REPORT OF THE BOARD OF EXAMINERS ON THE EXAMINATIONS HELD IN

April 2002

Subject 403 — UK Fellowship General Insurance

Paper One

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. The examiners are mindful that a number of interpretations may be drawn from the syllabus and Core Reading. The questions and comments are based around Core Reading as the interpretation of the syllabus to which the examiners are working. They have however given credit for any alternative approach or interpretation which they consider to be reasonable.

The report does not attempt to offer a specimen solution for each question — that is, a solution that a well prepared candidate might have produced in the time allowed. For most questions substantially more detail is given than would normally be necessary to obtain a clear pass. There can also be valid alternatives which would gain equal marks.

K Forman
Chairman of the Board of Examiners

25 June 2002

1 *This question was generally well answered with many candidates making many of the points applicable for this class of business.*

Purchased by company to protect against the Directors and Officers of the company being sued for acts they have performed in their capacity as directors and officers of a company.
Typical exposure measurement are turnover, net assets and liabilities
Typical risk / rating factors are type of business, past experience and economy
Covers all acts except deliberate fraud by directors and officers.
This is quite a long tailed class due to the high incidence of litigation.
Reporting of claims tends to be fairly swift
Insurance likely to be issued on a claims made basis
Mainly distributed through Lloyds

2 *A straightforward bookwork question for which the majority of candidates scored very well.*

(i) One manufacturer's product could have a fault that results in failure after a certain time.

(ii) Storms can give rise to accumulations in a particular area, and buildings and contents can both be affected, periods of cold weather can give rise to burst pipes in one region or countrywide affecting both buildings and contents, periods of heavy rainfall can lead to flooding of whole areas, periods of dry weather can lead to subsidence in wide regions. Also economic conditions e.g. recession could lead to many theft related claims.

(iii) General downturn in economy, where interest rates and unemployment rates are rising combined with falling house prices. An industry in a region can face a downturn and this would give rise to accumulation. Also if business is sold through only one lender who for example had a relax lending policy this could lead to an accumulation of claims.

(iv) Explosion or other catastrophes in a large workplace. Latent diseases (e.g. Asbestosis).

3 *Business plans and strategy are being used more prominently recently in all types of industry and insurance is no exception. It is important for the company to know the effects upon it of departure from such plans and hence this is an area of great concern. The examiners were disappointed with the general lack of demonstration of knowledge of the effects upon the insurer of both a lower and a higher level of business volumes than expected. Hence only the better candidates managed to score sufficient marks to demonstrate their understanding to the examiners.*

Shortfall in volume

Possibly no effect if there have been increases in rates which have made up for the shortfall in volumes

Reduced contribution to cover fixed expenses and profit

If the fall is permanent, need to reduce fixed expenses, often resulting in redundancies with resulting cost

If the fall is due to more non renewals in the year rather than expected, rather than less new business, then there will be the additional cost of attaining new business to replace this.

may need to increase the advertising spend, commission rates etc.

may have impact upon brand, market share and share price (if quoted company)

Reinsurance treaties are usually written on a minimum premium basis, so the reinsurance is in relative terms more expensive.

Strategic plans may no longer be viable.

Will be a cash flow impact in timing of positive and negative cashflows.

Higher volume

Greater contribution to fixed expenses.

It would raise the question as to whether premium rates were way out of line with the rest of the market, which if this is the case could have an impact on future profitability.

May be short-term consequences e.g shortage of staff to administer polices and claims — leading to the recruitment of additional staff.

Claims control could be poor.

Claims service could be poor.

Claims experience could worsen if staff are overloaded with work.

Effect on SM, which is likely to reduce– is there sufficient capital to support the additional volume of business.

The large influx of business may result in the regulators taking more interest in the company.

The rating agencies may not look on the rapid expansion in a favourable light.

There may be knock on reinsurance effects if there is any quota share business and the additional business has been acquired because rates were inadequate

May need additional reinsurance treaties or renegotiation of terms.

Premium rates allow for investment return on all assets. As free reserves are spread over more policies, a lower rate of return will be achieved per policy and hence rates become inadequate.

4 *Candidates could generally state enough points regarding the items required for each category of information in modelling the business*

Future Written Premium.
- average premium per policy
- monthly
- by NB/Renewal

Future Claims
- claims handling expenses
- development notified claims
- IBNR
- UPR/URR
- future written business
- legislative changes

Future Expenses
- commission
- staff costs, rental etc
- exceptional capital expenditure

Investment Return
- investment policy, now + future
- investment climate/prospects
- security of investments

Reinsurance
- existing arrangements
- planned changes
- planned new R/I
- security of reinsurers

Economic Environment
- inflation
- interest rates
- recession/moral hazard

Catastrophes
- future claim rates/loss ratios
- changes in payment pattern

Insurance Cycle

For each of the above categories split information by LOB, Distribution Channel, Source and Region.

Correlations between parameters in assumptions
- distribution of parameters

Tax
cashflow
changes in Statutory Solvency Requirements
solvency margin/level of reserves
margins in reserves
profit margin / return on capital
dividend policy
contingency load
management risk attitude
other third party defaulting

5 *This question was aimed at testing candidates ability to demonstrate an understanding of surplus reinsurance treaties by working through reasonable simple arrangements. Many candidates could not demonstrate how such treaties worked, although the better candidates managed to score very high on this question. Even though the term Estimated Maximum Loss (EML) has featured in many recent exams and the core reading, candidates could not demonstrate how this applied in practice.*

In particular, this question highlighted how important it is for candidates to read the question carefully before starting their answer. The question states that the company ***retains £1,000,000 on any risk before any cession to the surplus treaties.*** *Many candidates failed to reflect this statement in their answers and assumed that the maximum number of lines were used in each case. Some even repeated this part of the question in their answer and then in the next line of their solution stated that in respect of risk 1 the insurer retained only £500,000.*

Assume no further reinsurance cover on risk 5, or state what reinsurance cover there is assumed to be and give the appropriate numerical solution.

Calculate cessions

			3	*5*	*10*	*20*	
Risk	*EML*	*Insurer*	*surp 1*	*surp 2*	*surp 3*	*surp 4*	*Total*
1	2	1	1				2
2	9	1	3	5			9
3	15	1	3	5	6		15
4	30	1	3	5	10	11	30
5	50	12	3	5	10	20	50

Calculate cession percentages

Risk	*EML*	*Insurer*	*surp 1*	*surp 2*	*surp 3*	*surp 4*	*Total*
1	2	50.00%	50.00%	0.00%	0.00%	0.00%	1
2	9	11.11%	33.33%	55.56%	0.00%	0.00%	1
3	15	6.67%	20.00%	33.33%	40.00%	0.00%	1
4	30	3.33%	10.00%	16.67%	33.33%	36.67%	1
5	50	24.00%	6.00%	10.00%	20.00%	40.00%	1

Allocate Loss

Risk	*Claim*	*Insurer*	*surp 1*	*surp 2*	*surp 3*	*surp 4*	*Total*
1	5	2.50	2.50	0.00	0.00	0.00	5
2	5	0.56	1.67	2.78	0.00	0.00	5
3	10	0.67	2.00	3.33	4.00	0.00	10
4	50	1.67	5.00	8.33	16.67	18.33	50
5	50	12.00	3.00	5.00	10.00	20.00	50

6 *Most candidates were able to demonstrate a reasonable understanding of the additional data and information required, although some failed to mention those issues particularly relevant to this situation e.g. paid claims for the last five years only for the business as a whole.*

The purpose the reserves are being produced, as this would influence the assumptions chosen.
A suitable measure of exposure.

Data Issues

A split of data between comprehensive and non-comprehensive to reduce the heterogeneity.
Monthly or quarterly triangle would help to improve accuracy of estimates.
Data should be split into homogeneous groups by accident year but allowing sufficient stability for projections will show changes in mix of business.
Currency / country of writing should be separately identified.
Data should be grouped according to claim type.
Reported claims numbers and notified outstanding claims would allow frequencies and severities to be calculated and any trends allowed for in the projections.
Comparison of notified incurred cost with calculated projections would allow a reasonableness check to be performed.
Was business written more than 5 years ago and may this give rise to claims payments beyond the fifth development year.
Is it likely that there will be no development of any business after the fifth development year or should a tail factor be used?
Details of individual large claims (claims in excess of £50k) included in the development data would let these to be allowed for when projecting. How much would depend on the extent to which these anomalies were expected to recur.

Data regarding salvage and subrogation
Availability of case estimates.

Other Issues

Legislative/market changes.
Changes in mix / exposure to cause change in claim frequency.
Materiality/size of book in relation to other business.
Consideration of insurance industry statistics for benchmarking
Any work carried out by other consultants if available
Claims handling expenses.
Independent inflation indices for spare parts, labour rates and court awards over period would improve choice of past inflation assumptions.
Consideration of likely future economic commentaries would help choice of future inflation rates.
Subjective input from claims and underwriting staff should be sought as to features of business over the period being considered.
Details of changes in policy conditions and / or underwriting criteria
Details of any changes to settlement procedures, reporting definitions, claim definition over period should be obtained and development factors adjusted where appropriate, including change of distribution channel.
What is the nature of the reinsurance protections in place throughout the period and how have they changed? — Information gross and net of reinsurance.
How secure in the reinsurance?
Discount rates for calculations.

7 *Many candidates found this question very difficult in both explaining the reinsurance treaties from the viewpoint of the insurer and the reinsurer, and in carrying out the calculation of the profit / loss in all cases specified. Many candidates therefore scored very low marks by not being able to demonstrate to the examiners their understanding of why this situation may have arisen even though they were effectively given over 25 minutes to consider the situation. Some candidates managed to score very high marks on this question by demonstrating clearly their understanding of how and why reinsurance operates.*

Many numerical mistakes were made in part (ii) because candidates did not read the question carefully e.g. taking the reinsurance commission as 29 rather than 29% of the appropriate premium

(i) There is little "sharing of fortunes", in particular for 2001. The one for year 2000 is very much in favour of company A while the 2001 treaty terms favour the reinsurers.

2000
- A very high proportion is reinsured — possibly for solvency reasons.
- The reinsurers were probably very confident that the business would run at a loss ratio of less than 71% and probably less than 67.5 %.
- If the business is profitable, most of profits go to company A.
- Reinsurers at best earn 3.5% but have unlimited loss exposure.

- Company A is virtually assured of making a profit. It gets a commission of 29% while its expenses are 25% on 70% of the business i.e. it can afford a loss ratio of 84.3% before it makes a technical loss).
- Investment return will depend upon timing of payments by A to the reinsurer.
- In a competitive market there is little incentive for company A to take drastic action to ensure the business runs at a technical profit.

2001

- The situation has changed completely and the terms very much favour the reinsurers.
- Reinsurance market likely to have hardened very considerably.
- Company A now exposed very significantly to adverse results (retention now 60% and loss participation clause with no overriding commission).
- Company A needs to ensure that loss ratio stays below 75%.
- Reinsures likely to have insisted on company A retaining a larger portion of the business for its net account.
- Company A probably only accepted these terms as
  (1) it was unable to obtain better terms anywhere else, and
  (2) it could not afford to retain even more of the business.

(ii) Year 2000

65% loss ratio: combined profit 10.0 mil

Company A	7.55 mil.	Reinsurers	2.45 mil

80% loss ratio: combined loss 5.0 mil

Company A	1.30 mil	Reinsurers	(6.3) mil

Year 2001

65% loss ratio: combined profit 10.0 mil

Company A	7 mil	Reinsurers	3 mil

80% loss ratio: combined loss 5.0 mil

Company A	(4.0 mil)	Reinsurers	(1.0 mil)

(iii) Additional covers likely to be taken are:

(a) Single risk excess of loss. This would cap exposure to large losses. Particularly important if the company has solvency problems.

(b) Catastrophe cover. This would limit the exposure to a catastrophe, for example if household buildings and contents business is written the effect of a storm or flood could be catastrophic.

(c) Surplus cover. This would enable the insurer to vary the amount of risk retained. This is appropriate if the insurer provided cover for large or unusual risks, e.g. very large houses.

(d) Aggregate excess of loss. This would cover losses sustained from a single event or from a defined peril over a defined period e.g. many small storms.

8 *Most candidates managed to make reasonable attempts to describe the features of Pet insurance asked for and showed their knowledge of the basics of general insurance by reference to this product. References to this being a 'short tail' class were noted!*

Product features

We need to consider the perils that are likely to be insured.
We need to consider the period of cover under the policy. That is, is it an annually renewable contract, or a single premium policy covering the lifetime of the pet.

We need to consider the benefit levels, and any indexation of those limits.

Usual benefits might include

Vets fees. This could be up to a max amount per year, or a max. amount per illness or treatment.
Hospital benefits — max amount payable or maximum stay in hospital
There could be different bands of benefits
Death / loss benefit — value of the pet up to a maximum value
This would cover death by accident and death by illness up to a certain age.
Kennel fees if the owner is hospitalised
Liability cover if a pet attacks a third party —
Liability cover if pet damages property
Advertisement costs if the animal goes missing
Cancellation terms
An excess could be applied; this could be a fixed amount or a percentage of the claim
Any pre-existing health conditions may not be covered.
There may be a maximum and a minimum age at entry
Certain breeds may be excluded
Certain uses of pets may be excluded
War risks and nuclear risks exclusion
Geographical limits
Certain routine treatments and vaccinations might be excluded

Any terms used in the contract would need to be clearly defined.
Customer needs have to be considered.
Different products for different distribution channels

Administration

How is premium to be collected?
Premium payment method / intervals
What rate of Commission must be paid?

What management information and control totals will be imposed?

What information do we want to hold?

Which party would carry out the policy and claims administration?
Will this be done in house or will one or both be contracted out?
Will specialist veterinary knowledge be required for the handling of claims?

Can current systems handle these claims or will an external system be required

How will claims be paid?
Direct to the policyholder or to the Vet
Different administration by different distribution channels

Pricing issues

First consider some initial pricing issues.

Risk Factors

Current Health of the pet
Age of the pet
Breed of the animal, as thoroughbreds are more prone to illness
Health of the owner
Conditions in which the animal is kept
Locality — countryside or town
Temperament of the pet
Value of the pet
Sex of the pet
Whether the pet goes out at night
Whether or not it has been neutered

We need to consider what rating factors are likely to be used. The most likely are:

- age
- Geographical area
- Type of Pet
- Breed
- Number of pets covered
- Value of pet
- Occupation of the pet — if it used in conjunction with any trade
- NCD
- Period of cover
- Pre-existing conditions for the animal may be excluded
- Pre-existing medical conditions that are likely to require hospitalisation may be excluded.
- The liability cover may not be provided if the pet has attacked others in the past
- Annual premium versus premium for the life of the animal

In order to derive a risk premium, there is no internal data available for assessing the cost of claims. Therefore need to look to an external market sources such as veterinary advice, Internet sites. Additionally, we would consider the premiums being quoted by other insurers, while considering the scope of the cover that they offer.

After having obtained a risk premium to our best ability, allowance would then be made for commission, expenses, profit, contingencies, tax, investment return and cost of reinsurance.

In looking at loading for expenses and so on, we need to project volumes of exposure and consider per policy and per premium loading. The cost of handling claims and administering the policies can be compared with that for some of our other products.

May be regulatory restrictions on premiums charged

Need to consider possibility of anti-selection

Any minimum sum insured/minimum premium.

Consider any group / affinity discounts

Possibility of purchasing reinsurance. This would enable the company to gain experience in this new area. We would need to carry out a cost/benefit analysis.

Claiming

When submitting a claim proof will be needed, this will generally be in the form of a Vet's bill — Vets letter of notification of death, Doctor's note for Hospital stays, or a report detailing the "damage" in the case of an attack by the pet.

In this respect external claims handling services may be needed.

We need to consider what claims information should be kept to help with our future rating.

Likely to be many small claims e.g. vets fees.

Small number of liability / large claims.

Notification and settlement delays are generally short.

Possibility of aggregation of claims e.g. in the case of an epidemic.