

EXAMINATIONS

April 2003

Subject 403— UK Fellowship General Insurance

Paper One

EXAMINERS' REPORT

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.

Mrs J Curtis
Chairman of the Board of Examiners

17 June 2003

The examiners would like to remind candidates of the importance of reading the front cover of the answer booklet and complying with the instructions. The examiners were pleased with a significant overall improvement in handwriting. Examiners marking scripts are under severe time pressure in marking all scripts by the deadlines given. Good handwriting helps. An additional factor which seems to be creeping into some candidates scripts is the failure to indicate the question number of the question that is being answered, or in some cases indicate the wrong question number. Clearly examiners take this into account when marking but such additional identification of which question is being answered does delay the marking process.

The examiners would also like to remind candidates not to write their solutions in pencil, only use the right hand side of the page and do not return scrap paper with the answer booklet.

Comments about individual questions are given below.

- 1** *Most candidates did not find a problem with this question and managed to list enough examples to gain in excess of half the maximum number of marks for this question.*

Exclusions are used to avoid payment by the insurer in situations where the policyholder is at an advantage through possessing greater personal information about the likelihood of a claim. Without an exclusion there would be a very high probability of a claim or that the risk could not be reasonably estimated.

Accumulation / high severity event
e.g. terrorism

Management attitude to risk

Make rates more attractive
e.g. excesses

Avoid moral hazard
e.g. no domestic household theft cover if there is no evidence of forced entry

Exclude cover for events where probability of loss is very uncertain
e.g. terrorism

Probability of loss from some causes very high.
e.g. dangerous sports excluded from standard travel policy.

Reduces claim cost and allows policy to be targetted at specific markets
e.g. restricted territory travel insurance

Exclude perils which are covered by another party.
e.g. household policy may provide some cover for travel but will not pay if there is a specific travel policy in force.

To be in line with the market
e.g. to avoid anti selection

To avoid frivolous claims/expenses associated with large number of small claims
e.g. policy excess £50

- 2** *This straightforward bookwork question was very well answered with only the second part causing difficulty in some cases.*

- (i) Professional Conduct Standards (content not required here)

GN12 — General Insurance Business: Actuarial Reports

Applies to preparation of formal reports on actuarial aspects of a general insurance undertaking, as employee or consultant, except where solely relating to investments

GN18 — Actuarial Reporting for UK General Insurance Companies writing US Regulated Business

Applies to actuary appointed by UK insurance company to provide opinions required by the IID of the NAIC, NYID and/or other State Insurance Depts in respect of a UK insurance company authorised in the USA

GN20 — Actuarial Reporting Under the Lloyd's Valuation of Liabilities Rules

Applies to actuary appointed by a Lloyd's managing agent to provide an actuarial opinion in support of general insurance solvency reserves

GN33 — Actuarial Reporting for Lloyd's Syndicates writing US Business
Applies to the preparation, by an actuary appointed by a Lloyd's managing agent, of actuarial opinions required by the IID of the NAIC or NYID, for Lloyd's syndicates writing relevant US insurance or reinsurance business.

Interim Prudential sourcebook

Any legislation regarding setting of reserves

Advisory Notes

The Faculty and Institute of Actuaries also issue Advisory Notes on particular issues from time to time. They do not carry the same weight as GNs, but offer advice, which an actuary should consider when forming or communicating an opinion.

Recent Advisory Notes cover provisions for bad debt, unallocated loss adjustment expenses and date related risks (e.g. millenium)

- (ii) To ensure consistency, otherwise standards will vary and undermine the degree of professionalism displayed

To provide a reference point to which actuaries can refer, so as to ensure that the work undertaken contains all of the necessary relevant info.

To signal to those outside the profession the standards to which the actuarial profession operates.

To minimise the potential for conflicts of interest arising.

To help actuaries avoid potential areas of confusion

To help actuaries ensure that information provided is complete, clear, concise and well explained.

Reduces government intervention in market

Legal requirement to do so

Provide protection against lawsuit for negligence.

3 *Overall the examiners were disappointed with the answers given to the second part of this question. Candidates were not generally able to make sufficient and reasoned comments upon the reserves together with the range of statistical methods available.*

(i) Management information

The information coming off the claims system will lead to the following

Potential issue that claims not now recorded on system

Frequency of claims will initially decrease — these notifications which used to be stored are now no longer included

Ultimate frequency may or may not be lower depending upon whether nil claims were removed from the system when such detail was available, or are still recorded as nil claims once the information that they are nil claims is received

Average cost of claims — initial costs may or may not increase (if standard reserve estimates are used).

Ultimate average costs will rise as the number of “claims” has fallen, assuming nil claims are not now recorded and previously nil claims were not deleted.

Implications — if management isn't aware that frequency is dropping due to this change in practice, they may make decisions based on a perceived improvement in frequency when this is not the case.

Inconsistency with previous year's MI

Opens a level of subjectivity as to what is a nil claim

Significance of issue relative to overall business

Increases average term to notification from origin

(ii) Reserving

There will be a distortion in the incurred cost (case reserves + paid) for the last two notification years. There is now a lower incurred cost initially. Also there won't be so much of a release of the reserves from the 'notification' cases, which are settled at nil cost. Therefore there is a need to be very careful when projecting from these triangles.

You would want information on the previous numbers of these claims which were put on the system and what reserves they had against them. Also what proportion of them were settled at nil cost and over what period by accident year, so that it is possible to see what effect they had in the earlier years of the triangle

Average cost methods will be affected if using claim notifications because claim numbers have changed. Therefore there would be a need to make an adjustment based on the number of claims.

Average cost method may not be affected if average payment and no of payments used

Paid chain ladder methods would not be affected, as the pattern of claims payments should not be changing

Bornheutter Ferguson — the ultimate loss ratio should not change unless there is a knock on effect on the way that claims are actually handled

Incurred BF will be affected — see comments above, the Paid BF won't be.

Availability to make adjustments to above reserving methods

Claims handling expense reserve uncertainty

No change in UPR

4.

There were many points that could have been made to answer this question. Given that there were 17 marks for this question many candidates were unable to make sufficient valid points to score enough marks. The better candidates scored dwell in excess of half marks on this question and generally went on to answer other question well enough to pass.

(i) Considerations

What are the main trades / occupations being covered by this policy

What vehicles are being covered —cars, vans, Goods Carrying Vehicles.

What is the cover — comp, TPO?

Has the composition of vehicles varied much over the past few years

What are company X's expectations? Risk appetite?

What probability of breach does the insurer prefer?

i.e. Do you expect to pay claims over the aggregate regularly (annual breach of the aggregate) or is it to cover extreme experience.

Is the cover going to have a clause relating to volumes of premium as extreme growth in volumes could cause an unexpected breach

In what territories is the business to be written and any relevant legislation and regulations

Factors to consider in the calculations are

Variation in claims frequency

Variation in per claim amounts

Variation in volumes of business

Large losses

What currency are claims to be measured in and who bears the risk of currency fluctuations.

A's solvency

Reinsurance arrangements

Size of fleet

Existing portfolio

Catastrophe potential

Data quality and quantity

(ii) Data

Data would be required to be gross of reinsurance

Want historic claims experience split by country and type of claim (TP, own damage, F & T)

Also split by underwriting year of experience with numbers and amounts

Require data going back at least 5 years

Want the exposures for each year by country

Would ideally require the data From Ground Up, if not available and data just above £5000 was available would require information regarding changes in the excess.

Number of vehicles covered each year by type.

Expected number of vehicles for the coming year — by territory if possible.

Country specific details of cover and the main risk factors

Details of all individual (or aggregate) large losses over a certain level (250,000 or below with a lower limit for earlier years to allow for inflation)

Exchange rates

Adjustments for past trends / changes in policy conditions

Adjustments for past changes in legislation

Future trends in assumptions such as frequency and severity

Information on who current and previous insurers are

Any market information you have on these insurers regarding their reserving strength

Inflation indices for each country

Own historic data from other similar risks/ trades — numbers, amounts, exposure, by country

- 5** *Even though this type of calculation question has been asked on more than one occasion in the past, several candidates showed that they did not understand how excess of loss reinsurance operates and the effect of reinstatements on the cover available for later losses. The examiners urge candidates to attempt past exam papers and study the examiners reports carefully. The 7 marks available in the second part of the question were considered to be the easiest 7 marks on the paper. The third part was generally answered very well with some candidates scoring the maximum 11 marks available.*

- (i) Reinstatement: The restoration of full cover following a claim.

RP: the premium payable for reinstatement

Normally the number of reinstatements, and the terms, will be agreed at outset

Normally automatic and obligatory on both parties

Often collected as an offset to losses paid

- (ii) (a) First claim $6.5 - 5 = 1.5$ is recoverable, and 1.5 is reinstated
- Second claim the part of the claim between 5 and 10 is recoverable i.e. 5 and a further 5 is reinstated, still leaving 3.5 reinstatement
- Third claim still have full reinsurance cover of 5 and so $9.5 - 5 = 4.5$ is recovered and remaining 3.5 is reinstated giving cover now of 4m xs 5m
- Fourth claim the remaining cover of 4m is used and so 4m is recovered
- (b) Following the calculation in (a)
- Reinstatement after first claim is zero as first lot of 5m reinstatement is free
- Of the reinstatement after second claim 3.5 is free and 1.5 is at rate $1.5 * 150 = \$0.225\text{m}$
- After the third claim the remaining 3.5 reinstatement at 150% is made at a cost of $1.5 * 350 = \$0.525\text{m}$
- No reinstatement left after that so nil for fourth claim
- (c) Rate on line is $500/5000 = 10\%$

(iii) Details of existing reinsurance arrangements

Appropriateness of existing reinsurance arrangements

Past claims experience — say 5 to 10 years dep. on company and reinsurance coverage

Effect on profitability of higher retention levels

Goodness of fit of statistical distributions to past claims experience

Size of company

Classes of business written

Solvency margin / free assets

Size of risks

Volatility of claims experience

Geographical spread of business

Accumulations of risk

Cost of reinsurance, value for money

Reinsurers security

Directors appetite for risk

Catastrophe risk
Need for technical help
Need to reduce SMSM
Need to stabilise results
Need for financial support
Possible reduction in admin costs if less contact with reinsurers
Change in volume of business
Reinsurance premiums relative to gross premium
Investment freedom
Alternative options
Relationship with reinsurer
Competitor retention levels
Availability of higher retention
Opportunity cost

- 6 *This question proved to be a good discriminator. The better candidates could clearly demonstrate to the examiners their understanding of the use of limited data for such an exercise. Many candidates failed to comment in part (ii) about all the claims information that would be available in respect of the most recent calendar year and just concentrated on that relating to the most recent year of inception.*

- (i) Use several different methods to calculate the average cost per policy so far.

Triangulate claims paid and frequency triangles to estimate ultimate cost and frequencies including:

- Cumulative cost of claims
- Cumulative number of claims
- Cumulative claim frequency per policy
- Cumulative average cost per policy
- Cumulative average cost per claim

Look at a variety of trends — with regard to cost and frequency per claim and per policy including:

- Business volumes
- Calendar year claim features
- Average cost per claim

Combine the triangulation results with the trends identified to estimate the likely future cost per policy

Assume that the first year of business is fully run-off

Assume no change in a variety of other factors including:

- underwriting process
- the source of business
- policy terms
- competitors' rates
- the extent of competition
- the claims handling process
- claims definitions
- the external environment; legal, traffic levels, etc.
- mix of business

Assume data is correct

Assume data is gross

Assume no effect owing to large claims

Extent of any reinsurance and its effect

Run-off and fit a tail, external market data

Identify previous advice given and seek out the author

Pattern of writing of business by year , development of business from 1st year of writing

- (ii) Staff changes which has led to changes in practice with respect to some of the following costs:

- claims handling expenses
- Net or gross of any excess applicable

May be using a different definition of zero cost claims

Wrong date may have been used to assess the claim development year

There may have been a change in the treatment or handling of reopened claims

Speed of claims handling may have changed

May have associated claims with the incorrect policy

Costs may have been put against the wrong claim

Data errors / inconsistencies

Not a full year of claims transactions

Changes in partial payments policy

Processing delays

Definition of claims settlement

Changes in allowance of recoveries

Legislation changes

Impact of catastrophe

Currency conversion

Latent claims
Inflation

- (iii) The incorrect premium may be calculated, which may adversely affect the management decisions regarding the premium to be charged thus leading to:
- underwriting losses suffered
 - loss of market share, leading to failure to adequately cover overheads
 - adverse selection, through attracting undesirable risks

Incorrect claims reserves set-up.

If over-stated then:

- reported results appear worse, leading to loss of confidence by shareholders, etc.
- collapse of share price
- reduces the apparent solvency, leading to possible regulator problems
- effect on relationship with reinsurer
- Inappropriate investment policy and reinsurance purchasing
- Ties in assets which might otherwise have been employed on other projects

If under-stated then:

- reported results may appear better, resulting in profits being prematurely distributed and potential problems meeting future liabilities
- tax payments would need to be made sooner than might otherwise be the case.

7 *The examiners were pleased with the appropriateness of the rating factors given by most candidates in answer to the first part. The second part proved more difficult with some candidates explaining the actuarial techniques in detail even though the question stated that this was not required.*

- (i) Hull &/or cargo
Holiday / permanent residence
Sole occupant / occupied during daytime
Business use?

Type of boat
Size of boat
Engine size
Maximum design speed
Moored?
If moored, where
When constructed
Manufacturer
Area of usage (inland / coastal or ocean going)
Value of boat / sum insured
Date of last out of water survey / state of repair
Hull construction type
Heating systems
Nautical training / qualifications
Occupation
Rented out?
Past claims
Excesses
Value of contents / personal effects
Locks
Alarms
NCD
Accidental damage / all risks cover?
Optional extras — e.g. Free contents cover
Personal accident
Possessions away from home
Age of policyholder
Modifications
Smoker status
Fire protection equipment
Specifics of cover
Premium payment method
Member of club

(ii) Get definitive list of factors currently in use

- so that the appropriateness of each can be assessed

Review documentation relating to the decision making process behind the decision made to use the current factors

- to identify where changes have occurred in the reasoning behind the factors.

E.g. Meeting notes / Board papers

Identify changes in the nature of the risks being covered

- the relevance of factors will vary depending on the sorts of risks being underwritten

Establish current underwriting practice

- this may impact on what is / isn't possible to use.

E.g. By phone, using lengthy cover request forms, etc.

Analyse past claims and risk related data

- to establish those factors that have been most effective in rating the risks covered

Discuss with IT and marketing what information is / isn't available / viable to collect / request

- to establish a full range of possible factors

Research what competitors are using

- to minimise the potential for adverse selection

Review changes in mix of business

- to help identify any relevant trends in take-up

Review changes in external factors

- to help establish continuing relevance of factors

E.g. Legal changes, effects of global warming, safety requirements

Discuss with reinsurers

Other rating factors / additional data

Industry stats to minimise adverse selection

- Multivariate stats modelling