

REINSURANCE PROBLEMS

In Personal Accident, Workers Compensation and Other Lines of Business.

Thomas G. Kabele, Ph.D., FSA

Date: August 11, 2000

should suffice.

We use the following terminology.

insurance; and liability insurance.

premiums.

tier reinsurer.

4. The primary company which buys the reinsurance protection or a reinsurer which buys retrocession coverage is referred to as the “cedent” or “**ceding company**” or the “**reinsured.**”

5. A **Lloyd’s syndicate** underwrites insurance risks on behalf of its members (or “names”); each syndicate functions something like a separate insurance company, but there is a central fund and some

Policy Signing Office (LPSO). Contractually, each “name” is a separate insurer. Syndicates now have “corporate names” and sometimes the corporation also hires the syndicate underwriters. In 1996 Lloyd’s had about \$15 billion of premium capacity. See O’Neill and Woloniecki, the Law of Reinsurance in England and Bermuda (1998), Chapters 1-3 for more details.

6. A **Reinsurance Manager** underwrites reinsurance policies on behalf of one or more reinsurers.

7. A “**Primary Managing General Underwriter**” (MGU) underwrites insurance risks on behalf of a primary insurer. Sometimes the MGU pays claims.

8. There are various agents involved in the sale of insurance and reinsurance. A “**broker**” usually refers to an agent of the policyholder seeking insurance or ceding company seeking reinsurance. “**Field Agents**” or “Field Representatives” are terms used to refer to the agents of the primary insurer who seek business from policyholders, but usually do not have final underwriting authority.

9. The word “**claim**” has two meanings. It sometimes refers to a “loss event” (or a series of related loss events) and sometimes to the “amount of the loss” (in dollars, pounds, etc). We will usually use either “loss” or “claim” for the first definition and either “loss-amount” or “claim-amount” for the second definition.

10. A **Claims Bordereaux** is a claim-amount listing.

11. **Primary Ground Up claim-amount** is the claim-amount of the primary insurer as measured from the first dollar (i.e. “ground up”)

Plans of Reinsurance

There are various “plans of reinsurance.” The first two are “proportional plans” because the proportion of premiums and claims received and paid by the reinsurer are fixed in advance. (The reinsurer might pay 20% of claims, and receive 18% of premium, with the 2% being an “expense allowance.”) The next are called “non-proportional.” – because the reinsurer’s proportion of claims is not fixed in advance but depends on the size of the individual or aggregate claims. Aggregate Stop loss and franchise and catastrophe covers are called “aggregate” covers because they aggregate many primary claims into one reinsurance claim. The “secondary reinsurance” contracts covers a cedent for the additional reinsurance premium it might have to pay for reinstatements or for a swing rate. The reinsurance classes overlap, and in particular virtually all the plans could be described as “per risk-excess of loss.”

A. Proportional

1. **Quota share.** The primary policy losses and the primary premiums are shared in specified proportions. This is sometimes called “coinsurance” – especially in the life reinsurance market. (The life reinsurance market also has two other “proportional plans” -- “yearly renewable term” (YRT) plan and the “modified coinsurance” or “modco” plan. In YRT the reinsurer covers only the mortality risk, and the YRT premiums are proportional to the face amount at risk. The modco plan is similar to coinsurance except that the ceding company holds the statutory reserves and pays the reinsurer an “interest allowance” less an allowance for the increase in reserves.)

2. **Surplus Share.** This is first dollar quota share, but the quota share percentage varies policy by policy, and usually a large share is ceded on larger policies.

3. **Excess Share.** This is a variable quota share, where the primary company keeps a minimum “line size” on each policy. For example, on life insurance the primary company might keep the first \$100,000 of each claim and cedes the next \$400,000 to the reinsurer. On a \$300,000 policy the cedent keeps 1/3 of the claim, and the reinsurer has 2/3. On a \$500,000 policy the cedent keeps 1/5 of the claim and the reinsurer has 4/5. The reinsurer’s premium might be 90% of its share of the claim, with the other 10% regarded as an expense allowance.

B. Non-Proportional

1. **Per Occurrence Excess of Loss (XOL) (sometimes called a catastrophe cover).** The cover pays if the primary losses on a “single event” exceed a certain level. The “single event” might be a hurricane or windstorm, plane wreck, explosion, tsunami, earthquake, or volcanic eruption that causes multiple losses to many persons on many primary policies.

Often the XOL agreements cover specific “layers” of claim amounts. A “**high layer**” might cover \$10 million of a primary loss – when the primary company has over \$20 million of claims on a single policy. (This is usually referred to as “\$10 million excess of \$20 million.) A “**working layer**” is a layer where one expects some claims every year – say in excess of \$25,000. If the cedent is itself a reinsurer the layers could be defined in terms of the cedent’s claims, or in terms of the original primary claims.

Excess of loss contracts often require a “reinstatement premium.” For example if the premium for a \$10 million xs. \$20 million is \$200,000 and there is a \$6 million claim, then the reinsurer typically is entitled to a mandatory reinstatement premium of 60% of the \$200,000 – to “reinstatement” the \$6 million.

2. **Per risk XOL (sometimes called specific stop loss.)** The cover pays if the claims that attach to a “risk unit” exceed a specified limit called a specific attachment point. The “risk unit” could be a single

event (as above) or a single person, a single piece of property, or a single policy and should be carefully defined in the reinsurance agreement. Specific stop loss is commonly used on medical insurance, where the “risk unit” is the sum of the medical claims in a policy period that affect a single person. (Excess share reinsurance might exclude some kinds of losses – such as life insurance losses caused by drugs or alcohol. If the “risk unit” is a single policy and all types of losses are covered, then excess share is the same as surplus share. If the “risk unit” is a portfolio of policies, the “per risk XOL” becomes aggregate stop loss.)

3. Horizontal XOL Covers. This cover adds additional reinstatements to the underlying XOL cover. For example, the first XOL might cover \$1million xs \$2 million with 3 reinstatements, and the horizontal cover might add two more reinstatements.

4. Aggregate stop loss. The reinsurer covers the claims on a portfolio of primary policies that exceed some aggregate attachment point.

5. Franchise (sometimes called “Loss Trigger”). Similar to aggregate stop loss. If a loss benchmark exceeds a certain trigger point the reinsurer will pay the cedent’s losses above an attachment point which might be down to the first dollar. The loss benchmark might refer to the losses on the program reinsured or overall market losses. (Example: If the losses exceeds \$100K, then the reinsurer pays everything over \$5K.) (The drop down feature can be applied to cover catastrophe losses or specific losses.).

C. Secondary reinsurance (includes swing rate protections or reinstatement premium protections). The reinsurance covers the “swing premium” in swing rate plans (i.e. the second level reinsurer pays the reinsurers premium in excess of the minimum premium) or covers the cost of reinstatement premiums in XOL treaties.

Aggregation

The above plans can be distinguished by the method of aggregating losses – and in all cases the reinsurance losses are (hopefully) measured by and limited by the loss or losses on one or more **primary** policies.

	Aggregation of Losses
Primary Policy	Primary Policy
Quota Share	Primary Policy
Excess Share	Primary Policy
XOL – catastrophe	Certain types of losses due to a single “loss event” – on a portfolio of policies.
XOL – specific stop loss	Certain types of losses for a single “risk unit”
Horizontal – XOL	Same as underlying XOL cover
Aggregate Stop Loss	A portfolio of primary policies
Franchise	A portfolio of primary policies
Secondary Cover	Extra reinsurance premiums resulting from primary losses

Types of experience rating.

There are several methods of charging reinsurance premiums.

1. **Guaranteed Cost.** There is no retrospective experience refund (although experience may be used to set future premiums, and the current period premium might be adjustable based on volume).
2. **Experience Refund plans.** The insurer receives a retrospective refund if experience is good.
3. **Swing Rate.** The premium is (say) 125% of claims, subject to a minimum and maximum premium. The reinsurer loses if the claims and expenses exceed the maximum premium.

Types of Reinsurance Underwriting.

There are three methods of underwriting reinsurance.

1. **Automatic (also called treaty) reinsurance.** The original company underwrites a block of business and cedes it, usually on a bulk or bordereaux basis, to a reinsurer. (This is often on a quota share or a surplus share basis.)
 - 1a. **Blind automatic.** Like the above, but the cedent keeps its premium rates, individual claims, pricing methods and client list confidential.
 2. **Facultative obligatory (also called “semi automatic”).** The original company underwrites a specific primary policy and cedes it to the reinsurer, who can decline the risk if it already has its full retention.
 3. **Facultative reinsurance.** Each risk is individually underwritten by the reinsurer.

Some Lines of Business

The lines of business we are concerned about include:

1. **“Personal accident”** – this includes accidental death and dismemberment (ADD), accident medical and certain other coverages.
2. **Medical Stop Loss** – this provides coverage for employers who wish to limit their claims on their self insured U.S. medical risks.
3. **Workers Compensation** – these are insurance policies which provide benefits to injured workers. Most of the costs are medical benefits, death benefits or disability payments to injured workers; all of which are benefits covered by life & health companies. In some, but not all states, workers compensation covers “employers liability” risks. Workers compensation which carve out the employers liability risk have been written by life-health insurers for about 30 years. Property and casualty insurers are allowed to cover the death benefits if they are packaged with the other benefits.
4. **Aviation Reinsurance** - this covers the cost of the airplane “hull” which are damaged in accidents and the “liability” for injuries and death to passengers. Aviation reinsurance is written by a worldwide group of companies in the United States, France, United Kingdom, and other places; and includes some life insurance companies who are licensed to write aviation reinsurance. The frequency computations are similar to the pricing of life insurance risks.

CHAPTER 1 -- PROBLEMS and COMPANY SELF HELP SOLUTIONS

Section 1.1. Personal Accident PROBLEMS.

There are several problems with personal accident reinsurance, including various types of “circles” and “spirals,” hard to price business and lack of disclosure. These problems can be solved by the companies; state regulation is not needed.

1.1.A. The London “Claims Circle.” In the mid 1990s the “personal accident” business was beset by problems with a “claims circle” – sometimes called a “claims spiral.” The “circle” seems to be a “London Market” problem but could arise in other markets. It arises when: (1) a reinsurance agreement covers another reinsurance program, (2) the underlying reinsurance program cedes and reassumes the same claim and (3) each time the same claim is reassumed the cedent increases the reinsurance claim-amount, even though the underlying primary claim-amount is unchanged. (The last condition is the essence of the circle.)

Let us illustrate the circle. Suppose "A" is the primary insurer and it cedes to "B" who cedes back to "A," and "A" and "B" have just \$1,000 (\$1K) in retention; further “A” and “B” have unlimited and free reinstatements to each other, up to \$20 million (\$20M) per event. Reinsurer "C" provides a “high layer cover” say at \$5 million excess of \$20 million to one of the players “A” or “B.” The premium might be only \$60K – because catastrophes causing \$20 million or more of loss are rare. The reinsurers "A" and “B” supposedly don’t know the ground up claim amounts but do know if they have their full retention on a life or loss event. A \$102K claims comes to "A" who pays it and the policyholder claim is met in full. The primary company “A” then sends \$101K to "B" who pays it and sends \$100K to its own reinsurer – which is "A." Reinsurer "A" claims it has now "seen" \$202K in claims and sends the \$100K to its reinsurer – which is "B" -- who has now "seen" \$201K in claims. Then "B" sends the \$100K back to "A" who has now "seen" \$302K in claims. Eventually "C" is called on to pay the \$100K, when it thought that it didn't cover such small claims. If “C” pays the \$100K, then the circle stops.

The following chart illustrates the circle, where we have lowered the “C” attachment point to make the illustration fit on a page. In this illustration there are four contracts involved, and the last two protect the first two contracts:

1. The primary policies between “A” and the policyholders.
2. XOL reinsurance from “B” to “A” at (say) \$750K xs \$1K. This contract includes all reinsurance written by B.
3. XOL reinsurance treaty from “A” to “B” at \$500K xs \$1K.
4. XOL reinsurance treaty from “A” to “C” at \$3 million xs. \$501K

The “C” reinsurance treaty covers the primary policy and the reinsurance program from “B” to “A.” We show six “rounds” – at which time C ends up paying the \$100K.

\$ in 000	A	B	C
Round 1	\$102	\$101	0
Round 2	\$100	\$100	0
Round 3	\$100	\$100	0
Round 4	\$100	\$100	0
Round 5	\$100	\$99	\$1
Round 6	\$99	0	\$99

The circle arises because “A” and “B” increase the reinsurance-claim amount everytime the original primary –claim is reassumed. After round 5, “A” assumes that it has the equivalent of a \$502,000 claim amount on a single loss. If there were no “C” then the same \$102,000 claim would continue to be recycled – until presumably the parties would compromise in some way.

Usually, the “claims circle” is more complex; there might be four or more ceding companies having small retentions and ceding to each other. It is possible to have inner and outer circles; for example “A” cedes to “B1” who cedes to “B2” who cedes to “A” and then “A” has another agreement with “B3” who cedes back to “B1” and “B2.” The innocent capacity might be “C” who reinsurers one of the players. The claim circles can spin out on both a “risk attaching” and a “claim occurrence” basis to two different reinsurers – say “E” and “F” resulting in double coverage. A claims circle can arise from remote cedents; say “A” reinsurers “B1” who reinsurers “B2” (all on a quota share basis), and “B2” and “B3” have a claims circle, which gets transported back to “A” and then to “C.”

Experts, such as Lord Mustill in *Hill v. Mercantile and General Reinsurance Co.*, 3 All E.R. 865, 872 (1996) noted that the number of rounds can be in the thousands. Commenting on the Kuwaiti aviation loss in the Iraqi war and an aviation spiral (or circle):

The artificial complexity [of the aviation LMX spiral] is well illustrated by the fact that XXX paid over 10,000 claims in respect of this particular casualty or set of casualties.

It should be noted that many of the participants in the London Market are U.S. companies and many Lloyd’s syndicates are controlled by U.S. insurers. Apparently, most casualty lines now measure reinsurance claims by the primary ground up claims and the circle is not possible.

Magnifying Claims

The circle might magnify the total claim-amount especially if there are inner and outer circles. It is possible that brokerage or reinstatement premiums might increase the claim-amount, if the reinsurance covers “expenses” or the reinstatement premiums. If the “C” agreement is on a “franchise” or loss trigger basis the claim can increase to a much larger size – more than \$100K. Suppose that “C” covers “A” under a “franchise” cover and pays “A” all claims over \$1K, once the claims exceed \$500K. Then “C” owes “A” \$501K in the above example.

Industry Comments on Claim Circles (or spirals)

Some of the “claim circles” have been avoided by arbitrations. See the reference to the arbitrations in Chatset Lloyd’s League Tables, June 1999 at pages 100 and 214. In commenting on one syndicate Chatset referred to the circle as a “spiral” and “LMX business” and said:

The syndicate ceased trading on 31/12/93. A personal accident (PA) account was written, concentrating on LMX business. ... For Syndicate XXX, as the net retention per loss is \$5,000, the balance of any loss notified to the syndicate is passed back into the spiral. . . . Gross losses from the spiral are estimated at \$75 million and the participants of the higher layers bear the brunt of the losses. In 1997 YYY challenged the validity of the original information and ceased paying claims. ... Arbitration of the YYY dispute is scheduled for September 1999.

The arbitration was apparently won by YYY.

Lord Mustill in *Axa Reinsurance v Field*, 3 All E.R. 517, 519 (1996); [1996]1 WLR 1239 (House of Lords) said:

the [LMX] spiral was the **pathological outcome** of writing whole-account excess of loss in a narrow market, the essence being that the same loss might in certain events circulate through a chain or chains of reinsurances, repeatedly impacting on and **ultimately exhausting successive layers of cover**. (emphasis added)

Judge Morrison in *Berriman v. Rose Thomson Young* [1996] L.R.L.R. 426 (Commercial Court) noted in regard to a 1988-89 marine spiral:

..there is no allegation in this [court] case that Mr. XXXX [the underwriter] should not have engaged in the LMX market at all. There is much to be said in favour of such a contention, had it been made. It became quite apparent to me in the course of the evidence that the very nature of the way the market operated made it difficult for **any underwriter** to make soundly based judgments about the risks he was writing. It is a market which has, I believe, **ceased to exist since 1991** because it was recognized to be an **aberration**. (emphasis added)

Various groups at London have examined claim circles. Commenting on a 1987-89 marine spiral the Walker report said the following:

3.18 . . . [T]here is a question whether LMX business within Lloyd's was so extraordinary as to fall outside the scope of business that agents had authority to transact on behalf of their names or whether this business involved churning. But the authority under which a managing agent operates is a wide authority that enables the agent to write business and to exercise powers that he considers necessary or desirable for this purpose. Unless LMX spiral business could be shown not to be insurance business, the writing of such business would not appear to exceed the agent's authority in this respect. The committee noted that such business involved: the acceptance and ceding of risk; the payment and acceptance of a risk premium; an insurance interest on the part of the cedant; and a loss could only arise through the occurrence of any event outside the control of the participants. (Report on an inquiry into Lloyd's syndicate participations and the LMX spiral, June, 1992, by David Walker and E.E. Coleridge Esq. Chairman Lloyd's; paragraph 3.18 at page 19)

The 1992 Walker report recommended that Lloyd's analyze claims volatility (7.14 and appendix C2 & C3); recommended annual publication of syndicate performance (6.12) and also made several other excellent recommendations.

It is true as noted by the Walker report that an outside **loss-event** starts the spiral, but the **reinsured loss amounts** can (mathematically) be controlled collectively by the participants. Under the circle the XOL limits can be made meaningless, since a small primary claim spirals toward infinity if the circle is a closed loop and the stated retentions of the reinsurers in the closed loop don't quite cover the primary

claim. Even a \$5 million excess of \$1 billion layer will be hit with small claims. Moreover, the reinsurance claim amounts might bear no relation with the original primary claim; with a combination of XOL reinsurance and franchise reinsurance a small primary claim can be turned (mathematically) into a billion dollar reinsurance claim. Of course, the marine spirals examined by Walker were probably not as “tight” as the later personal accident spiral.

Lord Mustill correctly noted the pathological nature of the spiral which caused the exhaustion of the upper layers of reinsurance cover. While the aviation spiral mentioned by Lord Mustill did result from “whole account” covers, the circle could arise on a single primary claim of very small size, and it only requires two insurance entities to spiral the claim to a very large size. Judge Morison’s observation on the difficulties of underwriting the LMX circle (or spiral) seems correct. The claims circle, however, continued to exist after 1991. (Judge Morison also had some interesting comments on the “characteristics” of the LMX business.)

Source of the Circle Problem

To find the source of the circle problem the author examined the standard wording LMX PA 1.1992 (March, 1996). (PA for Personal Accident). Article I says

Article 1. Interest Clause. This Agreement is to indemnify the Reinsured in respect to all losses arising under any and all policies and/or contracts of Insurance **and/or Reinsurance** (hereinafter referred to as Original Policies) in respect of business underwritten by them. . . .(emphasis added)

This clause covers reinsurance assumed business written by the cedent – one of the essential ingredients in the circle, but the clause is not unusual; it is common to retrocede reinsured business.

We next examined Article 9:

Article 9, Ultimate Net Loss Clause. The term “Ultimate Net Loss” shall mean the sum **actually paid** by the Reinsured in settlement of **losses** or liability after making deductions for all recoveries, all salvages and all claims upon other reinsurances whether collected or not and shall include all adjustment expenses arising from the settlement of claims. . . .

Notwithstanding anything in this Article, it is understood and agreed that recoveries under all underlying Excess of Loss Reinsurance Agreements (as far as applicable) are for the sole benefit of the Reinsured and shall not be taken into account in computing the Ultimate Net Loss or Losses in excess of which this Agreement attaches, nor in any way prejudice the Reinsured’s right of recovery hereunder. . . . (emphasis added)

The clause indicates that there is other reinsurance ceded – which doesn’t inure to the benefit of the Reinsurer – another essential ingredient in the circle. But the PA clause, or something equivalent, is a fairly standard provision, even in American contracts, and multiple ceded contracts covering different layers of the same portfolio are common. If the claim-amounts were measured from the primary claims, then the second paragraph has economic purpose. Suppose “A” has two layers of coverage: \$2 million excess of \$1 million; and \$2 million excess of \$3 million. Suppose there is a \$5 million primary claim on a single life. The first reinsurance should pay \$2 million and the second \$2 million. But if first layer of reinsurance reduces the ultimate net loss from \$5 million to \$3 million, then the second cover would not apply.

Article 9 should be improved. It should say “in settlement of the **cedent’s share of the original primary** loss amounts or liability.”

We also examined Article 12 Settlement clause of LMX PA 1.1992:

Article 12. Settlements Clause. All **loss settlements** by the Reinsured including compromise payments shall be unconditionally binding upon Reinsurers provided that such settlements are within the terms and conditions of the Original Policies [meaning primary and reinsurance assumed business] ... and Reinsurers shall pay the amounts due from them upon presentation of reasonable evidence of the **amounts paid** by the Reinsured. (emphasis added)

This clause is a type of “follow the fortunes” clause – which is common. The last phrase is called the “pay as paid” clause, which can be a problem if the cedent pays claims arising from the claim circle. That clause needs clarification. It should say “Reinsurers shall pay the amounts due from them upon presentation of reasonable evidence of the amounts paid **for the cedent’s share of the original primary loss.**” The first sentence should say “within the terms and conditions of the Original **primary policies and reinsurance contracts – except that “circle” claim amounts resulting from the same primary claim being ceded and reassumed shall be regarded as zero.**”

The author believes that the circle arises from what is not in the LMX P.A. 1. 1992. The author could find no clause which ties the reinsurance claim-amounts into the primary claim-amounts. Instead we have:

Article 6. Reinsuring Clause. The Agreement subject to its provisions is to indemnify the Reinsured for all losses which may be sustained by the Reinsured in excess of an Ultimate net Loss of the Retention specified in the Schedule attached hereto . . .

Article 7. Definition of Loss Clause. For the purposes of this Agreement the term “each and every loss” shall be understood to mean loss and/or accident and/or occurrence and/or catastrophe and/or calamity and/or series thereof arising out of one event . . .

In Article 6, replace “for all losses” with “**for the cedent’s share of all primary losses.**” In addition to the above changes in wording we discuss other ideas which might eliminate circles.

An idea that mitigates the circle.

The following was an attempt at eliminating the circle:

New Retention Clause. If the same “claim” is ceded and reassumed, then the reinsurer shall not be liable for the claim unless the cedent has paid its full retention every time the claim is reassumed (even if that is thousands of times.)

This clause helped but didn’t eliminate the circle. We show seven “rounds” of claim payments – at which time C ends up paying \$89K, while A pays \$7K and B pays \$6K.

\$ in 000	A	B	C
Round 1	\$102	\$101	0
Round 2	\$100 (202)	\$99 (200)	0
Round 3	\$98 (300)	\$97 (297)	0
Round 4	\$96 (396)	\$95 (392)	0
Round 5	\$94 (490)	\$93 (485)	0
Round 6	\$92 (582)	\$15 (500)	\$76
Round 7	\$14 (590)	\$0 (500)	\$13

Solutions.

Arbitration is no fun. The most direct way of eliminating the circle problem is not to cover any underlying reinsurance program. State regulation is not needed to ensure sound contracts.

1. **Reinsurance Exclusion.** The agreement covers the direct primary business only; no coverage for reinsurance business howsoever assumed or written. "Reinsurance" includes any insurance written to protect Lloyd's "names" or insurance companies from the risks they write.

(Apparently the "howsoever assumed or written" clause is important because some London markets may consider reinsurance to be "primary business." Most courts have held that stop loss protection purchased by "names" is reinsurance, see O'Neill and Woloniecki, the Law of Reinsurance at 14 and 38.) (This solution is drastic; the reinsurance business could be profitable and the clause excludes mere "pass through" agreements where the reinsurance business itself covers only direct primary business.)

Covering reinsurance business

The reinsurance exclusion clause does not allow a cedent to cover its reinsurance business, and it would be desirable to cover such business – without running into circles, and without relying on state regulation. The following (2) is an attempt to draft clauses which would enable reinsurers to offer protections for a reinsurance book.

2. **Claim Reporting Clause.** The claims report shall show the primary insurer, its claims number, policy number, name of insured, date of accident, description of claim and primary ground up claim amount. The report shall show in sequence all intermediate reinsurers and their claim-amounts and the types of reinsurance.

No circle clause. The reinsurer shall not participate in claim circles directly from the cedent or indirectly from a remote cedent. Moreover, all claims shall be traced to and measured by the primary claim amounts, even claims covered by aggregate or catastrophe covers. The reinsurance claim amount shall not exceed the lower of the primary claim-amount or any intermediate cedent's share of the primary claim-amount -- nor (for purposes of the reinsurer's liability) shall the claim amount increase as it passes from cedent to cedent. If the primary ground up claim data is not available, then the reinsurer's liability shall be zero.

Some of the London personal accident markets say that they can't change the claims reporting practices, that their claims bordereaux never have the identity of the original primary company, its policy number, and its claim amounts, but only the identity of the ultimate policyholder and the accident date. They say that might have gotten parts of the primary claim from several sources, and maybe the life really did buy

multiple insurance policies. Regrettably it may be best not to cover such reinsurance business in the London market until the claims identification problem can be fixed. Most U.S. reinsurance agreements measure reinsurance claims in terms of the primary claim-amount. Apparently, so do some London markets.

If (2) is rejected by the cedent and the retrocessionaire wants to cover a reinsurance book, then experts have noted the following might mitigate the claims circle:

- 3A. “No excess of loss on excess of loss,” i.e. no Xol on Xol, directly or indirectly. (The circle usually involves Xol on Xol. The circle is less likely on quota share contracts – since usually such contracts tie the claim to the original primary claim amounts. But a quota share can pass along a claims circle from remote cedents, and a franchise or stop loss cover can magnify the original primary claim.)
- 3B. “No London Market Excess (LMX).” Some experts believe that “no LMX” includes “no Xol on Xol” but some experts say LMX business was a particular kind of Xol on Xol, which is now rare, and the “no LMX” clause may have little value.

Some reinsurance experts, however, have indicated that (3A) and (3B) cannot be counted on to eliminate all claim circles, and that for unknowledgeable retrocessionaires withdrawal from all London markets is safer. Other experts have detected American and European spirals; see Robert and Stephen Kiln, *Reinsurance Underwriting* (2d ed. 1996.) at page 163. Also circles might be exported all over the world by reinsurance. It is therefore important to understand claim circles.

Experts have noted that the claims circle can be mitigated by the following clauses, which also limit the total exposure:

- 4. Make all other reinsurance inure to the benefit of your program. (This creates conflicts and may leave some business uncovered.)
- 5. Warrant an unreinsured net retention. Warrant that the cedent takes its full retention on every reassumed claim. (These two clauses reduce the number of claims.)
- 6. Impose a “two-life warranty, with a minimum amount per life of (say) \$25,000 “ (The two life warranty means that the claim must involve at least two different lives; the \$25,000 minimum avoids game playing with claims whereby one claim might be \$100,000 and a second claim is \$5.) (The two life warranty reduces but does not eliminate circles.) (The two-life warranty also eliminates some partial disability claims, which are difficult to price.)
- 7. Set a limited number of “reinstatements.” A reinstatement covers new claims even after the reinsurance has responded to old claims. The number of reinstatements is commonly 1-2 on higher layers (covering big claims), and maybe 10-12 for “working layers” (covering smaller claims). The limited number of reinstatements is also a loss cap. Sometimes reinstatements are “free” and sometimes there is a charge – called a “reinstatement premium.” A charge, if made, is almost always mandatory (even if there is only one day left in the policy period). The mandatory charge is really a “claims coinsurance” clause.
- 8. Impose a claims time limit. The reinsurer might require all claims to be submitted within 1-3 years. (It used to be that a claim “circled” once every quarter – but with computers the circle can be speeded up to be instantaneous.)
Claims sunset clauses help. A “claims made” versus “claims manifested” clause help to limit the risks and to control circles.
- 9. Price for the circle. Price a \$10 million xs \$2 million layer like \$10 million xs \$0. Exclude stop loss and franchise covers to prevent reinsurance claims that exceed the primary claims.

10. Set a limited “depth” – for example, cover only business that has at most 3 tiers of reinsurers. (In solution #1 we limited the cover to one tier – primary only.)

Underwriting Aids – Arbitrage studies and questions.

The solutions above rely on contract wording. An “arbitrage study” might be helpful -- even where circles are not a problem. The author defines “arbitrage” as a situation where the cedent’s reinsurers consistently lose money while the cedent makes money. Using the Chatset Lloyd’s League Tables, or the Moody’s Lloyd’s Syndicate Rating Guide, one can compute a Lloyd syndicate’s net and gross gains and the gains of its reinsurers. Syndicates who have made money for reinsurers might be good candidates for additional reinsurance. Of course, arbitrage might have been due to a few unlucky claims

Questions can help. One might ask the cedents if they have reinsured and ceded business to the same entities. Find out what the cedent’s retention is.

Reinsurance Spirals, Networks, Boomerangs and Funnels distinguished from circles

We use the terminology below. A reinsurance **network** is a collection of reinsurance treaties which cover the same claims. A **maximal** reinsurance treaty is a treaty where the reinsurer assumes business but doesn’t cede any business from the treaty. A reinsurance **funnel** is a maximal treaty which assumes business from two or more treaties. A reinsurance **boomerang** is a network in which some of the same claims are ceded and reassumed by the same insurance entity.

Reinsurance networks involving several treaties are common and usually benign. Consider an example, a primary insurer “P” covers 10% of a \$400 million aviation loss. The claim to P is \$40 million; P cedes \$30 million to “A” which cedes \$20 million to B1 which cedes \$10 million to B2. The total claims from “P” are \$100 million, but the net claim is the same as the primary claim -- \$40 million. Sometimes there is brokerage at each layer, but this can be negotiated. A reinsurance network can become a “funnel” (or pyramid) -- when the reinsurer gets shares of the same catastrophe from several sources (for example “B2” might have indirectly covered several primary companies on the \$400 million aviation risk. The “funnel” can be controlled by limiting the total aggregate cover that the reinsurer provides to all clients. For example, a reinsurer might cover 50% of the aviation risks on a \$10 million excess of \$60 million layer; plus 50% of a \$10 million excess of \$30 million layer – so that the claim amounts on any aviation catastrophe can’t exceed \$10 million.

A “boomerang” can occur when a reinsurer has reciprocal relationships with other reinsurers. If pricing is adequate, then the reinsurer is getting what he bargained for, although there might be a surprise factor. The “boomerang” becomes a **circle** only when someone reinsures the “boomerang” and each time the same underlying primary claim travels through the boomerang the reinsurance-claim-amount is increased independently of the primary claim amount. (Some experts said they liked the phrase “spiral” (or “helix”) better than “circle” because the former conveys a sense of the same claim being pushed into higher layers. A “spiral” is an inverted “whirlpool” and like the latter is dangerous. The phrase “spiral,” however, is sometimes used to refer to a general reinsurance network.)

1.1.B Classes of Personal Accident Business.

The category of “personal accident” business is broad and it is important to delineate what risks are covered. This can be accomplished with specific inclusions or exclusions for various classes of business. Many of the classes of business are profitable if properly underwritten.

a. ABICO (aviation bodily injury carve out). The reinsurance might be on the “franchise plan” and be triggered if the aviation disaster exceeds (say) \$300 million. If such a disaster happens, then the reinsurer may provide up to (say) \$250,000 per passenger death. The trigger – the total liability amount; however, is a function of lawsuits. If a jet with 200 Americans crashes and all die, the cost might be \$1 million per person, or it might even be \$2 million per person. If the cost averages \$2 million then the reinsurance is exposed, while the underwriter might have priced the cover based on only a \$1 million cost. ABICO is really a “liability cover” and not a traditional accidental death cover which deals with fixed face amounts. The cover is also very hard to price because it requires expert knowledge of the aviation severity and frequency risks.

b. MBICO (marine bodily injury carve out). Similar to ABICO, but refers to boats and other risks.

c. Loss of License. This is a type of disability income benefit covering train or airplane pilots who lose their license to drive or fly.

d. Kidnap and Ransom. This is an incidental cover and can be included in a personal accident book. It can be profitable but is a very specialized cover and employs expert claims handling. The claims personnel include former FBI agents. The insurance is secondary to the law enforcement aspects of the cover.

e. U.S. Medical including provider excess, specific and aggregate stop loss; student medical, college sports, professional sports, short term disability and long term disability, and long term care. This business is difficult to price and sometimes has high expense loads; and some of it is not really “accident” business. Medical business is often very competitive and subject to rapid inflation.

Long Term Disability (LTD) business is volatile. There are (roughly) 4 claims per thousand person years, but the results vary by occupation group, area, and industry. Professional sports disability or ADD may have different claims patterns than other business; and the actuarial tables are inapplicable.

f. Same as (e) but with respect to non-U.S. business. Sometimes it is difficult to collect premiums on alien medical business, and one might consider a “condition precedent” – no coverage until the premiums are received in advance.

g. Credit Card accident risk. Some platinum cards now have \$1 million per life; and many of these cards have been issued. The credit card programs have a high concentration of risk – from airplane, boat or train accidents. Some actuaries feel there should be a surcharge for high concentration risks; see Bowers, Gerber, Hickman, et al., Actuarial Mathematics, 2d ed. Chapter 6, page 169-170.

h. Automatic Flight. This covers accidental death on an aircraft or train where the ticket has been purchased through a travel agent. While the airlines of the United States and other developed countries have very low crash frequencies (about 1 plane crash for every 2000 plane years), the crash rates of developing country airlines, while still favorable with respect to automobile travel, are 4-6 times higher than developing country airlines. Yet the same rate might be charged for each ticket. The aviation statistics might include only deaths that result from a crash where there is significant damage to the hull, while the insurance might even cover travel to the airport, and the stay at the airport. (Auto claims are 20 times higher – per passenger mile – than U.S. airlines.)

i. Workers compensation carve out. This is discussed later.

1.1.C LACK of Disclosure in Personal Accident Business.

Another problem with personal accident business is the lack of disclosure on treaty reinsurance. The reinsurance managers and cedents, including Lloyd's syndicates, want to protect their "client list" and their pricing models, but without details it is difficult for the reinsurers to help the manager and ceding company achieve good results. In this regard dividing the experience by class and using a long list of inclusions or exclusions will help the reinsurers, ceding companies and managers.

In the last year or two, the market has moved toward greater "transparency." There are a number of checklists – such as the Gilbert checklist and the Cigna checklist – which require considerable disclosure of the business written. Lloyd's syndicates prepare a "Lloyd's disaster scenario," which may be helpful. Lloyd's reporting, through Chatset and Moody's, is excellent.

1.2 U.S. -- UNICOVER and WEB Workers Compensation Carve Out Pools.

Unicover and WEB were workers compensation carve out pools which allegedly had adverse claims development. Workers compensation benefits vary by state. From 95%-100% of the benefits under workers compensation are medical, death, and disability benefits, all of which are usually written by Life-Health insurers. Property-Casualty insurers can write medical benefits, and are allowed to write death benefits if packaged with workers compensation. In some (but not all) states workers compensation covers employers liability. Workers compensation carve out reinsurance has been reinsured by life-health insurers for about 30 years, and has generally been profitable.

Although the Unicover pool involved workers compensation reinsurance the problems of underpricing and of unexpected large volumes could affect primary business as well as any reinsurance line. Health Insurance and Workers Compensation are two of the largest insurance lines for Life & Health and Property and Casualty insurers so it is not surprising that problems might develop for these lines. Some of the newspaper articles reported losses of up to \$2 billion, but the cost for Unicover has probably been reduced -- in view of the Reliance National settlement. The WEB pool was mentioned in the Odyssey Re and U.S. Life lawsuits. One reinsurer (see Allianz lawsuit) allegedly was told that it did not cover Unicover business, and was later told the business was included. Some of the losses might be reduced by investment income earned on cash flow.

Generic Case Study

We will discuss the generic underpricing problem with a generic case study. (The business could be life, health, property or casualty.) We assume a reinsurance manager operates like a regular pool for a few years; then gets a three year reinsurance program in place. There is a front reinsurance company, which takes significant risk, plus various levels of retrocessionaires. Some retrocessionaires are told the program will have \$100 million of premium, experts will be hired, and the business will be priced for a 7% profit ratio to the retrocessionaires. Instead the manager writes \$1 billion of premium (\$3 billion over three years), prices the business for a 20-30% loss, and ignores any experts.

Potential Solutions to Avoid Future Problems.

The problems in the case study can be controlled by careful design of the reinsurance and brokerage contracts – without significant changes in state regulations. There are at least three contracts which need to be reviewed: (1) Reinsurance Manager and Reinsurers; and (2) Reinsurers and Primary Insurer; (3) Reinsurers and Brokers for the Primary Insurer.

1. Premium Caps and Exposure Caps. Many reinsurers now have premiums and sometimes exposure caps. The caps should be applied in all three contracts. The premium cap limits the amount of reinsurance premium a reinsurer will accept.

The reinsurance premium cap, however, can be evaded if the program includes retrocession (2nd tier reinsurance) business. Thus a block of underpriced business might be ceded to a friendly reinsurer for \$100 million – to cover say \$1 billion in losses, and then the \$100 million is ceded to innocent capacity for \$80 million. Thus one should also use exposure caps and/or not cover retrocessions. The following are potential exposure caps: number of lives (medical, workers compensation); payroll (workers compensation, disability income); face amount (life insurance and accidental death); state loss costs (workers compensation); primary premium (medical, workers compensation).

2. Flat dollar Brokerages and Manager Compensation caps. The contracts between the Reinsurers and the brokers and Reinsurance Managers could have compensation caps – in flat dollars (or a declining percentage). This eliminates the incentive to write huge volumes of business. The compensation to Unicover might have exceeded \$100 million. A first tier reinsurer might also cap the ceding commission granted to the primary company.

3. Require a “cash flow model” and an “actuarial opinion.” States generally require “cash flow testing” anyway, and requesting an independent actuarial certification of the pricing model might help. Apparently many people knew the Unicover business was underpriced just by looking at the rates. Some of the workers compensation programs, however used two expert actuarial studies and still lost money.

4. Require that the Reinsurance Manager and the cedents obtain the written approval of an underwriting committee of the reinsurers for all reinsurance agreements over a certain size.

Remedies for violation of caps

A tenet of the legal realists is that there is no “right” without a remedy and a procedure for obtaining the remedy. See Oliver W. Holmes, Jr. Common Law; Karl Llewellyn, What Price Contract; and Wesley N. Hohfeld, Fundamental Legal Conceptions (1978 reprint of 1919 Yale law journal article). Thus, it is helpful to spell out detailed remedies. In the agreement between the primary insurers and reinsurers the remedies for violating the premium and exposure caps might include: (1) reduction in quota share; (2) increased premium rate to be applied to the increased volume (called jumping adjustable); and (3) after the cap is reached requiring all business to be ceded facultatively to each reinsurer. In the reinsurance management agreement the remedies for violating premium and exposure caps and not obtaining approval of the underwriting committee include reduction in compensation and suspension of future underwriting authority. The procedure for obtaining remedies is usually arbitration.

A solution suggested by a P&C reinsurer.

One large P&C reinsurer, General Reinsurance, has suggested that U.S. Life & health insurers not be involved in workers compensation carveout. However, several of the players in Unicovert at the front and the back ends were P&C companies. One life company, Cologne, had a sophisticated P&C affiliate – namely General Re. On the other hand, if state regulators had required an actuarial signoff on a “cash flow report” by a skilled actuary (say a fellow of the Casualty Actuarial Society) from the company or its parent, or from a consulting firm, then the problems might have been mitigated or uncovered sooner.

1.3. MEDICAL.

We will confine ourselves to specific and aggregate stop loss insurance -- which is a liability policy which covers the employee medical costs for self-insured employers. The business is underwritten by a “primary managing general underwriter” (primary MGU). The MGU is compensated on a fee basis; and the primary insurance is written by a primary carrier which in past years may have taken no risk; and then ceded the business to reinsurers. The specific stop loss covers the excess medical costs of a specific person over a specific limit. The aggregate stop loss covers all the excess costs when the aggregate medical claims exceed an aggregate amount.

In recent years some of this business has produced losses. The problems were

- a. Market too competitive – a “soft market.”
- b. Expense loads might have been too high – too many mouths to feed.
- c. Problems with “aggregate” pricing.

Controlling the soft market

The market for stop loss was extremely competitive; in some cases the primary MGU was quoting 50 cases just to get one. Perhaps the MGU got only the “mistakes.” The soft market can be controlled or mitigated by various devices, without more state regulation.

1. Withdraw from the market. This is drastic; other solutions are discussed below.
2. Require the primary carrier to take a significant quota share (say 30%). In some cases the Primary Carrier was a “front” which took no risk; that is 100% of the risk was passed on to reinsurers; or in some cases the carrier might take a quota share of the risk but limit its losses to the premium received. In a few cases the primary carrier did take 10% of the risk; but a 3% profit in the front fee could cover a 130% loss ratio. If a 30% quota share is too risky for the front, excess reinsurance might be purchased which would inure to the benefit of everyone.
3. Use a “control chart” to daily monitor every placed quote. The control chart is a quality control measure used by Japanese auto companies and was developed by U.S. statisticians. The MGU provides enough data on the case for the risk taker to check the rate computation, including number of employees, industry code, area code, manual rate, rate quoted, last year’s rate. If a given rate is “too low” (as a percent of manual) the MGU and risk takers can take immediate action on future quotes.
4. Contingent commissions. The reinsurers (risk takers) may want the primary carriers and primary MGU’s fees to be at risk. The MGU compensation might be 5% plus profits and losses through a reinsurance captive which takes a quota share of the risk. A “synthetic captive” can be used. With the

synthetic captive the MGU gets (say) 25% of the first 25% of profits and losses. If the combined ratio is 75%, then the MGU gets an additional 5%, and if 125%, the MGU fee is reduced by 5%.

5. Limit discounts off manual. Most stop loss U.S. medical business was priced off a manual, including the Howard Johnson, M&R, Tillinghast and Apex manuals. These are prepared by fine actuarial consulting firms. Sometimes, however, the Primary MGU found it necessary to discount off manual in the soft market -- where they quoted 50 cases to get one. Limiting discounts might mean little business -- but it means fewer losses. If one gets lots of requests to discount off manual it is an indication of a "soft market" and it may be time to withdraw.

6. Give the primary-MGUs other products to sell, such as group life, dental or vision.

7. Require a minimum \$10,000 specific limit. (This minimum is required by certain state laws in order for the employer to escape premium taxes and state mandates.)

Measuring Expense

Sometimes the expenses were quite high; and many parties were taking a part of the premium before the remainder got to the risk takers. The parties included (1) a Third Party Administrator (TPA) who paid the employer claims, and who also brokered the stop loss. (2) the Primary Managing General Underwriter (MGU) which prices the business and handles some claims. (3) the Primary Carrier which issues the employer contract; (4) A Reinsurance Manager who chooses what Primary MGU to cover and who does accounting, reserving and some claims handling; (5) a "lead reinsurer;" (6) a broker who brings the Primary MGU to the Manager; (7) a broker who finds the risk taking reinsurers; (8) the risk takers or second tier reinsurers.

The following were some potential costs:

Entity	Cost (% retail premium)
1. TPA or broker for bringing employer to the MGU	15%
2. Primary MGU (underwrites and claim handling)	10%
3. Primary Carrier (issues the policy)	5% + 3% premium tax
SUBTOTAL RETAIL	33%
Broker for bringing a Primary MGU to the Manager	1%
4. Reinsurance Manager (monitor MGU)	4% + Profit Commission
Broker for finding reinsurance risk takers	1%
5. Lead Reinsurer	2%
TOTAL EXPENSE	41%
Risk Takers (retrocessionaires)	59%

A rule of thumb developed by a casualty underwriter was that a risk taker on a first dollar contract should never take less than 65% of the premium, but the above cost structure gives only 59% to the risk takers. The rule of thumb is based on some workers compensation requirements.

Expense loads should be compared to the loads on competitive products or similar products. The typical expense loads on workers compensation insurance for premiums amounts over \$5,000 are roughly 26%. (Workers compensation is about 90% health insurance.) The expense loads on specific and aggregate insurance written and retained by primary carriers are about 26-28%.

State imposed caps on expenses are not necessary. A risk taker might demand that it get 70% of the retail premium on the MGU stop loss medical business. The other part of the premium can be allocated as the parties agree; some more or less random ideas are illustrated below:

Item	#1	#2	#3	#4
Risk Takers	70%	70%	70%	70%
Broker and/or TPA	7%	10%	15%	15%
Primary MGU	10%	8%	6%	10%
Premium tax	2%	2%	2%	2%
Primary Carrier	6%	5%	4%	2%
Reinsurance Manager	5%	5%	3%	1%
Others (paid by Manager)	incl.	incl.	Incl.	incl.

Direct life insurance business may have first year commissions plus an expense reimbursement allowance which total to 96%. The renewal commissions, however, are much lower. Also, the first year cash value is often zero, so that the policyholder pays for the 96% first year cost.

Techniques for MGUs

The MGUs might control the soft market by the “control chart” technique; and also by “qualifying quotes.” If the reason for a submission is “price” the MGU can just not quote, or can reduce commissions to the broker or TPA. If the reason is lack of service from the old carrier, the MGU might want to quote.

Controlling Aggregate Claims.

Many years ago employers may have had no aggregate coverages. Now aggregates are routinely covered and there have been significant losses. The following are some techniques that can be used to control costs – and state regulations are not needed to impose sound business practices.

1. Premium true-up. Aggregate premiums and attachment points are sometimes based on immature experience. The premium or the attachment point should be trued up if past experience proves adverse.
2. Maximum any one life on drug coverages. This is a rapidly increasing cost; and a limit in the aggregate program does not prevent the employer from offering unlimited drug coverage. Alternatively “excess reinsurance” might be purchased by the reinsurers – with the cost passed along to the employer.
3. Limit on the bunching of claims. Sometimes the claims aggregates are based on paid claims and one calendar year can have 13-14 months of incurred claims. Some reinsurance agreements limit the claims that will count to the aggregate as (say) 130% of those submitted in the first 10 months.
4. Increase the 25% load factor. Typically, aggregate limits are set so that the probability of an aggregate claim is only 1-2%, by setting the aggregate at 125% of expected claims. Sometimes small groups (of around 50 employees) are covered and the traditional 25% should be increased because claims are more variable. For example, one might multiply the 25% by the square root of 400 over the number of employees; so that for an 100 employee group the 25% becomes 50%. A minimum aggregate of \$4,000 per person is sometimes required by State Laws, and is helpful.

IV. LACK of ADJUSTABLE REINSURANCE PREMIUMS or ADJUSTABLE LIMITS

Problem #1. A reinsurer might charge a fixed rate of \$X based on a certain premium volume -- and then the ceding company wrote three times as much. Some treaties were unclear as to the coverage of "reinsurance assumed."

Problem #2. A reinsurer quotes (say) \$5 million xs of \$20 million for a catastrophe cover. The probability of a single airplane crash hitting the layer is (say) very low. Then the ceding company writes five times as much business, and almost every crash triggers a loss.

Solutions for #1.

The solution seems to be pretty easy – use adjustable premiums, or even “jumping adjustables.” Also, one should be clear about retrocession business. There is no need for state regulation; and state regulations can not make up for bad pricing decisions.

1. Make all premiums “adjustable” based on some volume measures – such as reinsurance premium or primary premium, face amount, payroll; number of lives insured, etc.
2. A jumping adjustable premium might be employed. Suppose the “target primary premium” is \$10 million. The reinsurer might charge 10% of the primary premium – as long as the primary premium is less than \$20 million. If the primary premium goes over \$20 million, then the 10% becomes 15%. Therefore if \$30 million of primary premium is written, the rate jumps from \$3 million to \$4.5 million.

If a reinsurer covers a reinsurance program, then the adjustable premium should not merely be based on prior year experience as a percentage of reinsurance premium, but also on some exposure measure. Suppose “A” has written lots of direct business in the past, and has ceded risks \$10 million xs. \$5 million to “C.” Then “A” writes fewer direct policies but lots of XOL reinsurance programs at \$10 million xs

\$5 million (primary ground up amounts). Then all the risk is ceded to “C” – perhaps at fraction of “A’s” premium.

Solutions for #2.

The solution might be to make the lower limit adjustable. If five times as much business is written, the \$20 million attachment point might inflate to \$100 million.

V. "VERTICAL PRICING"

Vertical pricing was common on aviation insurance in the late 1990s and worked as follows: Brokers asked each "market" to quote their own price -- starting with the "following markets" which got the lowest price, and then working up to the "lead market" -- which does the claims handling and contract work and which got the best price. (The “lead market” does allocate some of the claim costs to following markets via a “loss adjustment expense.”)

The premium for some of the following markets might be only 25% of the highest premium. The practice looked "benign" but in fact meant some of the following markets got inadequate premiums. Some following reinsurance markets might have gotten themselves into a trap by buying reinsurance with a "minimum and deposit" premium so they must write business to cover the minimum reinsurance premiums. Sometimes the brokers would give the same premiums to each market, but charge different brokerage commissions, some of which might be shared with the client airlines or product manufacturer.

Solutions.

The problem can be solved or mitigated without state regulations. While the broker might have suggested an inadequate premium and told the following market to take it or leave it, the market was not compelled to write the business. The following are some solutions.

1. Drop out. The markets getting the lower premiums might stop underwriting the business. Other steps are considered below.
2. Join with one of the lead markets. Instead of a facultative book, write an automatic book behind one of the lead underwriters. The lead underwriters, however, might not want to cede business; or might require too great an override.
3. Become a claims lead. This is also expensive. To become a lead one would have to hire claims people, contract people and probably engineers.
4. Develop your own pricing model.

Rather than accepting the broker’s pricing suggestion, a following market might develop a sophisticated pricing model. The author has developed a complex model of airline crash frequency rates. The results are interesting : U.S. airlines have about ½ of the world’s fleet of airliners and have excellent safety records – about one fatal crash for every 2000 plane years. The model showed that among the aircraft type the newer narrow bodies (called hybrids) are the safest, followed by widebodies, narrow bodies, and turbo props. The English speaking developed countries, and Other Western Europe countries had low crash rates, while the crash frequency for some developing country airlines were up to 4-6 times higher. Large “trunk” and large regional airlines had lower crash frequencies than smaller airlines. The model was developed using a two stage weighted linear regression; once with weights equal to plane years and

second with weights equal to the variances. The author has also studies severity costs by analyzing costs from past crashes.

Even the most sophisticated model, however, might be out of date or might not be able to properly take trends into account. The international liability protocols (which limit liability in the event of a crash) are changing and it is difficult to estimate the future severity costs. The U.S. court system tends to produce very large awards. These large awards are probably paid for middle class fliers and are arguably too high. It could be argued that the rich folks who fly airplanes can buy their own insurance or, paraphrasing arguments from the Economics and Law school, the rich people are arguably better insurers than the airlines; see also the landmark case *Hadley v. Baxendale* (allowing a defense of “foreseeability” to a shipper for delay in delivering a part to a manufacturing company.) On the other hand the middle class rate flyers frequently have low vacation fares. Our purpose is not to debate the U.S. legal system, but to show that even sophisticated models aren’t always effective.

Moreover, the leading reinsurer may have even more sophisticated models. Over a long period of time total claims and total premiums less expenses will probably be in balance. Those who survive may be those who get the best premiums.

5. Design retrocessional coverage so that one is not forced to write risks. Sometimes the reinsurers will buy retrocessional coverage to minimize fluctuations. If the excess of loss (XOL) retrocession coverage has a high “minimum and deposit” (M&D) premium, then the reinsurer might feel compelled to write business to cover the reinsurance costs. The best strategy in a soft market, however, might be to curtail business and this is especially true with vertical pricing. The reinsurer could try to buy XOL reinsurance with a low M&D. A facultative quota share may be preferable to an XOL program.

6. Require a price warranty of “second best price.” Require the client to warrant that your price (net of brokerage) is within (say) 5% of the leader’s price; and that no other market other than the lead has a better price.

Brokers might refuse to give a price warranty – in which case this solution becomes the first solution – drop out. It is unclear if “vertical pricing” benefits the clients in the long term or the short term; but it is part of the market. New state regulations probably would not help.

Ch. 2 EXISTING LEGAL DEFENSES

In Chapter one we showed that good contractual language might eliminate many problems. These are “prospective solutions.” Sometimes, however, problems develop. To solve these problems one might resort to arbitration and/or the courts. It is then time to call the lawyers who specialize in reinsurance. These “retrospective solutions” can be obtained under existing laws and regulations and do not require new state regulations.

There are about 30 different contract law defenses. These include fraud & misrepresentation, unconscionable, impractical, frustration of purpose, mistake, against public policy, limited capacity of agent (*ultra vires*). They include defenses to the existence of a contract -- lack of a valid offer, consideration or acceptance.

In addition, reinsurance is subject to “utmost good faith.” The utmost good faith insurance cases date back to Lord Mansfield (18th century), Justice Story and Justice Matthews (19th century), and some recent cases in the New York Court of Appeals and First Circuit (late 1990s). Some of the cases on “utmost good faith” seem to suggest a fiduciary relationship. In other words, the broker and the ceding

company might be fiduciaries of the reinsurer -- which might require affirmative disclosure of gross under pricing.

Contractual Defenses - (The “Samuel Williston List”)

Using various legal references the author has compiled a list of “contractual defenses.” The master list is formatted using a rule of thumb apparently developed 30-40 years ago by Industrial Engineers – that there should be more than 7 items in any subcategory. The primary sources for the list are the three important contract law treaties (1) Samuel Williston (1st ed. 1920), (2nd Thompson ed. 1938) and (3rd Jaeger ed. 1957-79) especially S1793; (2) Arthur Linton Corbin, Contracts (2nd, part of 3rd)(13 volumes in 2nd ed.); and (3) Restatement (Second) of Contracts (9 volumes). The author also consulted with the Uniform Commercial Code (UCC); Vienna Sales Convention; Contracts, William Wetmore Story (1st ed. 1844); Theophilus Parsons, Contracts (7th Kellen ed. 1873), esp. #646-671; and Moore’s Rules of U.S. Civil Procedure, especially Rules 9 –13; Barbour, Summary of the Law of Payment (1888); French and German Civil Codes (1800-date); Robert Joseph Pothier on Contracts (1761) and the Evans translation and commentary (1st ed. circa 1805)(3rd Am. 1850); and the Digest of Justinian (533 A.D.)(rediscovered c. 1075)(Alan Watson translator, 1985).

The defenses referred to under the “void”, “voidable” and “unenforceable” all go to the existence of contractual obligations; and the distinctions between them are usually not important (see Williston S15). Breach by the other party is an important defense, as are the mitigation doctrines. The statute of frauds has gained new life in the United States – regarding reinsurance contracts. Regulators want written contracts so they are not surprised in an insolvency proceeding.

SAMUEL WILLISTON LIST

I. Defenses related to the existence of the contract.

A. Void.

1. Lack of capacity (Ch 2) (infancy, drunk, insane, beyond capacity as in ultra vires)
2. Lack of Authority (ultra vires) (cf. Ch 2 S12 com. e)
3. No meeting of the minds. (Ch 3)
4. Lack of consideration or a substitute (Ch 4 especially S90)
6. Failure of condition precedent as to a contract’s existence.

B. Voidable due to improper action

1. Fraud, misrepresentation (Ch 7 Topic 1)
(including Ponzi schemes, shell games, phony claims).
2. Duress (Ch 7, Topic 2)
3. Undue influence (Ch 7 Topic 2)
4. Lack of good faith in performance and enforcement (Ch 9 S205)(UCC 2-103)
5. Unconscionable (Ch 9 S208).

C. Voidable for other reasons

1. Mistake of Law or Facts (Ch 6)

D. Unenforceable

1. Statute of Frauds (Ch 5)
2. Against public policy (restraint of trade; inducing violation of fiduciary duty) (Ch 8)
3. A pact to commit a crime, or a tort (the pact may be “evidence”) (Ch 8 S192)
4. Lack of insurable interest (on insurance and reinsurance contracts)
5. Sovereign Immunity (Ch 4. S78 com. c)

II. Defenses related to performance

A. Breach by other party or Performance by your client

1. Performance of duties (Ch 10 S235)
2. Breach of material condition by the other party (Ch 10 S237)
3. Prospective repudiation by other party (Ch 10, Topic 3)
4. Failure of condition precedent (as to a contractual duty or privilege) (Ch 9 Topic 5)
5. Setoff by netting an unrelated debt

B. Voluntary or Automatic Discharge

1. Impractical, impossible (Ch 11 S261)
2. Frustration of purpose. (Ch 11 S265)
3. Alteration (Ch 12 S286)
4. Condition Subsequent (Williston S666) (Ch 10 S 230 com. a)
5. Agreement Not to Sue (Ch 12 S284-5)
6. Accord and Satisfaction (Ch 12 S281)
7. Confusion, acquiring the correlative right.

C. Special Rules

1. Novation (Ch 12 Topic 2)
2. Delegation of duties, Assignment of rights (Ch 15)
2. Joint and Several Liability (Ch 13 Topic 2)
3. Surety rules (Ch 14 S314)

III. Defenses related to remedies

A. Mitigation doctrines

1. Avoidability as a limitation on damages (Ch 16 S350) (duty to mitigate damages)
2. Unforeseeable (Ch 16 S 351)(Hadley v. Baxendale)
3. Uncertainty as a limitation of damages (Ch 16 S352)
3. Restitution (Ch 16 Topic 4)

B. Legal Rules (various immunities)

1. Res judicata (claim preclusion; same suit can't be tried twice)
2. Collateral estoppel (issue preclusion; similar facts may govern future cases)
3. Bankruptcy Discharge
4. Statute of Limitations
5. Deemed payment (after say 20 years)

The Doob List of REMEDIES.

There are a variety of remedies for breach of contract, which were derived from Doob's 3 volume textbook on Remedies, and other texts.

A. Self Help Remedies

1. Suspension of one's own performance
2. Cancellation of future performance for the other party's breach
3. Recoupment – reducing the price

B. Legal Remedies.

1. Damages
2. Rescission ab initio (canceling from the beginning)
3. Specific performance
4. Setoff (on independent contracts)

Many contractual defenses and remedies may be useful in reinsurance actions involving underpriced business.

Lord Mansfield

Many of the general contract law doctrines and insurance law were developed by Lord Mansfield. Thus, in the famous case of *Kingston v. Preston* (1773) Lord Mansfield held that the failure of an important condition was a condition precedent for the return performance. In the case the nephew and another young man wanted to purchase the business from the Uncle; who agreed to the sale on the promise that they would provide security for the purchase price. The young men sued for their side of the contract, without giving security, and Lord Mansfield ruled against them. Lord Mansfield was instrumental in developing in the modern development of the setoff and recoupment doctrines. Setoff refers to netting debts on independent contracts, while recoupment refers to netting balances due on the same contract.

Utmost Good Faith – its history and meaning

Utmost good faith is a big topic; with dozens of recent court cases and many law journal articles covering the topic. The insurance doctrine of utmost good faith is centuries old. James Allan Park, *A system of the Law of Marine Insurances* noted in Chapter 10, “Of Fraud in Policies” (8th Hildyard ed. 1842)(1st ed. 1786)(Professional books Reprint, 1987):

No contract can be good, unless it be equal; that is, neither side must have an advantage by any means, of which the other is not aware. This being admitted of contracts in general, it holds with double force in those of insurance; because the underwriter computes his risk entirely from the account given by the person insured, and therefore it is absolutely necessary .. that this account be exact and complete ... [T]he very essence of insurance consists in a rigid attention to the **purest good faith** and the strictest integrity. (emphasis added)

Park gave footnote references to the following (titles in English): Blackstone (1722-80), 1 Commentaries 460 (1st ed. 1765); Hugo Grotius (1583-1645), *On the Laws of War and Peace* (1631); Samuel Puffendorff. (1632-1694), *On Natural Law* (1688). Park also quoted extensively from Lord Mansfield.

Justice Joseph Story of our own Supreme Court, quoted Lord Mansfield in *McLanahan v. Universal Insurance Co.*, 26 U.S. 170, 185 & 190 (1828). The case involved a marine insurance case where two sophisticated parties are dealing with each other. **Justice Story** noted:

The contract of insurance has been said to be a contract *uberrimae fidei* and the principles which govern it, are those of an enlightened moral policy. The underwriter must be presumed to act upon the belief, that the party procuring insurance, is not, at the time, in possession of any facts, material to the risk which he does not disclose; and that no known loss had occurred, which by reasonable diligence might have been communicated to him. If a party, having secret information of a loss, procures insurance without disclosing it, it is a manifest fraud, which **avoids the policy**. (emphasis added) (Note there are different Latin spellings of the English translation)

Justice Story referred to Park and to Marshal on Insurance (1810 ed.) and noted three cases decided by Lord Mansfield: *Carter v. Boehm*, *Ratcliff v. Shoobred*; and *Fillis v. Brutton*. See Park (8th ed., 1842) at page 413-426. (The U.S. reporter's spelling of the 1st and 3rd cases is incorrect.)

Justice Matthews in *Sun Mutual Insurance v. Ocean Insurance*, 107 U.S. 485,509 (1882) applied the doctrine of utmost good faith to reinsurance cases, and noted that in reinsurance the doctrine is even more necessary than in insurance cases. **Justice Matthews** said

In respect to the duty of disclosing all material facts, the case of reinsurance does not differ from that of an original insurance. The obligation in both cases is one *uberrimae fidei*. the duty of communication, indeed, is independent of the intention, as is violated by the fact of concealment even where there is **no design to deceive**. The exaction of information in some instances may be **greater in a case of reinsurance** than as between the parties to an original insurance. In the former, the party seeking to shift the risk he has taken is bound to communicate his knowledge of the character of the underwriter, while in the latter the party, in the language of Bronson J. [1830s NYS case, 17 Wendell 359] is "not bound nor could it be expected, that he should speak evil of himself." (emphasis added)

Other References

Gerathewohl (Munich Re. 1980), in his two volume treatise on Reinsurance (translated from the German), notes:

In English law the term "*uberrimae fidei*" (utmost good faith) constitutes a legal notion on the basis of which the "knowledgeable" party to certain legal transactions (in addition to insurance contracts, transactions such as "suretyship", "partnership", "guarantee", etc.) is required to inform the other party, prior to entering into the contract, of all material facts. Breach of this duty of disclosure renders the contract rescindable. C.f. *Golding*, Law p 9 and Chartered Insurance Institute.

From Words and Phrases:

Contracts of life insurance are said to be "*uberrimae fidae*" when any material misrepresentation or concealment is fatal to them, *Equitable Life Assur. Soc. v. McElroy*, 83 F. 631, 636.
"Uberrima fides" is the rule which applies to agents, partners, and trustees.

Note that agents, partners and trustees are all "fiduciaries" – see Restatement (Second) Trust, Sec. 2-4, 170 and 171; and compare Sec. 12 com. k.

Three standards

The following are three potential standards for “utmost good faith” in reinsurance contracts – in colloquial English.

Standard	Colloquial definition.
1. Highest Subordination	The cedent should subordinate its interests to that of the other party; similar to a trustee or guardian. See Black’s Law Dictionary (6th ed. 1990) on “fiduciary duty.”
2. Middle Equality	Treat the other partner as well as you would treat yourself. In pricing, underwriting and settling claims – act as if you would have acted had there been no reinsurance.
3. Lowest Contractual UCC 2-103 RSC S205	Utmost good faith is just merely “good faith and fair dealing as discussed in the Restatement (Second) of Contracts S205 and the Uniform Commercial Code. Watch out for yourself first, but don’t consciously conceal anything in the contractual negotiations and act fairly in the performance of the contract.

In many disputes the different standards will be moot – all of the standards will be met or all violated. The difference between the standards seems to relate to the ease of proof. It should be easier to prove violation of the higher standards than the lowest standard. The remedies for violation of any standard are the same -- rescission ab initio, termination going forward, recoupment, or damages.

Economic Reasons for utmost good faith

There is sound reasons for at least the middle standard applying in all reinsurance contracts. By relying on the ceding company for actuarial analysis, claims handling, and underwriting the total cost of the reinsurance relationship is reduced; see *Unigard Sec. Ins. Co. v. North River Ins. Co.*, 4 F.3d 1049 (2d Cir. 1993). For competitive reasons reinsurance costs must be kept to a minimum because primary insurers that reinsure must compete against primary companies that don’t reinsure.

The standard might depend on the type of underwriting, the amount retained by the cedent, and the type reports that are given to reinsurers. If the ceding company has a significant retention, then the middle standard may be appropriate. In automatic cases where the cedent has a low retention or will not disclose client lists or underwriting standards for competitive reasons, then the highest standard might apply.

Utmost good faith should also apply to the reinsurer in its dealing with the cedent. Park noted cases where an insured ship arrived safely in port so the insurance had no effect, and suggested the insured should receive the premium back (8th ed. at 418).

Various Sources

Recent cases have confirmed the doctrine of utmost good faith – concentrating on the disclosure issue. See *Compaigne de Reassurances v. New England Reinsurance Corp.*, 944 F. Supp. 986 (D. Mass, 1996), on remand from 57 F.3d 56 (1st Cir. 1995) (allowing 30 foreign reinsurers to rescind because of cedent’s misrepresentation) and see *Michigan National Bank-Oakland v.. American Centennial*, 89 N.Y.2d 94 (N.Y. 1996) (allowing reinsurers to rescind contracts when the cedent Union Indemnity failed to disclose its own insolvency). See also *Allendale Mut. Ins. Co. v. Excess Ins. Co. Ltd.*, 992 F. Supp. 278, 283 (S.D.N.Y. 1998).

Barry Outrigger and Mary Kay Vyskocil, *Modern Reinsurance law and Practice*, Chapter 3.02 (2d ed., 2000, Glasser Legal Works, New Jersey) discuss the various standards for utmost good faith, and noted that some courts have equated utmost good faith to a “fiduciary level” and others to the UCC level.

For Law review articles and legal textbooks see Oppenheimer, Wolff & Donnelly newsletter, *Insurance and Reinsurance Update* by Jay Wilker Edward Lenci, Spring 1998, reprinted from the Practising Law Institute.) See the articles by P. Jay Wilker and Edward K. Lenci, *Uberrimae Fidae Under New York Law: New York’s Highest Court Takes a pro Reinsurer Position*, 7 #17 Mealey’s Litigation Report 14 (Jan. 1997); Grais & Phillips, *Reinsurance law* (November 16 & 18, 1996).

For English views see C. Bennett, *Dictionary of Insurance* on “utmost good faith.” (London, 1992); and various internet sites, and the textbook Semin Park, *The Duty of Disclosure in Insurance Contract Law* (1996, Ashgate, Hants, England and Brookfield, Vermont).

Ch 3. REGULATORY SOLUTIONS

Above we talked about company solutions and general legal rules that apply to all contracts, as well as the concept of utmost good faith. There may be some regulatory actions that might help.

1. Cash Flow Testing. Direct writers (primary insurers) are often required to do “cash flow testing.” Regulators might require the same for reinsurers (indeed the current laws might cover reinsurance). The reinsurance regulation might require the reinsurer to obtain an actuarial certification by an FSA, FCAS, or FIA of the pricing model used by a reinsurance manager.

2. Required Disclosure of Client List.

The regulators might require that any reinsurer with a large share of a reinsurance pool (either a 10% share or more than \$5 million of premium) to obtain a list of the primary insurance clients. (Indeed the existing Schedule S seems to require disclosure). While the cedents often regard “client lists” as proprietary, their concerns might be addressed by limiting disclosure to those with relatively large shares. The Gilbert Questionnaire and the Cigna Questionnaire developed in 1999-2000 in London has gone part way to solving the “transparency problem.”

3. Anti Circle Clause.

The U.S. regulators might require all United State reinsurers to have an “anti circle” clause. The remedy for not having one might be a penalty reserve clause imposed on the reinsurer. Some experts have suggested that U.S. law should treat the reinsurance contract as void if the cedent tried to enforce a foreign arbitration or contract award in the United States. Perhaps U.S. regulators could temporarily prohibit U.S. insurers from assuming business from London markets. Perhaps English regulators should require that reinsurance claim amounts be limited to the primary claim amounts.

4. Other Disclosure.

The regulators might have additional annual statement disclosure of various practices such as expenses on excess share exceeding 35% of premium; vertical pricing; and lack of adjustable premiums. Reinsurance brokers are currently regulated. It might be a good idea to require insurance brokerage to disclose reinsurance prices and how much of the brokerage is shared with the client.

5. Elimination of Pure Fronts.

Some medical primary carriers take no risk. This can be accomplished either by a 100% cession, or by limiting claims to the reinsurance premiums. Some regulators might have front regulations that require at least 10% risk shifting. However, the risk shifting can still be minimized if one takes 10% risk and gets a very fat 10% risk charge on all the business. Then the primary carrier will not lose money unless the loss ratio hits 190% on his 10% share.