

EXAMINATIONS

11 April 2002 (am)

Subject 403 — UK Fellowship General Insurance

Paper One

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 all 8 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.

<p><i>In addition to this paper you should have available Actuarial Tables and your own electronic calculator.</i></p>
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1 Describe the main characteristics of Directors & Officers (D&O) insurance. [4]

2 Describe the types of accumulation of risk which may arise in the following classes of business written in the UK:

- (i) Extended Warranty policies for electrical goods. [1]
- (ii) Personal Lines Buildings and Contents policies. [2]
- (iii) Mortgage Indemnity Guarantee business. [2]
- (iv) Employer's liability. [1]

[Total 6]

3 Outline the possible effects on a general insurance company of writing volumes of business significantly different from those assumed in the business plan. [9]

4 You are an actuary responsible for the Financial Planning process within a general insurance company.

State the main categories of information you will have to make assumptions about in modelling the business, and the items you would require for each of these categories. [9]

5 A UK general insurance company operates with a normal maximum retention of £1,000,000. It has four surplus treaties, which have 3, 5, 10 and 20 lines respectively. It retains £1,000,000 on any risk before any cession to the surplus treaties.

The following five risks were written by the insurance company, and during the coverage period suffered the following claims.

<i>Risk</i>	<i>EML</i> <i>£m</i>	<i>Claim</i> <i>£m</i>
1	2	5
2	9	5
3	15	10
4	30	50
5	50	50

Calculate the claim to each of the four surplus treaties, and the claim retained by the insurance company, stating any assumptions you make. [8]

- 6 You are a consulting actuary and have been approached by a medium sized general insurance company to estimate the ultimate claims for its portfolio of private motor insurance business. The company uses a variety of chain ladder methods to estimate these reserves and has provided you with an annual development triangle of paid claims for the last 5 years.

Outline the additional data and other information you would require. [10]

- 7 Company A is a medium sized insurer writing only personal lines business. The last four years loss ratios were:

1998	66%
1999	68%
2000	70%
2001	82%

Company A pays 15% commission and incurs other expenses of 10% of premiums written.

Company A has had a quota share reinsurance treaty in place for the past few years and the terms for the last two years have been:

2000	70% quota share reinsured 29% reinsurance commission 100% profit commission for loss ratios less than 67.5% (i.e. for example if the loss ratio is 65%, then profit commission of $(67.5 - 65) 2.5\%$ is payable by the reinsurer to company A)
2001	40% quota share reinsured 25% reinsurance commission 50% profit commission for loss ratios less than 70% (i.e. if the loss ratio is 67.5%, then profit commission of $(0.5(70 - 67.5)) 1.25\%$ is payable). In addition there is a loss participation clause whereby company A will bear 50% of the reinsurer's losses for loss ratios between 75% and 85%

- (i) Discuss these two reinsurance treaties from the viewpoint of both company A and the reinsurer, mentioning the impact on each of them and giving reasons why the terms may have been negotiated and accepted. [15]
- (ii) Calculate the profit or loss to each party for the years 2000 and 2001 assuming gross loss ratios of:
- (a) 65%
- (b) 80%

Assume earned premiums of 100 million per year. [7]

- (iii) Describe what types of reinsurance cover, other than quota share treaty, would you expect company A to have in place and what their function would be. [3]
- [Total 25]

- 8** You are an actuary working for a large general insurance company which writes a wide range of personal lines products. The company is looking to move into the pet insurance market writing a product that covers domestic cats and dogs. You have been asked by the personal lines director, who knows very little about this product, to write a report on pet insurance

Describe what you would include under the following headings:

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|-------|------------------|------------|
| (i) | Product features | [9] |
| (ii) | Administration | [5] |
| (iii) | Pricing Issues | [12] |
| (iv) | Claims | [3] |
| | | [Total 29] |