EXAMINATIONS

7 April 2003 (am)

Subject 402 — UK Fellowship Life 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 7 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 Describe the principal risks for a UK life insurance company relating to the pricing of units in an internal unit-linked fund. [6]

2 A UK proprietary life insurance company defines its free estate as the excess of the realistic value of its assets over the realistic value of its liabilities.

Describe how the shareholders' share in the free estate of the with profits fund may be determined and how it might be valued in practice. [7]

3 An appointed actuary is writing a financial condition report for a UK life insurance company in accordance with GN2.

(i) List the factors potentially affecting the company that the appointed actuary must be alert to when performing dynamic solvency testing. (You are not required to list the experience assumptions.) [6]

(ii) Explain how the appointed actuary's report should address these factors. [2]
[Total 8]

4 For a non-linked without profits regular premium endowment assurance:

(i) State the conditions that would typically need to be satisfied in determining a basis for altering the policy to paid-up status. [2]

(ii) State a formula that could be used to derive the paid-up sum assured from the surrender value using a realistic prospective approach, defining any terms used. [3]

(iii) Describe the proportionate method of determining the paid-up sum assured, and compare the proportionate method with the realistic prospective method. [4]

(iv) Describe the other issues that would arise in comparing these methods if the contract was with profits rather than without profit. [3]
[Total 12]

5 A UK life insurance company is carrying out its annual supervisory valuation at 31 December 2003.

When calculating the resilience reserve the company considers two scenarios. Alongside an assumed fall in equity and property values, it considers both an increase and a decrease in the yields on fixed interest assets of 1.5 percentage points. It finds that the scenario that maximises the resilience reserve, and therefore the total supervisory reserves, is the 1.5 percentage point increase in the yield on fixed interest assets.

During 2003, the yield on fixed interest assets increased by 0.5 percentage points.

(i) Explain the impact of this increase on the free assets shown in the supervisory returns of the company at 31 December 2003. [6]

In order to minimise the immediate impact of the change in fixed interest yield on its solvency position the company is considering the following courses of action:

- Changing the resilience scenario considered so that the assumed increase in the yield on fixed interest assets is reduced from 1.5 percentage points to 1 percentage point.

- Changing its portfolio of fixed interest assets so as to reduce the mean term of these assets.

(ii) Discuss the impact of each course of action, if the changes are taken into account in the supervisory valuation at 31 December 2003. [15]
[Total 21]

6 A small mutual UK life insurance company sells a range of with profits business and without profits non-linked term assurances and annuities. It plans to launch a range of critical illness products during the coming year. All the products are sold only by insurance intermediaries.

The company has a low free asset ratio on both a supervisory and a realistic basis.

(i) Explain why the company needs capital. [10]

(ii) Discuss how the company could use different forms of reinsurance for existing and new business. [11]
[Total 21]

7 A UK life insurance company has sold unitised with profits contracts for many years.

(i) Describe how bonuses could be allocated to unitised with profits contracts. [4]

(ii) Describe the investigations the company might undertake to assess whether the current levels of bonuses being declared are supportable. [13]

(iii) Describe the actions that the company might take if the investigations show that the current level of bonuses being declared are unsupportable. [8]
[Total 25]