

EXAMINATIONS

13 September 2002 (pm)

Subject 403 — UK Fellowship General Insurance

Paper Two

You must answer this subject only, you may not attempt another subject in the 400 series.

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*
2. *You have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*
3. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
4. *Mark allocations are shown in brackets.*
5. *Attempt both questions, beginning your answer to each question on a separate sheet.*

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.

In addition to this paper you should have available Actuarial Tables and your own electronic calculator.

- 1 A UK general insurance company that writes both motor and employer's liability business has been put up for sale. At 1 January 2003, the purchaser will receive the assets of the company totalling £1bn which are held in government bonds and will be responsible for the liabilities in respect of all outstanding claims, IBNR and unexpired risks as at 31 December 2002.

The following financial information is available:

- Written premium for 2002 is estimated to be £400m.
 - Business is written uniformly over the year.
 - Current business plan shows that premium is expected to grow at 10% per annum.
 - Commission rates are 10% of written premium on average.
 - Expenses represent 20% of written premium on average.
 - Deferred Acquisition Costs are established as 30% of the Gross Unearned premium Reserve.
 - Incurred loss ratio is expected to be 65% of earned premium.
 - Outstanding claims reserves are 125% of premium written in the previous twelve months.
 - The Company pays no tax.
 - Investment Income is earned at 5% per annum on the mean funds.
 - Dividends are paid at the end of the year so as to leave the solvency margin expressed as a percentage of written premium at its current level.
 - Historically the impact of reinsurance has been minimal and can be ignored
- (i) Show that the shareholders funds as at 31 December 2002 are £360m. [3]
- (ii) Construct revenue accounts and profit and loss accounts for the 3 years, 2003 to 2005, stating any additional assumptions that you make. [12]
- (iii) Calculate the net present value of the future stream of dividends using a risk discount rate of 15%. [4]
- (iv) Discuss the other factors that you would take into account when considering whether a purchaser should pay the amount determined in (iii). [10]
- (v) During the due diligence process it has come to light that a significant number of policyholders had been involved in industries that involved the use of asbestos. Discuss the additional risks that the company faces as they relate to the reserve estimates. [6]

- (vi) The purchaser has asked for your advice on how the assets should be invested. Draft your response. [7]
- (vii) The purchaser has suggested that as the reserves for outstanding claims are shown on an undiscounted basis, after purchase some capital could be released by changing accounting policy to a discounted reserve basis and paying a special dividend. Discuss the issues that this course of action may raise. [8]
- [Total 50]

2 You are an actuary working for a reinsurance company operating in the London Market.

The company writes the following lines of business:

- aviation insurance and excess of loss reinsurance
- marine excess of loss reinsurance
- Surplus lines insurance (US risks written by insurers domiciled outside the US)
- US property per risk excess of loss
- US property Catastrophe excess of loss
- personal accident insurance and reinsurance
- LMX property

A series of large earthquakes has struck the San Francisco Bay area of California, USA, over a period of 48 hours. They have caused massive damage to property, and significant loss of life. The seaport area has been largely destroyed. The airport was also seriously affected. Three loaded passenger jets were caught on the runways, resulting in a number of fatalities.

In the immediate aftermath of the event, you have been asked by the Finance Director, who does not have an insurance background, to write a report outlining the potential areas of your company's business that could suffer claims, and discussing the major areas of coverage and coverage uncertainty.

Draft your report to the Finance Director. [50]