

COMMUTATION WORKING PARTY

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**P N Matthews
D I Tomlinson
M G White**

CONTENTS

SECTION 1	INTRODUCTION
SECTION 2	MARKETING
SECTION 3	TREATY IDENTIFICATION
SECTION 4	DATA RECONCILIATION
SECTION 5	ACTUARIAL EVALUATION OF INWARDS BUSINESS
SECTION 6	ACTUARIAL EVALUATION OF OUTWARDS BUSINESS
SECTION 7	NEGOTIATION
SECTION 8	SAMPLE LEGAL AGREEMENT
SECTION 9	POST COMMUTATION
SECTION 10	IMPACT ON ACTUARIAL STATISTICS
SECTION 11	CONCLUSION

1.0. Introduction

- 1.1.** Apart from the cut-off of individual short tail treaties for administrative convenience, commutations were virtually unheard of six years ago. Awareness is now growing that commutation can be an option in the resolution of reinsurance contracts where either cedant or reinsurer has become uncomfortable.

Commutation could be described as a means outside litigation, arbitration, repudiation, or liquidation, whereby both parties of a potential dispute can arrive at an acceptable financial settlement.

- 1.2.** The many reasons why cedant or reinsurer may wish to end a particular contractual relationship are described below. Generalising, it is unlikely that there will be pressure from either party for a commutation in the situation where the financial and administrative integrity of both parties is high. Commutations tend to be associated with weakness on one side or another, to which may be added commutations of treaties with disastrous results or which form part of the settlement of a dispute. Reduction of administration costs is rarely a prime motive.

- 1.3.** Commutations are an exciting opportunity for the actuarial profession. More and more are being negotiated and there is reason to believe that this trend will continue. Furthermore, because it is clear to all parties involved that estimation and interpretation of reserves is fundamental to negotiating a commutation, there is scope for a far greater degree of actuarial involvement in the commutations that are already taking place. Where there has been actuarial involvement on behalf of either of the parties involved in a commutation, it has been easy to demonstrate added value.

1.4. Putting Commutations into Context

Broadly speaking, a commutation is one of a number of ways of resolving a reinsurance problem although careful thought and research will be necessary before deciding which particular course of action is most suitable.

Commutation might be the solution to any of the following scenarios:

- (i) Cedant suspects reinsurer is in financial trouble;
- (ii) Reinsurer is in financial trouble and approaches cedant;
- (iii) Reinsurer disputes a treaty, claiming that cedant has not fulfilled its obligations in some way;
- (iv) Reinsurer suspects cedant is incompetent/not reserving properly/in trouble;
- (v) A treaty is producing unexpectedly bad results and the cedant offers commutation in order to protect a market reputation.

1.5. Where there is a dispute over the terms of a treaty the cedant will have the choices of, inter alia, litigation, arbitration and doing nothing, although commonly the arbitration clause in most treaties will require arbitration before litigation. Commutation may, however, be more attractive than arbitration since arbitration may be slow, expensive and unpredictable. Additionally, arbitration against a reinsurer of doubtful financial standing who is raising objections only to delay payments may achieve little.

1.6. It should, however, be realized that many classes of business cannot be commuted, though the situation will vary widely from company to company. The most common reasons why business cannot be commuted are the legal and regulatory environment for the class of business concerned, and the extent to which

the reinsurer's inwards business is itself reinsured, since the agreement of the retrocessionaires will be a major factor. Types of business which are unlikely to be the subject of commutations are:-

- (i) Direct business;
- (ii) Facultative business;
- (iii) Business written by pools where the manager cannot commit the participants;
- (iv) Business with substantial funds retained;
- (v) Business heavily protected by excess of loss reinsurance.

In practice a troubled reinsurer may be able to commute anything from 5% to 60% of its inwards business.

1.7. A troubled reinsurer will almost certainly have stopped writing new business, yet it may have a number of reasons for trying to stave off liquidation. However, the cedant will never know the full picture. This may give the reinsurer an advantage in negotiations.

1.8. What are the troubled company's objectives? The parent company, if there is one, may want to minimise the damage caused to it by guarantees it has given to its subsidiary, or it may wish to maintain its insurance licence in the hope of receiving a large sum for it (a new parent could inject new funds and write new business). The parent may be reluctant to inject large sums of money, whilst wishing to preserve its reputation as a responsible multi-national company. The management (although in practice only a skeleton management may remain) will want to preserve their jobs for as long as possible.

1.9. The rules relating to the liquidation of a reinsurer in the US differ from those in the UK. In the US, cedants are likely

to receive nothing, since they are well down the priority list. In the UK, cedants rank equally with other insurance creditors - so their chances are better - but a serious shortfall will almost inevitably result.

If the reinsurer is eventually destined for liquidation, and its liabilities to the cedant are long tail, the cedant will tend to take what cash it can now. If, on the other hand, the reinsurer struggles on for a long time, the cedant will wish he had not commuted. The whole process has similarities with the game of poker. An additional fact to include in the calculations is that if the reinsurer goes into liquidation shortly after a commutation, it is open to the liquidator, with the consent of the court supervising the liquidation, to reverse the commutation if it appears to have favoured one creditor at the expense of others. The period during which this may be done depends upon the jurisdiction in which the liquidation is taking place.

- 1.10. For the actuary called in to help either party, a major commutation can be a time-consuming exercise which stretches over a number of months, if not years. As will be explained later in the paper, much work has to be done on the data and, even after an agreement is concluded, more work will be needed to execute the agreement and to tie up the loose ends. The "actuarial evaluation" part of the task is not very time-consuming in comparison. In a typical commutation the proportion of time spent by those concerned, including the actuary, on each segment may be as follows:

Marketing	5%
Treaty Identification	10%
Reconciliation of balances, reserves, LOC's, funds retained etc	35%
Production of Statistics	5%
Actuarial Evaluation	15%
Negotiation	5%
Legal Agreement	5%
Post Commutation Administration	20%

	100%
	=====

- 1.11. Treaty identification and data reconciliation, although time-consuming, are critical to a successful commutation. The reconciliation process is extremely important to the actuary and he must be aware of all differences between his statistics, and the "true position" which more accurately reflects the updated situation once all errors or pipeline claims have been processed. Any actuary ignoring the results of the reconciliation process does so at his own peril. Sometimes quite considerable differences may occur between the statistical records held separately by the reinsurer and cedant. As is evident from the break-down above, the actuarial evaluation forms only a small part of the whole commutation process. The sections which now follow describe in detail the procedures of each segment.

2.0. Marketing (or deciding to do something)

- 2.1. A commutation may not be the first option which occurs to the management of an insurer or reinsurer and the concept may have to be "marketed".

In particular, the recent experience of, inter alia, Hurricane Hugo, Piper Alpha, Cat. 87J and the various U.K. and European windstorms in early 1990 may have considerable financial effects which can be mitigated by appropriate action. In these circumstances, it will be important for a reinsured to get as much as possible from his reinsurers but, by the same token, it is precisely this environment which will increase the number of doubtful reinsurers. Similarly, a company may find that it has become necessary to attempt commutation of inwards business in order to cope with expected claims.

- 2.2. Whatever the background or causes, a necessary first step is for the senior management to become aware of all the problems and the likely outcome if no further action is taken. It will be only after research and careful consideration that the management will be in a position to decide whether it is feasible to attempt to improve matters either by commuting selected inwards treaties, or by settling with reinsurers regarded as doubtful, or both. In many cases it will be necessary for the possibilities of commutations to be "marketed" to those who will have to decide what to do.

- 2.3. Once a strategy has been developed a select number of companies should be targeted and meetings set up to discuss mutual problems.

Prior to any meeting a presentation should be prepared to cover such issues as:

- (i) The mutual advantages of a commutation;
- (ii) What is to be commuted;
- (iii) The procedures required to commute;
- (iv) Who will be doing what;
- (v) Deadlines for the completion of each stage of commutation;
- (vi) The commutation cut-off date.

To speed up the whole process it is imperative the senior representatives of each party meet and discuss all issues. Subsequent communication via the written or the spoken word will prove to be much easier if each party can visualise the other.

3.0. Treaty Identification

3.1. Once it has been established that commutation offers a viable route the next stage is to define the commutation content. In this respect it is usually easier for the reinsurer to identify his assumed inwards business. For the cedant, identification is more difficult owing to the fact that each and every policy or treaty has to be interrogated to determine each and every occasion where protections exist with his reinsurer. In other words, the whole database has to be reviewed. For any large company this can be a vast undertaking. In situations where the intermediary maintains the database, the intermediary will have to become heavily involved in the treaty identification process.

3.2. For each treaty the following information is required:

- (1) Reinsurer Reference;
- (2) Ceding Company Reference;
- (3) Policy Year;
- (4) Treaty Description;
- (5) Treaty Limits;
- (6) Order Percentage;
- (7) Signed Line Percentage;
- (8) Business Classification Code;
- (9) Broker Reference;
- (10) Inception-to-date gross premiums;
- (11) Inception-to-date gross paid losses;
- (12) Current gross outstanding loss reserves;
- (13) Date of last processed account;
- (14) Reinsurance indicator (FAC, XOL, Surplus);
- (15) Funds Retained Details;
- (16) Letter of Credit Details.

With today's technology, identification can become much simpler by producing a computer spreadsheet of the

information. This will allow sub-division and sorting of treaties according to any desired sequence. In addition, the treaty listing will facilitate the identification of the 10% of treaties which represent 90% of the liability exposure. A specimen layout of a treaty listing is shown in Exhibit 3.1.

- 3.3. Sometimes it is too time consuming to commute all treaties between the ceding company and reinsurer particularly in the case of property treaties where very little, if any, exposure exists. To facilitate administration and reconciliation work it may be advisable to consider only those treaties with large potential or probable claims. When dealing with large US composites such as Crum & Forster, Cigna, Home etc, it may be advisable to have a phased approach whereby manageable chunks of business are identified and commuted. This will avoid unnecessary delays which would otherwise arise in the identification and reconciliation of each and every treaty ever written.

EXHIBIT 3.1.

XYZ COMPANY
TREATY LISTING EXAMPLE

<u>XYZ</u> <u>REF</u>	<u>CEDANT</u> <u>REF</u>	<u>POLICY</u> <u>YEAR</u>	<u>TREATY</u> <u>DESCRIPT</u>	<u>LIMITS</u>	<u>SHARE</u> <u>%</u>	<u>BUS</u> <u>CODE</u>	<u>BROKER</u>	<u>PREMIUM</u> <u>I.T.D.</u>	<u>PAID</u> <u>I.T.D.</u>	<u>O/S</u>	<u>LAST</u> <u>PROC</u>	<u>R/I</u> <u>IND</u>	<u>FUNDS</u> <u>RETAINED</u>	<u>LOC</u>
X 7479	C1282	81	CAS XS	750 XS 250	5.0%	37	SEDGWICK	50,000	30,000	100,000	12.87	XL	-	100,000
X 5006	C1329	87	PROP CAT	1M XS 1M	10.0%	36	BOWRING	7,000	20,000	3,000	12.88	S	-	3,000
X 0089	C1553	75	CAS QS	QUOTA SHARE	7.5%	67	W FABER	200,000	50,000	400,000	6.85	XL	400,000	-
TOTAL														
									257,000	100,000	503,000	400,000	103,000	

4.0. Data Reconciliation

4.1. In theory it should be easy to reconcile unpaid balances, outstanding case reserves, letters of credit, and funds retained. In practice the quality of information held by ceding companies, intermediaries and reinsurers will often be disappointing.

4.2. On a typical US placement in London there will be the following four players:

- (i) Ceding company;
- (ii) US intermediary;
- (iii) UK intermediary;
- (iv) Reinsurer.

At any point in time it is almost inevitable that each player, owing to timing differences, holds different information on balances, outstanding case reserves, letters of credit, etc. It is imperative to reconcile as closely as possible all accounting entries before any actuarial costing is performed. Reconciliation of all accounting entries can often consume large amounts of time and effort. Do not underestimate the problems involved.

4.3. Let us take the simple case of unpaid balances which can be broken into four categories:

- (i) Balances agreed by reinsurer and cedant;
- (ii) Balances paid by reinsurer but not received by the ceding company;
- (iii) Balances due to the ceding company but not yet reported to reinsurer;
- (iv) Balances funded to the ceding company by the intermediary.

4.4. It may seem trivial to spend so much time reconciling balances but unless it is done the actuarial advice can be totally

meaningless. In some cases outstanding reserves could now be paid balances and should the actuary ignore this transition of reserves to paid losses he could easily draw the wrong conclusion. A commutation is a final cash call and unlike reserving cannot be revisited a year later and adjusted retrospectively.

4.5. Outstanding case reserves should also be compared and any differences understood. Again this will reveal whether the statistical database needs to be amended or updated. An actuarial evaluation based on incorrect outstanding case reserves will generate an inappropriate costing.

4.6. Letters of credit are set up to provide the ceding company with a level of known security. Many commutation settlements are made up in part or in whole by monies generated by drawing down letters of credit. Therefore it is important to reconcile these in respect to the following details:

- (i) LOC Reference;
- (ii) Treaty Reference;
- (iii) Claim Reference;
- (iv) Beneficiary Details;
- (v) LOC Amount.

4.7. When letters of credit are not used, security is often provided via funds retained or trust funds. Again these should be reconciled and where interest is payable on a predetermined basis this should be factored into the actuarial costings.

4.8. At the beginning of this section we mentioned that data reconciliation should be easy, but in practice it is time consuming, frustrating and often very unrewarding. Quite often the law of diminishing returns applies whereby it may take as long again to reconcile the last 10% of any known differences. If it has taken, let's say, 6 months to arrive

at this stage and the inwards account is rapidly deteriorating, it may be preferable to ignore small differences and proceed with the actuarial evaluation and negotiation. As a rule of thumb, once the differences are within 10% on unpaid balances and reserves and no material gain can arise from spending further reconciliation time it is probably best to proceed to the next stage of actuarial evaluation and negotiation.

4.9. It is important to find out, at an early stage, whether outwards reinsurances exist on inwards business which is being considered for commutation. If so, the financial consequences of commutation upon future recoveries must be taken into account when deciding if the commutation is worthwhile. It is, for example, not unknown for excess of loss reinsurers to decline to contribute to a commutation payment on the grounds that nothing has occurred which triggers a claim on the reinsurance. In many circumstances it is advisable to sound out reinsurers and, where possible, reach an agreement on any contributions to the commutation payment before negotiating the commutation itself. There are certainly instances where reinsurers will themselves gain from the commutation and can be persuaded to pay amounts for which they might not be strictly liable in law. It is also usually politic at least to consult proportional reinsurers in advance of any significant commutation even if the reinsurers are bound to "follow the fortunes".

4.10. In a similar way, if outwards protections are to be commuted the position of anyone else who will be affected must be considered. An example of this would be commutation of excess of loss protections for the common account of a company and its proportional reinsurers.

5.0. Actuarial Evaluation of Inwards Business

- 5.1. Prior to commuting it is not uncommon for the actuary to know very little about the financial implications of the treaties to be commuted. He may in some instances be familiar with some of the more notorious treaties and have a vague idea of how they affect different reserving classes. When commuting, a company is dealing in hard cash; it cannot afford to get it wrong. The actuary therefore is faced with the evaluation of the once and for all monetary range applicable to the treaty content to be commuted.
- 5.2. Perhaps the most striking difference between ordinary company reserving and the actuarial evaluation of a commutation is that the actuary must become familiar with and understand all the details of the business to be commuted. He cannot rely on the law of averages and cannot recalculate the commutation price with the benefit of hindsight one or two years later. Therefore it is imperative to read as far as possible all of the slips and policy wordings pertaining to the commutable business. The actuary must understand the nature of the contracts, the limits and layers of reinsurance, the policy conditions relating to premiums, commissions, premium and loss funds retained, interest payable on funds retained, letters of credit, etc. It is all too easy to forget about the influence that funds retained have on the actual cash flow of a treaty. In many cases the paid claim payout pattern bears no relation to the actual cash accounting that will take place. In such a situation the actuary must estimate the present value of the projected cash flow and not the projected claim payout pattern. Exhibit 5.1 at the end of this section illustrates this point. Only by reading the slip information and contract wording can the actuary fully determine the nature of the treaties to be commuted. Should any doubt still exist discussions with the underwriter may assist.

5.3. In order to throw light on these delicate costing procedures an iterative process involving several costings allows the observer a range of possible outcomes. This in itself can generate many clues about the most appropriate monetary range of settlement. Further, management can be presented with a spectrum of different outcomes which enhances their understanding of the book of business to be commuted. The four descriptions below cover most aspects:-

- (i) Applying statistical projections to the combined development of the commutable treaties summarised by reserving class, eg Property Proportional, Casualty Non-Proportional, etc.. We term this the Reserving Class evaluation;
- (ii) Assessing the financial contribution currently made by the commutable treaties to the statutory accounts of the company/syndicate - the Booked Costing;
- (iii) Where the quality and quantity of data permits, more precise costing by individual treaty or claim - the Individual Costing;
- (iv) Evaluating the other party's position - the IBNR they disclose and possibly their booked costing. We call this the Other Party's Costing.

These approaches are now discussed.

5.4. Projections by Reserving Class

Collation of the statistical data associated with the treaty content will expose the cumulative data triangles by reserving class. Without prejudicing one's thoughts of the reserving classes given to the business ie short tail or long tail, just mathematically extrapolate and graph the underlying trends

within the data. Surprises are always present. Sometimes long tail classes turn out to be very short tail and almost mature whilst other classes deemed to be short tail can turn out to have substantial further development. Numerous reasons can be given to explain this unexpected phenomenon. The first could be that the business has been incorrectly coded, whilst another and more usual reason is that the business, although coded correctly, is atypical of the average trends associated with its business classification. Trend analysis does provide the first initial insight into the nature of the business to be costed. Attributing a long tail IBNR to business which is inherently short tail can alter the costing by millions. By extrapolating a payout pattern commensurate with the ultimate projections and allowing for all cashflow considerations it is possible to generate present value results across a range of discount rates.

5.5. Booked Costing

Application of the company's/syndicate's booked IBNR factors by reserving class and underwriting year to the treaty content statistics will enable the actuary to apportion the hypothetical "Booked IBNR" to the commutable business. This will provide senior management with a benchmark costing which can be used to measure the apparent profit or loss of the commutation. If a company discounts its reserves the appropriate company discount factors must be applied to the theoretically generated undiscounted reserves. The Booked Costing only has a value in so far as it demonstrates to senior management the break-even profit/loss position from a pure accounting viewpoint. The Booked Costing has no actuarial substance and in most cases the actuary should be able to demonstrate from his other calculations that even though an accounting loss may arise it still is in the company's/syndicate's long term interest to commute. Conversely, there will be numerous occasions when the

apportionment of the booked IBNRs overstates the expected ultimate outcome. In such cases management will only be too pleased to commute and record a financial surplus.

5.6. Individual Costing by Treaty or Claim

Sometimes, as in the case of Personal Injury or Workers' Compensation business, it is possible to extract very precise data about the payment expectations associated with known claims. Actuarial analysis will result in a very precise evaluation of the projected claims costs. Exhibit 5.2 illustrates how it is possible to evaluate individual Workers' Compensation claims by layer of reinsurance. Aggregation of these can produce an actuarially elegant result particularly when the business, as often happens with Workers' Compensation or Personal Injury, has been written on a claims made basis. Furthermore, by changing the assumptions with regard to Medical and Indemnity inflation it is possible to derive a spectrum of different scenarios.

5.7. The Other Party's Costings

Exchanging information about outstanding case reserves and IBNRs will help rather than hinder the commutation process. Obtain if possible the IBNR required by your opponent. Never be put off if this IBNR appears too high. Providing the payout pattern is commensurate with their reserves the difference in the discount price when discounting at 9% is remarkably stable. What is happening in fact is that the higher reserves determine a longer payout and hence a greater discount. On average one should expect to commute reserves with a proportionately large IBNR at a lower number of cents to the dollar than reserves with smaller IBNRs. Sometimes, of course, the other party's reserves are deliberately or inadvertently overstated. In this situation be prepared to justify your IBNR and demonstrate that theirs is inordinate.

5.8. Other evaluations which are often enlightening are:

- (i) projections in keeping with industry-wide statistics such as those published by A.M. Best and the R.A.A.
- (ii) the maximum exposure on a total loss basis. This is particularly useful when reviewing business with limited reinstatements or with aggregate limits.

Always remember to calculate the potential credit of future reinstatement or adjustment premiums arising from the projected reserves. It is all too easy to focus one's efforts on claims and forget the knock-on effect on premiums.

5.9. Evaluation of the gross inwards exposure is the first of several considerations facing the actuary. It is imperative he always looks at the reinsurances protecting the business, in particular, any non- proportional reinsurances. Providing the commutation makes financial sense, the company/syndicate should have no problems collecting down the line a percentage share of the commutation outlay from his own proportional reinsurances. The problem rests with non-proportional covers. The following example sets out this problem (illustrated in Exhibit 5.3.) in respect of one large loss event to which an internal IBNR has attributed by the cedant.

Excess Loss Protections

First Layer	\$0.5m x \$0.5m
Second Layer	\$ 1m x \$ 1m
Third Layer	\$ 1m x \$ 2m

Before Commutation Position:

<u>US\$(000s)</u>				
<u>Excess Layer Exposure</u>				
	<u>F.G.U.</u>	<u>1st</u>	<u>2nd</u>	<u>3rd</u>
Paid	700	200	-	-
O/S	800	300	500	-
IBNR	1,000	-	500	500
	-----	-----	-----	-----
Total	2,500	500	1,000	500
	-----	-----	-----	-----

Loss reserves are commuted at 50%.

Post Commutation position:

<u>US\$(000s)</u>	
Paid	700
Commutation Price	900 (50% of \$1.8m)

Total	1,600

Question: How do you allocate the commutation price over the three excess loss protections?

Allocation 1: Combine the commutation price with the original paid losses and recover on a vertical basis as follows:

<u>Excess Loss Recoveries</u>				
<u>US\$(000s)</u>				
	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>Total</u>
Paid	200	-	-	200
Comm. Price	300	600	-	900
	---	----	----	-----
	500	600	-	1,100
	---	----	----	-----

Question: Who will agree to Allocation 1?

1st Reinsurer - No. Why should he accept accelerated recoveries?

2nd Reinsurer - Maybe. He is probably aware of a potential total loss and now only pays 60% of Layer. He may require a further discount for early settlement.

3rd Reinsurer - Yes. He now has no exposure.

Allocation 2: 50% of prior reserves allocated to each layer as follows:

<u>Excess Loss Recoveries</u>				<u>US\$(000s)</u>
	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>Total</u>
Paid	200	-	-	200
Comm. Price	150	500	250	900
	----	----	----	-----
	350	500	250	1,100
	----	----	----	-----

Question: Who will agree to Allocation 2?

1st Reinsurer - Yes. The reinsurer was expecting a total loss and now only pays 50%.

2nd Reinsurer - Probably yes. He should have been aware of a potential total loss and now only pays 50% of Layer.

3rd Reinsurer - No. The IBNR is an internal cedant calculation. He has not received any reported losses to the layer although precautionary advices may have been

recorded. In all probability the 3rd reinsurer will be awkward and the cedant may have to write-off any expected recoveries.

- 5.10. In conclusion, the recovery of non-proportional reinsurances on commutation payments is always difficult. Much discussion will ensue with the brokers and reinsurers before commutation collections are recovered. Allocation 1 is probably more acceptable but even here flexibility and compromise must prevail. As a rule of thumb, check at the outset that no more than 10% of the outstanding reserves are non-proportionately reinsured. If a sizeable element of the business is reinsured it is imperative that the commutation is marketed to the reinsurers, for acceptance in principle, before any monies are paid to the original ceding company. Non-collection of reinsurances can turn an excellent deal into a very poor one.

EXHIBIT 5.1**PROPORTIONAL TREATY CASHFLOW**

<u>Funds Retained :</u>		100% O/S Loss Reserves									
<u>Interest Payable:</u>		5% p.a. of Funds Retained									
<u>Year</u>	<u>Projected</u>	<u>Projected</u>	<u>Change</u>	<u>Fund</u>							
<u>End</u>	<u>O/S Loss</u>	<u>'Paid'</u>	<u>In</u>	<u>Retained</u>	<u>Net</u>						
	<u>Reserve</u>	<u>Losses</u>	<u>O/S Loss</u>	<u>Interest</u>	<u>Cashflow</u>		<u>Discount</u>	<u>'Paid Loss'</u>	<u>Cashflow</u>		
							<u>Rate</u>	<u>Present</u>	<u>Present</u>	<u>Value</u>	<u>Difference</u>
								<u>Value</u>	<u>Value</u>		
1989	255,700										
1990	277,100	17,200	21,400	(12,785)	25,815		0.0%	664,100	109,115	554,985	
1991	297,700	19,500	20,600	(13,855)	26,245		4.0%	416,427	114,066	302,361	
1992	312,000	22,100	14,300	(14,885)	21,515		5.0%	375,457	113,442	262,015	
1993	323,200	22,900	11,200	(15,600)	18,500		6.0%	340,166	112,402	227,764	
1994	329,900	25,500	6,700	(16,160)	16,040		7.0%	309,629	111,050	198,579	
1995	335,500	24,400	5,600	(16,495)	13,505		8.0%	283,089	109,469	173,620	
1996	341,600	23,600	6,100	(16,775)	12,925		9.0%	259,924	107,724	152,200	
1997	344,300	25,900	2,700	(17,080)	11,520		10.0%	239,619	105,868	133,751	
1998	342,800	26,200	(1,500)	(17,215)	7,485		11.0%	221,747	103,939	117,808	
1999	336,500	28,100	(6,300)	(17,140)	4,660		12.0%	205,955	101,969	103,986	
2000	322,500	33,000	(14,000)	(16,825)	2,175						
2001	307,900	31,900	(14,600)	(16,125)	1,175						
2002	291,100	32,200	(16,800)	(15,395)	5						
2003	267,900	36,100	(23,200)	(14,555)	(1,655)						
2004	242,000	33,800	(25,900)	(13,395)	(5,495)						
2005	216,900	33,000	(25,100)	(12,100)	(4,200)						
2006	190,700	32,600	(26,200)	(10,845)	(4,445)						
2007	161,100	33,000	(29,600)	(9,535)	(6,135)						
2008	133,700	29,500	(27,400)	(8,055)	(5,955)						
2009	107,900	25,900	(25,800)	(6,685)	(6,585)						
2010	85,700	22,100	(22,200)	(5,395)	(5,495)						
2011	67,800	18,000	(17,900)	(4,285)	(4,185)						
2012	53,100	14,600	(14,700)	(3,390)	(3,490)						
2013	41,100	11,900	(12,000)	(2,655)	(2,755)						
2014	0	41,100	(41,100)	(2,055)	(2,055)						
		664,100	(255,700)	(299,285)	109,115						

Note:

The above example ignores any cashflow arising from Premiums, Commissions, Expenses, Premium Funds Retained and Interest on Premium Funds Retained.
Readers are referred to a paper entitled Cash Mechanics of Proportional Treaties (GIRO 1985) for a full explanation of all factors affecting cashflow.

EXHIBIT 5.2**WORKERS COMPENSATION**

Name : Smith
Date of Birth: 01/01/55

\$40,000
\$300,000
\$340,000

Indemnity Paid to Date:
Medical Paid to Date :
Total Paid :

ANNUAL
Indemnity \$8,000
Medical : \$35,000
INFLATION
0.0% 6.0%

Lavers of Reinsurance**Expected Total Future Payments**

<u>Future Years</u>	<u>Medical 6%</u>	<u>Indemnity 0%</u>	<u>Cumulative Paid</u>	<u>0.6Mx0.4</u>	<u>1M x 1M</u>	<u>3M x 2M</u>	<u>5M x 5M</u>	<u>10M x 10M</u>	<u>0.6Mx0.4</u>	<u>1M x 1M</u>	<u>3M x 2M</u>	<u>5M x 5M</u>	<u>10M x 10M</u>
0	35,000	8,000	340,000										
1	37,100	8,000	385,100						0	0	0	0	0
2	39,326	8,000	432,426	32,426					32,361	0	0	0	0
3	41,686	8,000	482,112	49,686					49,487	0	0	0	0
4	44,187	8,000	534,298	52,187					51,874	0	0	0	0
5	46,838	8,000	589,136	54,838					54,399	0	0	0	0
6	49,648	8,000	646,784	57,648					57,054	0	0	0	0
7	52,627	8,000	707,411	60,627					59,863	0	0	0	0
8	55,785	8,000	771,196	63,785					62,822	0	0	0	0
9	59,132	8,000	838,328	67,132					65,930	0	0	0	0
10	62,680	8,000	909,007	70,680					69,210	0	0	0	0
11	66,440	8,000	983,448	74,440					72,654	0	0	0	0
12	70,427	8,000	1,061,875	16,552	61,875				16,097	60,173	0	0	0
13	74,652	8,000	1,144,527		82,652				0	80,065	0	0	0
14	79,132	8,000	1,231,659		87,132				0	84,047	0	0	0
15	83,880	8,000	1,323,538		91,880				0	88,214	0	0	0
16	88,912	8,000	1,420,451		96,912				0	92,580	0	0	0
17	94,247	8,000	1,522,698		102,247				0	97,135	0	0	0
18	99,902	8,000	1,630,600		107,902				0	101,892	0	0	0
19	105,896	8,000	1,744,496		113,896				0	106,857	0	0	0
20	112,250	8,000	1,864,745		120,250				0	112,013	0	0	0
21	118,985	8,000	1,991,730		126,985				0	117,385	0	0	0
22	126,124	8,000	2,125,854		8,270	125,854			0	7,580	115,358	0	0
23	133,691	8,000	2,267,545			141,691			0	0	128,684	0	0
24	141,713	8,000	2,417,258			149,713			0	0	134,607	0	0
25	150,215	8,000	2,575,473			158,215			0	0	140,701	0	0
26	159,228	8,000	2,742,702			167,228			0	0	146,960	0	0
27	168,782	8,000	2,919,484			176,782			0	0	153,358	0	0
28	178,909	8,000	3,106,393			186,909			0	0	159,882	0	0
29	189,644	8,000	3,304,037			197,644			0	0	166,495	0	0
30	201,022	8,000	3,513,059			209,022			0	0	173,217	0	0
31	213,084	8,000	3,734,142			221,084			0	0	179,984	0	0

EXHIBIT 5.2

WORKERS COMPENSATION

Name : Smith
Date of Birth: 01/01/55

\$40,000
\$300,000
\$340,000

Indemnity Paid to Date:
Medical Paid to Date :
Total Paid :

ANNUAL
Indemnity \$8,000
Medical : \$35,000
INFLATION
0.0%
6.0%

Layers of Reinsurance

Expected Total Future Payments

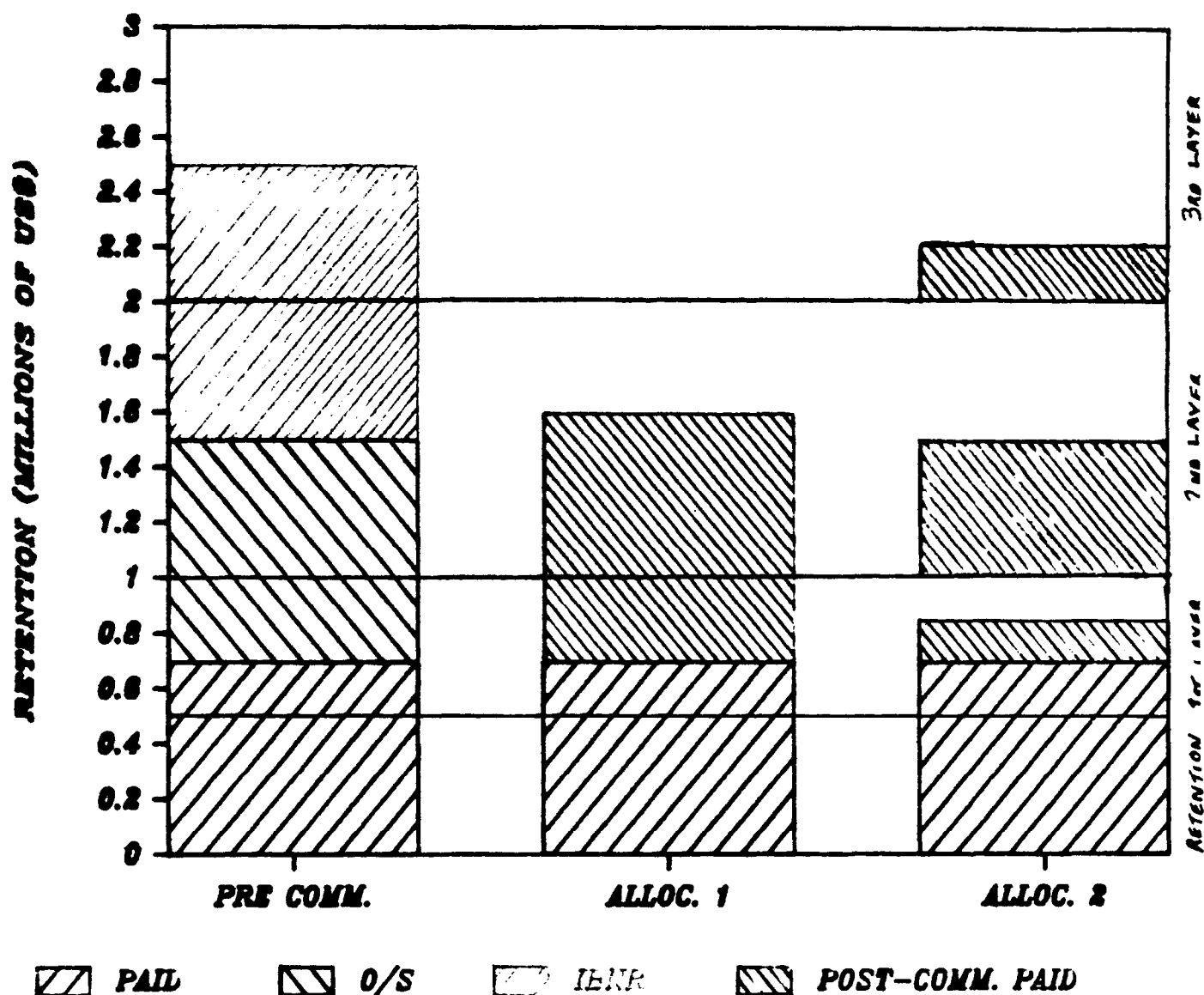
Future Years	Medical 6%	Indemnity 0%	Cumulative Paid	0.6Mx0.4	1M x 1M	3M x 2M	5M x 5M	10M x 10M	Prob. of Survival	0.6Mx0.4	1M x 1M	3M x 2M	5M x 5M	10M x 10M
32	225,869	8,000	3,968,011			233,869			0.7986	0	0	186,767	0	0
33	239,421	8,000	4,215,431			247,421			0.7822	0	0	193,532	0	0
34	253,786	8,000	4,477,217			261,786			0.7649	0	0	200,240	0	0
35	269,013	8,000	4,754,230			277,013			0.7465	0	0	206,790	0	0
36	285,154	8,000	5,047,384			245,770	47,384		0.7271	0	0	178,699	34,453	0
37	302,263	8,000	5,357,647				310,263		0.7067	0	0	0	219,263	0
38	320,399	8,000	5,686,046				328,399		0.6853	0	0	0	225,052	0
39	339,623	8,000	6,033,669				347,623		0.6629	0	0	0	230,439	0
40	360,000	8,000	6,401,669				368,000		0.6395	0	0	0	235,336	0
41	381,600	8,000	6,791,269				389,600		0.6152	0	0	0	239,682	0
42	404,496	8,000	7,203,765				412,496		0.5899	0	0	0	243,331	0
43	428,766	8,000	7,640,531				436,766		0.5637	0	0	0	246,205	0
44	454,492	8,000	8,103,023				462,492		0.5363	0	0	0	248,034	0
45	481,761	8,000	8,592,784				489,761		0.5079	0	0	0	248,750	0
46	510,667	8,000	9,111,451				518,667		0.4784	0	0	0	248,130	0
47	541,307	8,000	9,660,759				549,307		0.4482	0	0	0	246,199	0
48	573,786	8,000	10,242,544				339,241	242,544	0.4174	0	0	0	141,599	101,238
49	608,213	8,000	10,858,757					616,213	0.3864	0	0	0	0	238,105
50	644,705	8,000	11,511,462					652,705	0.3552	0	0	0	0	231,841
51	683,388	8,000	12,202,850					691,388	0.3242	0	0	0	0	224,148
52	724,391	8,000	12,935,241					732,391	0.2934	0	0	0	0	214,884
53	767,854	8,000	13,711,095					775,854	0.2633	0	0	0	0	204,282
54	813,926	8,000	14,533,021					821,926	0.2341	0	0	0	0	192,413
55	862,761	8,000	15,403,782					870,761	0.2059	0	0	0	0	179,290
56	914,527	8,000	16,326,309					922,527	0.1789	0	0	0	0	165,040
57	969,399	8,000	17,303,708					977,399	0.1533	0	0	0	0	149,835
58	1,027,562	8,000	18,339,270					1,035,562	0.1295	0	0	0	0	134,105
59	1,089,216	8,000	19,436,486					1,097,216	0.1079	0	0	0	0	118,390
60	1,154,569	8,000	20,599,056					563,514	0.0887	0	0	0	0	49,984
										591,750947,9412,465,2752,806,4752,203,554				

N.P.V. at 8.0%

363,311	272,319	275,538	115,962	39,235
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EXHIBIT 5.3.

PROBLEM WITH EXCESS OF LOSS



6.0. Actuarial Evaluation of Outwards Business

6.1. This is not completely the mirror image of commutation of inwards business because the motives for commuting are probably different.

To recapitulate, outwards treaties are likely to be commuted because;

- (i) the security of the reinsurance is in doubt;
- (ii) the commutation is part of the settlement of some dispute;
- (iii) the reinsured wishes to relieve reinsurers of liability in order to protect or enhance other business relationships.

6.2. As a general rule insurers do not commute reinsurance treaties with good security and, although it might be possible to consider what would happen if a reinsurer offered a commutation at what appeared to be far too high a price, this is probably of hypothetical interest only. In practice were such an offer to be made the first reaction of most reinsureds would be to assume that the reinsurer had advance warning of a major deterioration in the business covered by the treaty!

By and large, therefore, the reinsured must expect to get less than fair value from the commutation and, in some instances, the decision will be about getting the maximum available without regard to the consequent loss.

6.3. It is common practice to receive a trickle of commutation offers from small foreign reinsurers of previous years' business, who would perhaps not be acceptable security in these days of higher standards; these reinsurers have small lines on a handful of treaties and the amounts of money involved seldom exceed £10,000 and are often less than £1,000. While it is tempting in these cases to be thorough and to

bargain hard, the potential gain can hardly justify the distraction of staff and management from the real business of running the reinsured.

- 6.4. However, in the more significant cases it is obviously essential to estimate the present value of the reinsurance recoveries which will be forgone in the event of a commutation. In some cases it will be possible to produce a definite answer; in others there will be a range of possibilities depending upon the course of events at present unknown and a value judgement will be necessary.

The calculation of this present value will reflect the type of business involved and will vary from case to case. For example, a treaty providing high level protection of property catastrophe business will need to be approached quite differently from a working casualty treaty; proportional treaties will be different again.

- 6.5. Generally speaking, it is necessary to be more exhaustive when evaluating outwards rather than inwards business. First, there should be more data in-house and secondly, it is most important not to underestimate exposure. Therefore, it is essential to calculate a multitude of evaluations which is not necessarily limited to the following:-

- (i) Reserving Class Projection;
- (ii) Booked Costing;
- (iii) Individual Costing by Treaty/Claim
- (iv) Other Party's Costing;
- (v) Industry Average Projection;
- (vi) Total Limit or Aggregate evaluation;
- (vii) Frequency and Severity analysis;
- (viii) Analysis of Precautionary Advices.

The first five methods have been discussed thoroughly in Section 5. The last three will now be discussed in more detail.

6.6. Total Limit or Aggregate Evaluation

It often happens, especially with Medical Malpractice business, that treaties are written on an Aggregate Limit basis. The Aggregate Limit should be defined in the policy wording; sometimes it is expressed as an amount and in other cases as a percentage of premiums (or some other variant). The exposure on such a treaty cannot exceed the Aggregate Limit (unless adjustment expenses are in addition) and therefore it is a straightforward matter of deducting the reported claims from the Aggregate Limit to derive the 'maximum' IBNR. By applying a probability factor to this maximum IBNR and assuming a realistic payout pattern it is quite a simple matter to generate present values at varying discount rates. Exhibit 6.1. illustrates the IBNR evaluation of a programme of excess of loss reinstatement treaties.

6.7. Frequency and Severity Analysis

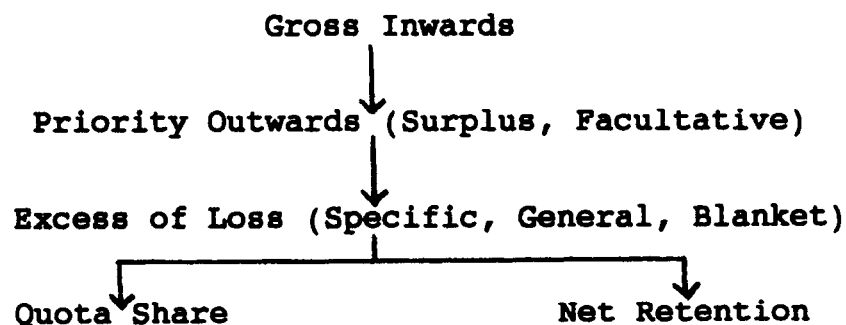
Excess of loss and facultative protections are usually structured as a programme of consecutive layers arranged either vertically or horizontally. Within each layer by policy year it should be possible to look at the number of claims developing over time. By extrapolating the trend, or by assuming a credible number of claims on very high layers, it is possible to project an ultimate number of claims for each layer. In other words, the frequency expectation can be determined. Looking at the amount of each claim we can calculate the average size of each currently reported claim. Using a future inflation rate and assuming expected dates of settlement which vary by policy year it is a straightforward exercise to overlay future expected claim numbers and values onto the reinsurance programme. Obviously the inflation and date of settlement assumptions can be varied to produce a whole spectrum of different outcomes. Study of this range can considerably enhance understanding of the variability of

possible outcomes. Using a payout pattern commensurate with the expected ultimate outcome will produce a range of results at different discount rates. Exhibit 6.2. illustrates the results of extrapolating an unlimited vertical reinstatement casualty programme assuming constant inflation at 10% per annum.

6.8. Analysis of Precautionary Advices

For legal and notification purposes many potential claims are reported on a precautionary basis. Normally, such claims will not impact the current statistics and it is therefore quite possible, using techniques which only project reported claims, to understate the potential losses arising from known precautionary claims. In particular, this is very pertinent when considering exposure to asbestos and pollution related losses. A simplistic approach to evaluating precautionaries is to apply a probability factor (which may reduce towards the higher layers of exposure) to the total potential loss on each claim. Sometimes the ensuing result can be quite astronomical and great care must be taken to incorporate a credible margin within the IBNR to accommodate future deterioration emanating from precautionary advices.

6.9. It is quite common in the London Market to have the following gross/net structure:



In such cases the quota share reinsurers are protected by the priority and excess of loss reinsurances. It is important therefore to obtain approval from the quota share reinsurers that commutation of any protective reinsurances is acceptable. Should agreement not be forthcoming the reinsured has a problem. In practice, however, most reinsurers are commercial and providing sound financial reasons are provided for certain actions, support is usually granted.

EXHIBIT 6.1**EVALUATION OF REINSTATEMENT TREATIES**

US\$ THOUSANDS

<u>REFERENCE</u>	<u>TREATY</u>	<u>LAYER</u>	<u>NUMBER OF COVERAGE</u>		<u>PAID</u>	<u>O/S</u>	<u>REPORTED</u>	<u>MAX</u>	<u>FUTURE</u>	<u>VALUE</u>	<u>MAXIMUM</u>		<u>PROB</u>	<u>PROBABLE</u>
			<u>REINSTATES</u>	<u>LIMIT</u>							<u>RM PREM</u>	<u>RESERVES</u>		
								<u>IBNR</u>	<u>RM PREM</u>	<u>FUT PREM</u>	<u>NET PREM</u>	<u>RESERVES</u>	<u>FACTOR</u>	<u>RESERVES</u>
1	1ST XOL	0.1M X 0.1M	3	\$400	\$75	\$400	\$0	\$400	0.00	\$0	\$0	\$0	100%	\$0
2	2ND XOL	0.2M X 0.2M	2	\$600	\$120	\$600	\$0	\$600	0.00	\$0	\$0	\$0	100%	\$0
3	3RD XOL	0.6M X 0.4M	2	\$1,800	\$300	\$750	\$1,050	\$1,800	1.75	\$525	\$525	\$525	100%	\$525
4	4TH XOL	1M X 1M	2	\$3,000	\$350	\$0	\$750	\$750	2.00	\$700	\$2,300	\$2,300	100%	\$2,300
5	5TH XOL	2M X 2M	1	\$4,000	\$500	\$0	\$0	\$4,000	1.00	\$500	\$3,500	\$3,500	80%	\$2,800
6	6TH XOL	4M X 4M	0	\$4,000	\$600	\$0	\$0	\$4,000	0.00	\$0	\$4,000	\$4,000	40%	\$1,600
7	7TH XOL	7M X 8M	0	\$7,000	\$700	\$0	\$0	\$7,000	0.00	\$0	\$7,000	\$7,000	10%	\$700
				\$20,800		\$1,750	\$1,800	\$3,550		\$1,725	\$17,325			\$7,925

FROM GROUND UP FIGURES**PAID \$1,850****O/S \$1,800****REPORTED \$3,650**

Note: In the above example, reinstatement premiums are calculated on a pro rata paid loss basis and not on a total reported (paid + O/S) basis.

Reinstatement premiums are often defined as the greater of a minimum premium and a percentage of underlying premiums written. For simplicity the above example assumes fixed predetermined reinstatement premiums.

EXHIBIT 6.2

VERTICAL CASUALTY EXCESS LOSS PROTECTION

CURRENT NUMBER OF CLAIMS

POLICY YR	<100	100-200	200-400	400-1000	INFLATION:	10.0%	PROJECTED NUMBER OF CLAIMS			
							<100	100-200	200-400	>1000

1984	27	16	9	4	1		53	33	19	9
1985	36	24	17	9	1		79	54	38	20
1986	52	30	13	5	1		126	73	32	14
1987	20	9	8	3	2		56	25	24	9

CURRENT AVERAGE VALUE (THOUSANDS)

POLICY YR	<100	100-200	200-400	400-1000	INFLATION:	10.0%	PROJECTED AVERAGE VALUE AT SETTLEMENT (THOUSANDS)			
							<100	100-200	200-400	>1000

1984	70	135	280	700	1,290	9.0	165	318	660	1,650
1985	65	140	300	490	1,200	10.0	168	363	778	1,270
1986	75	135	310	430	1,300	11.0	213	385	884	1,226
1987	80	145	320	720	1,700	12.0	251	455	1,004	2,259

CURRENT RANGE

POLICY YR	100 X 100	200 X 200	600 X 400	1M X 1M
<100	3,445	0	0	0
1984	3,445	0	0	0
1985	5,372	0	0	0
1986	12,600	1,638	0	0
1987	5,600	2,856	0	0

ULTIMATE EXPOSURE BY LAYER (THOUSANDS)

POLICY YR	100 X 100	200 X 200	600 X 400	1M X 1M
1984	3,445	7,694	10,340	7,850
1985	5,372	16,402	26,364	7,400
1986	12,600	21,543	23,888	6,164
1987	5,600	12,656	21,175	14,096

The IBNR can be derived by subtracting current reported losses within each layer from the above ultimate results.

CURRENT RANGE

POLICY YR	100 X 100	200 X 200	600 X 400	1M X 1M
<100	3,445	0	0	0
1984	3,445	0	0	0
1985	5,372	0	0	0
1986	12,600	1,638	0	0
1987	5,600	2,856	0	0

ULTIMATE EXPOSURE BY LAYER (THOUSANDS)

POLICY YR	100 X 100	200 X 200	600 X 400	1M X 1M
1984	3,445	7,694	10,340	7,850
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1986	12,600	21,543	23,888	6,164
1987	5,600	12,656	21,175	14,096

The IBNR can be derived by subtracting current reported losses within each layer from the above ultimate results.

TOTAL

1984	3,445	7,694	10,340	7,850
1985	5,372	16,402	26,364	7,400
1986	12,600	21,543	23,888	6,164
1987	5,600	12,656	21,175	14,096

7.0. Negotiation

- 7.1. The dictionary definition of the word "negotiation", is "conferring with another with a view to compromise or agreement".
- 7.2. Most people interpret negotiation to be the final phase preceding an agreement. In fact, negotiation is a complex series of human interactions which starts with the very first contact which could be a meeting, a telephone call or written correspondence. The whole process of commutation from start to finish is one long negotiation made up of different stages.
- 7.3. Most commutations involve a lot of work and heavy demands will be placed on both parties. It is therefore preferable for the leading players to meet at the outset in order to establish a meaningful working relationship. This will enhance the flow of data and accelerate the point at which commercial decisions can be made. Seldom does a back-room approach achieve the same results.
- 7.4. The uniqueness of each commutation makes it difficult to predict precisely an exact series of sequential events. However, the many variations should contain in some shape or other the following negotiation stages:

- (i) Greetings and salutations;
- (ii) Marketing the purpose and reason for commuting;
- (iii) Data collection and collation;
- (iv) Reconciliation of data;
- (v) Negotiation of price;
- (vi) Agreement of legal contract;
- (vii) Payment of monies;
- (viii) Farewells.

7.5. Although the above mentioned stages speak for themselves it is worth dwelling for a moment on the reasons behind the greeting and farewell stages. It is of the utmost importance to obtain an insight into the social, technical and intellectual abilities of your opponents. If you are polite, courteous, and respectful, you will establish a rapport which will allow business to be conducted in a relaxed and professional manner. It is pointless at the early stages to be aggressive and officious, as to do so will create unnecessary defensive barriers which at some stage must be overcome. Likewise, at the end of a commutation the result should be to the mutual advantage of both parties and therefore no ill feeling should exist.

Be respectful to the very end and avoid making enemies. Remember, the insurance world is a very small fraternity and you never know when you may have to deal with the same people in the future.

7.6. It is likely that your client will achieve a better final settlement if you yourself are closely involved in the final negotiation stage. However, in many cases, clients will want to handle the final stage by themselves. The possible reasons for this include: the understandable reluctance to delegate financial authority to an outsider, especially if the relationship is a new one; and the perceived excitement and kudos of the final stage, which the senior management may wish to keep for themselves.

7.7. To assist in explaining the results of your work to your client, it may be of benefit to role play the final negotiations. The actuary should be prepared for the following situations:

- (i) The client gains a good grasp of the issues involved and handles the final negotiations himself, with or without your assistance as part of the team.
- (ii) The client appreciates the complexities of the situation and decides that it would be prudent to let you play a major part in the final stage.
- (iii) The client does not gain the in-depth understanding it really needs, but decides nevertheless to conduct the final negotiations without your help.

If there are a number of commutations to be agreed over a period, the client-advisor relationship may develop to allow the actuary to take a larger role in subsequent final negotiations.

7.8. During the final negotiations when discussions about hard cash are in process it is essential to have immediate access to, inter alia, the following information:

- (i) The financial impact of different settlements, both in real terms and in the apparent effect on a set of accounts;
- (ii) The range of settlements which will be acceptable;
- (iii) Estimates of the range of settlements which will be acceptable to the other side;
- (iv) An assessment of the likely course of the "horse-trading";
- (v) Spurious arguments that may be advanced and the counter arguments to refute them.

Equipped with the above your negotiation strategy is set. Good fortune, guile and good manners should secure a satisfactory compromise. Always remember to walk away if the price is too high (if you are the reinsurer), or too low (if you are the cedant).

- 7.9. Generally speaking, the psychology of striking agreements is such that people like to split differences. A large number of settlements ultimately end up around half-way between the opening stand of the reinsurer and the opening position of the cedant!

8.0. Sample Legal Agreement

8.1. Without going into the legal technicalities of commutations, which can often be varied and complex, we feel it is worth setting out the Sample Commutation Agreement which now follows:

SAMPLE COMMUTATION AGREEMENT

THIS AGREEMENT is made the 31st day of October, 1990.

B E T W E E N:-

- (1) ABC Insurance Company Limited of Lime Street, London, EC3 and its subsidiary and affiliated companies ("ABC"); and
- (2) XYZ Reinsurance Corporation of New Lime Street, New London and its subsidiary and affiliated companies ("XYZ").

WHEREAS:-

- (1) The parties entered into various Reinsurance agreements details of which are included but not limited to those identified in the Appendices hereto (hereinafter called "the Reinsurances").
- (2) This Agreement relates to business written in the ABC's London Office and elsewhere.
- (3) Disputes and differences have arisen between the parties affecting various of the Reinsurances, in particular:
- (4) The parties have now agreed as hereinafter mentioned to settle and resolve finally all and any claims differences and disputes between them concerning the Reinsurances including but not limited to those particularly referred to at 2 above.

NOW IT IS HEREBY AGREED as follows:-

1. XYZ shall pay forthwith to ABC the sums of:

STG 150,000

US\$ 625,000

Receipt of these sums is hereby acknowledged by ABC.

2. In full and final settlement of all the claims, differences and disputes referred to in the Recitals hereto ABC and XYZ hereby irrevocably and unconditionally release and discharge each other absolutely from all and any liability of whatsoever nature and wheresoever and howsoever arising and whether known or unknown under or in respect of the Reinsurances, save for the provisions of this Agreement.
3. ABC and XYZ will not commence any legal or arbitration proceedings against each other in any jurisdiction whatsoever in respect of the Reinsurances and both ABC and XYZ will immediately take all steps necessary to discontinue or stay any such proceedings insofar as they are between XYZ and ABC.
4. ABC and XYZ hereby warrant and undertake to each other that:-
- (a) They have not assigned or agreed to assign to any other person, a firm or corporation any of its rights or obligations under the Reinsurances or any of the claims, proceedings, demands or causes of action which are released herein; and

(b) The persons executing this Agreement have been duly authorised and empowered to do so on behalf of the respective parties.

5. Each party will bear its own respective legal and other costs to date (including the costs of proceedings, disputes, negotiations, inspections relating to the matters referred to in the Recitals hereto and any cost incidental to the negotiation and execution of this Agreement).
6. It is understood and agreed that the terms and conditions of this Agreement are strictly confidential to the parties except insofar as such party is obliged to disclose them to any other person by law or for the purposes of enforcing this Agreement.
7. This Agreement shall be governed by and construed in accordance with the laws of England.

IN WITNESS whereof two copies of this Agreement have been executed this day of 1990.

By: _____

Title: _____

For and behalf of ABC
Insurance Company Limited

Attest

By: _____

Title: _____

For and behalf of XYZ
Reinsurance Corporation

Attest

9.0. Post Commutation

9.1. The final handshake is just the start of numerous post commutation activities. The post commutation administration can sometimes be as time consuming as the actual commutation itself. The procedures which must be completed can be summarised as follows:

- (i) Notification to third parties such as brokers and MGAs of all treaties and balances contained within the commutation agreement;**
- (ii) Actuarial allocation of the commutation price by treaty and policy year. For inwards commutations, reserves will be zeroised and paid losses increased by the allocated proportion of the commutation price. On outwards commutations, the cash received must be credited to the appropriate cover and used as a fund to service future recoveries;**
- (iii) Notification to reinsurers of all financial implications of the settlement;**
- (iv) Computer or manual processing of the commutation;**
- (v) Flagging each inward commuted treaty so that they can be readily identified for statistical purposes at some later stage;**
- (vi) Flagging the appropriate retro percentage of each commuted outwards treaty thereby enabling future tracking of unrecoverable commuted reinsurance;**
- (vi) Updating, reconciling, and clearing all broker ledger entries.**

10.0. Impact on Actuarial Statistics

10.1. Statistics in respect of a block of business containing commuted treaties will reflect the commutations, and care will be necessary in interpreting the significance of the figures. It is unlikely that information systems will have been designed with the actuary's particular requirements in mind so information, if it is accessible at all, is unlikely to be in a form that is immediately useful. Furthermore, those whom the actuary consults may not appreciate the particular problems which he faces so that their answers to his questions may be inadvertently misleading; this particularly applies to descriptions of events in the past which may have not appeared to have any significance at the time of occurrence.

10.2. As always, the better the understanding and knowledge which the actuary has about the account upon which he is working the more reliable and the more useful will be the conclusions which he can draw. There will, however, be occasions when appropriate information is extremely hard to obtain, not merely details of past commutations but even whether or not there have been commutations involving material amounts and whether there is a regular pattern or occasional "one-offs". At least if the actuary has been put on warning that the statistics which he has been given may contain major commutation transactions, he can limit the conclusions which he draws.

10.3. Commutations of Inward Business

10.3.1. The particular distinguishing feature of commutations of inward business is that the reinsurer will almost certainly never know what would have happened if the commutation had not occurred; the only information about claims experience from the date of commutation is the actual amount paid in commutation.

10.3.2. From the reinsurer's point of view the commutation payment will be recorded as a paid claim. It will cover the discounted value of known outstanding claims and the discounted value of IBNR claims. For a reinsurer who reserves without taking account of future investment earnings (i.e. without discounting for the time value of money) a surplus will normally emerge which might be regarded as a profit by the unwary. The commutation payment may be greater or less than the current reserve for outstanding claims depending upon the circumstances.

10.3.3. In general, claims development statistics will demonstrate a lower ultimate loss ratio (ULR) and a shorter time to the payment of claims than if the commutation had not occurred. In addition to the effect of discounting to present value, the ULR will also be lower if there has been a discount to reflect the weakness of the reinsurer or to reflect a technical dispute. If one or more commutations have had a material effect upon the statistics for past underwriting years, some care must be exercised when applying deductions based upon these years to later underwriting years.

10.3.4. In an ideal world it would be possible to flag and identify each commuted treaty, thereby enabling easy separation of commuted from live "on-going" business statistics. If commutations are a regular occurrence the information system must be enhanced, if practicable, to allow easy identification and extraction of commuted business from the main database. One way of doing this is to implant a "commutations code" into the header file of each commuted contract.

10.3.5. At any point in time the total of all business can be subdivided into the two mutually exclusive subsets of on-going and commuted business, namely:

$$\text{On-going} + \text{Commutated} = \text{Total}$$

As more business is commuted less exists as on-going and the statistical database is in a continual state of flux. At the next reserve review the content of on-going business may have altered substantially. Sometimes the whole development characteristics of a reserving class can change if, for example, a material segment with different development properties to the remaining business is removed. Always revisit your old assumptions and check whether they are still appropriate to the "new" on-going database.

10.3.6. It goes without saying that providing it is practically possible, commuted statistics should always be separated from on-going data. Exhibits 10.1. - 10.3. at the end of this section give an example of the separation of commuted from on-going statistics. If commuted business is not extracted from the main body of the development statistics it is all too easy inadvertently to generate IBNRs in respect of commuted business, thus overstating projected reserves. Exhibit 10.1. and 10.3. show the results of applying a simple chain ladder projection using an RAA General Liability (exc Asbestos) tail factor of 1.385. Note the distortion in the 'Ongoing + Commuted' projections caused by not removing the commuted business. A distortion will occur whatever the projection technique. The example clearly illustrates the desirability of separating commuted data from the live on-going statistics.

10.4. Commutations of Outward Business

- 10.4.1.** Outward commutations include those which are involuntary such as liquidations when the dividend is exactly analogous to a commutation payment. Many insurers take the view that, except in trivial cases, they will not commute with good security and it may generally be assumed that a commutation is going to produce a loss.
- 10.4.2.** Even with today's advanced technology it is quite appalling that one still finds so many outwards systems unable to cope with the separation by reinsurer of an outwards treaty's accounting records. All too often accounts are kept by broker and not sub-analysed by retrocessionaire. In such cases manual procedures (assisted by Personal Computers) need to be devised which will capture the future non recovery of commuted payments and loss reserves.
- 10.4.3.** Providing historical data are available modern systems should be able to analyse by individual retrocessionaire the make-up of each outwards protection. Typically this is done by integrating a "retrocession matrix" which contains details of the respective signed lines of each reinsurer with the 100% figures posted to the treaty. Once a commutation has been concluded the appropriate element of the retrocession matrix must be flagged as commuted in such a way that it can still identify the original reinsurer. It may be of importance some time in the future to measure the profit or loss by reinsurer. This is particularly relevant should a commutation only cover a subset of treaties and the reinsurer approaches the insured once again to commute the remaining business.
- 10.4.4.** From the actuary's point of view, it is probably most suitable for statistics to be maintained as though the commuted treaty were still in force. Recoveries are for statistical purposes regarded as being made whenever they would have been made had

the commutation not occurred; since, in fact, recoveries are no longer being made the amounts can be charged to a commutation account which is credited with commutation receipts - and, if desired, there can be a different account for each treaty or for each reinsurer.

The claim development patterns revealed by previous years' statistics will then contain no distortions caused by, for example, the non-collectability of reinsurance. As an additional benefit it will be possible to monitor the profits or losses on commutations by watching the development of the commutations account and making a suitable assumption about investment earnings. When considering IBNR provisions for an underwriting year in which reinsurances have been commuted it will be necessary to increase the net provision by an amount which compensates for the (part of the) treaty which has been commuted.

Although this appears to be straightforward there may be objections from some quarters. If the statistical records are based upon the accounting records, or if one set of figures serves both purposes, those responsible for keeping the insurer's books of account may not be happy about recording reinsurance recoveries which cannot in fact be made.

10.4.5. Less obviously, it may be the case that the underwriter is responsible for the underwriting result net of reinsurance recoveries (the placing of outward reinsurance being his responsibility) but not for any amounts written off as, say, expenses. It would clearly be undesirable for the costs of failure of reinsurance to be transferred from the person who should be accountable to some other area.

10.4.6. To conclude, there are several ways to record and reflect within the accounts and statistics the effects of an outwards commutation. It rests with senior management to discuss

thoroughly and derive the most appropriate in-house system to cater for the financial implications of commuting retrocession business.

10.5. Portfolio Transfers

- 10.5.1. Many books of reinsurance business which contain proportional treaties may be affected by portfolio transfers. It is useful to be aware of the commercial considerations and practices relating to these and the ways in which they may affect the statistics. The impact of portfolio transfers needs to be considered in many circumstances, not just when negotiating commutations but also when reserving or testing profitability.
- 10.5.2. In many ways a portfolio transfer is similar to a commutation, certainly for the reinsurer who is coming off risk. However, there are fundamental differences; a portfolio transfer is usually to a succeeding reinsurer on a treaty as opposed to back to the cedant, and portfolio transfers are a normal part of continuing commercial relationships as opposed to specially negotiated break in relations. It was thus felt that the differences were such as to make a discussion of portfolio transfers inappropriate in this paper.
- 10.5.3. Since the working party has done some work on portfolio transfers which may be of general interest, our thoughts have been included in a separate note which accompanies this paper.

EXHIBIT 10.1

<u>US\$ CASUALTY NON PROPORTIONAL ON-GOING</u>										<u>US\$ THOUSANDS</u>				<u>CHAIN</u>	
<u>POLICY YEAR</u>	<u>1ST</u>	<u>2ND</u>	<u>3RD</u>	<u>4TH</u>	<u>5TH</u>	<u>6TH</u>	<u>7TH</u>	<u>8TH</u>	<u>9TH</u>	<u>10TH</u>	<u>11TH</u>	<u>IBNR</u>	<u>LADDER</u>		<u>ULTIMATE</u>
1979 PREMS	2,485	5,672	5,975	5,999	6,109	6,203	6,088	6,106	6,112	6,117	6,128				
PAID	0	204	374	893	1,631	2,178	2,732	3,161	3,488	3,596	3,703				
O/S	114	560	714	1,923	2,641	2,703	2,465	1,710	1,407	1,615	1,314				
PAID+O/S	114	763	1,088	2,815	4,271	4,880	5,198	4,871	4,895	5,211	5,017	1,931			6,948
1980 PREMS	2,790	3,871	4,191	4,258	4,223	4,362	4,444	4,430	4,438	4,425					
PAID	8	167	835	1,899	2,375	3,318	3,810	3,961	4,359	4,589					
O/S	67	820	1,496	1,618	1,633	1,738	1,646	1,835	1,902	1,902					
PAID+O/S	74	987	2,331	3,517	4,008	5,056	5,456	5,796	6,261	6,491		2,498			8,989
1981 PREMS	1,560	2,540	2,678	2,734	2,716	2,706	2,708	2,710	2,714						
PAID	0	84	656	1,264	3,544	3,860	4,212	4,350	4,432						
O/S	10	588	1,642	2,620	1,066	1,172	1,510	1,520	1,886						
PAID+O/S	10	672	2,298	3,884	4,610	5,032	5,722	5,870	6,318			2,996			9,314
1982 PREMS	70	600	580	580	580	590	590	590							
PAID	0	0	0	0	160	160	250	270							
O/S	0	0	0	0	40	470	500	540							
PAID+O/S	0	0	0	0	200	630	750	810				439			1,249
1983 PREMS	587	1,025	1,131	1,178	1,181	1,188	1,199								
PAID	0	12	56	62	150	185	542								
O/S	0	8	53	489	453	713	1,115								
PAID+O/S	0	20	108	551	603	897	1,656					924			2,580
1984 PREMS	1,807	3,245	3,856	3,823	3,832	3,823									
PAID	0	2	218	381	1,113	1,519									
O/S	34	610	707	1,163	1,318	1,634									
PAID+O/S	34	612	925	1,544	2,431	3,153						2,311			5,464
TOTAL												11,099	34,544		

EXHIBIT 10.2

US\$ CASUALTY NON PROPORTIONAL										COMMUTED				US\$ THOUSANDS				
POLICY YEAR	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	IBNR	ULTIMATE					
PREMS	2,463	3,786	3,850	3,919	3,931	3,970	3,957	3,986	3,981	3,980	3,980							
PAID	0	17	211	444	957	1,172	1,842	2,340	3,425	3,572	4,039							
O/S	321	908	1,008	1,236	1,133	1,609	1,374	1,484	659	405	0							
PAID+O/S	321	925	1,219	1,680	2,090	2,780	3,216	3,824	4,085	3,977	4,039	0		4,039				
PREMS	1,958	3,318	3,549	3,622	3,550	3,568	3,607	3,606	3,606	3,605								
PAID	0	19	320	1,180	1,975	2,300	2,986	4,864	5,338	5,754								
O/S	34	498	1,081	1,709	1,699	2,271	2,209	643	415	0								
PAID+O/S	34	517	1,401	2,889	3,674	4,571	5,195	5,507	5,753	5,754		0		5,754				
PREMS	952	1,960	2,194	2,258	2,126	2,062	2,102	2,116	2,114									
PAID	0	154	658	816	1,480	2,060	3,032	3,596	3,642									
O/S	10	1,248	546	566	518	1,540	518	298	0									
PAID+O/S	10	1,402	1,204	1,382	1,998	3,600	3,550	3,894	3,642			0		3,642				
PREMS	370	2,520	3,480	3,540	3,600	3,590	3,590	3,590										
PAID	0	0	0	450	490	2,490	5,210	5,300										
O/S	0	500	810	2,480	3,260	1,710	130	0										
PAID+O/S	0	500	810	2,930	3,750	4,200	5,340	5,300				0		5,300				
PREMS	93	483	861	929	935	936	936											
PAID	0	0	20	33	960	1,386	1,547											
O/S	0	2	278	567	471	0	0											
PAID+O/S	0	2	297	600	1,431	1,386	1,547					0		1,547				
PREMS	1,454	3,796	4,702	4,541	4,584	4,584												
PAID	0	455	1,800	3,452	4,748	4,766												
O/S	24	1,565	1,869	667	87	0												
PAID+O/S	24	2,021	3,669	4,118	4,835	4,766						0		4,766				
TOTAL												0		25,048				

EXHIBIT 10.3

<u>US\$ CASUALTY NON PROPORTIONAL</u>												<u>ON-GOING + COMMUTED</u>				<u>US\$ THOUSANDS</u>				<u>ON-GOING</u>		
<u>POLICY YEAR</u>	<u>1ST</u>	<u>2ND</u>	<u>3RD</u>	<u>4TH</u>	<u>5TH</u>	<u>6TH</u>	<u>7TH</u>	<u>8TH</u>	<u>9TH</u>	<u>10TH</u>	<u>11TH</u>	<u>IBNR</u>	<u>CHAIN LADDER</u>	<u>CHAIN LADDER</u>	<u>ULTIMATE</u>	<u>ULTIMATE</u>	<u>'DISTORTION'</u>					
1979 PREMS	4,949	9,458	9,825	9,917	10,040	10,173	10,045	10,092	10,093	10,097	10,107											
PAID	0	221	585	1,337	2,587	3,350	4,574	5,501	6,913	7,168	7,743											
O/S	436	1,468	1,722	3,158	3,774	4,311	3,840	3,194	2,066	2,020	1,314											
PAID+O/S	436	1,688	2,307	4,495	6,361	7,661	8,414	8,695	8,980	9,189	9,056	3,487	12,543		6,948		5,595					
1980 PREMS	4,748	7,190	7,741	7,880	7,773	7,931	8,051	8,036	8,045	8,030												
PAID	8	186	1,155	3,079	4,350	5,618	6,795	8,825	9,697	10,344												
O/S	101	1,318	2,577	3,327	3,332	4,009	3,855	2,479	2,317	1,902												
PAID+O/S	108	1,504	3,733	6,406	7,682	9,627	10,650	11,303	12,014	12,246		4,714	16,959		8,989		7,970					
1981 PREMS	2,512	4,500	4,872	4,992	4,842	4,768	4,810	4,826	4,828													
PAID	0	238	1,314	2,080	5,024	5,920	7,244	7,946	8,074													
O/S	20	1,836	2,188	3,186	1,584	2,712	2,028	1,818	1,886													
PAID+O/S	20	2,074	3,502	5,266	6,608	8,632	9,272	9,764	9,960			4,154	14,114		9,314		4,800					
1982 PREMS	440	3,120	4,060	4,120	4,180	4,180	4,180	4,180														
PAID	0	0	0	450	650	2,650	5,460	5,570														
O/S	0	500	810	2,480	3,300	2,180	630	540														
PAID+O/S	0	500	810	2,930	3,950	4,830	6,090	6,110				2,979	9,089		1,249		7,840					
1983 PREMS	680	1,508	1,992	2,106	2,115	2,124	2,135															
PAID	0	12	75	95	1,110	1,571	2,088															
O/S	0	9	330	1,056	924	713	1,115															
PAID+O/S	0	21	405	1,151	2,034	2,283	3,203					1,802	5,004		2,580		2,424					
1984 PREMS	3,261	7,042	8,557	8,365	8,416	8,407																
PAID	0	457	2,018	3,832	5,861	6,286																
O/S	59	2,175	2,577	1,830	1,405	1,634																
PAID+O/S	59	2,633	4,595	5,662	7,266	7,919						6,022	13,941		5,464		8,477					
TOTAL												23,157	71,650	34,544	37,106							

11.0. Conclusion

11.1. Financial resolution by commutation involves a complex series of events. Attention to detail should secure a satisfactory outcome for both parties. The recent spate of liquidations and doubtful debts will place considerable future demands on management to consider commutation as an alternative avenue in resolving financial disputes.

11.2. Finally a checklist of the "dos" and "don'ts" surrounding commutations:

Dos

- (1) Always identify treaties;
- (2) Read slips and policy wordings;
- (3) Identify re-instatement and adjustment premiums;
- (4) Read Coverage Limitation Clauses particularly in relation to Asbestos and Pollution;
- (5) Understand the implications both statistical and accounting of all reconciliation differences;
- (6) Understand any indexation clauses;
- (7) Identify and calculate interest on any funds retained;
- (8) Identify all off-setting securities such as funds retained, trusts, LOCs;
- (9) Look out for aggregate policies with defined upper limits;
- (10) Always understand the financial mechanics of the major treaties;
- (11) On outwards treaties always consider the frequency and severity of losses from underlying layers;
- (12) Always inquire about the other party's IBNRs and payout patterns. Challenge assumptions if appropriate.
- (13) Aim, within reason, to be better prepared than the other party when you commence the final

negotiations.

- (14) Try to play a part yourself in the final negotiations on behalf of your client if you feel they will get a better deal this way.

Don'ts

- (1) Don't ignore policy wordings;
- (2) Don't assume your statistical data is sound;
- (3) Don't always assume the past will provide an indication of the future. Sometimes policy limitations will prevent future development once all losses become total limits. The converse is true with high layer coverage;
- (4) Don't assume commutations are simple. Each one is unique and will have its own problems;
- (5) Don't be complacent, you cannot revisit and adjust the calculations at some later date as is usually possible with reserving;
- (6) Don't ignore the consequences of reinsurance protections on inwards commuted business;
- (7) Don't assume that all recoveries from an inwards commutation will be acceptable to or collectible from the reinsurers;
- (8) Don't go into the final negotiations unprepared. All the arguments, counter-arguments and scenarios need to be at your fingertips.

11.3. This paper is not intended to be exhaustive. Indeed the subject of commutation is almost limitless and can in many ways be likened to a financial game of golf - you follow the same ground rules but each time the outcome is unique.