

Making a Scene...

Unauthorized trading events can and do lead to catastrophic losses in financial institutions. The questions arise: How can a rogue trader's activities go undetected for so long? What are some underlying reasons that lead to a failure in control mechanisms? In "The Tale of the Rogue Trader" **Penny Cagan**, Head of Research, Zurich IC Squared, attempts to answer these questions. She compares instances of rogue trading and the resulting loss events in several leading institutions such as Barings plc, Allied Irish Bank, the Sumitomo Corporation and WGZ Bank.

The retelling of past events and paying close attention to their details provide insight into patterns that develop over time. Often, one needs to look closely to recognize these patterns and derive meaning from them. The story of the blind men and the elephant demonstrates how an examination of just one aspect of the whole, taken in isolation, can lead to grievous misinterpretations. In this story, the first blind man feels the elephant's trunk and believes he has come upon a large snake. The second man feels the elephant's side and imagines he has encountered a canvas hung on a wall, while the third man feels the elephant's leg and thinks he has discovered a tree.

So what does the story of the blind men and the elephant have to do with unauthorized trading events and operational risk? "The Tale of the Rogue Trader" demonstrates that the study of loss events, viewed piecemeal, is similar to examining the minutiae of what seems to be a "snake," "canvas" or "tree," and missing the integrity of the "elephant." However, when viewed holistically, one is better able to understand how seemingly unrelated events in

the area of operational risk, such as unauthorized trading, may develop into a single knowable creature—loss events. A plurality of such events, if gone undetected, can lead to a catastrophe of elephantine proportions.

The tale of the rogue trader

The landmark case for unauthorized trading, and in fact for operational risk itself, is the one involving Barings Bank and the rogue trader, Nick Leeson. Barings plc, a venerable 233-year-old institution, suffered a \$1.3 billion loss in February 1995 due to Leeson's unauthorized trading activities. The catastrophic loss, larger than the bank's entire capital base and reserves, created an extreme liquidity crisis. Barings, forced to declare bankruptcy, was later purchased by the Dutch bank, ING, for the token amount of one pound. Leeson, a hotshot Singapore-based trader, eventually pleaded guilty to two counts of fraud and was sentenced to an eight-year jail term. (See Case 4 in Appendix A.)

The event shook the world's financial markets, and raised the awareness of banks, trading houses, and regulatory agencies

regarding the inherent operational risks involved in trading operations. However, many industry players, shortsightedly believing that Barings was a one-time event—a snake instead of an elephant—were shocked when similar events occurred later on.

Allied Irish Bank, Ireland's largest bank, revealed on February 6, 2002, that John Rusnak, a currency trader, had disappeared after defrauding a US-based subsidiary of \$691.2 million. Many of the details of the Allied Irish case resemble those of Barings and other unauthorized trading events. (See Case 5 in Appendix A.)

On commonalities of events

The tale of the rogue trader has a certain commonality of structure that manifests itself in surprising ways. (See Table 1.) Often, such a loss emerges serendipitously, as in the case of Allied Irish, when a compliance officer accidentally discovered unconfirmed trades on a junior colleague's desk. The discovery is also accompanied by the shocking realization that a well-respected institution, such as Barings, could become insolvent

Contributory Factors	Typical Responses
Events surface in a seemingly random manner.	Industry expresses surprise at the long duration of the event.
A majority of the events involve commodities or derivatives linked to exchange or interest rates.	Bank where loss occurs promises full investigation into the matter.
Trader often has a “gambling” personality and does not profit directly from his rogue-trading activities.	Bank promises to institute new control processes.
Unauthorized events often occur in far-flung branch locations and/or non-core business units.	There is an outcry for increased industry regulation.
Management fails to question the rogue trader’s “above-average returns.”	Peers claim that such an event could never happen in their own institutions.

Table 1: Common characteristics of unauthorized trading events

overnight due to long-standing, undetected, unauthorized trading events.

The resulting outcry for increased industry regulation within the compliance community leads the company where the event occurred to promise to investigate fully and institute new procedures in order to prevent a reoccurrence. Meanwhile, the large industry players claim that such a loss could never happen in their own institutions.

The unauthorized trader responsible for a loss event often trades commodities or derivative instruments tagged to interest or exchange rates. Interest and exchange rates offer a great deal of volatility and the associated possibility of providing deeper cover for buried losses. An unauthorized trader usually exhibits behaviour resembling that of a desperate gambler who frantically tries to dig himself out of an ever-deepening hole. (To date, there have been no noteworthy incidents of female rogues.) He experiences modest losses that, at first, he tries to reverse by

increasing the size of his trades. The trades and losses continue for a remarkable period of time during which losses accumulate substantially.

Outsiders ask: How could such activities have gone undetected for so long? This is possible because such trades often occur in far-flung offices or subsidiary branches. Also, they tend to occur in non-core business areas where there is little understanding of the risks involved and where inadequate expenditures are allocated to implement and maintain proper risk management systems.

And, last but not least, management plays a large role in making such a scenario possible. The managers responsible for overseeing the rogue traders often look the other way when the behaviour of the trader or the size of his trades are questioned.

Typically, the trader appears to be profitable and his profits contribute significantly to his division’s bottom line. Eventually, his activities translate into increased bonuses for everyone. In fact, the failure on the part of

management to question above-market returns is often a key element in the “success” of the rogue trader.

The gambling persona

It appears from the a report (Ludwig Report 2002) released by Eugene A. Ludwig, former U.S. Comptroller of the Currency, that Rusnak was caught in a downward cycle that resembled the archetype rogue trading model: the cover-up of ever-accumulating trading losses. Rusnak, like Leeson, was in significant violation of his trading limits. He transacted trades as large as \$150 million, although his assigned limit was \$2.5 million.

This lapse went undetected within the bank for five years, with most of the losses and trading violations occurring in 2000 and 2001. It took a great deal of close attention to complex details in order to perpetuate this sham for such a long time. And, like the situation at Barings, the losses occurred in a far-flung subsidiary that was not subject to the same control

structures as its parent entity. There is no evidence that Rusnak, Leeson or any of the other notorious rogue traders profited in terms of direct monetary gain. However, they did benefit in their home institutions in terms of bonuses and reputation.

In a trading incident involving the Swedish company Electrolux in 2000, a rogue trader confessed to manipulating accounts in various countries in order to cover his eventual \$28 million in losses. (See Case 3 in Appendix B.) He claims to have tried to generate profits for his company rather than his own pockets. However, he got caught in a web of trades that were intended to make up for past losses, but led instead to ever-increasing ones. Again, note the resemblance in behaviour to that of a desperate gambler who tries to reverse a losing streak.

In fact, it can be argued that the personality traits of a trader who likes the challenges of a fast-paced trading floor resemble those of a gambler who is most at home in the exciting ambience of a casino. A losing gambler leaves the casino only when detection is inevitable—he either runs out of money and/or is thrown out. Similarly, the trader at Electrolux eventually confessed to management when he could no longer hide his losses. And Leeson's losses were uncovered when his "bets" were so large that they literally brought down the house.

Other notable instances of rogue trading, including the \$2.6 billion loss of Sumitomo Corpora-

tion (see Case 1 in Appendix A) and the \$230 million loss at WGZ Bank in Germany (see Case 1 in Appendix B.), involve traders who displayed similar attempts to recover from staggering losses. In the case of WGZ Bank, two employees found loopholes in the bank's trading and settlement system that allowed them to circumvent internal controls and enter incorrect exchange rates. Their alleged motivation was a desire to recover from accumulating losses, rather than to achieve personal gain.

The Sumitomo Corporation trading case is classic in terms of the tale of the rogue trader. The trader in question, Yasuo Hamanaka, had been accumulating losses for over 10 years. He tried to recover his initial losses in 1985 through speculative copper trading, but only increased them by purchasing huge quantities of copper and raising market demand.

Hamanaka's strategy was deceptively simple: he bought copper in large amounts and attempted to manipulate its supply and demand. Fearing that a cessation in his activities would lead to a market crash, he continued making large copper trades. When the market crashed, he had accumulated 5% of the world's copper supply.

Rusnak's activities have been characterized in the Ludwig report as "unusually clever and devious." His losses and the bank's failure to uncover them are remarkable in terms of number and complexity. He devised

elaborate schemes for hiding his accumulating losses, including downloading and manipulating historic foreign exchange rates. This action was exacerbated by the bank's ignoring its own rules for independent sources of market prices, reputedly because it did not want to pay Reuters an estimated \$10,000 for its service.

Rusnak manipulated the inputs into the bank's Value-at-Risk models, minimizing the visible riskiness of his trading strategy. His illicit activities are similar to Leeson's at Barings, Hamanaka's at Sumitomo, and Toshihide Iguuchi's at Daiwa Bank. (See Case 3 in Appendix A.)

What is particularly disconcerting is the tenor of the headline that appears in an *Operational Risk* newsletter, "Banks see little to learn from AIB control failures" (Marmery and Keefe 2002). When Barings' catastrophic loss surfaced in 1995, the newspapers and industry publications contained similar headlines, such as, "Bank is too complacent over Barings lessons" (Alexander 1995). Each time a major loss event occurs, peer institutions are quick to declare that such an event could never happen to them because controls are in place. But this dissociation from reality precludes the opportunity for an institution to learn from the mishaps of others by examining itself closely for similar signs of opportunism.

Protected by management

What are some underlying reasons that lead to a failure in

control mechanisms? It is not unusual when a pattern of unauthorized trading is detected to discover that management was happily looking the other way for a number of months or even years. This most often occurs when a trader is profitable, and is one of the key contributory factors to operational risk losses.

The “failure to question above-market returns” explains what went wrong in the Kidder Peabody Joseph Jett case. (See Case 2 in Appendix B.) The Securities and Exchange Commission eventually accused Kidder of lax supervision, poor management judgment, and of creating an environment in which “employees were unwilling to ask tough questions when money was being made.”

It was eventually discovered that Joseph Jett, then head of Kidder’s government bond trading desk, had faked \$350 million in profits, and had hidden \$85 million of real losses. In a very short time he went from being Kidder’s “Man of the Year” to the catalyst of its failure. He was later partially exonerated by a 1996 arbitration panel that determined that he was mistakenly under the impression that his trades were making money. Remarkably, while Jett was earning such high returns in the fixed-income marketplace, no one questioned his methods.

In the Sumitomo case, management’s reluctance to question a strategy that appeared to be highly successful contributed to the company’s loss of \$2,857,000,000 over a 10-year period. The management at

Allfirst also failed to ask the hard questions. When Rusnak’s strategies—including the size of his trades and the use of the bank’s balance sheet—were uncovered, his managers aggressively defended him. According to findings of the Ludwig report, Rusnak was so protected by his management that irregularities were not questioned on several occasions.

There were early signs that there was something amiss with Rusnak—in particular, his abusive behaviour toward the compliance staff, who were characterized in Ludwig’s report as inexperienced and unsupervised. However, Rusnak’s behaviour was defended again and again by his managers who feared he would walk out of the bank, along with his perceived flow of profits.

The risk of non-core businesses

The Ludwig report suggested that Allied Irish re-examine its non-core business lines, including the efficacy of having a proprietary trading business within the auspices of a small regional bank. If organizations are going to learn from this case, they will have to scrutinize the risk profile of their remote or non-core business lines very carefully. They will need to undertake assessments of businesses such as proprietary trading, and determine if there is both the appetite for potential losses and the deep pockets required to invest in proper risk systems and experts. In the case of Allfirst, a small regional bank, proprietary trading was clearly a non-core busi-

ness that belonged elsewhere—perhaps within the more sophisticated structure of its parent organization.

At Allfirst, Rusnak’s Asian trades were not being confirmed, even though it was the bank’s policy to confirm all trades. It had been argued—and accepted by the compliance staff—that Rusnak’s trades offset each other and, thus, did not require confirmation. No one seemed to understand that the trades had different expiration dates and, hence, could *not* offset each other.

As mentioned earlier, a supervisor inadvertently spotted unconfirmed trading tickets on a junior staff member’s desk in early December 2001. This habit of not confirming such trades had been going on for at least 18 months! The supervisor directed the employee to confirm all trades. And yet, when he followed up in late January 2002, almost eight weeks later, Rusnak’s Asian trades continued to be unconfirmed.

The failure to confirm Rusnak’s trades, which has been explained by his alleged “bullying” of the inexperienced back-office staff and a general lack of understanding on the part of his managers, is an example of how one control mechanism after another failed Allfirst. In fact, the Ludwig report describes an institution whose entire trading and risk-control architecture was flawed. This includes the fact that Allfirst, with its limited resources and market clout, was involved in proprietary trading activities that could not have

been profitable for an institution of its size. Aggressive compensation schemes and Rusnak's being allowed to trade alone were cited as problems inherent in the bank's structure. And, although Rusnak applied intelligent methods to circumvent the bank's controls, many of them were dysfunctional in the first place.

There are numerous examples of large losses, particularly in commodities and foreign exchange, that have occurred in institutions where trading was not a core business. For instance, the Electrolux Group is the world's largest producer of power appliances for kitchen, cleaning and outdoors use. Sumitomo is a diverse conglomerate in a variety of business lines, including chemicals, life sciences, machinery, electronics, and construction equipment.

Another instance is that of Showa Shell Sekiyu, a major oil refiner and subsidiary of Royal Dutch/Shell Group, which suffered a \$1.5 billion loss from forward currency transactions that were executed by its treasury department in order to recover losses. (See Case 2 in Appendix A.) In a strategy that is not unlike Rusnak's, the company's treasury department was able to roll over its losses in hopes that they could eventually be recouped. Instead, they were rolled over into a pool of losses as trades on certain currency movements continued to work against the traders.

Lessons learned: It takes two

As with the tale of the elephant, "getting the big picture" can be achieved from observing past unauthorized trading events in toto. An analysis of 62 unauthorized trading losses from the Zurich IC Squared First Database of Operational Risk Loss Events demonstrates that there are striking similarities among them. (See Table I.)

The largest loss events in terms of size of loss tend to happen in one of two sets of circumstances. They occur in non-core business lines where a company's management does not understand the real risks involved with a proprietary trading operation, or in far-flung subsidiaries that are not subject to the same control structures as its parent entity. Also, most of the incidents involved trading volatile commodities pegged to interest or exchange rates, as in the case of Barings, Daiwa and Allied Irish Bank. Further, the traders who made the unauthorized trades for a number of years exhibited gambling tendencies when they increased the size of their bets in order to recover losses.

Although the unauthorized trading occurred over a number of years, the resultant losses emerged quickly and without warning once uncovered. Event duration of more than a few months suggests a lax control environment, inattentive management and a reluctance on their part to question the above-

market returns of their most profitable traders.

Of course, there are other lessons to be learned, including the best methods of detecting losses and management's appropriate response to the cases—particularly the very public ones. But most of these lessons can be consolidated into three broad categories. First, a rogue trader can only succeed in his over-the-limits dance if he is partnered by an institution with lax or absent risk controls. Second, financial institutions need to have the vision to accept that lessons can be gleaned from past loss events. And, third, an institution that is preoccupied with looking for a snake will miss the opportunity to catch an elephant.

References

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Appendix A: Top 10 loss events from the Zurich IC Squared First database

Case 1: Sumitomo Corporation, 1985–1999, \$2,856,999,936

Sumitomo Corporation's star copper trader, Yasuo Hamanaka, incurred huge losses through excessive trading. Hamanaka began making risky transactions in an effort to recoup a comparatively small loss, and was able to continue his activities because his firm was reluctant to stop a trading scheme that appeared to be successful. By the time the Sumitomo saga played out, it had affected not just Hamanaka's firm, but also the entire copper market and a collection of financial institutions that had loaned money to the trader.

Case 2: Showa Shell Sekiyu, 1989–1993, \$1,500,000,000

Showa Shell Sekiyu KK, a major oil refiner in Japan, faced losses of 165 billion yen from forward currency transactions. The company's treasury department, expecting the U.S. dollar to rise against the yen, began buying forward dollars on futures markets at around 145 yen. Unfortunately, the dollar decreased to 120 yen in 1993 causing huge exchange rate losses for the firm. To conceal these losses, the department rolled over its positions, which increased the amount of unrealized losses because the yen continued to rise in value relative to the U.S. dollar.

Case 3: Daiwa Bank, 1989–1995, \$1,100,000,000

Daiwa Bank's Toshihide Iguchi was responsible for a \$1.1 billion unauthorized trading loss. He had been in charge of both securities trading and the custody department, and used this combination of positions to carry out and cover up his scheme. Iguchi postponed taking losses by rolling over contracts, and offset losses on short-term trading by selling, without authorization, government bonds that Daiwa had in its long-term account.

Case 4: Barings plc, 1995, \$1,300,000,000

Barings plc lost \$1.3 billion due to unauthorized trades perpetrated by Nick Leeson, a 28-year-old trader with Baring Futures Singapore. Leeson was given a great deal of latitude by Barings' management. No one was looking very closely at the nature of Leeson's trading activities, either because derivative trades appeared too exotic to be understood in the early 1990s, or because management was thrilled to register Leeson's gains and did not care to investigate further. Leeson was able to hide losses in a special account that he controlled. He was the acting settlement manager for both the back and front office, and so was able to hide his accumulating losses for more than two years. It is speculated that Leeson was given these dual duties by Barings as a "cost-cutting measure."

Case 5: Allied Irish Bank (Allfirst), 1997–2002, \$691,200,000

Ireland's largest bank revealed on February 6, 2002 that a currency trader had disappeared after defrauding a US-based subsidiary of \$691.2 million. John Rusnak was identified as the rogue trader who initially went into hiding after the event was made public. The trader was caught in a downward cycle of trying to veil trading losses, and of accumulating ever-increasing losses as he tried to compensate for his losing trading strategy.

Case 6: Deutsche Bank AG (Morgan Grenfell), 1995–1997, \$646,642,176

Morgan Grenfell Asset Management's (MGAM) reputation was severely damaged when its European Growth and Capital Growth unit trusts that Peter Young managed were found to have lost money on investments in unlisted companies. Mr. Young's fund position was in violation of a rule that prevented more than 10% of a fund from being invested in non-quoted stocks.

Case 7: Merrill Lynch & Co. Inc., 1987–1989, \$377,000,000

In 1987, a lapse in managerial control in the trading of mortgage-backed securities left Merrill Lynch with a \$377 million loss. A senior trader, Howard Rubin, took a risky position with an exotic derivative of a mortgage-backed security. The firm knew of the position and deemed it tolerable. Rubin is alleged to have then increased his bet, but failed to disclose the new position immediately to Merrill Lynch's management. When Rubin's action was discovered, traders and salesmen started trying to unwind the firm's position discreetly by selling the securities to customers.

Case 8: Deutsche Genossenschaftsbank AG, 1990, \$350,000,000

Deutsche Genossenschaftsbank AG (DG Bank) of Frankfurt ended up in an international dispute with nine French banks. The French banks asserted that they had purchased bonds from DG Bank under the stipulation that the German bank would buy them back under a repurchase agreement. The German bank's chief bond trader, Mr. Steil, allegedly sold the bonds without his supervisor's knowledge and struck supplementary agreements that transgressed his authority.

Case 9: Tokyo Securities Company, 1994, \$323,559,136

Tokyo Securities Company suffered a loss of 32 billion yen. In May 1994, the company's portfolio of U.S. Treasury bonds had a latent loss of 2 billion yen. In an effort to recover these unrealized losses, the general manager of the bond department began trading derivatives. The general manager believed that the dollar would strengthen against the yen and bought derivatives accordingly. Instead, the opposite occurred and the company incurred 17 billion yen in losses from currency derivatives and spot currency by exchanging the dollar for the pound or yen. This was in addition to 15 billion yen in losses from the Treasury bonds.

Case 10: Volkswagen AG, 1984–1987, \$258,926,944

In February 1987, the German car manufacturer Volkswagen discovered that it had lost 473 million marks due to foreign exchange fraud. The incident revolved around the company's 1984 purchase of currency futures, which was intended to guard against a decrease in the value of the U.S. dollar. Later, however, several Volkswagen employees secured future foreign-currency positions for the manufacturer by using false documents and assuming that the value of the dollar would continue to rise. When the dollar fell, the employees concealed their losses by cashing in the contracts, altering computer programs and erasing data tapes from the 1984 transactions. The loss surfaced in February 1987, when the National Bank of Hungary refused to honour forward contracts that it discovered had been forged.

Appendix B: Other notable cases from the Zurich IC Squared First database**Case 1: Westdeutsche Genossenschafts-Zentralbank EG, 1997–1998, \$230,553,088**

Two FX option traders manipulated data in order to cover up losses they had incurred due to unauthorized trading. The perpetrators had worked at WGZ Bank for seven and 14 years, respectively, and so knew the computer system well. This in-depth knowledge helped them to find loopholes in the trading and settlement system, which, in turn, allowed them to circumvent internal controls. In order to hide their losses from detection by daily, market risk-control systems, the traders entered incorrect values into a system that calculated dollar exchange rates.

Case 2: General Electric (Kidder Peabody & Company), 1991–1994, \$85,000,000

The SEC accused Kidder of lax supervision, poor management judgment, and for creating an environment where "employees were unwilling to ask tough questions when money was being made." Joseph Jett was the

head of Kidder's government bond trading desk, and was billed as a rising star who catapulted himself to stardom while at Kidder. It was eventually discovered that Jett had faked \$350 million in profits and had hidden \$85 million of real losses. He was dismissed on April 17, 1994, after his senior colleagues became convinced that he had generated false profits, causing the firm to report hugely inflated earnings to its parent company, General Electric.

Case 3: Electrolux AB, 1999, \$28,187,326

An employee of Electrolux's internal bank confessed that he had lost 55 million marks through unauthorized currency trading. The employee began making unauthorized trades in foreign currency contracts early in 1999. In his confession, he stated that the transactions were not for his own benefit, but were intended to make a profit for the company. His bets on the direction of exchange rates were unsuccessful, however, and he began to manipulate accounts in various countries to cover his losses. He also increased his trading activities, in an attempt to recover the money he had lost. But, by the end of the year, he realized that he could no longer hide the losses and reported them to management.