two other seminal catastrophic insured liabilities: asbestos and environmental liability. Environmental liabilities are currently estimated at \$30-40 billion for domestic U.S. insurers; \$38-53 billion for all

Insured Loss Amounts (\$ billions)		
Line of Insurance	Low	High
Workers Compensation	\$ 3.0	\$ 5.0
Aviation	3.0	6.0
Commercial Property	10.0	12.0
Life, AD&D	4.5	6.0
Liability	5.0	20.0
Business Interruption	3.5	7.0
Other	1.0	2.0
Total	\$30.0	\$58.0

Source: Tillinghast – Towers Perrin estimates

Largest Single-Event Insurance Losses		
Event	Year	Estimated Insured Loss
Terrorist Attack 9/11/01	2001	\$30 billion - 58 billion
Hurricane Andrew	1992	\$20 billion
Northridge Earthquake	1994	\$16 billion
Cyclone Mireille	1991	\$ 7 billion
Storm Daria	1990	\$ 6 billion
Storms Lothar and Martin	1999	\$ 6 billion

Source: Tillinghast – Towers Perrin for terrorist attack; Swiss Re for other events, which are inflation adjusted to 2000 price levels

insurers worldwide. Asbestos liabilities are currently estimated at \$55-65 billion for U.S. insurers; \$117-127 billion worldwide. However, the difference is that the terrorist attack is a single event and not a decades-long process, and the losses will be recognized and paid much more quickly.

The loss will be spread widely, both at the primary level and through a variety of reinsurance mechanisms. The resilience of these spreading mechanisms will be tested in an unprecedented way. While failures are not expected to be widespread, it is reasonable to expect that some insurers and reinsurers will be surprised by the extent of their losses. A few may be overwhelmed.

A key indication of the effect on the industry and on individual companies will be available by mid-November. This is when insurers in the U.S. must file their third-quarter financial reports with the SEC and state insurance departments. These disclosures will open the window to a better view of the magnitude of the impact.

Impact by Sector

Primary Property/Casualty Insurers

Primary companies may discover that their losses from the event exceed the limits of their reinsurance coverage. Reinsurers will respond to each primary company's loss as

determined by the coverage negotiated. In large measure, this response will be determined by the definition of "occurrence" found in each contract. At this stage, it is uncertain whether the September 11 events constitute one or more occurrences. The answer will affect the primary company's net retention, the amount of reinsurance potentially collectible, the primary company's co-participation in the occurrence, and any costs associated with paid reinstatements. The individualized and sometimes complex nature of reinsurance placements may necessitate protracted negotiations between reinsurers and cedants.

Due to previous soft market conditions, it is possible that many carriers had secured sufficient reinsurance limits to protect them against their losses. Certainly, most companies had purchased larger limits of reinsurance than would have been the case in a harder market. Some reinsurance buyers have put in place finite reinsurance contracts that respond after traditional reinsurance coverages are exhausted. Primary companies will need expertise from many disciplines as they sort through the myriad issues presented by this complex event.

Reinsurers

Reinsurers may discover that their losses exceed the limits of their retrocessional protection. In the past, there have been issues of "spirals" in reinsurance as companies have assumed the risk, retroceded it out, and then reassumed it back from another company. Such issues may not be readily apparent, as was the case in Unicover. Some reinsurers may fail, so companies may find that they cannot collect on all of the reinsurance protection that they did purchase. While capital in the reinsurance industry was plentiful before the terrorist attack, the less well-capitalized reinsurers will be threatened.

Currently, reinsurance contracts for U.S. primary companies typically do not include terrorist exclusions, and a common war risk exclusion does not apply within U.S.



territories. History suggests that reinsurers will attempt to impose immediate restrictions on coverage. This will put primary companies at a disadvantage, as they generally need regulatory approval to implement parallel restrictions in the primary market.

Coverage disputes among primary insurers, reinsurers and retrocessionaires are likely. Reinsurers may debate the number of occurrences, since this directly affects the bottom-line involvement of each primary carrier in the losses, the reinsurer's payment obligation to each company within each layer of coverage, and whether such payments to a carrier exhaust the reinsurer's contractual obligations to the carrier.

We expect reinsurance capacity to shrink significantly in the coming months. Some workers compensation catastrophe reinsurers have put all new and renewal business on hold, which could be a precursor to withdrawal. Reinsurers had also been looking to tighten reinsurance contracts prior to September 11. It goes without saying that the impact of the incurred loss from September 11 will be felt in terms of higher reinsurance premiums, fewer prepaid reinstatements and more restrictive coverage. Despite the fact that certain coverages may apply in primary policies, reinsurers may seek to:

- insulate themselves from future claims payments for the results of terrorist acts
- avoid certain risks and exposures that increase their aggregate exposures
- institute exclusions for toxic tort claims, losses from exposure to molds, and cybertorts.

To date, several insurers and reinsurers have publicly stated that they do not intend to invoke terrorism or war exclusions that may exist in their contracts. As the claims escalate, there may be greater pressure to argue coverage issues, and some may choose to invoke such exclusions. However, this would have political and public relations consequences that need to be carefully weighed.

Life Insurers

Life insurers and reinsurers will face a significant number of additional claims on individual and group life and disability; corporate- and bank-owned life insurance, and to a much lesser extent, guaranteed minimum death benefits on variable annuities. These claims in the aggregate will be only a fraction of the property/casualty claims. For insurers covering employer groups that suffered large numbers of casualties, there is a possibility that claims will exceed the limits of their catastrophe reinsurance coverage, but the solvency of most companies should not be threatened.

The financial impact of the event on life insurers will be very dependent on:

- whether they had significant exposure
- how they structured their reinsurance
- to whom the risk was reinsured
- whether they are also in the property/casualty business.

Many companies have indicated they will expedite processing of life claims. In particular, they have indicated that they will suspend their normal practice of requiring a death certificate before paying claims.

Note that some companies are reported to be experiencing an increase in sales activity. Apparently, individuals who previously ignored the value of life insurance, disability insurance or estate planning in general are reconsidering their personal financial risks in light of September 11.

Companies with significant variable life and annuity portfolios have seen fund values continue to drop following already weak equity markets over the past year and a half. This will result in smaller asset charges and larger ongoing costs for guaranteed minimum death benefits. A few companies temporarily pulled their fixed annuity products immediately after the attacks until the bond markets stabilized.

The general health of the economy affects the life industry's level of sales activity and

the financial performance of its investments. Therefore, if a recession ensues, we can expect a slowdown in the sector. A shift toward sales of life products that are less volatile and more guaranteed — that is, from variable to fixed products — is possible. More volatility in the equity market also will cause insurers to rethink or reprice guarantees they offer on variable products.

The impact on overall individual mortality will be a small increase for the year. It should not, by itself, be enough to significantly change the mortality assumptions that underlie life products, particularly for the term insurance marketplace. However, reinsurers largely drive the term insurance market, so their pricing response to all their claims could affect it. For both groups and individuals, certain types of large claim reinsurance, such as catastrophe coverage, may become harder to obtain, and the cost may rise substantially.

Health Insurers

The impact on the health insurance industry is likely to be relatively small, and concentrated on those carriers that have a significant amount of business in metropolitan New York. Sadly, there were relatively few patients treated at hospitals in New York and New Jersey — 3,700 according to the Greater New York Hospital Association. Most were treated for minor injuries, though several were victims of severe burns. Many injuries may be covered under workers compensation policies rather than group health policies. Elective surgeries in New York City were affected by the attack, with several hospitals indicating they had performed half to three quarters of their usual number of procedures in the week following the attack. This may offset some of the increased costs related to the attack.

The major impact on the sector may be in respiratory illnesses, post-traumatic stress and other mental health-related illnesses, typically covered by group health and employee assistance program providers. These costs

may well exceed any medical costs directly related to the attack. Mental health and stress-related illnesses will affect people and health plans across the country, not just those in New York and Washington.

Many of the companies most affected may be self-insured, leaving the health carriers with more limited exposure. Our initial view is that these losses will not be a material issue, even to carriers concentrated in the New York area.

Several health carriers have already gone on record as saying that any “act of war” exclusions do not apply to the September 11 attack. We do not expect carriers to put terrorism or other new exclusions in future policies or to impose any substantial premium loads to reflect increased uncertainty going forward.

Discussion of Major Insurance Lines Workers Compensation

Injured workers and dependents of workers killed in the terrorist attack will be compensated through the workers compensation system. These benefits apply no matter what other benefits, such as life insurance, are due the claimant. Surviving dependents and workers with severe permanent injuries will receive weekly payments for the rest of their lives.

Wage replacement benefits are subject to a weekly maximum, and we estimate the average ultimate cost of these benefits is typically about \$400,000 per claim. Workers compensation will also cover medical expenses and wages for lost workdays for those less severely injured.

There will likely be workers compensation claims in the longer term from respiratory injuries and stress. The number of such claims is extremely uncertain and they can take many years to emerge.

Reinsurance claims will also hit life insurers that provide significant catastrophe workers compensation capacity at higher layers. Poor workers compensation results had already reduced reinsurance capacity for catastrophic events, and this tragedy will likely result in an additional contraction.

We expect underwriters to spend more time on life safety issues in regard to loss prevention, especially in high-rise buildings. In general, however, we do not expect any long-term structural issues with this coverage.

Property Damage/Business Interruption

The claims settlement process for the disaster itself is an almost unimaginable challenge. Proving the actual loss amounts will be difficult given the physical condition of the area and the loss of records and experienced staff at some affected companies. Business interruption forms were originally designed to deal with manufacturing or retail losses. Thus, quantifying office-related losses will be extremely challenging, especially given the antiquated insurance language with which adjusters have to work. Extra expense will be easier to quantify, but many policyholders may find that they have purchased inadequate amounts of insurance. As in the Gulf War a decade ago, many insureds may need to retain specialized experts to assist in the calculation of these losses. Ultimately, the industry will need to develop more appropriate insurance language to deal with office-related business loss of income.

Besides those businesses directly damaged, innumerable other companies in lower Manhattan will have losses from an inability to conduct business. These businesses may not have been physically damaged, but their financial losses are real and, in some cases, insurable.

The commercial property insurance market was particularly hard before the disaster and will likely become more severe in the coming weeks. This effect will be most pronounced for the worst quartile of perceived underwriting risks. Risk managers are already reporting problems with their renewals following the attack. Some risk managers, fearing escalating rates, are locking in quotes from before the disaster. In addition to an expected rise in property rates, capacity may be an issue, particularly in catastrophe coverages such as earthquake and windstorm that have depended on heavy use of reinsurance.

Insurers are expected to get tougher on existing underwriting standards and add some new ones. *Target Risk Building* parameters will likely be incorporated into the underwriting process, making it difficult for many properties to continue to maintain full coverage on a cost-effective basis. Underwriters will now be concerned with both physical (e.g., sprinklers/exits) and operational (e.g., fire drills) responses to risk. Classes of business such as high-rise commercial will join the already difficult class of high-rise residential in underwriters' close scrutiny.

War and terrorism clauses in insurance policies may further complicate the claims settlement process. Furthermore, these and other restrictive clauses will become a much bigger concern for policyholders.

Aviation

There are fewer primary insurers and reinsurers in the worldwide aviation insurance market because of its lack of profitability in recent years and because of mergers and consolidation within the insurance industry. Fewer reinsurers are willing to provide coverage under the terms the primary insurers have offered.

Even before the attack, the commercial airline industry faced several insurance-related concerns, including the limited capacity in the present aviation liability marketplace (approximately US\$1.5 billion per occurrence), the rising cost of coverage and the possible credit risk in the event of multiple catastrophe losses in a single year.

Before September 11, available limits were on the brink of inadequacy given the increasing size of aircraft (some will soon carry 500 or more passengers), average claims now exceeding US\$3 million per deceased passenger and the potential property damage and/or loss of life on the ground in the event of a crash. The terrorist attack can only exacerbate current industry concerns.

We believe the airlines will need to come together to find an industry solution to the insurance capacity crisis, much as the oil and

gas industry did in the mid-1970s with the creation of OIL Ltd.

Liability

Estimating the third-party liability claims that may arise from the terrorist attack is extremely difficult. At this juncture, it is simply not possible to predict what legal actions will be initiated, what theories of fault will be proposed, who those actions will be directed against, how receptive juries might be to the arguments put forth, or how insurance coverages will respond. Actions could be initiated related to both bodily harm and property damage.

We have constructed several scenarios as to legal actions that might be pursued by plaintiff attorneys; however, those scenarios are highly speculative. Our range of \$5 billion to \$20 billion for third-party liability is therefore essentially an educated guess. The low end of the range reflects the basic facts of the situation: plaintiffs that will be very sympathetic, and defendants with very deep pockets. These suggest that, in all likelihood, some payouts will occur. The high end of the range takes a much more pessimistic view — assuming that a broad set of actions is initiated, involving many plaintiffs and many defendants. The extent of governmental and private response may also be a factor; if those who suffered a loss are provided for by these mechanisms, they are much less likely to initiate a lawsuit. Liability losses could certainly be less than our low estimate, or possibly higher than our high estimate.

Implications

Lessons From Hurricane Andrew

Hurricane Andrew had held until now the distinction of being the largest single-event loss to the insurance industry. It provided many lessons about how a major catastrophe can challenge the foundations on which insurance is based. These challenges uncover weaknesses and the industry develops new solutions to overcome the deficiencies. Here's what we learned from Andrew.

Reinsurance limits may be inadequate.

The World Trade Center event will cause insurers to rethink the adequacy and design of their reinsurance programs. After Andrew, property insurers realized that they needed substantially more reinsurance protection than they had purchased in the past. Workers compensation, aviation and life insurers are likely to come to a similar conclusion this time given the potential size of this single event. In addition, there may be a greater demand for “clash” or aggregate covers that protect against losses across multiple lines.

Capacity will be tight. The available capacity in the market will shrink. After Andrew, the amount of property catastrophe coverage that was available in the market was cut in half. This may happen again, particularly with respect to the aviation line, but also in life, property and casualty reinsurance. We also expect that these capacity shortages will become pronounced at the upcoming January 1 renewals.

Prices will rise. Prices for reinsurance will also rise dramatically. With many P/C reinsurance treaties up for renewal in a few months, we should expect a difficult renewal season to become even more problematic. Some reinsurers may put their renewal quotes “on hold” while they reassess the situation.

Insolvencies should be expected. Not every insurer and reinsurer will be able to pay. After Andrew, a half dozen companies became insolvent. There will be recoverability issues this time, too, although their extent is difficult to assess at present. Even a few problems will raise credit concerns, potentially leading to a flight to quality.

New entrants may emerge. With both primary and reinsurance prices rising, new players may enter some markets opportunistically. After Andrew, a half dozen new catastrophe reinsurers were born in Bermuda. Product innovation also occurred, in the form of securitization and catastrophe coverage bonds.

Looking Further

Finally, we see some other implications from the tragedy.

Life insurers may need to reassess how they structure their business. Life insurers traditionally have analyzed mortality in terms of general mortality such as the effect of an influenza outbreak, or of “normal” group risks such as travel or factory accidents. A reevaluation may be needed to find ways to finance and spread the risk from large loss of life in a concentrated time and place.

The P/C market gets even harder.

The property/casualty insurance market was already hardening, and the terrorist attack will further exacerbate market conditions. Policyholders should expect their property/casualty insurance to cost even more over the next year or two. Higher retentions will be forced on policyholders, leading to an even greater interest in risk financing alternatives and captive insurance formations.

Coverage restrictions will be added. Some insurers and reinsurers will prospectively seek to impose new coverage restrictions that exclude terrorist acts. Such restrictions are currently much more common in Europe, particularly the United Kingdom, than in the U.S. They could cause a market to form for this specialty coverage, force insureds to go without the coverage, or both.

Governmental pools may be necessary.

If terrorist activities or similar catastrophic events are deemed beyond the ability or willingness of the insurance industry to

finance, governmental mechanisms may be required. In the U.S., such mechanisms include the longstanding federal riot and flood programs. More recently — and more to the point — would be Pool Re, the U.K. terrorist reinsurance program.

Risk management again gains center

stage. After every major disaster, corporate management reexamines issues of safety, security and disaster recovery. Businesses will address everything from succession planning to information protection to life safety activities in buildings. Traditional insurance solutions are not designed to take care of all the possible risks and financial implications.

For insurance companies in every sector, risk management will also come to the forefront. This tragedy has brought new meaning to “worst-case scenario” from an insurer’s standpoint. Prior to September 11, the focus was on a single peril: a workday earthquake occurring in a major California city, a Category 5 windstorm hitting metropolitan areas or two large planes crashing in midair. The new worst-case scenario involves a single event that affects numerous policyholders and coverages, as well as damage to the insurer’s physical facilities and death or injury to its staff.

We expect that the horrible events of September 11 will cause a sea change in the way that insurance executives measure and manage risk.

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Towers Perrin Reinsurance provides reinsurance intermediary services and consulting expertise that focus on the creative blending of traditional and nontraditional risk transfer vehicles.

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