Subject ST4 — Pensions and other Benefits Specialist Technical

EXAMINERS' REPORT

April 2009

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. 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.

R D Muckart
Chairman of the Board of Examiners

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General comments

Poor examine technique continues to be a concern of the examiners. Too frequently candidates do not write enough distinct points that reflect the marks available or appear not to plan their time so that all questions can be attempted. Unless a specific question requests a list, the examiners expect more than the buzzwords and reward highly those candidates who demonstrate that they can apply their knowledge to the scenario outlined in the question.

Specific comments on individual questions

Q1 *It was clear that candidates could not distinguish between duties, responsibilities and powers and resorted to repetition. There was also evidence that candidates were not aware of what items are key and which are more minor.*

Q2 *Generally answered reasonably but again there was little awareness of the main items to disclose for part (ii).*

Q3 *Candidates knew the bookwork so found parts (i) and (ii) relatively straightforward but the examiners were surprised at how poor the answers to part (iii) were.*

Q4 *Surprisingly badly answered. Those that had the right idea generally didn't make enough points.*

Q5 *Too many candidates did not understand how to allow for commutation in a valuation basis. A review of our suggested solution should show how straightforward parts (i) to (iii) were. Part (iv) was trickier and it was disappointing that very few demonstrated with numbers. Quite a few suggested that this member should not be offered the commutation option.*

Q6 *The majority of candidates misinterpreted eligibility and wrote at length about minimum age or service criteria so making no attempt to relate their answers to a scheme open to all permanent employees. This was disappointing. Only the better candidates recognised that the employer would wish to be involved in decisions which might increase the costs of operating the scheme.*

Q7 *It was disappointing that candidates did not score highly on the bookwork parts of this question, mainly because too few distinct points were made. It was also disturbing that some candidates failed to state the obvious e.g. mortality is a key risk, no consensus on future improvements.*

Part (iv) caused some difficulties.

Q8 *There was some evidence that candidates are unable to distinguish between advising trustees and advising employers so perhaps not surprising that this question was not well answered.*

Parts (iii) and (iv) were particularly poorly answered with too many simply listing the technical guidance notes and what they contain for part (iii).

In part (iv) candidates fell into two camps:

- *Those who refused to acknowledge that one individual could advise both parties; and*

- *Those who did not seem to be aware of situations where different individuals (or even different firms) advice each party.*

Finally, the examiners would appreciate candidates taking a little time to ensure that their script is legible. As we have noted previously appropriate credit cannot be given if we cannot read your handwriting.

1 (i)

- Primary duty is to protect the rights and benefits of the beneficiaries of the scheme
- With the utmost good faith
- Maintain equity among beneficiaries

(ii)

- Understand details of Trust Deed and Rules
- And ensure provisions are observed
- Ensure compliance with regulations
- Act impartially
- And not confer an advantage on one or more beneficiaries at the expense of others
- Ensure proper accounts are kept
- And relevant information is provided to interested parties as required
- Monitor sponsor covenant

(iii)

- Power to set employer contribution levels
- Power to augment benefits
- Power to wind up the scheme
- Power to set investment strategy
- Distribution of death benefits to dependants
- Power to delegate duties

2 (i)

- Required by legislation/regulations
- Important that owners of capital are aware of financial significance of benefits obligations that exist
- .. similarly for potential owners
- .. so as to recognise realistic costs of accruing benefits
- .. which avoids distortions resulting from fluctuations in flow of employer contributions
- .. and so provides consistency in accounts from year to year
- Enables readers of accounts to form realistic opinion of company's current financial position
- .. and potential future financial position
- .. by making assessment of risks in light of information provided
- ..and assumptions that are used / disclosed

(ii)

- Elements of actuarial basis, e.g. assumptions used
- .. and actuarial method
- .. highlighting any changes from previous year's accounts
- Value of liabilities accruing over year
- Increase in past service liabilities at start of year
- Investment return on assets over year

- Surplus / deficit over year
- ..change in surplus / deficit over year
- Pension cost over year for directors
- Contributions actually paid over year
- Expected future cash contributions

3 (i)

- Analyse / understand Scheme benefits

- Specify and obtain:

    - Membership data
    - Asset data
    - Accounting data

- Check benefits / membership data
- Undertake reconciliation of data
- Assess Employer Covenant
- Set Funding Objective
- Choose valuation assumptions and method
- Complete calculations
- Valuation results / report
- Undertake sensitivity analysis
- Undertake analysis of surplus
- Agree actual contributions to be paid

(ii) *Specify the problem (i.e. set and validate the funding objective):*

- to produce valuation results that suggest reserves will be sufficient to meet benefit promises and future contributions are set at appropriate levels

Develop possible solutions (Planning and execution):

- Consider data requirements
- Set assumptions
- Use different actuarial models /funding methods
- And assessment of different assumptions to understand sensitivities

Delivery and Evaluation:

- Presentation material
- Agree timescales
- Monitor experience and use valuation results
- to feedback into the "problem" specification
- And the solution stage of the control cycle
- Identify the causes of any departure from targeted outcome of the model from previous valuations

Apply professionalism

- Consider Legislation and
- Guidance

(iii)

- Allocates responsibilities for the component parts of the valuation process
- Good governance / audit trail
- Allows ongoing monitoring of the progress against the plan
- Producing a well managed process
- Reduce errors
- Allow sufficient time for discussion of valuation results
- Allowing the right outcome for all parties involved
- Agreed end point of valuation process
- And subsequent steps along the process
- The action plan set out who will do what
- And by when
- Setting budgets
- Aids understanding of process

4 (i) *Investment:*

- Covenant strength allows employer to underwrite any asset underperformance
- Allows investment in "risky" assets
- Maximum flexibility

Assumptions:

- Consider assumptions relative to chosen funding target
- Maximum flexibility
- Consider degree of prudence appropriate
- Taking account of strong covenant and chosen investment strategy
- Not unreasonable to allow for anticipated asset "out performance" over Gilts

Deficit:

- Payments can be afforded with relatively strong cashflows
- Deficit could be payable over a relatively short period as 'affordable'
- Conversely strong covenant means longer recovery period should be acceptable

(ii)

- Consider reasons for reduction in covenant
- Might not be a concern if scheme is well funded
- Look at what less strong means in terms of capital strength and cashflow
- Which of these has changed and by how much?
- Need to consider the significance to the overall assessment of the covenant e.g. cashflow may be reduced as a result of difficult trading conditions but overall balance sheet strength may still be strong
- For example will the covenant still partially mitigate any default risk
- Or are there more serious concerns to meet scheme obligations over the short term
- Consider bringing the date of the next valuation forward or conduct an immediate valuation
- Instigate a regular review of covenant e.g. more than annually
- Consider if covenant will deteriorate further

(iii) *Investment*

- A more cautious investment strategy likely to be appropriate
- For example a general move of equities to bonds
- Although if current funding level is strong, a less cautious investment strategy may continue to be appropriate
- Consider contingent security to mitigate risk of any aggressive investment strategy

Assumptions

- Less flexibility
- Need to align with any changes in investment strategy
- Degree of prudence should be re-assessed
- With more prudence given greater risk

Deficit

- Consider employer affordability
- Consider alternative to cash payment e.g. charge on fixed assets
- Consider ratchets in contributions if position improves
- Consider setting up contingent contributions if position deteriorates

5 (i) *Maximum exchange for a lump sum*

Liability for Actives and Deferreds is \$36m.

Assuming 1/6 of non pensioners are in relation to dependants

Assumed valued lump sum at 12 for 1

Excluding SDAR gives \$30m.

\$30m is present value of projected pension at retirement
$\times$ (75% $\times$ 16 + 25% $\times$ 12)
i.e. p.v. of pen@ret $\times$ 15
Revised liability is p.v. of pen@ret $\times$ (50% $\times$ 16 + 50% $\times$ 12)
i.e. p.v. of pen@ret $\times$ 14

So revised liability of member's pensions = 14/15 $\times$ \$30m = \$28m
Revised total accrued liability is \$34m, i.e. fall of \$2m

Total normal cost is 13% + 5% = 18% of salary
Net cost for member's pensions is 18% $\times$ 5/6 = 15%
Allowing for maximum commutation = 14/15 $\times$15% = 14%
Add back SDAR = 14% + 1/6 $\times$ 18% = 17%
Deduct member contributions = 17% – 5% = 12%
Impact is a fall of 1% in employer's regular contributions

Credit was given to candidates who noted that the fall in accrued liabilities might further reduce sponsor contribution requirements.

(ii) *Improvement to 90% of value of pension*

Revised value of benefits at retirement is
(75% $\times$ 16 + 25% $\times$ .9 $\times$ 16) = 15.6
Revised liability is 15.6/15 $\times$ 30 + 6 = \$37.2m, i.e. increase of \$1.2m
Revised NC is 15.6/15 $\times$ 15% + 3% – 5% = 13.6% of salary, i.e. increase of 0.6% of salary roll

(iii) *Both (i) and (ii)*

Revised value of benefits at retirement is
(50% $\times$ 16 + 50% $\times$ .9 $\times$ 16) = 15.2
Revised liability is 15.2/15 $\times$ 30 + 6 = \$36.4m, i.e. increase of 0.4m
Revised NC is 15.2/15 $\times$ 15% + 3% – 5% = 13.2% of salary, i.e. increase of 0.2% of salary roll

(iv) In this scenario the liability is higher if the member exchanges maximum amount for cash

Assume he:

- lives one year
- is married
- 50% spouse's pension payable
- value of 19 (3 years younger) for spouse's pension

(1) ignores discounting on grounds of simplicity

Just prior to retirement value of £100 p.a. of member's pension in plan is $100 \times (16 \times 6/5) = \$1,920$

Allowing for reduced longevity and maximum exchange for cash, value changes to $100 \times [0.5 \times 12 + 0.5 \times 1^{(1)}] + 100 \times ½ \times 19 = \$1,600$

So value lower than reserve held so concern misplaced

But mortality "profits" will be lower than if no exchange permitted

6 *Member options*

- Commutation (exchange) of income for lump sum at retirement
  - Providing such a basis is neutral to the fund, or does not cause a strain on the fund
  - … the sponsor will be able to delegate the methodology of its calculation, and the frequency of its review to the trustee body
  - .. e.g. to reflect changing market conditions

- Transfers out / in
  - The basis will need to take account of any legislative or professional constraints, e.g. that transfers in and out should be calculated on a similar basis
  - .. which means that a TV out basis which results in low TVs could cost the company money if applied to TVs in
  - The aim of such a basis will generally be to be neutral to the fund, or at least to avoid a strain on the fund
  - .. the sponsor will be able to delegate the methodology of its calculation, and the frequency of its review to the trustee body
  - .. e.g. so as to reflect changing market conditions

- Early / late retirement basis (not ill-health)
  - Similar to transfer out
  - If the basis is generous to the employee (i.e. not neutral to the fund), the sponsor will wish to retain control to ensure that there are not excessive drains on the fund
  - .. e.g. following a downsizing
  - Employer might wish to control incidence and impact on workforce

- Ill-health early retirement basis, e.g. whether / when to grant / possibility of commuting the whole payment
  - If the basis is generous to the employee (i.e. not neutral to the fund), the sponsor will wish to retain control to ensure that there are not excessive drains on the fund
  - If the scheme is large, and it is possible to set a contribution rate and reserve in advance, it may be possible for the sponsor to set out guidelines for the trustee body to operate
  - .. which are reviewed from time to time

- Surrender for additional dependants pension
  - Similar to commutation
  - Watch for health/selection issues

Eligibility for benefit

- Distribution of death benefits, e.g. on death in service
  - There should be a reserve (or insurance payout) available for distribution
  - .. so generally not a cost implication for the sponsor
  - ..and it will generally be satisfactory for the trustee body to collect suitable evidence and make a decision on which of the (possibly competing) parties should receive the payout (as lump sum or annuity)

- Benefits to partners / dependants (e.g. non spouses / dependant children)
  - If such benefits not specified in rules, then trustee body will wish to agree the rules underlying the provision of such benefits from time to time with sponsor
  - .. and both parties will wish to ensure that the cost of providing such benefits is established in advance,
  - ..e.g. by an addition to the contribution rate, or lump sum payments by the employer from time to time
  - .. subject to review from time to time

Augmentations

- Augmentations above the benefits in scheme rules, e.g. granting extra service
  - Possibly significant cost implications to sponsoring employer
  - ..e.g. if augmentations being granted to senior employees or directors (as part of a Golden hello)
  - .. so sponsoring employer will therefore wish to retain control in general
  - .. unless additional costs per employee are small (e.g. waiving a short service qualification)

- Increases in payment above those guaranteed in rules
  - cost implications to sponsoring employer who will therefore wish to retain control in general
  - .. unless a policy already in force which has been allowed for in funding
  - .. such as to top fixed increases in payment up to a prices index, with advance funding
  - .. with costs subject to review from time to time

7 (i)

- Assumption used last time / Scheme experience
- Historic levels of mortality for the country as a whole
- Historical population data for similar countries
- Industry / Sector data
- Insurance Company data
- Projections of mortality improvements for country
- Medical papers about future longevity
- Mortality Studies (academic research / actuarial profession studies)

(ii)

- Actual scheme experience
- e.g. exposed to risk of each member at each age, number of deaths at each age or amount of pension ceasing on death at each age
- But is data sample large enough
- Past data may not provide an estimate of the future experience
- Need to allow for changes in mortality over time (projections for mortality improvements)
- Need to also consider changes in social & economic conditions,
- Random fluctuations / potential errors in data,
- Changes in balance of homogenous groups,
- Heterogeneity
  - Executives/non executives
  - Geographical location
- Consider use of standard tables
- With an appropriate adjustment for the membership
- Mortality is a key risk and has a significant impact on the liabilities
- Allow for prudence as appropriate in the funding valuation
- Mortality assumption pre / post retirement
- Interaction with Funding Method
- Any Professional / Statutory requirement or recommendations

(iii)

- Health improvements mean longevity is expected to improve over time
- So pensions paid for longer leading to increased cost
- A large part of longevity risk is this unknown future improvement
- No consensus on how rates will improve over time
- Trends in mortality are increasingly important

- Any base mortality table (with appropriate scheme specific adjustment) will need to projected to allow for mortality improvements

Methods of projection include:

- Process based projections — modelling trends in the cause of death
- Extrapolative methods with historical trends projected into the future
- Allowance for cohort effects can be built in — mortality improvements by year of birth or "cohort"
- Possibly with a floor to improvement levels
- Simplistic approach of allowing for improvements by reducing the probability of death (q (x)) by say 2% p.a. overtime.
- Or reducing the discount rate by say ½% p.a.
- Stochastic modelling approaches can be used

(iv) *Disclosures in company accounts:*

- May simply follow the funding assumption
- Or may strip out the degree of prudence
- And use a "best estimate" assumption

Insurance company "buy out":

- Likely to be more prudent with a significant margin
- A more sophisticated approach to rating may be adopted
- e.g. individual rating by post code analysis
- Influenced by "market pressure" on total buy out price

Bulk TV:

- Assumption needs to be "agreed" by both actuarial advisers
- Likely to be on a best estimate basis
- But will depend on the methodology used
- E.g. could be individual TV basis, accounting basis or "share of fund"

8 (i) *Funding:*

- Input on implication of Covenant assessment on valuation process
- Advice on funding strategies and implications for contribution levels
- Advice on alternatives to cash funding
- Review and input into valuation assumption
- Including management of mortality risk
- Deficit / surplus management
- Including efficient management of company's capital structure
- Valuation updates — deficit position / sensitivity analysis
- Review proposed scheme factors where there are cost implications

- Help Company understand the trustees perspective to any proposed benefit changes
- Advice on optimum / suitability of investment strategy

Risk management:

- Analysis of pension risk on Company financials (balance sheet / cashflows)
- Including Stochastic modelling, VaR analysis
- Managing closed DB Schemes if appropriate
- Advice on Insurance Company buy outs
- M&A / Pension Scheme mergers
- Pension Scheme Governance
- Enhanced Transfer Value exercises
- Investment risk management / investment products
- Accounting — calculation, analysis, assumptions, interpretation
- Future benefit design considerations
- Remuneration strategy
- Advice on regulatory/legislative requirements

(ii)

- Trustee Actuary is appointed by Trustees who have a duty of care to members
- And operate within Trust Deed and Rules
- Corporate Actuary is appointed by Company only
- This avoids potential conflicts

Funding:

- Trustee perspective is based on prudence
- Company may be more focused on best estimate assumptions
- And may have a specific corporate agenda e.g. minimise cashflow etc.
- The covenant assessment is key for Trustee adviser and the interaction of investment strategy, covenant and funding assumptions underpins any decisions

Risk management:

- Many solutions e.g. buy out are driven by the employer not trustees
- However investment strategy is generally determined by Trustees with consultation with Employer
- The Trustee adviser will only be concerned by the defined benefit scheme and the current benefit structure in the scheme rules
- The corporate advisor has a wider remit and will consider the bigger corporate picture and possible changes to the scheme

(iii)

- A document covering professional conduct and standards for advice could be issued to all actuaries
- By issuing Standards and Guidance
- Setting out general principles and ethical standards
- The aim may be to achieve a minimum level of competence or consistency in approach
- The guidance may relate to the application of professional conduct to specific aspects of the work of an actuary
- Including the interpretation of relevant legislation
- The professional guidance may provide a useful checklist of required actions
- Or it may replace detailed regulation

(iv)

- The actuary has two separate clients — the Trustees and Employer
- Advice to each client should be unaffected by interests other than those of the client
- there is potential conflict between the advice that could be given to the Trustees and the Employer
- e.g. setting contribution rates, impact of benefit changes
- Hence the advice might not be independent
- Or might not be perceived to be independent

Mitigated by:

- Strict terms of engagement / appointment letters for both parties
- Agreement from both parties that the advice can be given
- Ensure the advice is clearly addressed to Employer or Trustees
- With relevant consent copy advice to both parties
- Seek an alternative actuary for one of the appointments

END OF EXAMINERS' REPORT