Faculty of Actuaries **Institute of Actuaries**

EXAMINATIONS

April 2003

Subject 403— UK Fellowship General Insurance

Paper Two

EXAMINERS' REPORT

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.

The examiners considered this to be a well balanced paper between candidates with London Market experience and those working in Personal Lines areas. Good candidates without the London Market experience generally made a very good attempt at question 1 with Bankers Blanket Bond proving the only difficult area.

Comments about individual questions are given below

1 *Candidates with experience in the London Market clearly showed a strong knowledge on this topic and generally scored well. Many marks could have been scored without this background knowledge. Part (I) was generally better answered than part (ii) which somewhat surprised the examiners. The points given below indicate the issues which the examiners were looking for in the candidates solution.*

(i) data request

For each LOB,

- Individual claims From Ground Up
- Gross and net paid triangle, quarterly
- Gross and net incurred triangle, quarterly
- Gross and net premium triangle, quarterly
- Estimated ultimate claims, gross and net, by year
- estimated ultimate premium, gross and net, by year
- rate changes by year

details of all inuring reinsurance programmes purchased

- class/es of business covered
- attachment,limit, any annual aggregate deductible, reinstatement terms, current incurred and paid losses
- basis of cover, losses occurring during or risks attaching
- will run-off cover be purchased for losses occurring during covers?
- who are the retrocessionaires? (to help estimate bad debt load)

details of all large losses, gross and net, at quarterly evaluations from date of loss
details of any losses subject to dispute or litigation

current bad debt reserve held

actuarial reports available

internal management reports

FSA returns

Questions

Claims team structure, levels of experience, authority
changes to claim procedures over time
retention efforts to keep claims staff
how is bad debt monitored/reserved

By LOB, general
- background of lead underwriter
- business mix/approach changes over time
- average and normal maximum line size
- detail of any stop loss or agg xl or annual aggregate deductible policies
- claims made v occurrence coverage offered
- details of multi-year policies written
- rate changes estimated
- frequency/severity trends
- court awards/pending cases
- large/cat losses
- problem treaties
- latent claim exposure
- unexpired risk

Extended Warranty
- Byas Mosley lineslip exposure?

Bankers Blanket Bond
- ABN Amro fraud etc.
- recent deterioration in claims experience

Facultative
- detail needed as to what included
- property, liability, Personal accident, Directors and officers etc.
- detail of schemes written e.g. Holt, Aon facility, Benfield Greig Caribbean.
- any Workers compensation/Personal accident carve out (Unicover…)

Property XL
- cat exposure management
- territorial exposure
- development of large losses e.g. Lothar, Martin….

Liability XL
- moves from claims made to losses occurring during
- any tobacco/accident, pollution and health

Motor XL
- detail of Ogden treatment for UK
- Also Woolf, NHS….

Prof. Ind.
- claims made or losses occurring during
- any big 6 accountants exposure
- pensions mis-selling

(ii) Analysis

Stochastic estimate of ultimate net loss reserve by class
may project gross, RI recovery and net separately
Allowing for correlation, stochastic estimate of total ultimate net loss reserve
Stochastic estimate of ultimate net loss payout pattern
Calculate NPV of mean losses to layer, at appropriate discount rate
Allocate capital based on variability of results modelled to layer, to determine profit load
Allow for tax, internal expenses to calculate loaded rate
consider sub-limiting or excluding vary variable or unquantifiable exposures
sensitivity test result on payout and mean loss amount
need to allow for potential changes in claims handling/settlement procedures

2 *The examiners were surprised to find that on the whole the solutions given to question 2 were of a lower standard than question 1. In particular the solutions to part (ii) were generally very short and picked up on very few of the issues which the examiners were expecting. Even the standard part requiring comments upon appropriate reinsurance was not very well answered by many candidates.*

(i) Need to consider policy coverage and risk exposure
Then need to obtain related data in order to model potential future claims outgo.
From the question, the implication is that there is no significant insurance of this form existing at present, so need to find a variety of proxies as close to it as possible
This may take the form of new home, new car or white goods warranty cover
Alternatively there may be other similar organisations of insurances sold elsewhere in the world.
Also, likely to be beneficial undertaking a survey or pilot study in order to obtain information relating to potential for claims locally

Perhaps review complaints received over last few years, or discuss remedial works undertaken by large builders involved in setting up the scheme.
Consider quality of workmanship, etc.
Assessment of risk premium will then depend on the pricing mechanisms, rating factors to be used.
If sole provider of this type of insurance then a simple structure with few factors will be viable.
Competitive market may mean more rigourous analysis required.
Analysis should be undertaken on frequency and severity separately.
Multi-variate and stochastic analyses preferred if sufficient data, though unlikely to be viable here
May consult reinsurers for assistance, especially as they will most likely be heavily involved in risk sharing proposals
Risk premium will need to include allowance for reinsurance premium
(i.e. Gross risk premium = net risk premium + risk premium charged by reinsurers)
Long term of cover means that inflation and future investment returns will be important.
Need to make due allowance for various premium rating mechanisms as these may affect the risk premium required.

For example, many builders may undertake their own repairs in order to maintain market reputation, protect market reputation, etc.
Also, profit sharing arrangement may also affect builder behaviour.
For each distinct risk category model the information available under variety of scenarios in order to select most appropriate rates.

(ii) Term of policy quite long, so allowance for inflation and future investment returns quite a significant component.
Expected real rate of returns on assets to be held to back the liabilities is of particular importance, rather than the separate inflation and notional investment return components
Risk premium will need to be expressed in present day terms, so future claims will need to be modelled and discounted back at expected real rate of return.
Pricing as a whole needs to be assessed on a mean estimate basis with explicit profit and contingencies loaded separately.
This allows for greater understanding of true underlying risk and premium levels required to achieve profitability
Long term nature of policy will mean that Contingency loading will make due allowance for uncertainty in expected real rate of return on assets.
Levels assumed for inflation and investment returns likely to be a blend of market sentiment and actuaries own professional opinion.
Allowance to be made will consider past economic and investment data, especially more recent.
However, the past is not necessarily a guide to the future, so the assumptions must make due allowance for current and potential future state of the markets / economy.
Need to consider the assets that will be held to back the technical liabilities.
Likely to be varying short — long term fixed and index-linked securities.
Index-linked may be suitable for matching real (inflation-linked) aspects of liabilities.
However, likely to be subject to different inflation rates, house-rebuilding cost inflation, salary inflation, etc.
Also need to consider solvency levels, which assets are to be used for free reserves and the likely capital allocation to this business.
Quite tight to start with, due to minimal capital provided for start-up, so likely to be held in safe, liquid assets.
Especially given the uncertainty regarding the potential claims profile.
Asset-liability modelling may be used to assess suitable matching portfolio.
As part of this exercise will need to project expected future claims
This may involve testing of many different scenarios, and may use stochastic models to gain better understanding of distribution of outcomes.
Important to gain good understanding of potential claims runoff as ten year period is quite long.
If earnings curve wrong to start with may result in many years worth of unprofitable business written before discovered.
Degree of uncertainty increases with time. This will be allowed for through significant contingency margin
Assumed rate of return should mirror stated objectives in Business plan, with risk of non-achieving allowed for through contingency margin.
Also, allowance will need to be made of Board's tolerance for risk

(iii) The aim of experience rating is to differentiate between different levels of builders risk
Also, means that policyholders will benefit from good claims experience, so may help to engender reduced claims risk

Main questions are Retrospective vs. prospective and frequency or cost based approach?
As this is a new business, retrospective is more appropriate — no previous experience available
However, needs to cover a suitable term, as too long may mean the builders pay little regard to it (short-termism), and too short may mean that claims not fully run-off.
Also, even ongoing, past data will not be a reliable measure of future risk due to staff turnover.
However, it may be possible to operate a limited prospective rating system in addition to the retrospective.
The effect may be to encourage reduced claims for the insurer, even though it does not reduce the incidence of failures — it may encourage builders to undertake their own repairs
This has the benefit of improved customer relations, is cheaper as there is no profit margin being paid, and they may save on the VAT side — insurer unlikely to be able to reclaim much VAT
As claims frequency is likely to be low, cost rather than numbers based system will probably be more appropriate
Allowance would need to be made for exceptionally large claims
Numbers based system requires relatively high frequency in order that it doesn't just reflect bad luck

(iv) Legislation impacts from the outset as the proposed venture may require authorisation from the Regulatory Authority in order to transact insurance business in the country concerned.
The purpose of this is to protect potential future policyholders
Regulatory Authority may require a detailed business plan including;
Sources of capital
Information on key personnel — Directors, managers, controllers, etc. All of whom should be appropriate persons for running an insurance company.
Systems and controls
Business volumes projections
Solvency requirements have a significant impact on a new insurer where the available capital is limited
As it is difficult to tell what level of business volumes there will be it is difficult to judge the potential capital requirements.
The potential for a booming economy may result in significant volumes and thus new business strain and
Limited capital coupled with solvency requirements may limit the Investment policy freedom.
The extensive work required to satisfy legislative requirements results in high set-up costs
Also, need to adhere to the various Companies Acts and other more general legislative requirements that may be in force.
E.g. requirements may include detailed documentation of procedures and policy matters, systems and controls
Also, may need to include details of reinsurance policy and reinsurers used
May require pre-certification of premiums and rating structure

(v) Levels of reinsurance will be quite significant due to it being a new company / insurance product.
Likely also to be seeking as much technical assistance as possible.
Quota Share will be especially useful in this case as it provides a means of spreading the risk and limiting the initial uncertainty.
Also, it eases the new business strain problems caused by the degree of uncertainty in underwriting business which due to the limited capital requirements can not be otherwise mitigated.
May retain only a very small proportion, though this depends on the extent to which reinsurers wish to be involved.
Excess of Loss treaty will be useful as it will limit the impact of unexpectedly high levels of claims.
Best arranged on a cover incepting basis if available — term of policy should cover the expected claims profile — at least 10 years.
However, it may be possible to arrange a Stop Loss cover if claims across inception years turn out to be high
There may be several layers, the lowest of which may be set at quite a low excess point — i.e. a working layer — in order to help reduce the level of uncertainty in the new business.
Higher layers will essentially reflect catastrophe potential — i.e. systemic risk, where a whole batch of conservatories have a design flaw.
Always preferable to use AAA rated reinsurers, especially in this situation as requires as much improved certainty as possible.
Also, should spread the risk over several reinsurers, though the extent of this may depend on their respective ratings.
The aim is to build a long term relationship with a view to ensuring reasonable long term stability.
Possibility of Financial Reinsurance owing to limited capital
Deal with local RI as required by regulator