

SESSION D

GENERAL INSURANCE CONVENTION 1991

LLANDRINDOD WELLS 23-26 OCTOBER

LATENT CLAIMS

LATENT CLAIMS

GISG 1991

The members of the working party who prepared this paper for the General Insurance Study Group conference to be held at Llandrindod Wells in October 1991 were as follows:-

Chairman	Colin Czapiewski
	Roger Boulton
	Harold Clarke
	David Craighead
	Dewi James
	Nicholas Michaelides
	Haidee Pickton
	Hugh Rice
	Martin White

Index

<u>Section</u>	<u>Title</u>	<u>Page</u>
1	Introduction	5
2	Other Countries Survey	8
3	UK Survey	22
4	Control	31
5	Exposure	46
6	Projection Methods	50
7	Conclusion	67

Amcangyfrif Niwed Cudd

"Lle rhyfedd i falchedd fod
Yw teiau ar y tywod"

o "Llys Ifor Hael"

Y mae ganddyn ni yng Nghymru brofiad dros y blynyddoedd o'r niwed y gall llwch glo wneud i'r ysgyfaint. Y mae pwnc y papur felly yn un berthnasol iawn i ni.

Y mae'r broblem o amcangyfrif pris niwed cudd yn faes newydd i'r broffesiwn ac y mae'n rhaid i ni ddeall nad oes un ffordd unigol yn gallu archwilio pob agwedd o'r broblem. Felly y mae'r papur yn edrych ar sawl fodd wahanol ac yn pwysleisio fod rhan fawr o'r broblem yn un ddisgrifiadol, nid yn unig yn niferol.

LATENT CLAIMS

1. INTRODUCTION AND OVERVIEW

- 1.1 The report produced by the working party for the 1990 GISG Conference in Newquay described many salient features of latent claims. These claims, that effectively lie dormant for many years then emerge to terrify insurers (and reinsurers), were shown to cause severe problems for accurate reserving and indeed the quantum had the potential to cause financial ruin to the entire insurance industry.

This paper follows up on some of the topics raised in last year's paper and also investigates new aspects of latent claims.

- 1.2 Reserving for known latent claims is hard enough. Much work has been performed by notable insurance experts; but even their estimates of ultimate numbers and amounts of losses have usually been proved to be too low. However, as the first major latent claim to affect the market, much has been learned from asbestos bodily injury about the necessary monitoring of claims, the claims management, legal interpretations of policy wordings, the roles of external advisors (eg. loss adjusters and attorneys) and general insurance expertise in areas such as claims coverage and reinsurance.
- 1.3 Reserving for latent claims where the major issues are still being determined by courts is much harder. The judgements given by various courts have sometimes differed considerably by jurisdiction. No settled pattern of verdicts has emerged. Ultimate losses from these "immature" latent claims, such as asbestos building claims and environmental pollution, are much harder to evaluate.
- 1.4 In Section 6 of this paper we have explored alternative practical methods of allowing for the reserving of latent claims. It is felt by members of the working party that the Institute of Actuaries could be more proactive in this respect. With UK actuaries sometimes certifying reserves in respect of the liabilities of their organisations, some clear guidance for actuaries in dealing with these practical problems is desperately needed. We did not feel that we could produce a definitive answer in a paper with so broad a directive. More work needs to be done.
- 1.5 In the 1990 paper, the emphasis was on the problems already encountered in the USA. This paper enlarges the scope to cover other areas of the world in Section 2; both the more and lesser developed countries. The contacts made in these countries could easily be followed up to help obtain a wide view of potential claims. By sharing our knowledge of latent claims with actuaries in other countries, all will benefit.

1.6 A questionnaire in the 1990 paper asked for brief details from UK companies and Lloyd's syndicates as to whether they had problems with specific latent claims. With the help of anonymity we received a healthy response. A further questionnaire in this paper asked for more detailed information. The results and data are time consuming for insurers to produce and considerable delay in response was anticipated. A brief resume of the results is given in Section 3, and further work is anticipated in preparation for a future paper.

1.7 We stepped outside the pure world of insurance for Section 4 of the paper. Whereas risk control was such an important role for insurers and reinsurers several decades ago, some feel that they have now relinquished this role. Insurers can have a significant effect on risk control and can even affect the design of ships, buildings, cars, etc... Risk control can extend to good internal housekeeping of a factory, maintenance and enhancements of safety at work provisions, fireproof walls, etc. The insurer must ensure that he does have a say in such matters where possible or at least has an influence. It is better to underwrite risks before losses occur rather than to react to these losses.

As a last resort we can be more negative. However, too many exclusions in coverage are not really in the long term interests of insurers or insureds. They are a tool that can be used by insurers and are included to complete the section on control.

1.8 Exposure is a difficult subject and is mentioned briefly in the paper (Section 5). Exposure means different things to different people. With some types of reinsurance we cannot measure exposure without detailed information from the insured or cedant. This will often not be forthcoming.

Exposure measurement is often seen as necessary in theory but an expensive luxury in practice. Even if we had details of the full potential exposure, would we reserve totally for all this exposure giving rise to 100% losses? All we can do in practice is to allocate probabilities of loss to these exposures.

Rough estimates of exposures to particular large risks, plus a more general reserve for small risks may be a more useful practical approach.

- 1.9 We tried to keep this paper short, but the topic is so important and so complex that to trim it too much would be a retrograde step. We have also tried to make each section self-contained for ease of reference. Some knowledge of the 1990 paper and other sections of this paper are helpful but not essential for any section. However, it would clearly be advantageous for an interested reader to obtain a copy of the 1990 paper from the Institute of Actuaries.
- 1.10 We talk of the future in the conclusion. We have only touched on various aspects of the subject. Further work is needed to expand on this base and to keep in touch with future events.

2. OTHER COUNTRIES SURVEY

2.1 RATIONALE

2.1.1 We felt it desirable to establish contact with representatives of the insurance industry worldwide, as latent claims are obviously not a problem confined to North America or solely of interest to the London Market. We saw three main reasons for doing this:

- (i) to raise awareness of the latent claim problem in European and other industrial countries, particularly those where no problem was currently recognised or where latent claims had only arisen on a small scale to date.
- (ii) to inform representatives of the insurance industry in the same countries of the existence of this working party, the work it has already done and which it hopes to do in future.
- (iii) to establish professional relationships to encourage an exchange of information and opinions leading to greater appreciation of the latent claims problem worldwide and formulating appropriate responses to it.

2.1.2 We sent a letter explaining our interest (Section 2.2) and a copy of last year's paper, together with a simple questionnaire (Section 2.3), to 18 countries. Our contacts work in large insurance (or reinsurance) companies, industry/government bodies or consultancies, and many of them are actuaries. We were greatly encouraged to receive information from 17 countries and we acknowledge the invaluable assistance of those who replied. Our survey results cover 8 European Community countries, 5 other European countries, and 4 other significant "developed" countries. The survey does not include the UK, USA, South America, the Middle East or (with one exception) the former Eastern Bloc or Third World countries. Nonetheless, whilst bearing in mind that our results predominantly refer to developed countries, we believe they do provide a useful starting point for anyone wishing to assess the known scale and current awareness of the latent claims problem around the world. Our results are set out in Section 2.4.

- 2.1.3 The most striking feature we observed is the apparent reluctance, even among highly developed countries, to set up reserves for specific types of claim despite exposure being acknowledged, claims being advised and adverse trends being detected. In this report, we can only speculate on possible explanations. For some countries, absence of specific reserves may simply reflect relatively primitive reserving practice in the industry generally rather than an overly optimistic outlook. For other countries, however, we can only suppose that commercial, legal or other considerations are deterring insurers from facing up to the reality of the latent claims problem by establishing some reserves, whether implicit or explicit.
- 2.1.4 We would advise caution in interpreting the results, given the broad nature of the survey, the small sample, the variety of respondents, and the need for many of them to translate English into their native tongues. Consequently, we considered it inappropriate to identify the individual replies. It is inevitable that there will be inconsistencies of interpretation, but we believe that this is an acceptable price to pay to begin collecting information. The detailed results need little amplification. However, the following features seem to arise:

Asbestos Bodily Injury

Eleven countries report some exposure, but no clear trend is apparent. Impact is increasing in six countries and reducing in the others, but after attaining either significant or modest peaks. Reserves are held in four countries. Five countries report no exposure.

Asbestos Building Claims

Only six countries report exposure, with limited impact to date. A deteriorating trend is apparent, but specific reserves are not normally held. Are the other countries confident in believing they have no exposure to this area?

Deafness

Ten countries report exposure, five with moderate impact to date and five modestly affected. The trend is generally increasing however, and some specific reserves are held.

Pollution

Most countries are exposed, many affected moderately or significantly already and all report a deteriorating trend. Specific reserves are only held in a few cases. Four countries do not consider themselves exposed, however.

Pharmaceutical-related

Eleven countries report exposure, but six indicate only modest impact to date. The clear trend reported though is for increasing effects in domestic insurance industries. Specific reserves are held in the same four countries which reserve for pollution claims.

Other latent claims

Various other types of latent claim are listed in this paper, in addition to the above, and further concerns were often expressed in covering letters.

Products liability, whilst certainly leading to claims the specific nature of which are not known at the time of writing the insurance, does not normally produce claims of a generally unanticipated nature and so falls slightly outside the class of latent claims which was our particular concern in designing the questionnaire and covering letter.

Five countries mentioned concern about exposure to claims arising from the use of HIV-contaminated blood products. One reply also referred to a recent legal decision opening the door to claims arising from passive smoking.

- 2.1.5 This reply, together with others, illustrates the close relationship which we observe between legal (and political) evolution, social attitudes and the emergence of latent claims. Insurance industries in various countries have avoided, to date, major trouble from latent claims by relying on exclusions, the minimal litigation consciousness (or legal access) of most of its policyholders, or social insurance picking up the bill for certain types of losses.

Legislation, particularly concerning the environment, is planned or being enacted in many of the countries we contacted, often along strict liability US SuperFund lines.

There have been major political changes in Eastern Europe and elsewhere, even since last year's report. As the world becomes more "sophisticated", we should expect to see an acceleration in the emergence of latent claims. It is no coincidence that latent claims were largely unrecognised before the second half of the twentieth century. Our survey confirms that other latent claims are there, but for how much longer will they remain latent?

2.2 THE LETTER

16 April 1991

Contact
Address
Country

Dear Contact

2.2.1 The Problem of Latent Claims (With an emphasis on insurance aspects)

I am writing to you on behalf of a UK Actuaries working party (study group) on Latent Claims. We are working on a research paper which will be presented in October 1991 to the annual General Insurance Research Convention. This is the second year of operation of our working party, and a copy of the paper produced last year is enclosed.

2.2.2 What are latent claims?

Many circumstances of loss or damage to society or individuals, including those which give rise to insurance claims, take years to emerge. In this sense much liability (also known as casualty) insurance coverage is bought to provide protection against latent claims. For example, professional indemnity claims frequently do not emerge until some years after the act giving rise to the claim, and there can be a further delay before the claim amounts are finally determined and settled.

However, the focus of our working party is not on the generality of latent losses and latent claims, but on those claims the precise nature of which was not anticipated at the time insurance coverage was granted (therefore making the assessment of insurance premiums and reserves particularly difficult). Examples include:

- claims emerging due to governments passing retrospective legislation or courts over-ruling contract wordings designed to exclude certain types of claim, e.g. environmental pollution claims from the USA.

- claims relating to products, e.g. birth abnormalities caused by pharmaceutical products.
- claims relating to the workplace, e.g. deafness.

2.2.3 We need your help

You will see from the enclosed 1990 Latent Claims paper that our first year's work concentrated on the situation in the UK and the USA. We gave a brief survey of those types of latent claims currently causing concern to insurers (and reinsurers), concentrating on claims relating to asbestos and environmental pollution. There are many legal issues as yet unresolved and we attempted merely to describe the issues, without making any judgment on, for example, the ultimate costs to insurers and reinsurers.

This year our objectives are wider. Latent losses, of which latent insurance claims are only a part, are an international problem. Insurance markets are becoming more international, and therefore all insurers and reinsurers have an interest in managing latent claims. It is also frequently argued that insurers have a duty to society to advise on and encourage risk management where possible, i.e. to assist in the control of losses for its own sake, not just for the purpose of reducing the cost of insurance.

We therefore need an international perspective and this year part of our report will be devoted to surveys of the situation in other countries. A questionnaire is enclosed and we would be grateful if you could help with this to the best of your ability. (We are not writing to anyone else in your country.) Any information you provide is confidential to individual members of the working party and will be used purely for the research we have described, not for any commercial purpose. In particular, the information is not available to our respective employers. If there are other sources of information you would recommend we contact, or indeed any other suggestions in connection with our task, these would also be much appreciated. Sources of information will not be named in our report.

We hope that one of the beneficial side effects of this survey will be to strengthen our links with other professionals, especially actuaries, in countries other than the UK. We will, of course, acknowledge your reply and also send you a copy of the report we produce for our October conference. Incidentally, we do have a number of non-UK actuaries who regularly attend this conference.

We look forward to hearing from you, if possible before 10 June 1991. If you have any questions or wish to discuss anything further please do not hesitate to contact any of us. The papers enclosed with this letter are:-

- 1) Latent Claim Report 1990
- 2) A note indicating the scope and objectives of this year's working party report.
- 3) Your questionnaire.

Yours sincerely,

2.3 OTHER COUNTRIES QUESTIONNAIRE

- (1) Do you believe that insurers in your country have, or have had, significant exposure to the latent claims tabled below? (Yes/No)
- (2) What impact have these latent claims had to date on your insurance industry?
(1 = Modest; 2 = Moderate; 3 = Significant)
- (3) Do you think the existing scale of latent claims is increasing (I) or decreasing (D)?
- (4) Are specific reserves typically held for such claims? (Yes/No)

Example Answer

Question:	(1)	(2)	(3)	(4)
<u>Type of Claim</u>	<u>Exposed</u> (Y/N)	<u>Effect</u> (1/2/3)	<u>Trend</u> (I/D)	<u>Reserves</u> (Y/N)
Asbestos (bodily injury)	Y	2	D	Y
Asbestos (building claims)	N	-	-	-
Deafness	Y	2	D	Y
Pollution	Y	1	I	N
Pharmaceutical-related	N	-	-	-
Other (please specify)	N	-	-	-

- (5) Do you have an insurance industry body?
(Yes/No) If so, what is its name and address?

Does this body or any other body monitor losses or their development? How does it monitor them?
- (6) Have claims on existing business arisen unexpectedly through Government passing new legislation? Is environmental legislation in place or planned?
- (7) Are any classes of insurance compulsory?
Have any latent claims emerged from these classes?

2.4 THE RESULTS

("-" indicates no reply or no clear reply given)

2.4.1 Asbestos Bodily Injury

	<u>Exposure</u>	<u>Severity</u>	<u>Trend</u>	<u>Reserves</u>
1.	Y	2	I	Y
2.	Y	3	D	Y
3.	Y	2	D	N
4.	Y	1	I	N
5.	N	-	-	-
6.	N	-	-	-
7.	N	-	-	-
8.	N (sic)	1	I	N
9.	Y	1	I	Y
10.	Y	1	D	N
11.	Y	3	I	Y
12.	Y	1	D	N
13.	Y	2	I	N
14.	-	-	-	-
15.	N	-	-	-
16.	Y	1	= (sic)	N
17.	N	-	-	-

2.4.2 Asbestos Building Claims

	<u>Exposure</u>	<u>Severity</u>	<u>Trend</u>	<u>Reserves</u>
1.	Y	2	I	-
2.	N	-	-	-
3.	N	-	-	-
4.	Y	1	? (sic)	N
5.	N	-	-	-
6.	N	-	-	-
7.	N	-	-	-
8.	N (sic)	1	I	N
9.	N	-	-	-
10.	N	-	-	-
11.	Y	2	I	Y
12.	Y	1	D	N
13.	Y	2	I	N
14.	-	-	-	-
15.	N	-	-	-
16.	N	-	-	-
17.	N	-	-	-

2.4.3 Deafness

	<u>Exposure</u>	<u>Severity</u>	<u>Trend</u>	<u>Reserves</u>
1.	Y	2	I	-
2.	Y	2	I	Y
3.	N	-	-	-
4.	Y	1	I	N
5.	N	-	-	-
6.	N	-	-	-
7.	N	-	-	-
8.	N (sic)	1	I	N
9.	Y	2	I	N
10.	Y	1	D	Y
11.	Y	2	= (sic)	Y
12.	N (sic)	1	-	N
13.	Y	2	I	N
14.	-	-	-	-
15.	N	-	-	-
16.	Y	1	I	N
17.	N	-	-	-

2.4.4 Pollution

	<u>Exposure</u>	<u>Severity</u>	<u>Trend</u>	<u>Reserves</u>
1.	Y	2	I	-
2.	Y	3	I	Y
3.	N	-	-	-
4.	Y	1	? (sic)	N
5.	Y	1	I	N
6.	Y	2	I	Y
7.	Y	1	I	Y
8.	N (sic)	1	I	N
9.	N	-	-	-
10.	Y	-	I	N
11.	Y	3	I	Y
12.	Y	3	I	N
13.	Y	2	I	N
14.	Y	2	I	N
15.	N	-	-	-
16.	Y	2	I	N
17.	N	-	-	-

2.4.5 Pharmaceutical

	<u>Exposure</u>	<u>Severity</u>	<u>Trend</u>	<u>Reserves</u>
1.	Y	2	I	-
2.	Y	1	I	Y
3.	N	-	-	-
4.	Y	1	? (sic)	N
5.	Y	1	I	N
6.	Y	2	-	Y
7.	Y	1	I	Y
8.	N (sic)	1	I	N
9.	N	-	-	-
10.	N	-	-	-
11.	Y	2	= (sic)	Y
12.	N (sic)	1	I	N
13.	Y	2	I	N
14.	-	-	-	-
15.	N	-	-	-
16.	Y	2	D	N
17.	N	-	-	-

2.4.6 Other latent claims

	<u>Exposure</u>	<u>Severity</u>	<u>Trend</u>	<u>Reserves</u>
3. Industrial sickness	Y	3	I	N
Whiplash	Y	3	D	N
4. Aids/blood products	Y	1	I	N
7. Products liability	Y	2	I?(sic)	Y
Financial risks	Y	1	I	Y
10. Aids/blood products	Y	1	D	N
Public services	Y	-	I	N
11. Products liability	Y	2	I	Y
16. Aids	Y	2	I	N

3. UK SURVEY

- 3.1 In 1990, the Latent Claims Working Party conducted a survey of developments in reserving practices in the non-life insurance industry in respect of latent claims. The results of this survey were incorporated in the report which was presented at the GISG conference at Newquay in October 1990. At the time the survey was conducted, respondents were asked if they would be prepared to provide further information to help with future investigations. Of the 67 responses received, 40 confirmed they would be willing to do so.
- 3.2 These 40 organisations were contacted again this year and were asked whether they would be willing to provide details of claims developments for each type of latent claim. In particular, organisations were asked to provide the following information for each major claim type:-
- a) Developments of claim numbers, paid claim amounts and outstanding claim amounts by accident/underwriting year and year of notification/payment;
 - b) an indication of the classes of business to which these claims developments relate;
 - c) the above information both gross and net of available reinsurance with details of gross and net exposure, and split by original insured/assured. A copy of our data request is included as an appendix to this section.
- 3.3 To date, despite repeated follow-up telephone calls, only 7 organisations have provided us with claims development information. Given the small number of responses it has not been possible to provide any firm conclusion since the available developments are not likely to be representative of market experience and particular organisations' data may distort the overall picture.
- 3.4 We have also encountered a number of problems in analysing data across different companies including the following:-
- a) companies allocate claims either by underwriting year or accident year, and these allocations are conducted on a number of bases;
 - b) a lack of availability of data both gross and net of reinsurance;

- c) it is possible, in some cases, that the earlier developments of latent claims have been consolidated into the first year that such claims were identified and separately analysed.

3.5 We have nonetheless conducted a crude analysis of the data available at the time of writing, for illustration purposes only. We have included certain graphical presentations based on the combined calendar year developments in respect of asbestos related, pollution and deafness claims, including:-

- a) claim payments;
- b) claim notifications;
- c) cumulative paid/incurred claims ratios.

It should be noted that in some cases we have combined net and gross data.

3.6 Although the sample of responses received does not provide a credible basis for analysis, the available data indicates clearly that latent claims development is generally a calendar year phenomenon.

3.7 Given the difficulties that we have experienced in collating data, it has been proposed that we might continue our work in 1992. We propose contacting each of the 276 organisations initially targeted during our 1990 survey with a questionnaire of a more limited scope asking for data in a specific format. We believe that this approach will lead to a greater response and more credible information for analysis over the next 12 months.

LATENT CLAIM WORKING PARTY

DATA REQUEST

1 Developments of claim numbers, paid claim amounts and outstanding claim amounts by:-

- Accident/underwriting year
- Year of notification/payment

for the following major claim types:-

- Agent Orange
- Asbestos (Bodily Injury)
- Other Lung Diseases
- Asbestos (Building Claims)
- Dalkon Shield (IUD)
- Deafness
- DES
- Pollution *
- Spondylosis
- Tenosynovitis (ULD, RSI)
- Vibration White Finger
- Other - *please specify*

* If possible, split by:-

- Clean up costs
- Third party damage (bodily injury and property damage)
- First party claims

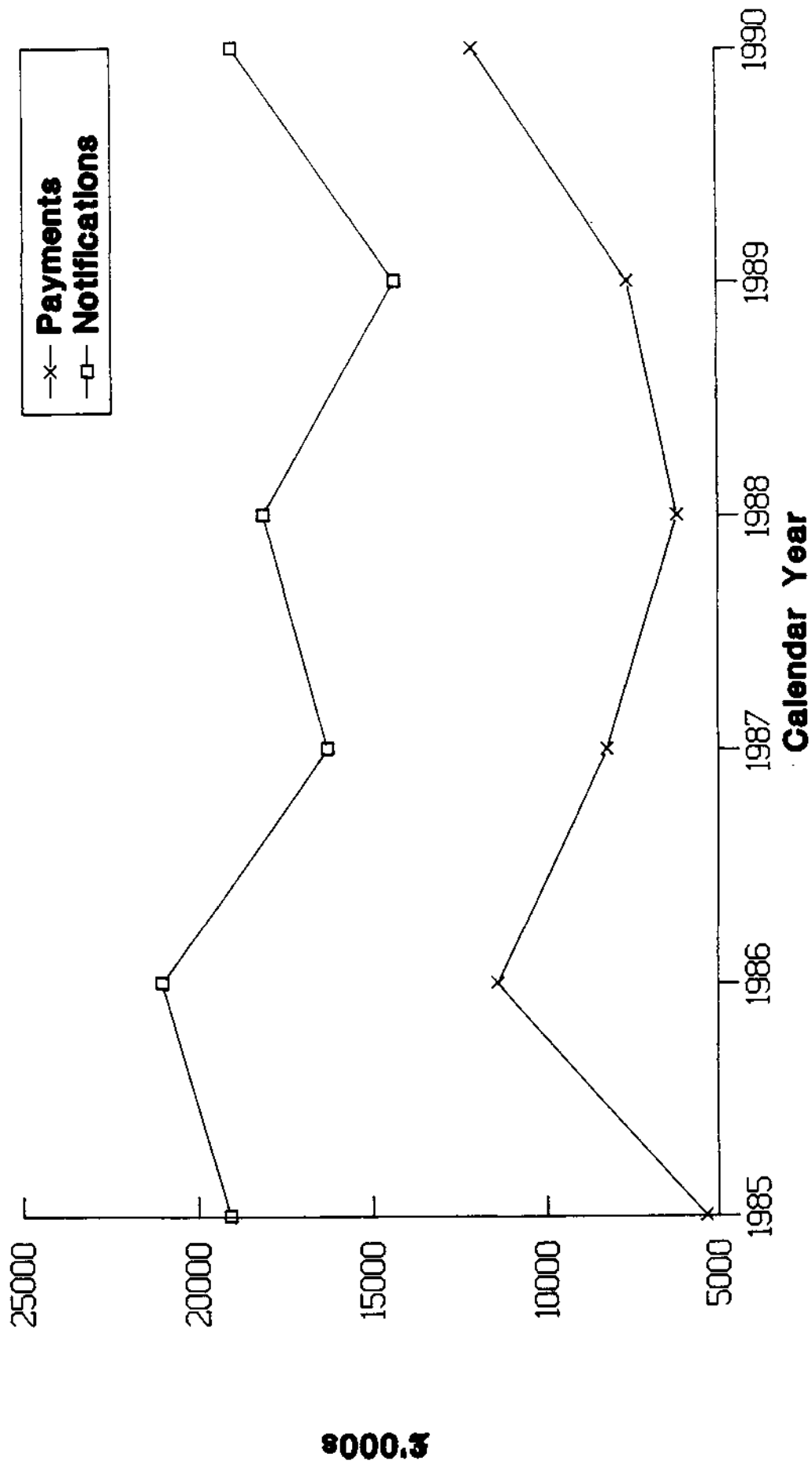
2 An indication of the classes of business that these claim developments relate to and whether the business is direct, reinsurance, retrocessional, LMX.

3 The above information both gross and net of available reinsurance with details of gross and net exposure.

4 Information in 1 and 2 above by original insured/assured.

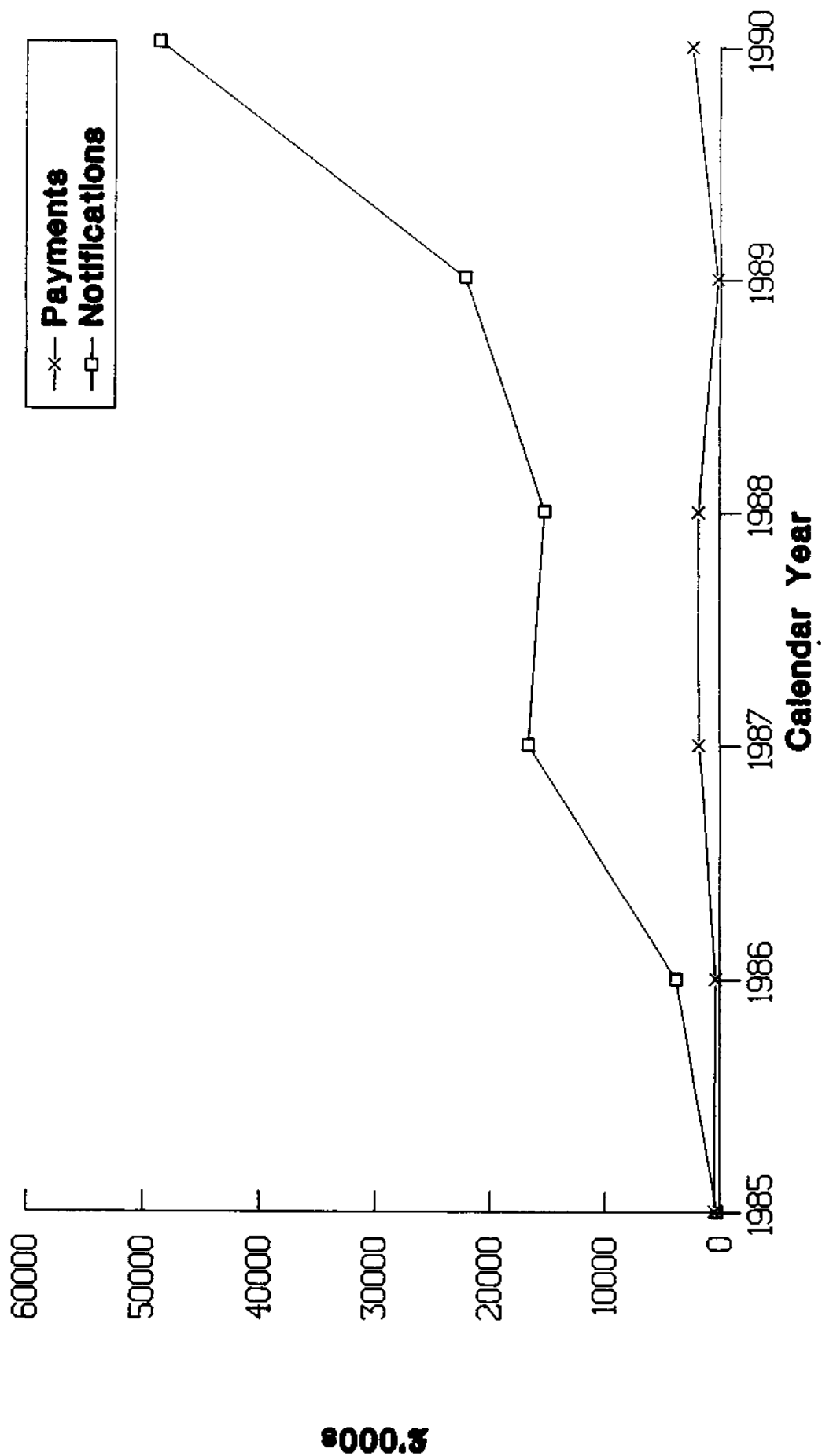
Asbestos-Related Claims

Payments and Notifications in each Calendar Year



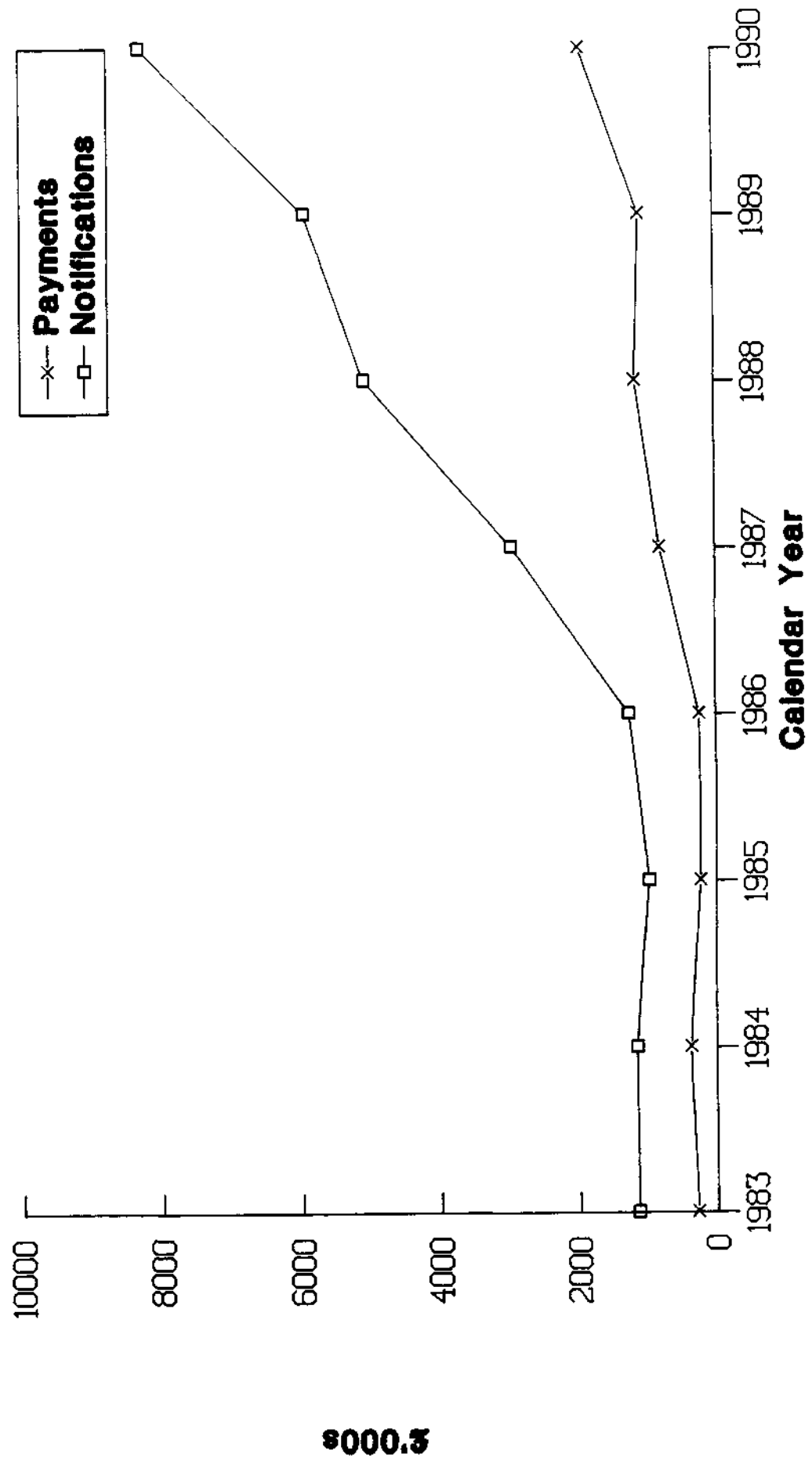
Pollution Claims

Payments and Notifications in each Calendar Year



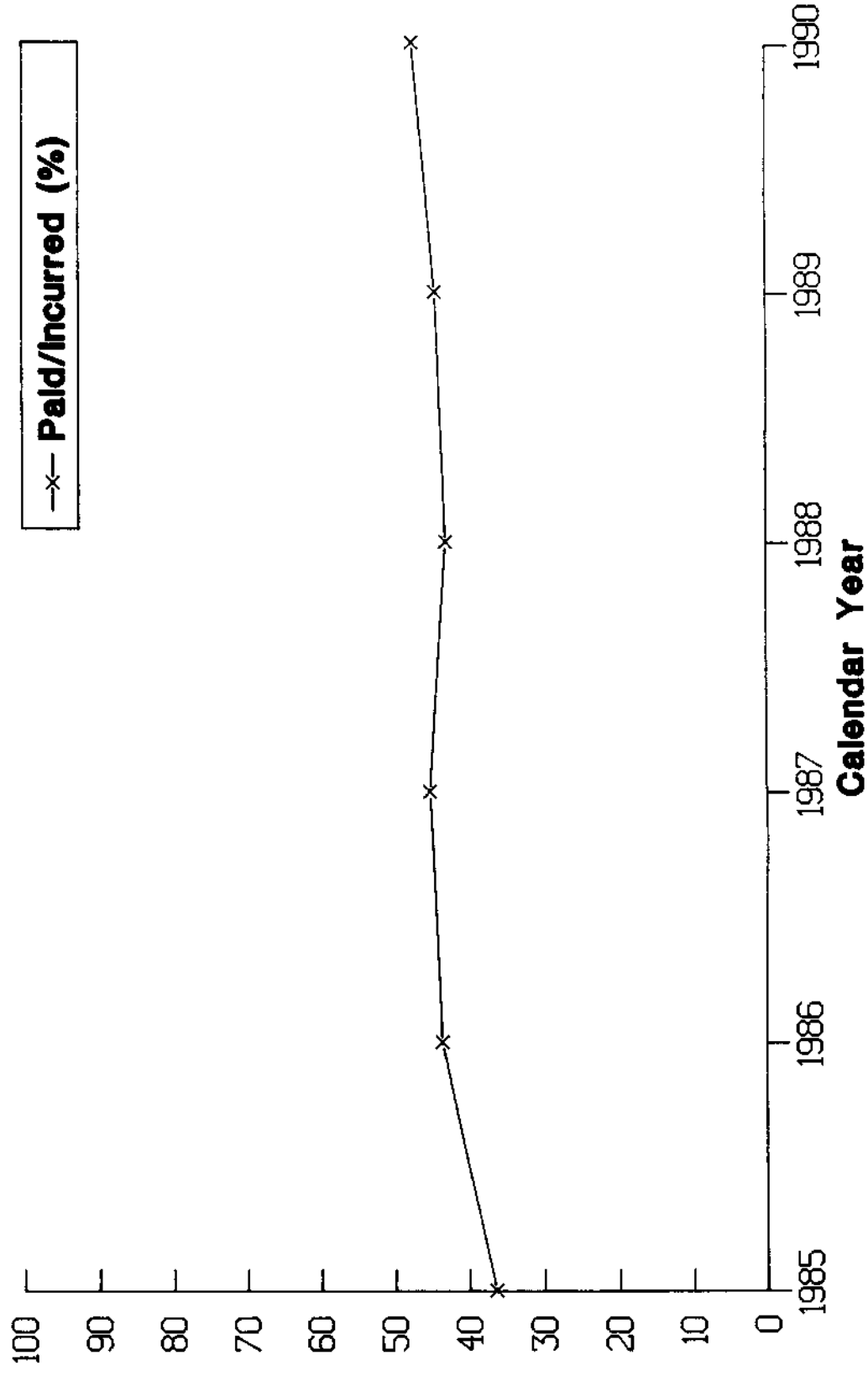
Deafness Claims

Payments and Notifications In each Calendar Year



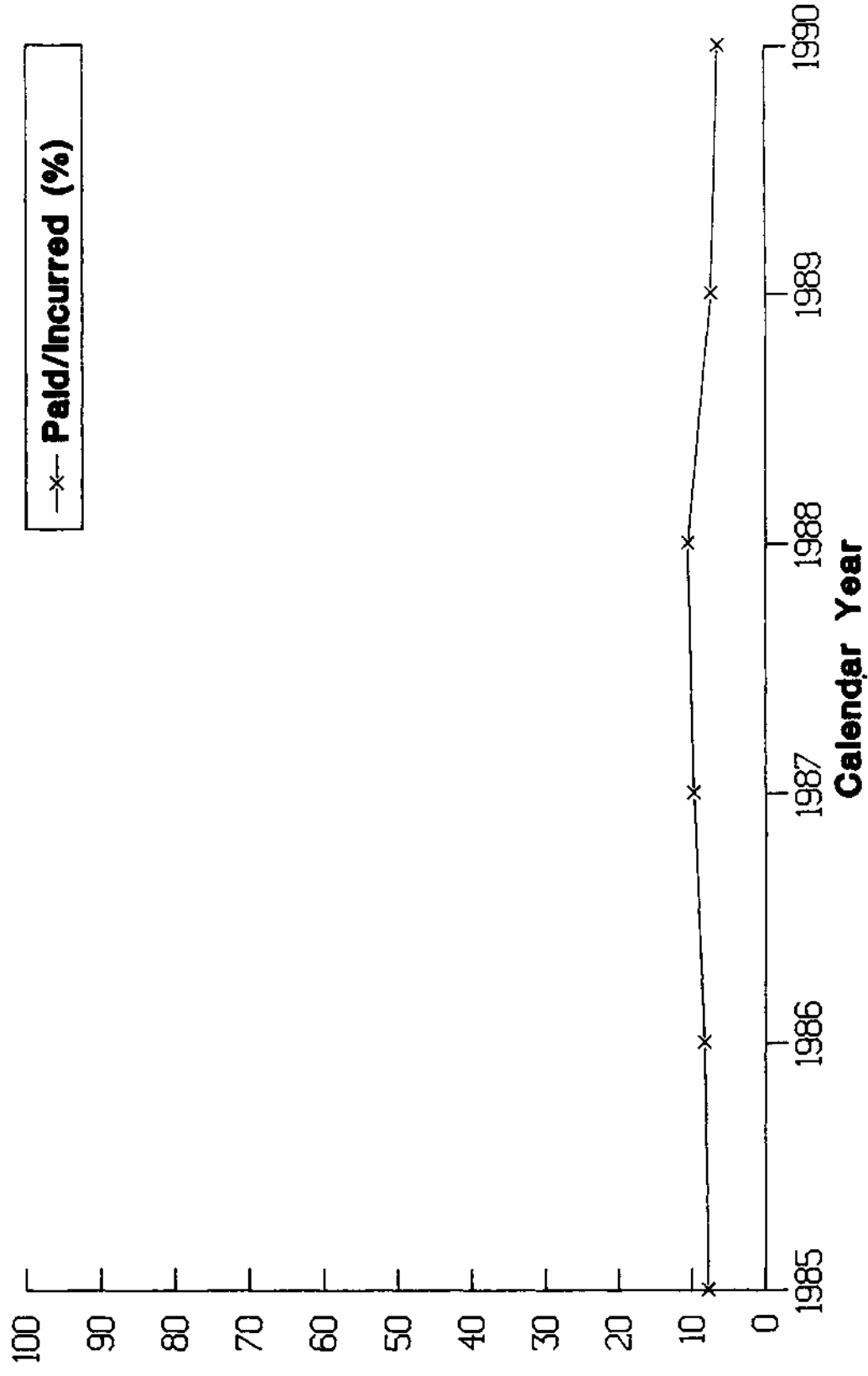
Asbestos-Related Claims

Ratio of Paid Loss to Incurred Loss (%)



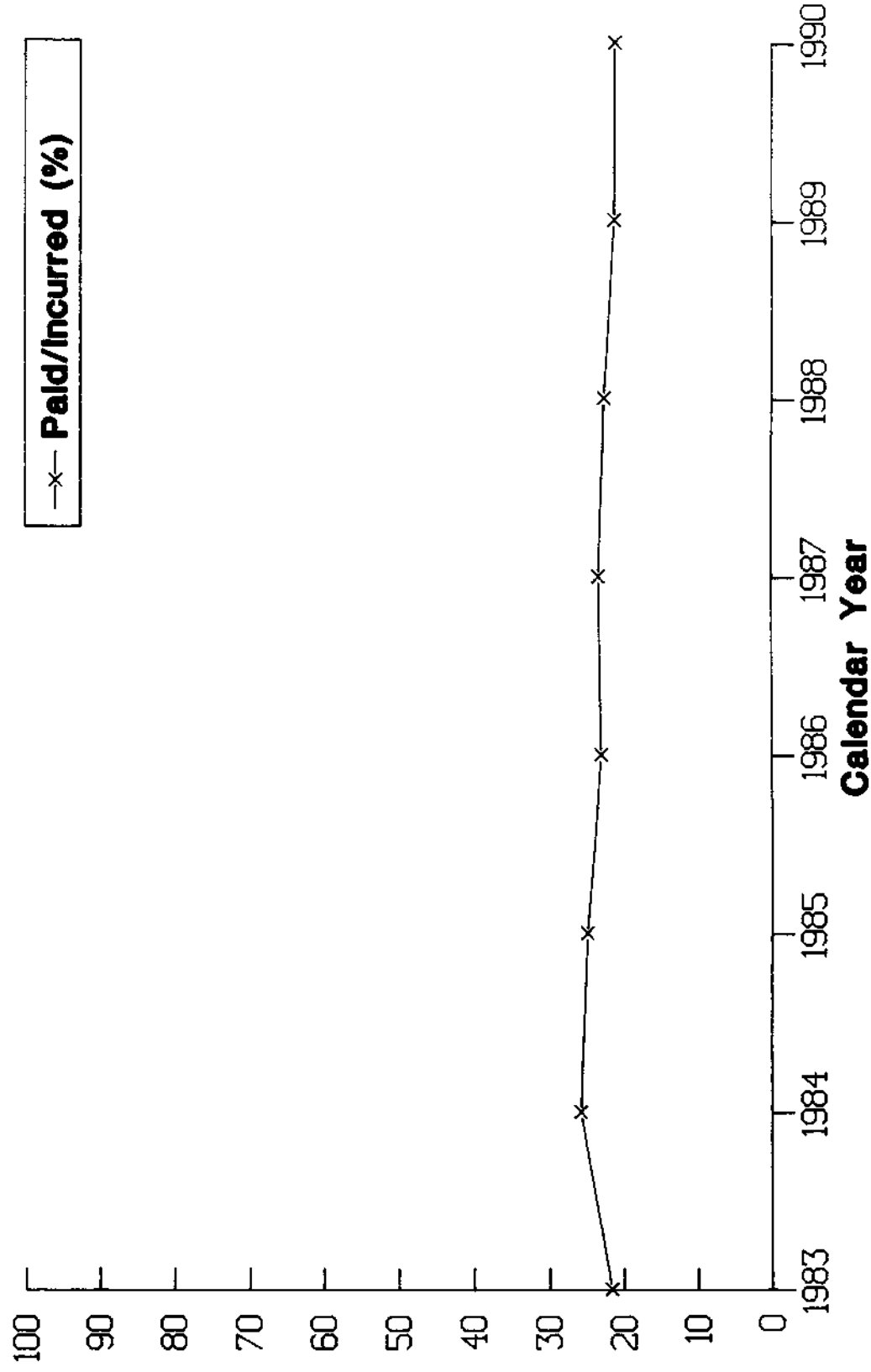
Pollution Claims

Ratio of Paid Loss to Incurred Loss (%)



Deafness Claims

Ratio of Paid Loss to Incurred Loss (%)



4. CONTROL

4.1 WHAT DO WE MEAN BY CONTROL?

By the very definition of latent claims which was introduced in the previous working paper, it is at least five years between the occurrence of an incident or exposure to a harmful agent and the manifestation of its resultant effect whether on the health of an individual or the environment generally. That means that there will be at least five years' exposure if measures to prevent its continued occurrence are introduced on the initial manifestation and that would involve linking cause and effect immediately. That utopian thought is rarely borne out in practice and of itself could result in an expensive series of claims for which an inadequate, at best, premium is likely to have been collected.

While it is clearly essential to attempt to close the stable door once the first horse has bolted, better still would be to identify potential bucking broncos whilst they are but sparkles in their mothers' eyes. Whether referring to insurers, employers or manufacturers, there has always in the past been a certain unwillingness to admit that the risks currently being underwritten have a significant long-tail element to them. The purpose of this section is to suggest that this act of faith should be accompanied by some rather more concrete measures which might just protect all parties from a future influx of unexpected claims.

4.2 PHYSICAL CONTROLS

This section is written from the perspective of an insurer of legal liability. Whilst it is clearly laudable for us to encourage the elimination of risk in its entirety, that is not always practical. Life itself carries a risk and it is unrealistic for either employers or manufacturers to reduce it below the level at which we expose ourselves in our normal daily lives. As a society, we all benefit from the risks undertaken by others. Our daily pint of milk is delivered by a man braving icy roads. Our fish is fried by courtesy of those who face the high seas. This paper is prepared by those who are not afraid to let the train take the strain. And the delegates at the 1991 GISG conference have travelled 100's if not 1,000's of miles by road, rail, sea or air. Clearly, if risk can be totally avoided, there will be no possibility of claims for damage caused, but the most realistic hope is that we can limit unexpected legal liability. In other words, that we do all that can be expected of us.

This section covers those activities which are aimed at preventing the damage occurring in the first place. As is being more widely recognised today, we cannot continue to expect future generations to pick up the burden of a complacent or careless attitude to our environment or fellow human beings. If we can take greater care of our world today, it is more likely that our children will indeed inherit the earth rather than some barren wasteland.

Whilst it clearly can take a lifetime of exposure to test whether a particular substance is harmful, the other extreme is to be extremely casual. One example is the change in animal husbandry practices brought about by BSE.

Once upon a time, old dairy cows were processed by knackers yards and turned into glue and animal feed or pet food. That, of course, is the route by which BSE was transmitted in the first place but now that this cycle has been broken, BSE afflicted cows have to be disposed of by the farmers themselves. This frequently involves the use of mass graves and their rotting carcasses could well affect our drinking water. Since the treatment in the knackers yards failed to kill the BSE virus, can we be confident that chlorine will be any more effective?

The point of this cautionary tale is to demonstrate the truth of Shaw's assertion that "Hegel was right when he said that we learn from history that men never learn anything from history".

4.2.1 State of the Art Defence

A key aspect is that one of the effective defences to claims for legal liability (in the UK, at least) is that of "state of the art". By this is meant that provided an individual applied the knowledge of his day, he has a defence against negligence. The definition of negligence involves what a reasonable person would do either to protect another or to avoid doing them harm.

With latent claims, the judgement of whether a defendant acted reasonably is made with the benefit of hindsight and it is essential that information is maintained to demonstrate that what might seem primitive with the benefit of this wisdom was actually perfectly reasonable in those ancient times.

At present, the state of the art defence does seem to be in a state of confusion. In a recent trial concerning the effect of welding fumes where the claims had been made in the mid 1980s, the evidence brought by the plaintiffs included medical research not published until 1989 and 1990. This evidence was accepted by the court as indicative of a causal link between welding fumes and bronchitis, even though this material was obviously not available to the employer at the time of the exposure to the fumes. The plaintiffs concerned had not worked since the early 1980s!

It has recently been suggested in America that all man-made mineral fibres are potentially carcinogenic. In the light of what has gone before us, it would be reasonable to anticipate that should this possibility turn out to be true, employers and manufacturers could well be deemed negligent if they fail to take this possibility seriously.

Does this mean, however, that they should be treated as though they were asbestos fibres?

The essence of a state of the art defence is that somebody somewhere has to know about the causal relationship between a product, practice or environment and its effect. In theory, therefore, if we were to have perfect knowledge of the research world, there could be never be a latent claims. At the very time that the knowledge emerges, previous practices would stop and there would be no negligent exposure. Unfortunately, the real world is a rather different place. Reality is that few companies have the resources to maintain a world wide monitor of any eventuality that could have an impact on their liability. If, however, some years after the event a disparate collection of obscure research papers or newspaper articles is presented to a court, it may well appear that industry failed to respond to incontrovertible evidence. This places a huge onus on industry and their insurers which has not really been taken into account by the majority.

4.2.2 Employers' Liability

In the early stages of development of an economy, where capitalist and relatively ruthless forces abound, employees are expected to absorb the concomitant risks of the job with the job they are lucky enough to be given. At that stage in their development, such societies are unlikely to suffer claims from employees for the long-term effects of their employment. As the societies mature, people's expectations and their employers' attitudes often change and claims are made retrospectively.

Also, employers as they had to grasp such problems, obviously tackled the most important and life threatening ones first. When the air was thick with asbestos dust, little attention was played by any party to vibrating hand tools and yet 40 years on, what appeared to be sensible priority setting at the time can now appear as complacency.

Within this sub-section we take a number of diseases which - since both cause and effect are known today - are not strictly speaking latent claims. However, the reality is that if nothing is done about the cause, they will have exactly the same effect in the future as those which fall under the definition. It is hoped that a common theme will emerge from the precautionary measures suggested which might help to avoid those diseases of which we have no knowledge or information at present.

a) Vibration White Finger

- identify those processes with high levels of vibration
- select processes with minimum vibration and/or adapt the processes to reduce levels of vibration
- maintain regular medical records of employees exposed
- encourage employees to advise any changes in their conditions eg blanching of fingers
- provide appropriate rest breaks
- provide instruction and training on the correct use of equipment
- ensure equipment adequately maintained to reduce levels of vibration
- devise work schedules to avoid long periods of vibration
- advise employees of the risks of exposure.

b) Noise Induced Hearing Loss

- comply with the UK Noise at Work Regulations of 1989 which specify three action levels of noise and the required response to each level. In summary, the Regulations require the employer to provide protection against exposure and the employee to use it

- identify equipment and areas with noise levels in excess of 85 dB(A)
- introduce alternative machines with noise levels below 85 dB(A)
- provide hearing protectors in areas where noise levels exceed 85 dB(A)
- enclose equipment to provide areas where the noise level is below 85 dB(A)
- maintain records of the use of hearing defenders by employees
- take full account of Judge Lachs who said "this calls for strong, persuasive, imaginative sustained propaganda. More than a short talk and shorter films; more than a notice in a pay packet; more even than a notice stuck up in a clocking on office". Unless hearing conservation programmes are fully effective both on paper and in practice, they will never prevent future claims for noise induced hearing loss.

c) Skin Disease

- seek alternative substances less likely to cause irritation
- where powerful chemicals have to be used, use mechanical means instead
- provide protective clothing, barrier creams and good washing facilities
- encourage high standards of personal hygiene
- ensure employees are aware of the risks they are undertaking
- keep sensitive people away from irritant substances where possible.

d) Upper Limb Strains

- check processes to ensure that they do not impose undue strain or stress
- ergonomic design of work place to avoid imbalanced posture etc
- where repetitive work is carried out, ensure adequate rest periods and job rotation to ensure that the repetitive activity is not carried out for excessive periods
- advise employees of the potential risks and encourage early advice of any symptoms

- medically examine those exposed on a regular basis and remove those who show excessive degeneration
- take account of any complaints received and treat seriously.

e) Necrosis

- (a condition where bone dies; causes include working at high atmospheric pressure without adopting safe procedures)
- comply strictly with all regulations concerning tunnelling in compressed air
- maintain records to show the correct procedures have been undertaken in compliance with the Blackpool tables. These tables indicate the rate at which people should return to normal pressure either in a decompression chamber or - in the case of deep sea divers - climbing back to the surface.

f) Stress

The following work-related activities have been found to hasten the onset of stress

- under-employment
 - excessive and too demanding a workload
 - excessive overtime
 - poor working conditions
 - unacceptable behaviour of colleagues
 - over-promotion
 - excessive travel arrangements.
- In order to control exposure, managers need to be aware of these factors and have the time and work management skills to be able to reduce or eliminate the risk.

g) Visual Display Units

- carry out regular eye checks of all employees using VDUs
- ensure that VDUs are sited so as to avoid glare on the screen
- ensure that the chair provides appropriate support and that the operator is at the right height relative to both screen and keyboard
- check screens regularly to ensure they are properly focussed and flicker free
- ensure work breaks are taken.

A number of common threads include the advice to employees of the potential risk of their particular occupation, the maintenance of accurate records of the preventative measures undertaken, the compliance with statutory regulation and job rotation so that employees are not exposed to a single causative effect for long. This last point is particularly important because human physiognomy evolved to cope with a wide variety of activities rather than spending all day every day doing much the same thing. If we spend our lives doing the same jobs, it seems almost inevitable that a significant proportion of us will develop symptoms, some of which may be more serious than others. The threshold of acceptance of these symptoms has been rising generation by generation and could soon reach the point where we will seek compensation for the mere fact of having to go to work each day.

In order for these threads to be drawn together, companies need to ensure that one person is responsible for health and safety. That person should be as senior as possible to ensure that a policy can be implemented. Where this responsibility lies with a safety officer, only lip service may be paid to their recommendations.

According to an article in the Guardian on the 31 May 1991, 50,000 people take the day off each and every day because of back pain. A significant proportion of this is likely to be caused at work and of this proportion, many will be due simply to sitting on the wrong type of chair.

This is particularly of concern in relation to the use of VDUs where attention of late has been focussed on repetitive strain injury. Back pain shares with RSI the lack of visible symptoms or sympathy from those immune but could well be the next type of claim caused by our love affair with the computer.

We refer in section 4.3.7 to "ownership" of the problems by employees. To obtain this responsible attitude requires management to warn their staff of potential problems. Alone that can lead to more claims but, as part of an integrated programme, is essential if the vicious circle is to be broken. Some employers even reinforce their message through the threat of disciplinary action if employees refuse to look after themselves. Even if the warning does generate additional claims, it is surely a small price to pay for the incorporation of a defence which could well prevent many thousands of claims being successfully brought in the future.

4.2.3 Public and Products Liability

The various possible trigger dates of a liability insurance policy include the date of manufacture, the date of purchase, the date of causation and the date of manifestation. Under a UK Public Liability policy, the trigger date would be the date of the accident. For example, if a screw were made in 1980, incorporated in a crucial part of an aeroplane in 1982 and the failure led to a crash in 1991, it is that 1991 policy which would pick up the liability. Therefore, on taking on any risk the insurer is immediately liable for all historical turnover which generates accidents during his period of cover. This means that a UK Public Liability policy falls somewhere between an occurrence and claims made wording.

While there are clearly strong parallels with Employers' Liability, the relationship between the originator and the victim is not under the same degree of control. Although there is a duty to take reasonable care towards both employees and third parties, the standard of reasonableness does vary somewhat to take account of the relationship. It would seem, therefore, that a manufacturer or supplier who keeps close to the end user of his product is more likely to be able to manage the risk than one which takes no such interest.

This good practice would enable the originators to ensure their products are used in the way for which they were designed and, if not, to modify their designs to meet their customers' real needs as opposed to their own perception of them. Also, it should enable a better feedback system to operate whereby the earliest possible notice is taken of possible adverse side effects and enable withdrawal or modification to be made promptly.

As has already been indicated, for liability to exist somebody somewhere has to know of the problem. Returning to the arena of Employers' Liability, firms whose health and safety experts identified problems but which ignored that advice found themselves having an earlier date of knowledge imposed on them than those who relied on public information. Whilst that might seem harsh, it is very important that companies react positively towards such whistle blowing. Whilst a question of company culture in a liability proposal form might be rather difficult to word and still harder to answer, a firm which practices open management may be in a better position to respond than one which beheads the bearers of bad news.

The recently announced class action in the UK against manufacturers of Ativan and Valium could well have some interesting repercussions. Over many years, there has been wide publicity concerning the side effects of these drugs and, in particular, their addictive qualities. Despite all the concerns, these drugs are still available although their prescription has been heavily proscribed. The outcome will give some guidance as to the notice that suppliers and manufacturers of products should take of a series of warnings which individually may not appear terribly significant but collectively damn a product or practice.

4.3 WHAT INSURERS CAN DO

4.3.1 Know the policyholder

In section 4.2 we have listed the various measures which policyholders can take to reduce their exposure to latent claims. Insurers can play a role in educating their policyholders about the actions that can be taken although the implementation of these measures might be more effective if insurers were prepared to insist upon them.

With only one or two exceptions, insurers do not habitually survey liability risks before accepting them: Any surveys carried out subsequently are likely only to be in response to claims made. This means that potential hazards may well be overlooked unless and until the claims start to be received. Larger risks with a latent claims problem may well receive the attention of a broker's own safety service in order to present the risk in the best possible light to potential insurers. In such cases, the broker will indicate the action being taken to prevent the recurrence of those claims in the experience. This responsible attitude is, however, largely the exception, and the reliance of the insurer on such action is arguably less than satisfactory. If the market could be disciplined enough to change its practice to that where a survey was required prior to risk attachment then the implementation of appropriate risk management would be more widespread. Risk surveyors would need to be thoroughly trained in assessment of liability risks not only for the short-tail accident type claims in which they currently specialise but also in the critical area of latent claims. This latter aspect may have more to do with work practices than machinery safety but it is essential that insurers find a way to break the cycle of latent claims emergence.

It is reasonable to suppose that the more that an underwriter knows about the risk he is taking on, the more likely he will be able to control his exposure either through the business he accepts and rejects or through imposing risk control measures on the prospective policyholder. Although it might be deemed uneconomic and impractical to survey each risk prior to inception or renewal, it is surely reasonable to make better use of proposal forms to elicit key information than has been the market practice in recent years.

If we can present these questions in a positive light with the aim being to assist the policyholder to control his exposures rather than to trip him up, we may be able to achieve greater co-operation from various intermediaries as well as the primary insureds. After all, it is in all of our interests to control and, ideally, eliminate long-tail exposures.

4.3.2 Policy wordings

A natural reaction is to exclude latent claims from policy wordings and this has certainly been done in the case of pollution. The success of this action is very much dependant on the stability of the market and tends to be eaten away while the market is soft.

Although exclusions can be used in certain cases to restrict cover, their very wording needs the utmost care, particularly as words can change their meaning over time. For example, in general liability policies it is standard practice to exclude pollution unless it is "sudden and accidental". We may have to face the question as to whether these words apply to the pollution itself - such as a pipe dripping over many years - or its manifestation - as in the appearance of this pollution as waste appearing in a stream. Also, most pollution up to now has, in fact, been accidental and we cannot assume that this clause will eliminate the most serious exposure. For example, do we know the hazards of the substances, the processes, the geography of the area in which a factory is sited and its proximity to towns and so forth? A fairly recent very expensive claim involved the release of sugar into a nearby river and serious damage can be done by similarly natural products appearing in the wrong place. It is thought by some, for example, that milk is much more polluting than crude oil when released into water.

The other drawback to this approach is that such exclusions can only be applied to identified problems and do nothing to defuse the time-bomb in relation to the unexpected. Also, where insurance is compulsory as is the case with Employers' Liability, it is simply not an option to exclude categories of claims.

A method which became attractive at one time was the change from occurrence based cover to claims made cover. The intention was to help the insurer to obtain better control of claims and, therefore, improve the accuracy of pricing. However, the result was deemed to be the avoidance of storing up problems for the future by severely restricting cover in this way.

However, it totally fails to provide the very peace of mind which liability insurance is designed to provide, and has been rewritten by certain courts who have sought to find an insurer to pay the claims and can only really be enforced when market conditions are relatively hard.

When it comes to Public Liability, additional measures include limits, coinsurance and exclusions. In the case of exclusions, however, these can only be effective against those causes which have already been identified and, therefore, cannot assist with containing exposure to latency.

4.3.3 Pass The Buck

One view of reinsurance has traditionally been a means by which insurance companies have sought to pass on unfavourable risks. Excess of loss has a limited impact on latent damage claims since the cause is usually a whole series of events over a number of years and the deductible in any one year unlikely to be reached. In addition, a stability clause will maintain the value of the deductible in real terms making it still less likely for excess of loss to apply. Captive arrangements where the aggregate excess of loss limit is unindexed are, therefore, particularly vulnerable to latent claims.

Those reinsurance contracts which have been specifically targeted towards latent disease claims have frequently been less than satisfactory. Contracts have been disputed on grounds of disclosure whilst reinsurers have sometimes found themselves unable to meet the claims. The length of period over which recoveries will be sought means that reinsurance security is particularly difficult to assess and it is likely that only partial recoveries will be made when the claims eventually materialise. The insurer may prefer to retain the funds within their company and build up provisions and reserves to meet potential claims.

Financial reinsurance in all its detail is beyond the scope of this paper but suffice to say that it can afford a limited protection where a stream of latent claims is anticipated. One concern to the insurer may be the timing of payments he might have to make and the consequent strain on investments. Financial reinsurance can contain the amount which has to be paid in a given period. However, the protection afforded by financial reinsurance is limited but particularly attractive to those institutions or territories where explicit discounting is not permitted.

4.3.4 Settlement Schemes

One of the very real problems which can face an insurer when a latent claims problem is manifest is the cost of handling the many thousands of claims that may well be involved. An approach which has been adopted in the UK to deal with Vibration White Finger and Deafness claims has been to reach agreement with the plaintiffs' representatives - namely the trades unions and their solicitors - whereby simple rules are adopted to determine liability and a scale of damages paid in accordance with an agreed measure of the severity of damage. This has enabled insurers to handle such claims using junior staff and in large volumes. An added advantage for the insurer is that the claims cost can be more accurately estimated whilst the plaintiffs have the benefit of receiving their damages very much sooner than might be the case were such claims dealt with in the standard way. The proportion of indemnity payments made to third parties is hereby minimised!

4.3.5 Going To Court

An important role which insurers can play to protect both themselves and their policyholders is through assiduously defending cases in the courts. This involves ensuring that the appropriate level of resources is dedicated to those cases identified as being potentially significant and the maintenance of information pertinent to potential court cases. This will include medical reports, scientific research and research which would give some indication of the state of knowledge at the time when the illness or disease might have been incurred.

4.3.6 Helping To Manage The Risk

The insurer can hope to avoid liability for latent claims if he ensures that full use is being made of state of art knowledge. This knowledge can be expressed in terms of legislation such as the UK COSHH Regulations, statutory instruments attached to The Health and Safety at Work (etc) Act or merely in published research.

At the very least, therefore, it is essential that policyholders comply with the regulations, and this of itself would drastically reduce the current exposure to latent claims.

The law now places a great onus on industrial management to demonstrate that it is indeed managing processes. Suppliers have to provide information on the safe use of their products and this can now be insisted upon notwithstanding the patent laws which once provided an excuse for the withholding of this vital information. There may be certain difficulties in enforcing these regulations which include regular health checks on employees.

Some employees resort to claims for stress arising out of medicals but it is to be hoped that the courts will reject such frivolous claims in the light of the UK Government's intention to make the workplace safer.

4.3.7 Choosing The Right Risks

This legislation makes it easier also for the insurer to pursue health and safety issues with his policyholders. They can now ask what the COSSH assessment is, for example. However, it is likely to be in the attitude of management that the greatest fruits will be born rather than simply paying lip service to legislation. In selecting their policyholders, ideally insurers should seek those industries which are rich enough willingly to afford health and safety measures. Proactive employers who actually seek out safe practices rather than respond to known problems should also present a lower long-term risk. Education and training of employees is necessary to stress that it is their problem and that the "somebody else" could well turn out to be them. For example, keeping an oily rag in a trouser pocket may be convenient but the scrotal cancer which could emerge is clearly not.

The International Loss Control Institute of Atlanta, Georgia, has studied many thousands of American factories in terms of safety ranking them in order. On returning to the best performers, some 20 areas of good practice emerged which seemed correlated with a low accident rate. These included leadership, job task observation, accident and incident analysis, the supply of protective equipment and education and training generally. This list provides a standard against which employers can be rated which might well be a useful underwriting tool as well as providing a focus for those aspects of health and safety which need to be tackled.

Since Employers' Liability coverage is compulsory in the UK, and insurers' wordings have to follow the requirements of the EL (Compulsory Insurance) Act and Regulations made under the Act, it is only through price and risk selection that underwriters can control their exposure. However, since they operate in a market which may not share their views or even be aware of the problems which they have already encountered, a useful role is to seek to educate the market. As ever, insurers are perceived by some as greedy monsters with deep pockets who demand hefty premiums to write restrictive cover yet offer desultory discounts in return for the implementation of costly and time consuming safety measures.

In the arena of latent claims, it is harder still for insurers to justify themselves or their requirements in terms of insurance premiums because it is so difficult to collect anything in the first place for a liability which many regard as contingent. The insurer has to look beyond the immediate premium saving and assist his customers in cost benefit appraisals which include non-insurance costs. In addition to the public relations costs of latent claims will be many other uninsurable costs, such as time off work, lost training if an employee cannot return to work and the low morale of the workforce whose employers apparently care little for their welfare.

4.3.8 A Young Man's Dreams

In the olden days, insurers would not dream of issuing a policy without having looked over the prospective risk in advance. Those were the days when there was insufficient capacity, of course, and current competitive pressures mean that insurers are (unfortunately) left with inadequate time to adopt this practice widely. However, the fruits of reintroducing such a practice although increasing the costs of running the business, may well be more than offset by lower claims experience. Even if that approach finds no favour, making an attempt to improve information flows within the insurance company could well bear fruit. Ensuring that claims inspectors are made aware of the needs of underwriters and encouraging them to develop closer ties with the policyholders, will enable them to feed back important information to their underwriters. For example, talking to safety officers and finding out whether anybody ever listens to them let alone acts upon their advice, will give an indication of management's attitude towards health and safety, thought by us (actuaries) to be so important.

On the basis that perfect knowledge would result in the near end of latency, we suggest that a monitoring body to co-ordinate and disseminate such relevant information would be of immense value to all liability insurers and should be established by the UK insurance industry. It is known that trade unions have established such monitoring systems to enable them to support their members in the making of claims for industrial disease. In support of our policyholders and in the interests of their employees and customers, a similar service would be in the interests of all participants. It might even be possible for there to be some liaison with trade unions and certainly, with the Health and Safety Inspectorate and Executive.

This monitoring body would not only be responsible for acting as an early warning system but should also be examining means to reduce or eliminate exposure both to known and potential problems. As this experience develops, it might well develop a code of good practice for insurers in the selection, management and control of their liability exposures.

5. EXPOSURE

5.1 INTRODUCTION

- 5.1.1 Whether the liability insurer of the local chrome works in downtown Detroit or the underwriter of a remote layer of aggregate excess of loss reinsurance written in an obscure office block thousands of miles away in darkest London, both insurers should be interested in the potential of the liability they have undertaken. Policy limits, deductibles, wordings, exclusions and the like are only relevant once we have identified the scale of the original problem.
- 5.1.2 That measure will depend on the nature of the original employer or manufacturer. For example, if we take DES, it would be helpful to know the number of women to whom it was prescribed, their fertility and that of their daughters. Given that total potential, it is then relatively straightforward to estimate the effect of varying risks of side effects emanating, the proportion of the liability that was insured, the proportion of disabled people claiming and, ultimately, the proportion retained by the particular underwriter.
- 5.1.3 In the case of Employers' Liability, pension fund data should give a ready estimate of the total number of exposed people and may even break down the numbers according to the various shops within a factory exposed to different hazards. If the insurer of a significant portion of industry, then government data may well be an appropriate starting point using market share to determine the insurer's particular interest. The UK Government has produced estimates of the numbers of the working population thought to be exposed to certain conditions which again provides a guide. Various studies into the impact of noise on working and other populations have been conducted. Examples of these are "Tables For The Estimation Of Noise Induced Hearing Loss" by D W Robinson and M S Shipton published in June 1977 by the National Physical Laboratory, "Auditory Impairment and the Onset of Disability And Handicap In Noise Induced Hearing Loss" written by Messrs Robinson, Wilkins, Thyer and Lawes published by the Institute of Sound and Vibration Research of The University of Southampton in November 1984 as their Technical Report No. 126 and "Noise Exposure And Hearing - A New Look At The Experimental Data" by D W Robinson published as the HSE Contract Research Report No. 1/1987. Similarly, in relation to Vibration White Finger, the Health and Safety Executive has published "Survey of Exposure to Hand/Arm Vibration" by K Kyriakides and denoted as Research Paper 261988.

5.1.4 It is often impractical or impossible to obtain original numbers of employees insured or widgets manufactured, although working back from wage roll or turnover levels based on average unit wage or price, will give a better guide than nothing. If only premium records are available, then guessing at the average rate charged will give a better guide than no information at all. The value of these exercises is that rates of notification for latent claims are often on the increase and any projection method can, in effect, be calibrated by the exposure approach - hence the need to obtain some measure of what is at stake.

5.2 DEFINITION OF EXPOSURE

5.2.1 While estimates could be made of the total cost to all parties of latent claims, whether covered by insurance or not, this section will focus on the insured cost.

5.2.2 The measurement of exposure is not straightforward for a number of reasons:

- a) The unit of exposure could be the policy limit less the deductible, or a multiple or a fraction of this. The result could be a theoretical maximum claims amount, a probable maximum claims amount, or the amount arising under a set of assumptions.
- b) Inwards reinsurance business gives rise to many complications. For proportional treaties one relies on the quality of the cedant's information system and a cedant's co-operation; often it is difficult to get a complete breakdown of claims reserves and the basis of calculation of reserves may not be clear, hence the provision of adequate exposure details may be virtually impossible. Excess of loss policies with unlimited reinstatements can imply theoretically unlimited exposure; the reinsurance wording and the existence or otherwise of an aggregate extension clause may cause uncertainty. In cases such as pollution, where there are fundamental uncertainties over what constitutes an occurrence, trigger of coverage, etc... then the underlying assumptions of the various scenarios will determine whether the liabilities lie mainly with the direct insurers or reinsurers. In retrocessional businesses these problems are compounded.

- c) Exposure may be measured gross or net of reinsurance. Both are relevant given that there may be uncertainty over allocation between cedant and reinsurer, and also the major problems of failure of reinsurance security, and tendency of some reinsurers to dispute (and delay their response to) cedants' claims.
- d) Missing policy documents for business written many years ago and lack of detailed records where run-off policies have been written for defunct insurers.
- e) Defence costs in addition to policy limits, insurer's legal costs and punitive damages awards against the insurers.

5.3 REASONS FOR MEASURING EXPOSURE

- 5.3.1 The main reason for measuring exposure is to assist in reserving; claims tend to be slow to emerge initially and are often followed by an avalanche of similar claims with perhaps some easing and further surges of claims. There is often a mass of litigation which takes years to mature before it becomes clear how insurance coverage applies and how liabilities are to be allocated between the various policy years affected. Knowledge of exposure helps in setting reserves since once can ensure, for example, that loss projections do not exceed the available coverage or the projected losses do not look unreasonably low in relation to identified exposures; also, one can estimate the impact of various assumptions, eg. on legal developments, in order to determine sensitivity of expected losses to the various sources of uncertainty.
- 5.3.2 Other areas where knowledge of exposures might help us are in considering the insurer's solvency position and capital requirements, purchase/sale of an insurer, cash flow projections, commutation of individual contracts, (both on direct and reinsurance business), assessing the impact of reinsurance security failure, and in internal management reporting.
- 5.3.3 In Appendix 4 of the 1990 Latent Claims Report, there was an outline of an asbestos claims exposure system in a London Market company and how it is applied in the context of reserving. With regard to US pollution claims exposure, data cannot be used in the same way; unlike asbestos, where bodily injury claims give rise to total loss claims on most affected policies relating to a small number of major producers, pollution claims are likely to involve a large number of separate sites and insureds and thus exhaustion of insurance coverage is not regarded as the most likely outcome.

In addition, there are many legal uncertainties regarding coverage; there are widely varying estimates regarding the cost of cleaning up any one site, and the share that any one "potentially responsible party" may have to bear is uncertain. Given the uncertainties, the decision theory approach illustrated in Appendix 8 of 1990 Latent Claims Report may be helpful.

5.4 PRACTICAL MEASUREMENT OF EXPOSURE

5.4.1 As can be seen from the preceding paragraphs, there are considerable problems involved in the measurement of exposure to latent claims. As claims begin to emerge and more data becomes available then some work can be done. This is particularly so for claims such as asbestos bodily injury.

5.4.2 However, for asbestos building claims and for pollution, there is still so much uncertainty as to the future likely outcome, that any detailed work on exposure may well give a misleading impression. It may well be helpful to find out what the potential exposure is, but one view is that given current knowledge this information is often not of specific use in actuarial projections. For instance, estimates of environmental pollution clean-up costs in USA range from \$50 bn to \$1,000 bn. The figures for Europe are not too different. Consider the effects on insurance policies for such a wide range of possible costs. But as court decisions are made, and the situation becomes clearer, the range of costs will become narrower and then exposure measurement will have much to offer the actuary.

The use of exposure measurement is explored further in Section 6.

6. PROJECTION METHODS

6.1 PROJECTION METHODS AND UNCERTAINTY

6.1.1 In last year's report, the progress of latent claims was described as being progressive or truly latent. Progressive disease develops over many years and arguments are used that the damage done in each policy period contributes a separate claim. Truly latent claims, it was argued, responded to some trigger mechanism which launched the progress of the disease. This leads to the case that the onset of, and subsequent development of, a class of latent claim for insurance purposes is correlated with calendar years rather than the period since policy inception, which is the more traditional actuarial concept. In the particular case of Asbestos Bodily Injury and Pollution claims, both arguments have been applied and US courts have reacted in different ways. Projection methods used must therefore depend upon a clear interpretation of the claim process and the key factors likely to influence the impact of the progress of claims on insurers. It should be noted that latent claims are not just an insurance problem, but may be a significant aspect in takeovers/mergers, privatisations and other commercial transactions.

6.1.2 The degree of uncertainty associated with significant latent claims is considerable, and the universe of claimants tends to expand because of publicity through the media, detective work by attorneys, the medical profession, the plaintiff and the authorities. In the US in particular there has often been a political element to the loss process, e.g. retrospective changes in legislation and legal interpretation of policy conditions not anticipated at the time policies were drafted. Indeed, some court verdicts ignore the policy wording if the general social good is deemed to benefit thereby. Latent claims may be subject to surges in both settlements and notifications as a result of landmark decisions or the anticipation of landmark decisions. Some insurers have experienced increasingly "lumpy" claim advices. The market initiatives established - eg Asbestos Claims Facility (ACF) - are believed to have speeded up claims settlements considerably (and significantly reduced defence costs). In the context of the ACF, a recent court decision (Outhwaite) has cast doubt on the reinsurance collectability of large sums already paid out and previously assumed to be recoverable.

6.1.3 The long latency period introduces special uncertainty into the analysis of exposure since policy records are frequently poor and not maintained by the insurer. Investigations of broker files may be needed to reconstruct a frequently incomplete picture of the business underwritten. It is also necessary for insured and insurer to match policy records and the insured will frequently have had several changes of insurer, or the insurer's reinsurer may have changed frequently. There is not therefore likely to be consistency in the insurance over the periods covered.

6.2 QUALITATIVE & QUANTITATIVE CONSIDERATIONS

6.2.1 The traditional methods used by underwriters and claims managers (such as arbitrary loading of notified outstandings or incurred claims) in the case of asbestos and pollution in particular have not generally recognised the scale or tail length of the loss development. The empirical evidence for this is the large proportion of Lloyd's syndicates failing to determine a reinsurance to close or declaring large old year deficiencies year after year.

6.2.2 Any "actuarial" projection method will also, very likely give the wrong answer, but the disciplines of modelling and closely monitoring expectation and outcome, and learning from these differences provides a continually improving reserving platform

6.2.3 Given the uncertainty in almost every aspect of the understanding of the likely progress of a latent claim, any quantitative analysis needs support and justification within a qualitative framework reflecting important considerations which affect the loss pattern but which are beyond the scope of the quantitative model. Consideration of the qualitative factors affecting the loss development provides additional scope for sensitivity testing. In the context of latent claims, projection methods are an approach towards providing improved management information to help focus management thinking onto key issues, to take a view on these unknowns and to form a reasoned judgement as to the appropriate reserving level for accounting and other purposes. A byproduct of the projection methodology may be a cashflow projection and a gross to net of reinsurance analysis, so enabling further business issues to be considered.

6.2.4 A quantitative analysis may consist of projecting claim numbers, average costs, curve fitting, assuming development according to precedent cases etc.

Qualitative factors may include - the scope and outcome of legal developments in various jurisdictions, the possibility of aggregation of losses, the impact of outwards reinsurance (including disputes), general views on the industrial and social scope of certain features of the claims and general views on the total universe of claims.

- 6.2.5 Depending upon the maturity of the data it may be possible either explicitly to assign weights to the different qualitative factors or else to take a view on the expected development of these features and shading the actual reserve about the quantitative projection appropriately. Maturity in this context may be measured in terms of the period since notification of the particular class of claim began to develop, and also in terms of the proportion that settled claims bears to notified incurred claims to date, this latter measure being a proxy test of the extent to which key issues of uncertainty have been resolved. As more information becomes available, court rulings are made, appealed and decided, and standard procedures for dealing with claims emerge, then the qualitative view can be modified and eventually more formally incorporated as part of the quantitative analysis. In many cases a simple projection approach is preferred to a detailed multifactorial method with the projections talked around within the qualitative framework.

6.3 TESTING RESERVING METHODS

- 6.3.1 The suitability of different reserving methods can be analysed in terms of the variability of the expected ultimate year on year, the ability to predict settlements and emerging IBNR in the year, and the outcome of specific factors affecting the expected loss development compared to the expected outcome at the beginning of the year. By having a preconceived idea of the expected position one year on and the reasons for this expectation, differences can be factored back into the reserving method and used to improve the projection method iteratively.
- 6.3.2 In common with the reserving of any class of business, the projection method must be capable of being explained in non-actuarial terms and justified both within and outside the company.
- 6.3.3 The degree to which a projection approach can be called a projection method or just management information depends upon the level of maturity of the latent claims. One might say that the "what if" perception of the projection reduces according to how much of the projection is driven by insurer-specific loss data, and how much by external global qualitative considerations.

6.4 RESERVING IN THE ABSENCE OF CLAIMS

- 6.4.1 Today we recognise asbestos, pollution, DES and others as latent claims because of the long delay between the event causing damage and notification of the claim and because of the unexpected nature of the appearance of such claims. Ten years ago, US Environmental Pollution was not identified as an impending catastrophe for the London insurance market and asbestos was widely held to be a minuscule fraction of its current cost to the insurance sector. Indeed, asbestos manufacturers were still able to obtain high level insurance coverage at very low rates, eg. \$50M xs \$125M for a premium of 2 per mille.
- 6.4.2 Are latent claims inevitable? Is there a basis on which reserves may be set aside now for an equivalent future catastrophe to that of asbestos or pollution? Should companies set aside reserves for these possibilities? These questions have many implications such as in the fields of exposure measurement (see Section 5) and loss equalisation reserves. Popularly cited examples of such impending disasters are fluorescent lights, electromagnetic vibrations from cathode ray screens, fibre glass (which microscopically is very similar to asbestos), disco deafness, Sick Building Syndrome etc.
- 6.4.3 The starting point for such a basis is a thoroughly researched tabulation of known latent claims. This might examine the events leading to the emergence of large classes of unexpected claims. Such a tabulation would include an analysis of the different impacts of improved medical diagnosis, the effect of the legal system, political impacts and wider social factors. If a historical pattern exists then this may form the basis of improved premium rating and tax allowable claims equalisation reserves.

6.5 PROJECTION METHODS

6.5.1 Limitations

There are many limitations with projection methods - both data interpretation problems and modelling/projection problems. Here we discuss data problems, and projection/model problems are discussed within the example section (6.7).

6.5.2 Data Problems

Emergent latent claims have very little data widely available because relevant studies have not been carried out, information is not disseminated widely through secrecy, self interest, self preservation and bad communication. Thus the scale of the potential losses is not generally recognised. Also the legal position regarding occurrence definitions may be purely speculative or subject to appeal or declaratory judgement. Very often, advices of outstanding claims are themselves not clear, for example in the case of pollution. The following problems are typical of the problems of interpretation facing insurers. They relate specifically to pollution losses but may be viewed as common to many other cases:

- (1) Lawyers reports are not always clear as to specifically which sites have a zero recommended reserve.
- (2) Whilst reports are reasonably clear as regards major site involvements giving a recommended indemnity reserve, they may not be so clear on the reserves at less significant sites. Sometimes a block reserve is suggested for an assured's exposure to a number of sites, which makes it impossible to decide which specific site carries a recommended reserve and which is at nil value. This makes estimating reinsurance recoveries impossible, particularly given the highly skewed loss distribution of site clean up cost which is emerging.
- (3) The site cost may be unclear because:
 - a) There is often a very wide range of potential clean up costs shown. In addition, the clean up costs for a site may vary between different assureds' reports.
 - b) It is not always clear whether a dump site is one site (eg. Stringfellow), several sites in one area but referred to under one name (eg. Shell Rocky Mountain), or dump sites spread around the country under one name, (eg. Scientific Chemical).
 - c) The reserve recommendation is not always subdivided between remedial action, third party claims, the different phases of clean up, or whether it includes costs incurred to date. Cost may or may not include defence costs. The ultimate cost after clean up and settling claims may bear little relationship to the estimate in the reports.

- d) Some site estimates appear to be just below the excess point for specific underwriters, though if the assumptions changed slightly, then a zero advice might become a non zero advice. The impact upon specific insurers is dependent upon the number of years and Potentially Responsible Parties over which costs are assumed to be spread. The chance of spreading costs over a smaller number of years or PRPs can lead to a very large gearing effect to some insurers, increasing the uncertainty even more.
 - e) Some assureds have definite and (likely to be) significant site involvements, but are not forthcoming with the relevant information.
 - f) Sometimes it is not clear whether the "clean up" costs are the assured's share or the 100% figure.
- (4) Reports sometimes seem to be self contradictory. The body of the attorney report may suggest no involvement, but various attachments to the report indicate the contrary.
- (5) There may be cases of double counting indemnity reserves - eg some owned sites are said to be 100% the liability of the owner, but they may also feature against other assureds' potential claims when these others are named as PRPs.
- This is also potentially a problem with parent/subsidiary - the parent may have the subsidiary's liability included and the insurer may be including the subsidiary in the analysis of assureds.
- (6) Policy coverage is often patchy:
- a) Primary cover is not always shown, and there are frequently unexplained gaps in coverage.
 - b) Not all policies have been found by the brokers.
 - c) The insurer's line on a specific risk may not be available.
- (7) Legal opinion is varied, some reports are bullish in that defence is solid (or claim is de-minimis) and no claim will become payable. However it is not always clear whether the attorney has allowed for the likelihood of coverage being denied or not.

6.6 THE MODELLING CONCEPT

- 6.6.1 The general actuarial approach of assuming that the past is a guide to the future is useless if there are no precedent claims. This leads to looser analogue models - e.g. comparing loss development with another class of business or adopting parameterised models. The latter approach has certain attractions in that the assumptions made regarding the parameters can be monitored and experience adjusted. However the starting conditions of the model present certain fundamental problems of quantitative and qualitative explanation.
- 6.6.2 Where there is no real development data then clearly a statistical test of adequacy of the model does not exist and can only be developed over time. If data is extremely limited then the results presented are effectively "what-if scenarios".
- 6.6.3 The examples set out in the following section only consider situations where some development data is available. The approaches vary from the purely pragmatic to more theoretically advanced approaches. None of the methods may be described as a theoretical/academic advancement of the state of knowledge, but are really different approaches which encourage underwriters and claims specialists to view the general problem from a different angle.

6.7 EXAMPLES

General Introduction

There may be many reasons for obtaining an actuarial investigation, including:

- a prior history of back year deficiencies casting doubt on the existing reserving methods
- a need for a second opinion, or any opinion
- legal or legislative, or for justification in order to obtain tax relief for latent claim reserves.

The following examples show some of the problems experienced and the considerable uncertainty surrounding the area.

6.7.1 Example 1 (Asbestos Reserving) Background

An underwriter has experienced consistent year on year deficiencies, even though at each year end he has felt confident in his reserve assessments.

Procedure

Initially some scene setting was carried out and a table was prepared, for all underwriting years combined, net of all reinsurance, showing for each of the last five calendar year ends the actual incurred claims, the deterioration in expected ultimate claims since the preceding year end and the IBNR set aside by the underwriter at each calendar year end. The underwriter's reserving philosophy was clearly shown to have been producing low estimates. The IBNR set aside provided for deterioration in incurred claims for periods of between six months and one and a half years.

Data Gathering

Actuarial investigations in common with any other work are constrained by time and cost and usually in the short term the actuary has to use whatever data can be easily extracted from the underwriters' systems. The company actuary will spend considerable time on constructing and maintaining good quality statistics and data. In the case of a consulting actuary, only after a reasonably long association, can detailed level data be achieved. The data in this case consists of manual records and summary statistics giving the assured name, the net paid and outstanding over the last 8 calendar years, with a subdivision between Bodily Injury and Building Claims, and direct advices and retrocessional advices. A further summary document was available giving the same breakdown by underwriting year rather than by assured.

Detailed records of underlying policies were not available for an exposure analysis. In addition, certain records relating to individual assureds were not available to the actuary for legal reasons.

Discussion with the underwriter brought out certain factors which might be expected to affect the loss development for the particular insurance company concerned. Principal amongst these were:

- all the claims are expected to be in connection with product liability

- a change in underwriting philosophy in the late 1960's to early 1970's, with lines on US direct writers considerably reduced
- a change in the reinsurance covers purchased over the same period, namely that the later years had aggregate extension clauses and that the earlier years did not
- a general movement to policies with combined single limits from separate limits, also during the same period
- the general landmark period also coincided with the period when contracts became legal costs inclusive within the policy limits.

Approach

The approach adopted was a simple one, but supplemented with considerable dialogue between the actuary and the underwriter, discussing the merits and demerits of the approach and the considerable uncertainty in making projections against a background of changing legal interpretation and development.

The data was subdivided as follows:

- | | |
|---------------------------------|---|
| by groups of underwriting years | - 1969 and prior
- 1970 and later |
| by category of claim | - bodily injury
- building claims |
| by underlying source | - direct
- retrocessional
(including LMX) |

The above showed net paid and net notified outstandings separately. This gives eight groupings in total. The data was presented on a calendar year basis and is illustrated in the graph.

Projection

The projection method used was to fit by least squares, a Craighead curve to the net incurred data.

The goodness of fit of the method was tested by stepping back a year, then two years, then three years and tabulating the estimated ultimate each time.

It was found that this approach had a tendency to increase its estimate of ultimate as time progressed. Namely that over the period for which the curve was tested, actual loss development exceeded that predicted by the curve. However, it was found that the year on year deficiencies generated were reducing, indicating that actual loss development may be approaching the curve fit as time goes on. This problem was explored by changing the curve parameters so that the B parameter was made a function of T, and only approaching B asymptotically. A suitable function was found for B which gave a greatly improved fit over previous time periods.

A further cross check to the method was applied by assuming that asbestos bodily injury would behave in its entirety as a book of US casualty business, and the incurred loss distributions shown in the Reinsurance Association of America loss development study for US casualty business provided a suitable loss profile for projection purposes. The rationale for using an accident year loss profile for calendar year loss development statistics (rather than underwriting year) is that the asbestos claims are developing according to landmark events in calendar years and are not so correlated with the delay period since policy inception. (Legal concepts such as loss "rollover" are the main exception.)

A significant parameter with both the approaches described is the assumption of the level of maturity of losses, namely how far along the time axis claims are assumed to have got. The assumption made was that the development period 1 occurred when losses first became noticeable, namely in 1980 for Bodily Injury (BI).

The curve fit approach was preferred to the pure external model because it is influenced by specific features affecting the particular insurer, and the volume of data was felt to be sufficient to give a sensible solution. Items such as the proximity of underlying assureds to policy limits, the results of specific lawsuits and other factors are not explicitly allowed for - these factors are only allowed for to the extent that they have already influenced the historical development.

The BI development showed a smoother pattern than Building Claims, and direct development a smoother pattern than retrocessional advices for this particular insurer. The graphs illustrate some of these points. Due to the lack of data points, the immaturity of both Building Claims and retrocessional claims, and the erratic development pattern, it was decided to use the BI results as a basis for projecting the Building Claims and retrocessional advices.

For Buildings Claims, a lag of 4 years behind Bodily Injury was assumed. Retrocessional advices are relatively small and a lag of two years behind direct losses was assumed for these items. The 4 year lag for Building Claims was chosen because this was believed to reflect the relative emergence of Building Claims losses relative to BI, similarly retrocessional versus direct losses.

Clearly the approach used is open to criticism from a number of viewpoints:

- (i) no attempt was made to measure exposure
- (ii) the method does not allow explicitly for important features like:
 - (a) certain contracts approaching policy limits
 - (b) explicit consideration of the different loss development characteristics of BI and Building Claims

These points were dealt with by highlighting the uncertainty of the likely future loss development of all these categories and discussing them within a qualitative framework with the claims managers and underwriting staff. Attempts to determine the theoretical maximum policy limits were also undertaken and the projected figures were found to be within acceptable bounds.

6.7.2 Example 2

An even more pragmatic approach has been suggested, namely that the fund carried for asbestos should generate sufficient investment income to meet annual settlements. The reserve equals the settlement divided by the expected gross yield on investments.

This approach has little theoretical justification but has considerable intuitive appeal. The reserve estimate is highly sensitive to distortions in the assured settlement rate resulting from settlement acceleration or delay because of factors outside the normal claim process. This approach also requires a certain level of maturity in the class of claim - the reserve for pollution claims on this basis would be relatively small!

6.7.3 Example 3 (Pollution Reserving)

Background

The significant increase in incurred pollution claims over the last year had caused the underwriter to go into more detail in his assessment of the reserves required for pollution claims.

Data

The data consisted of schedules of individual claims showing lawyers' outstandings, underwriter's estimated outstandings and settlements, split by assured, site and priority code. Lawyers' reserves had been established for 63% of the claim records.

Methodology & Results

The objective of the approach is to summarise the data into a triangular form which may then be modelled using a link ratio approach to provide an estimate of future development on known claims. Further analysis of the data is then performed to estimate a reserve for future claims.

The number of claims was broken down according to both the year the reserve was first established and by the year of notification. No details of the development before 1987 were available. From 1988 onwards, the total number of claims per year with reserves established for the first time is still increasing. The claims were analysed by priority code and the trend was the same for each category of priority code. Similarly the number of claims on which an underwriter's reserve or a lawyers' reserve has been established that are notified each year has not started to decrease.

The data was aggregated by assured, main site and where appropriate split by priority code. Each combination of assured, site and priority code is treated as separate advice. The analysis showed that the number of advices, by year the reserve is first established and by year of notification, is still increasing.

Lawyers' Reserves

The aggregated data was summarised by the year that the reserve was first established. This method shows the development of the lawyers' reserves from establishment without distortion due to the time delay between the notification of a claim and the lawyers setting a reserve. The analysis shows that there is often considerable delay in some cases between the claims being notified and the reserve being set.

The reserve for ABC was excluded from the modelling so that the large increase in incurred claims for this assured in 1990 would not distort the analysis. Incurred claims notified before 31 December 1990 were projected using a link ratio approach. No further loading was applied to ABC.

TABLE 1
Claims with Lawyers' Reserves as at 31 December 1990

	Paid \$000's	Outstanding \$000's	IBNER \$000's	Total \$000's
Other Assureds	81	5,520	6,525	12,126
ABC	0	2,313	0	2,313

IBNER refers to deterioration on claims which have had lawyers' outstandings established, that is, incurred but not enough reported.

To make allowance for lawyers' reserves being established on new assureds, sites and priority code combinations (new advices) involves projecting an average number of new advices per year for an estimated number of future years at an estimated average cost. As the estimated average cost per advice is significantly lower for 1988 and subsequent years of notification than for 1987 and prior, we have estimated the average number of new advices and average cost per advice from years 1988 to 1990 as shown in Table 2 below.

TABLE 2

Average Number of new advices 1988-1990	72
Estimated Ultimate for claims with Lawyers' Outstandings notified 1988 to 1990	\$ 4,440,000
Average Ultimate Cost for years 1988 to 1990	\$ 21,000
Estimated Ultimate for claims with Lawyers' Outstandings for 1990	\$ 2,475,000
Average Ultimate Cost based on 1990	\$ 29,000

The number of new advices with lawyers' reserves each year will depend on the following:

- i) Claims already notified with no reserve at present.
- ii) Claims already notified with underwriter's reserves only at present.
- iii) New claims being notified.

Table 3 summarises the implied results for a number of projected years of lawyers' reserves being established.

TABLE 3

	10 \$000s	15 \$000s	20 \$000s
IBNR	15,120	22,680	30,240
Ultimate	29,559	37,119	44,679
IBNR & IBNER	21,645	29,205	36,765
Percentage of Outstanding	276%	373%	469%

If the average cost per advice is based on 1990 only, the IBNR and IBNER, based on 20 further years, increases to \$56.0 million, a 715% loading on outstanding.

There is no precedent set in settled claims so a possible range of "win" scenarios was revised. Table 4 shows the percentage loading on outstandings for a varying proportion of cases settled for legal fees only. It has been assumed that legal fees comprise 25% of the projected Ultimate Costs.

	Cases Settled for Legal Fees Only			
	0%	10%	25%	100%
Number of future years lawyers' reserves are set				
10	276%	248%	206%	-7%
15	373%	337%	248%	17%
20	469%	427%	362%	42%

The loadings were compared with the policy limits on notified claims with reserves present. It was found that there was a considerable margin.

Summary

As with all pollution claims, the position is likely to remain uncertain for several years until case law in the USA becomes established. A reasonable range of possible outcomes was considered to be from:

- i) 10 future years, win 25%, average costs based on 1988 to 1990, to
- ii) 20 future years, win 0%, average costs based on 1990 only.

This gives a range of loads for IBNER and IBNR of 206% to 715% of outstandings. However, it is possible that the eventual outcome may be outside this range.

The approach can be criticised because:

- i) No attempt was made to measure exposure.
- ii) No allowance was made for the improvements in the pollution exclusion clause that have taken place and its different varieties.

6.7.4 Example 4

Variations on Example 1 have been used, where some of the criticisms are removed, in particular the likelihood of policy limits being exhausted. In these cases reserves are set on the basis of policy limits (plus perhaps a margin for additional legal costs) for the largest assureds, with a loading based on RAA factors or similar for the remainder. The approach tends to result in a significantly lower overall IBNR than the non selective method 1, since the distribution of amounts of notified incurred claims tend to be highly skewed, with the 10 or so largest assureds, out of perhaps 200 in total, representing 80% of the total incurred, with the largest assureds being close to policy limits, if not already through or in Chapter 11 bankruptcy.

Reserving levels prevalent in the market

There are very wide ranging IBNR loads expressed in a variety of ways, as a percentage of outstandings, as a percentage of incurreds, as loss ratios or as fixed sums. The amounts may be discounted or not discounted, gross or net of various levels of reinsurance (eg. proportional, facultative, excess of loss), and with or without allowance for reinsurance disputes and irrecoverables.

The particular circumstances of individual insurers have special effects on the levels, also the size of the problem in relation to other reserves, eg if asbestos and pollution are 1% of the total, then very large IBNRs are possible without materially distorting the bottom line. Unfortunately the converse is frequently true for Lloyd's syndicates.

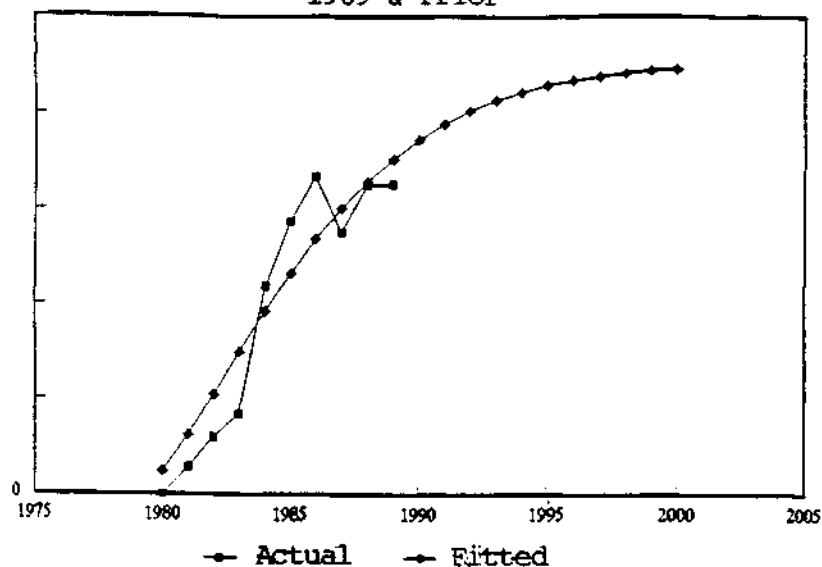
Data Requirements for Asbestos and Pollution Reserving

The list below gives the data for estimating reserves for Asbestos and Pollution reserves that is commonly available in the London Market:

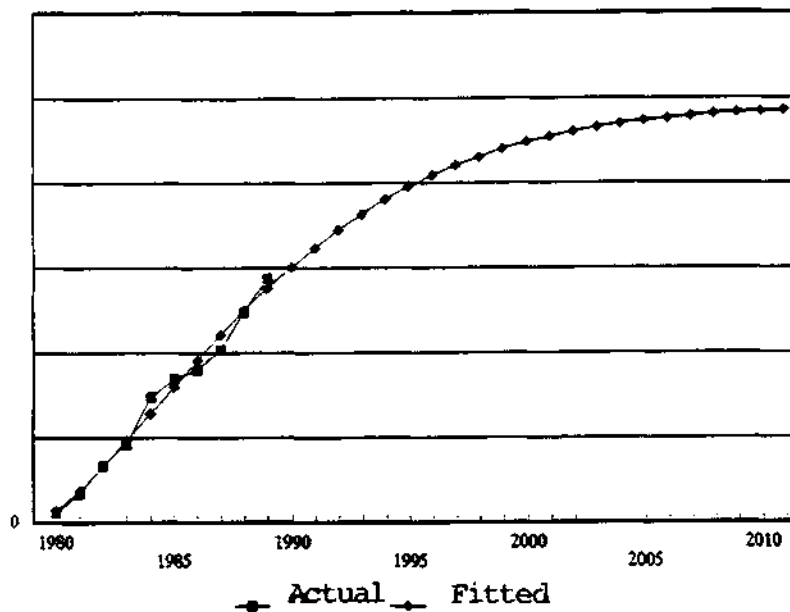
1. Split into Asbestos Bodily Injury, Asbestos Building Claims and Pollution. Pollution also subdivided between first party clean-up, third party clean-up and specific pollution (EIL) policies.
2. Site (for Pollution).
Assured commercial company.
Direct insurance company.
3. Underwriting year.
4. Year of notification.
5. History of payments and outstandings in original currency.
6. Policy limits.
7. Signed line.
8. Priority code for Pollution claims.
9. Pollution exclusion clause e.g. ISO, NMA (less common).
10. Reinsurance recoverables: facultative, proportional and excess of loss.

Asbestos - Reins/Retro Actual & Expected Incurred Claims

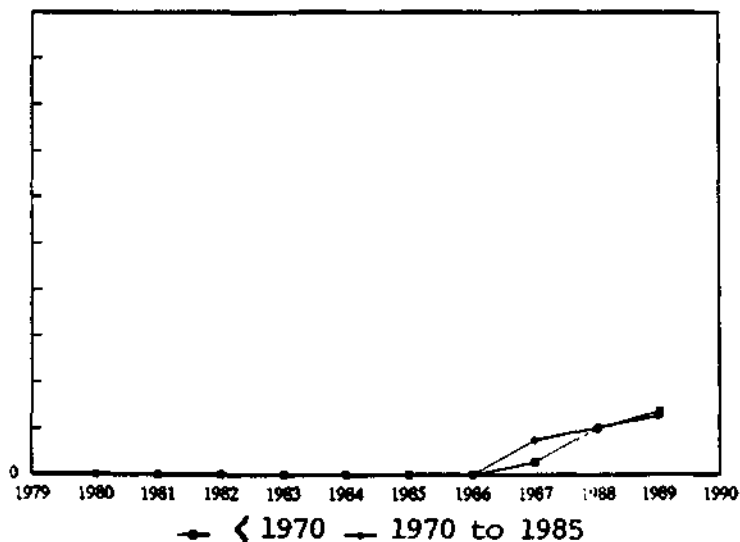
1969 & Prior



Asbestos BI Incurred Claims - 1969 & Prior



After BC Incurred Claims - 1970 & After



7. CONCLUSION

- 7.1 The structure of this paper clearly demonstrates our concerns regarding latent claims. We do not know the scope of known latent claims. No comprehensive central database is available. By asking various companies, at home and abroad, about their claims experience and their views of future claims, we can get a better feel of the breadth and severity of the problem.
- 7.2 There is evidence of a lack of comprehension (by some) of the potential for latent claims. Some companies may not want to admit the possible extent of their latent claims problems, and that may be one reason why they have not answered the questionnaire.

The slowness in (or lack of) response from UK insurers may have been a function of the detail being asked for. Many were keen to respond in detail and accurately, but found the process of data extraction arduous. Rather than simplifying the questions to a level insufficient for our required analysis to be performed, we followed the route of patience and a future working party will benefit from our late notified results and experience.

- 7.3 Countries have differing latent claims problems. The potential for latent claims in a country is not merely dependent on their specific practices of disposal, product design and testing, and marketing processes, but also on their litigiousness and legal system. The emergence of latent claims and the resultant effect on insurers arises from a plethora of causes.

Further work is necessary to follow up on the overseas survey. Our contacts have given us considerable potential to explore latent claims problems in more detail. The high response rate also encourages us to be more optimistic and possibly to create a wider portfolio of contributing countries.

- 7.4 Risk control is a subject close to the heart of the working party. To have a long list of exclusions in the policy wording gives insurers a bad name, does not serve the interests of the insureds and may then be overturned or ignored by future courts.

A more positive approach is to pre-underwrite a risk - to insist on certain minimum standards and to charge even more premium for the more risky risks.

The initial costs will be higher, but the improved loss ratios should prove their worth eventually. The insurers should thereby gain overall goodwill and be seen in a much better light by the general public.

For certain classes of risk there is good evidence of risk control, but these are few, eg. specific pollution insurance.

- 7.5 We have not produced too detailed a section on Exposure. To do so would greatly increase the mass of the paper and thus detract from the other more practical areas. Improvements in exposure measurement have taken place over the last few years and indeed we understand that databases of polluted sites are being established. These could be of substantial use in the future.

To measure the exposure of an insurance company is possible for direct business and facultative reinsurance, but the problems expand with non-proportional treaty reinsurance and may be impossible for proportional treaty business unless the cedant is particularly open and helpful. For retrocession business, including LMX, there is no accurate measurement that we know of or can guess at.

- 7.6 The section on projection methods is inherently practical. The scenarios and examples are realistic and give a flavour for the situations encountered by actuaries. Of course there is no one perfect method. Actuaries use their skills plus judgement plus experience to produce a projected value. They may well be wrong, perhaps substantially, but they can justify their methodology, rather than "just pick any number from the sky because it gives an acceptable bottom line figure in the accounts".

If the method used provides consistent results over a number of years, then the method attains an increasingly more acceptable status.

7.7 THE FUTURE

Where do we go from here? Clearly this conclusion has given some guidance for future work. This paper supplements that produced in 1990. Another can cover further areas, such as the question of tax relief for latent claims yet to emerge, to continue the UK and overseas survey work, and keep up with changes occurring in this field.

We believe that actuaries have more to contribute in this field both in the UK and overseas, and will benefit by us maintaining our momentum.