EXAMINATIONS

September 2001

Subject 303 — General Insurance

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.

K Forman
Chairman of the Board of Examiners
20 November 2001

1 *Most candidates scored full marks on this question although some failed to mention anything more than Buildings Insurance.*

Residential buildings
Moveable property / contents / possessions
Commercial buildings
Land vehicles
Marine craft
Crop
Aircraft

2 *There were many items that could have been covered in this question which was largely bookwork. Candidates who clearly knew their bookwork scored very high marks. There was a good range of marks on this question which demonstrated that some candidates could not recall or did not understand the wide range of areas of risk and uncertainty in general and how in particular such a book of business would be affected.*

Premium rating structure does not accurately reflect the cost of the insured risks.
This may result in adverse selection.
The overall level of office premiums may be too low
Allowance for expenses is too low due to business volumes lower than expected
Business volumes / profit may be volatile due to competition.
Poor policy wording may result in additional unanticipated claims
The insurer will have to take appropriate measures to avoid moral hazard.
The insured risk profile may not be even over the policy duration
Claims costs or frequency may be greater than expected — adverse fluctuations.
Claims costs or frequency distributions may be different from those expected.
There may be concentrations of risk, for example for fleet business where more than one driver from the same fleet is travelling to the same destination
Geographical spread of risks should be considered, to avoid unnecessary accumulations of risk
Possible under reserving by the insurer poses a serious risk of insolvency.
Incorrect recording of data poses considerable risk as accurate data is crucial for the correct assessment of premiums and reserves.
Higher inflation than anticipated represents a minor risk —
if liability cover is included then most of the liability is short-tailed, though there may be some longer tailed third-party liability / injury elements which have greater impact.
Poor performing, illiquid or mismatching investments pose considerable risk.
Where the market is competitive, underwriting margins will be tight and investment returns a more significant element.
If investments are not sufficiently liquid then there is risk of exposure to random fluctuations in the level of claims
Risk of investment default
Catastrophes represent a considerable area of uncertainty.
Inappropriate or insufficient reinsurance levels of reinsurance
Third party default
Exposure to risk from political and legal changes / precedents

3 *Although this was a fairly straightforward bookwork question many candidates failed to mention more than a few distinct points. Very few candidates scored more than half marks on this question.*

Classes of business written
Change in company strategy
Reduce volatility of claims experience / smooth profits
Size of free reserves
Total premium written
Geographic area covered (e.g. flood is only a risk in some places)
Accumulations of risk, too much in one geographic area
Accumulations of risk, too much of one class of business
Accumulations of risk, risks where claims can occur in more than one class of business
Accumulations of risk, inwards reinsurance (but may not even know what you are reinsuring)
Availability of reinsurance / capacity
Value for money of reinsurance – return commission
Security status of available reinsurers
Any regulations on the amount and types of reinsurance that must be purchased
Existing relationship with broker / reinsurance
Risk aversity of management

4 *Most candidates could define the four terms. The main one causing difficulty was IBNER. Clearly candidates were guessing in some cases what it meant and in others clearly had no idea such as stating that it stood for Incurred But Not Ever Reported.*

(a) A time limit, usually defined in the policy wording or through legislative precedent, placed on the period within which claims must be reported. Generally applies to classes of business where a long delay may occur from origin of claim to awareness of condition giving rise to a claim and subsequent reporting — e.g. employer's liability.

(b) A form of reinsurance covering a single risk, commonly used for very large risks or portions of risk written by a single insurer, that are shared among several reinsurers. More time consuming than a Treaty.

(c) A reserve reflecting expected changes (increases and decreases) in estimates for reported claims.

(d) The risk that an insured may attempt to take an unfair advantage of the insurer, for example by suppressing information relevant to the assessment of risk or by submitting a false claim.

5 *This question provided a wide range of answers. Although an unusual reinsurance arrangement, not only did candidates not understand the order in which the two contracts worked but many had difficulty in understanding that for the surplus treaty that the minimum was always ceded. Some demonstrated that they did not understand the significance of the EML. A few candidates thought that the EML was the largest claim that could arise.*

(i) EML is the expected or estimated maximum loss

The largest loss expected to arise from a single event in respect of an insured property which may well be less than its market or replacement value.

Used as an exposure measure in rating certain classes, including reinsurance.

(ii) (1+N) * R

(iii) $10m EML is split as follows
A:B:C 5:2:3

Claim is $9m, A will pay $5m, B will pay 2/5 of (9–5)= $1.6m, C will pay $2.4m

An alternative answer of 5:0.75:3.25, was accepted if explained as it was apparent that from the tuition material that candidates could have interpreted this question in that way although the examiners consider the first solution to be more valid.

6 *Very few candidates had problems with this straightforward bookwork question.*

(i) One year accounts, which consider all income earned and outgo incurred in a year and permit the release of any profits at the end of the year
Funded accounts, which consider the business written in each year (and income and outgo pertaining to that business) and do not permit the release of profits until the end of a subsequent year (usually the third year)

(ii) Going concern, that the business will continue to operate for the foreseeable future
Accruals, revenue and costs are recognised as they are earned and incurred not as they are received and paid
Consistency, like items are treated in a similar manner within each period and from one accounting period to the next
Prudence, revenue and profits are not anticipated and provisions are made for all known liabilities.

7 *Most candidates gained good marks on this question. The main area where marks was lost was in part (iii) in describing ways a supervisory authority could influence the investment policy.*

(i) Maximise return
subject to meeting all contractual obligations and
recognising the uncertainty involved

(ii) Term of liabilities
Nature of liabilities
Amount of liabilities
Currency of liabilities
Absolute size of free reserves
Size of free reserves relative to written premium
Size of non-investible funds
Culture / risk averseness
Regulatory requirements
Moral / marketing aims
Asset deemed over / under priced
Expected return
Investment manager's advice
Availability of assets
Liquidity / marketability
Tax
Expenses

(iii) Restriction on which asset types are admissible for establishing solvency and meeting a minimum level of solvency
Restriction in amount for which each asset is admissible
Custodianship of assets
Prevent some assets being held
Prescribe that other assets must be held and amount thereof
Require mis matching reserves to be held if certain assets are held
Requirement of investment manager being experienced / take professional advice
Specify asset valuation methodology for statutory purposes

8 *There were many items of data which could have been mentioned for this class of business. Scores were generally low because candidates could not extend the normal data items needed to the particular product in the question. Nearly all candidates could list the basic items but only the better candidates could state many items relating to the data required about the builders.*

Policy Data:
Cover / Identifiers

Policy number
Policy status
Address
Geographical location (postcode, etc.)
House purchase price / sum insured
House-rebuilding cost index at purchase
Fees paid / premium
Endorsements / Exclusions
Policy Limits
Site number
Commission
Source of business
Excess

Dates

Date policy purchased
Date home started
Dates of various stages of construction
Date home completed
Date first occupied
Date of legal completion
Associated dates on which information is recorded
Term of policy / end date

Technical / Risk information

General risk information

Site size
House type (detached, terraced, flat, etc.)
Construction type (brick & block, timber frame, etc.)
Number of floors
Number of bedrooms / size of property
Floor space area
Site manager
Special features
Buildings standards in force
Inspection certificate

Construction information

Ground conditions / treatment
Trees / subsoil
Foundations type
Ground floor type
Wall type
Window / door types
Roof type
Basement?

Builder data

Builder current trading status
Trade association
Date commenced trading
Date ceased trading
Reason for ceasing to trade (bankruptcy, retired, etc.)
Builder size (number of homes completed in last *n* years)
Turnover
Profit
Builder Identifier
Any subcontracting information
Other accounts information
Credit Rating
Company Directors
How long has the builder been in business
Premium rating category / measures
Past claims history

Claims Data:

Identifiers

Claim number (link to policy)
Name of current owner
Claim status
Claim accepted as valid?
Claim investigated or cash settled
Remedial works contractor identifier

Dates

Date damage first noticed
Date reported

Date investigated
Date accepted as valid
Date initial damage case estimate made
Dates of payments
Dates closed
Dates reopened

Technical / Damage information

Type of damage / defect (code)
Damage / defect description
Location of damage
Causation of damage

Financial information

Initial estimate of repair cost
Current estimated cost of repairs / outstanding amounts
Paid so far
Type of cost — repairs / alternative accommodation / technical investigation
Recoveries made from third parties

Other data

Competitors premiums
Investment returns — for discount rate
Relevant inflation indices: RPI, NAE, House re-building
Salaries of staff employed to handle claims
Legal and professional costs
Equipment costs (computers, stationary, etc.)
Economic cycle
Building cycle
Profit loadings
Contingency loading
Reinsurance arrangements
Earning pattern of premiums

9 *Many candidates failed to demonstrate to the examiners the reasons why the Basic Chain Ladder method was not the best to adopt in this case. Some candidates failed to distinguish between the damage and injury type claims. In part (ii) almost all candidates mentioned Bornhuetter- Ferguson and other methods but failed to expand on further additional steps.*

(i)

Outstanding Claims Reserves = Outstanding Reported Claims + IBNR + Outstanding Claims Handling Expenses + Reopened Claims Reserves
Should always use more than one method to establish technical reserves.
BCL often more useful as just a broad brush check on other methods.
BCL method is very simple and has numerous implicit assumption.
Effect of large claims in data
Claims triangle unlikely to be fully run-off, so BCL cannot be used on the existing data to estimate the tail-end liabilities.
BCL assumes a stable run-off pattern from year to year. This is unlikely to be the case with TP cover which has low claim frequency and a skewed cost distribution.
Earlier years less credible as growing account from nothing
Might be reasonable for more frequent damage claims which are reported and settled quickly for relatively small amounts.
However, particularly poor for injury claims which can often take considerably longer to settle and are less frequent.
Future inflation is implicitly assumed to follow that experienced in the past data, which is quite likely not to be the case.
Internal factors such as changes to the claims handling process may have occurred to invalidate the "same pattern as the past" assumption.
As too can External factors, such as changes in the legal process.
Changes may also have occurred to the underlying risk due to things like;
Increased traffic conditions, changes to court award levels, changes to the risk profile due to competition or rate changes.
The most recent years are very uncertain, especially in respect of the injury claim liabilities, due to the longer delays.

Extent of reliability for IBNR will depend on basis of data.
Paid claims triangle – little is known of latest year.
Incurred claims triangle – greater information for latest year.

Extent of usefulness for estimating claims handling expense reserves will depend on the extent to which the claims data includes or excludes associated claims handling costs

(ii)

External data and curve fitting might be available in order to assess the likely extent of the "tail"
May use additional methods of assessment, including amongst others;
Inflation adjusted chain ladder

Bornhuetter-Fergusson
Average Cost per claim methods
Analysing the various delays in the lifecycle of a claim may provide insight into how the "tail" may look
May approach reinsurers for technical assistance
May adjust the data for known internal and external factors
Ask the underwriters or other experts
Other reserves such as UPR, APUR etc.

10 *This question tested the candidates ability to determine which types of insurance products would be required for such a commercial enterprise. Most candidates managed to mention most of the products but some demonstrated that they did not understand the difference between perils, risk factors and rating factors. Some candidates clearly ran out of time and failed to complete part (iii)*

(i) Employers Liability:
This insurance indemnifies the insured against legal liability to compensate an employee or their estate for bodily injury, disease or death suffered, owing to negligence of the employer, in the course of employment.
Perils are largely grouped as;
Accidents caused by negligence of the employer or by other employees
Exposure to harmful substances
Exposure to harmful working conditions

Public Liability:
The insured is indemnified against the legal liability for the death or bodily injury to a third party or for damage to property belonging to a third party, other than those liabilities covered by other liability insurance.
Perils will include compensation for injury from falling objects, pollution, etc.

Motor Fleet Third Party Liability:
Third Party Liability indemnifies the owner of a motor vehicle against compensation payable to third parties for personal injury or damage to their property.

Motor Property Damage
Indemnifies insured against loss or damage arising to their vehicle from specified perils such as theft, subject to any limits or excesses.

Commercial Property Damage:
As per motor property damage..
For Commercial Fire perils include mainly fire, but can also include Explosion, lightning, theft, storm, flood and vandalism

Pecuniary Loss:
Protects the insured against bad debts or other failure of third parties or effects of recession, as specified in the policy

Fidelity Guarantee:
Covers the insured against financial losses caused by dishonest actions by its employees, including loss of money or goods owned by the insured or for which the insured is responsible, and reasonable fees incurred in establishing the size of the loss.

Business Interruption:
Indemnifies the insured against losses made as a result of not being able to conduct business
Perils will include items such as fire at insured's property, and fire at neighbouring properties.

Product Liability
Indemnifies insured against legal liability for death or injury to third party, or damage to property belonging to a third party arising from product fault. Perils include faulty design, packaging, misleading instructions etc.

Group Medical and Personal Accident Insurance
Indemnifies the insured against some or all sorts of the costs for medical treatment and fixed amounts for loss of limbs etc.

Crop insurance:
Indemnifies the incurred against losses made to the crop

- disease
- fire
- storm
- drought

(ii) Employers and Public Liability:
Payroll / number of employees
Type of business
Claims experience
Location of workforce
Equipment used / Processes involved
Materials handled
Health & Safety measures / procedures
Training
Turnover
Deductible

Motor Fleet:
Use of vehicle
Age of vehicle
Number of vehicles

Value of vehicles
Type of cover
Excess
Occupation of drivers
Sex of driver
Age of driver
Type of vehicle
Location of vehicle overnight
Weight / capacity
Area of use (local / national)
Maintenance procedures
Level of use
Claims experience

Commercial Property
Size of farm / number of buildings / sum insured
Use of buildings
Construction design
Location
Value of stock
Age / condition of buildings / machinery
Excess
Claims experience / training provided
Fire precautions
Security measures

Pecuniary Loss, Fidelity Guarantee, Business Interruption:
Type of business
Turnover / earnings / sum insured / profits / projected sales
Value of work in progress
Materials handled
Equipment Used
Indemnity period (3-5 years)
Years trading to date
Previous bankruptcies
Financial Controls / Security(Cash kept on site)

Product Liability
Size of trees
Associated components
Packaging
Chemicals used in farming process
Location of sales (country)

Medical / Personal Accident
Age
Sex
Cover

Number of people covered
Region
Medical history
Sum insured for PA
Activities in workplace

Crop Insurance:
Location
Past claims
Variety of tree
Use of pesticides
Sum insured / crop value
Security measures
Exclusions
Tree density
Fire prevention measures

(iii) Employer's Liability:
Many claims likely to be reported and settled quickly. However, some may be complicated due to origination over long periods of time.
So long reporting delays (due to appearance and notification)
And long settlement delays (due to determination and agreement of extent of liability and settlement of conditions).
E.g. Asbestosis, or here perhaps long-term effects of use of chainsaw.
Therefore long-tailed.
Claim frequency quite low, but seasonal effects.
Average cost of claim distribution quite skewed.
Potential for quite large individual claims and accumulations of risk arising from the same cause.

Public Liability:
Similar to Employers' liability, though reporting delays unlikely to be long
Motor Liability Claims:
Greater frequency than Employers' and public liability claims.
Cost distribution not dissimilar
Reporting and settlement quicker, though not as fast as property damage claims.
Accumulation of risk not quite so great — class action case shouldn't arise.

Motor and Commercial Property:
Claim event sudden and easily determinable, so few reporting and settlement delays.
However, some settlement delays can occur on larger claims to verify value of stocks, etc.
Frequency is greater than liability claims.
Average cost distribution is less skewed.

Accumulations are generally possible where there is a risk of fire on a particular business park site. Though this is unlikely to be the case unless there are neighbouring farms also covered

Pecuniary Loss & Fidelity Guarantee:
Generally few reporting and settlement delays — short-tailed.
Frequency and cost of claims usually low.

Business Interruption:
Generally few reporting and settlement delays — short-tailed.
Frequency and cost of claims usually low.
Though settlement delays may be longer than for Pecuniary Loss owing to greater need for verification.

Product Liability
Generally few reporting delays
May be long settlement delays in determining liability
Low claim frequency
Very skewed cost distribution

Medical / Personal Accident
Generally few reporting and settlement delays – short tailed
Sometimes subject to dispute
Claims often quite small in size

Crop Insurance:
Short tailed, except for claims arising from disease
Catastrophic
Frequency effects
Low frequency
High average cost