Impacts of the Unpredictable

SEPTEMBER 11 ALTERED THE NATION'S PSYCHE AND BUSINESS DECISIONS WHEN IT COMES TO TERRORISM RISKS. NINETEEN YEARS LATER, THE RIPPLE EFFECTS CONTINUE TO INFLUENCE THE INSURANCE INDUSTRY.

Lauren Anderson

At 8:46 a.m. on September 11, 2001, **Liz Heck** was late for work as she stood in her lower-Manhattan apartment across the street from the World Trade Center. Almost immediately after the hijacked American Airlines Flight 11 crashed into the North Tower, FEMA agents were in her apartment lobby telling everyone to wait upstairs because that was the "safest place" to be. So, Heck stood by anxiously on the ninth floor with her two young children and mother, who had planned to babysit that day.

"All of the sudden you heard this sonic boom," Heck remembers of when the first tower began to collapse. "We were completely enveloped in dust. It was pitch black. You just saw it coming up."

A steel girder from the tower's wreckage had plunged into her apartment building, causing a fire on her floor. She and her family evacuated to the basement until the dust had cleared enough to see. "Then, we were told to run to the river," she says. They never went back.

The personal crisis Heck experienced after losing her home that day simultaneously converged with a crisis in her professional life. She began working at **Greater New York Mutual Insurance Company** as vice president and controller shortly after the attack, a time when the insurance industry was forced to reinvent itself in the face of this unthinkable new terrorism exposure. Although insurers are responsible for anticipating risk, at that time, they lacked the imagination to anticipate an event like 9/11.

"On the twelfth you went back to work, and all bets were off," Heck says. "The industry was turned on its head. So, immediately we had to rethink our approach to the risk."

Fearing an event like this could happen again, reinsurers reacted by universally excluding losses caused by terrorist acts from new and renewing property/casualty policies starting in January 2002. That left primary carriers with little alternative but to offer less coverage or not write the business. GNY was determined to stay rooted in the greater New York area after 87 years doing business there. Yet, the few companies willing to provide coverage were forced to increase their prices.

The lack of insurance capacity had a negative ripple effect on the U.S. economy. At the time, it was estimated to have delayed or cancelled $21 billion in real estate transactions and cost 300,000 construction workers their jobs.

GNY had about $17 million in claims from the 9/11 attacks, including one $7 million claim from a building that was directly across from the World Trade Center. But it could have been worse, given that approximately 70 percent of the company's business was downtown.

While insurers, including GNY, were able to pay virtually all the claims from the 9/11 attacks and their aftermath, the industry also made it clear that it could not cover future terrorism losses on its own.

This period of market confusion continued for 14 months until the Terrorism Risk Insurance Act created a federal backstop to reimburse insurers for catastrophic insured losses caused by certified acts of terrorism. Without the program, American businesses would be hard pressed to find or afford the coverage they needed, so TRIA was extended in 2005, 2007, 2015, and 2019 without any major changes to keep terrorism risk insurance available and affordable.

"Here you have a program that doesn't cost anyone anything," Heck says. "And yet, it has created the ability for the economy to thrive. Insurance companies returned. Carriers reentered the marketplace. So, to me, it's a win on so many levels."

Before Heck took over for her father, Warren Heck, as president and CEO of GNY, she supported him in his role as the first chairman of NAMIC's TRIA Task Force and as he passionately championed the cause on Capitol Hill. Throughout the first three renewal cycles, the elder Heck testified before Congress eight times, describing GNY's post-9/11 experience and the solutions that enabled his company to stay committed to serving policyholders throughout the period of uncertainty.

"We had an issue where we didn't want to leave because we felt that we had an obligation to our policyholders who we had covered for all these years," Heck says. "So, we did something different. We had to figure out what we could do to stay in the game."

GNY purchased expensive stand-alone terror reinsurance, and in attempt to quantify its terrorism exposure, licensed a rudimentary mapping program, which, at the time, wasn't designed for insurance use. Unlike with natural catastrophic events, there was no basis for estimating terrorism frequency, making it among the most difficult perils for insurers to model.

Modeling Terrorism

It didn't take long, however, for industry players to take on the challenge of terrorism modeling.

One month after 9/11, reinsurance broker **Guy Carpenter** — which was headquartered in the South Tower and lost 23 employees in the attack — hired **Emil Metropoulos** as a catastrophe modeler focused on the workers' compensation line of business and terrorism peril in GC Analytics. He had interviewed for the job prior to September 11, but his onboarding was expedited after the event. His background in accumulation data and catastrophe modeling gave him the expertise needed to help the industry accomplish something that it had never done before: model terrorism risk for national portfolios. Today, Metropoulos is the practice leader of Guy Carpenter's Workers' Compensation and Terrorism Centers for Excellence.

"Data [for modeling terrorism risk] was highly incompatible with anything that was going to come on to the market in the next year or two," Metropoulos recalls. "So, I actively – both fortunately and unfortunately — had to apply the challenges the industry faced in getting the right data to model the peril that quickly morphed from the tragic events of September 11, 2001, correctly. One of my responsibilities was to help bridge that gap."

To model this new risk, there was an urgent need for data at a much higher resolution level that had not been previously essential to assess other perils. This made accuracy an ongoing challenge, but through technology advancements, model vendor advisory groups, and time, the degree of granularity and output precision have substantially improved to the point that is comparable to — and in some cases better than — other natural catastrophe perils.

Guy Carpenter's Sunstone modeling capability, for example, contemplates a global terrorism target database with more than 600,000 U.S. targets and drills down for select Tier I cities using the latest computational fluid dynamics 3D modeling technology and imagery. "We are now at the point where entire key cities have been mapped and essential data digitized down to the building level," Metropoulos says.

The technology evaluates distance, height, and angle in addition to attack angle, confinement, and building shielding for a true 3D-modeling perspective. Plus, the locations analyzed via CFD go well beyond the limits of New York City, meaning even smaller mutual insurers can benefit from this technology.

"Now there is more data, more targets, and more attack modes that are highly realistic and compatible to risks of smaller companies," Metropoulos says. "As TRIA gets renewed amid the backdrop of reauthorization uncertainty, it does a tremendous amount in increasing the data accuracy and model output scrutiny that carriers undertake."

Evolution of Terrorism Risk

In addition to more sophisticated modeling, Heck and Metropoulos have witnessed how the terrorism peril has evolved since the 9/11 attacks. Instead of targeting property, more frequent "soft" human attacks are becoming commonplace, increasing the threat of incidents occurring in or near public spaces and workplaces.

"If you think about the Boston Marathon bombing, it was just two kids who created a makeshift bomb," Heck says. "Those events can happen anywhere, and they're actually less likely to happen in a very well-protected area."

These types of lone-wolf, soft-target attacks are often ignored in commercial models because the economic impact is too small and, as a result, can lead to an overemphasis of larger events applied to a relatively smaller number of trophy targets in Tier I cities such as New York.

"As the peril continues to morph, the TRIA gap will continue to widen," Metropoulos says.

The latest TRIA reauthorization maintains the program trigger at $200 million, which can leave smaller insurers vulnerable. Small insurers may not purchase enough private reinsurance to cover the gap between their individual deductibles and the program trigger. So, depending upon the magnitude of the terrorism losses experienced by other insurers and the industry overall, a small company could be unprotected if the program isn't triggered.

"This is an area where more and more carriers are interested in the modeling because they may have always assumed that their losses might have been overstated because of inadequate data," Metropoulos says. "So, they suspected that there was a gap, but because they didn't have high confidence in the results, they said, 'We will wait and see if we need to buy that protection.'

"The Sunstone model provides more credible validation and clear identification of which insured locations are exposing the gap," he continues. "The model, coupled with efficiently priced reinsurance options, provides insurers with everything necessary to make these decisions."

Remarkably, the TRIA program was reauthorized a full year ahead of its December 31, 2020, expiration — a very different outcome than the previous reauthorization, when the program briefly lapsed. This time, the program will stay in place for seven years without any major changes.

"The importance of the program after nineteen years is a no-brainer," Heck says. "What lawmakers seem to understand now is that the nuances matter, the deductibles matter, the trigger matters. It's the earliest we've ever been. So, it's a huge win." N

A Midwest Case for TRIA

In anticipation of the TRIA program's original December 2020 expiration date, AM Best administered a stress test of the industry's terrorism risk mitigation plans by identifying carriers that would be vulnerable should the federal backstop lapse or no longer exist.

The ratings agency's October 2019 study measured carriers' capacity to handle a hypothetical scenario where a five-ton truck bomb detonated at or near an insured's location, similar to what occurred in the 1995 Oklahoma City bombing. **Columbia Mutual Insurance Company** was one of 30 carriers flagged by AM Best for substantial terrorism exposures and a heavy reliance on the TRIA program. Most of those identified were smaller insurers, particularly those in the workers' compensation sector.

"It was a little bit of a surprise," says **Gary Thompson**, president and CEO of Columbia Mutual.

Concern was raised over a workers' compensation policy Columbia Mutual wrote for a business outside of Dallas. Because carriers do not have the option of excluding terrorism for workers' compensation, the lack of a federal backstop would leave Columbia Mutual on the hook for all workers' compensation losses caused by terrorism.

"The report was based on data that was unneeded in the past," Thompson says. "So, we suspected when we looked at the report that the data wasn't one hundred percent accurate." As a result, the organization spent time revising and remodeling the loss data by using more-refined exposure information. Then it put together a mitigation plan.

In this instance, the company near Dallas had an estimated 450 employees, but the modeling data didn't account for shift work or the fact that there were multiple locations being insured under the same policy, meaning it would be unlikely for all employee to be in the same location at once. Other data refinements included the layout of the insured property and whether its design was a widespread campus or a single high-rise building.

Columbia Mutual lost this policy during the renewal process. However, because of AM Best's warning, it implemented controls to help the company identify risks that would cause concern if TRIA is not reauthorized in the future.

"This isn't just a big city, large company issue," Thompson says. "It certainly does affect smaller, regional companies like [ours] that would not be able to write workers' comp risks at this level without the TRIA backstop or allow us to insure larger businesses with larger number of employees given the potential threat of terrorism." N