EXAMINATION

September 2006

Subject SA4 — Pensions and other Benefits Specialist Applications

EXAMINERS' REPORT

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.

M Stocker
Chairman of the Board of Examiners

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General comments

Overall the standard of candidates was in line with recent sittings of this subject.

However, there is still evidence of candidates not reading the questions carefully, and failing to write enough distinct points that reflect the marks available.

Comments on individual questions

Q1 *(i)* *Generally well answered, although it was disappointing that many candidates failed to write down the further assumptions they had made. Too many candidates compared the value of the DB pension with the amount of the DC pension.*

(ii) *Not many candidates demonstrated that they could prepare an analysis of change, with many leaving a significant balancing/unexplained item. Few candidates attempted to quantify the annuity change into interest and mortality despite saying both had an effect.*
Only the better candidates took a structured approach to setting out their answers.

(iii) *Some candidates focused on the reasons why the basis had changed, rather than answer the question asked. Most candidates assumed that the member had been misled so lost marks by not considering the other side of the case.*

(iv) *Poorly answered by most candidates. As many assumed that the member had been misled (see Q1(iii)) they concentrated their discussion on how the member could be compensated.*

(v) *This question was reasonably well answered by well prepared candidates. Marks were lost as candidates did not cover enough distinct points in their answers. Some candidates concentrated on giving specific details of* ***a*** *particular implication, rather than considering* **the** *wider implications.*

Q2 *(i)* *In general, well answered, although some candidates were unfamiliar with the features of industry wide schemes. Some wrote about the ability to change the benefit structure despite the wording of the question.*

(ii) *A few candidates misunderstood the question and covered 'fund within a fund' issues or concentrated their answers on issues relating to participating periods.*

(iii) *Generally, well answered, with most candidates having a good understanding of the relevant issues.*

(iv) *The better candidates planned their answers by grouping points related to specific topics rather than using a scatter gun approach. Some candidates gave too much detail on the general duties and responsibilities of trustees without focusing on their training needs.*

(v) *Reasonably well answered, although only the better candidates considered the characteristics of the scheme in question, ie they did not just list the standard issues.*

(vi) *Many candidates wrote about deficits in general and did not relate their answers to the specifics of the scheme in the question. For example, very few candidates mentioned the possible implications of the 5 year contract.*

1 (i) **Estimated Projections**

DB Pension in 1995

Service at 60:	35 years
Projected Salary:	$30{,}000 \times 1.07^{20}$ = £116,100
Projected Pension:	$35/60 \times 116{,}100$ = £67,700 p.a.
DB Pension as % of salary:	$67{,}700 \div 116{,}100 = 58\%$

DC Projection in 1995

Existing fund projected to 60:	$75{,}000 \times 1.10^{20} = 504{,}600$
Future DC contributions:	$15\% \times 30{,}000 \times \bar{a}_{20\text{yrs}@2.8\%} \times 1.10^{20} =$ 465,200
Total projected fund at 60:	£970,000
Projected pension at 60:	$970{,}000 \div 13$ = £74,600 p.a.
DC Pension as % of salary:	$74{,}600 \div 116100 = 64\%$

DC Projection in 2005

Existing fund projected to 60:	$250{,}000 \times 1.06^{10} = 447{,}700$
Future DC contributions:	$15\% \times 60{,}000 \times \bar{a}_{10\text{yrs}@1.9\%} \times 1.06^{10} =$ 146,900
Total projected fund at 60:	£595,000
Projected pension at 60:	$595000 \div 20$ = £29,800 p.a.
Projected salary at 60:	60000×1.04^{10} = £88,800
DC Pension as % of salary:	$29{,}800 \div 88{,}800 = 34\%$

Additional assumptions / approximations

Continuous annuities used for ease of calculation.
No averaging of pensionable salary in DB section.
DC fund used to secure pension with RPI increases plus 50% dependant's pension.
Impact of commutation / taking part of DC funds as cash ignored.

(ii) Key factors that reduced level of projected benefits

Reduction in projected fund:	970000 – 595000 = £375,000
Reduction in projected pension:	74600 – 29800 = £44,800 p.a.
Reduction in pension as %:	64 – 34 = 30% projected salary

Various ways to analyse/quantify this. One approach is to separate the experience before 2005 from the impact of the difference in financial and demographic assumptions, i.e.

Actual experience to date

Note that expected salary in 2005 was $30{,}000 \times 1.07^{10} = £59{,}000$

Not significantly different from actual salary (£60,000) so actual salary increases from 1995 to 2005 have had no significant impact on the projections in nominal terms.

No reason to believe that contributions weren't paid at the expected rates, and nominal salary increases were broadly in line with assumptions so impact on fund value at 2005 can be attributed wholly to investment returns, i.e.

Expected fund value in 2005:

1995 fund projected to 2005:	$75{,}000 \times 1.10^{10} = 195{,}000$
Expected DC contributions:	$15\% \times 30{,}000 \times \bar{a}_{10\text{yrs}@2.8\%} \times 1.10^{10} = 102{,}000$
Expected fund value in 2005:	£297,000
Actual fund value in 2005:	£250,000
Investment loss to date:	~£47,000

This loss would accumulate to $47{,}000 \times 1.10^{10} = £122{,}000$ at age 60

Changes to assumptions for future experience

- pre-retirement
  - lower assumed nominal/net investment returns
  - lower than expected salary increases and hence contributions

Combined effect of changes to assumptions must be total reduction in projected fund, less that attributed to pre 2005 experience i.e.

375,000 – 122,000 = £253,000

- post-retirement
  - lower than expected discount rate nominally / net of assumed pension increases
  - higher life expectancy

Pension based on 2005 fund value projected using 2005 pre-ret. assumptions, 1995 annuity:

> 595,000/13 = £45,700 p.a.
> (as % of projected salary: 45,700 ÷ 88,000 = 51%)
> i.e. loss of
>
> 45,700 – 29,800 = £15,900 p.a., or
> 51% – 34% = 17% of projected salary
> (18% if 1 d.p. amounts used, i.e. 51.5 – 33.5)

How much of this can be attributed to fall in net yield?

1995 assumptions: net yield was 5.3% post-retirement (1.10/1.045 – 1)%
2005 assumptions: net yield is 2.0% post-retirement (1.045/1.025 – 1)%

Using rule of thumb that each 1% change in post-retirement net yield adds 12% to liabilities, this would increase the annuity from 13 to around 18, accounting for approximately 70% of the fall in pension due to post-retirement assumptions.

Balance is due to increased life-expectancy.

Appropriate credit was given for alternative plausible approaches.

Summary

	A	B	
	Projected fund value	Projected Pension	Pension as % salary
1995 DC Projection	**£ 970,000**	**£ 74,600 p.a.**	**64% (of £116,100)**
Lower than expected investment returns from 1995 to 2005	(£122,000)	(£ 9,400 p.a.)	(8%)
Change in Pre-retirement assumptions from 2005 to 2015	(£253,000)	(£ 19,500 p.a.)	n/a due to change in salary growth assumption
Projected fund value at retirement	**£595,000**	**£ 45,700 p.a.**	**51% (of £88,800)**
Reduction in assumed net post-retirement yield		(£ 11,100 p.a.)	(12%)
Increased life expectancy		(£ 4,800 p.a.)	(5%)
2005 DC Projection		**£ 29,800 p.a.**	**34% (of £88,800)**

(iii) ***Was the member misled by his DB/DC comparison in 1995?***

- It does appear that the member would have been better off remaining in the DB section.

- His projected pension would now be £51,800 (58% of projected salary at retirement).

Points regarding the original statement that might be used to argue that the member was misled:

- Assumptions used were optimistic.

  - Possibly at the time?

  - Certainly appear so with hindsight.
    {e.g. Investment returns since 1995 have been lower than the original

assumptions. Approximate average return 1995 to 2005: solve for "*i*" in
$75{,}000 \times (1 + i)^{10} + (15\% \times 45{,}000 \times 10) \times (1 + i)^5 = 250{,}000$
$\rightarrow i \sim 7.5\%$)
(assumes average salary over period was £45,000)}

- Lower assumptions for investment returns / yields would have made DB look the more attractive option.

- were 1995 assumptions prescribed at time?

- Only one set of assumptions appear to have been used.

  - this gave him no understanding of the possible variability of outcomes
  - or the sensitivity of the results to key assumptions

  - Showing projected funds and pensions in monetary terms made numbers look very high ("telephone numbers").

    - Were they shown as a percentage of projected salary?

    - Were they shown in current terms (inflation stripped out or % applied to current basic salary)?

    - If neither, was the member told how to adjust the benefits to allow for inflation?

- Were the benefits from existing assets and future contributions separately identified?

  - Was attention to drawn to other DB benefits that might have been advantageous to the member (not just the apparently favourable DC outcome at retirement)?

  - Were appropriate warnings included?

  - Regarding variability of outcomes and sensitivity of the results to assumptions.

  - That the member would bear the risks of poor investment returns, annuity rates, mortality improvements, etc.

  - That financial advice should be taken.

Points that would weaken his case:

- Perhaps the statement did cover most of the above issues.

- The assumptions were best estimate / consistent with those used for funding at the time.

- The fall in investment returns, yields for annuities and life expectancy are not something that could have been anticipated at the time.

- If he didn't take financial advice, that's his problem (particularly if it was on offer).

- If he did take individual financial advice, he needs to discuss his concerns with the adviser.

- He has had annual DC statements over the last 10 years — these showed a progressive fall in the projected pension at retirement. Why has he only just raised this?

- If he had stayed in DB, his pension will be subject to solvency risk — if the scheme winds up before he retires he may only get, say, half his accrued pension.

  - Even with PPF protection.

- This might be less than his DC pension, which would not generally be reduced on wind-up.

- The DB section may be closed, face benefit reductions before he would have retired.

- Did he pursue a risky investment strategy / make bad selections since 1995?

(iv) Trustee actions

- Review all 1995 communication material and process:
  - announcements
  - illustrations
  - staff presentation material
  - whether individual advice was offered

- Review all communication material over last 10 years.
  - annual statements
  - any other communications with DC section members that has covered the impact of falling yields, increased life expectancy, poor investment returns

- Review whether appropriate investment options were offered.

- Get actuarial advice.

- Get legal advice.

If the Trustee are then comfortable that they have done all that they reasonably could be expected to, they may choose to do nothing further.

- Write to member and explain calculations
- Mention IDRP option if member continues to be unhappy

(v)

- The Company may wish to review the DC scheme design to consider whether it still meets their original objectives for the DC section.

- Target spend or target benefits?

- Can members afford to retire at the age the employer wants them to?

- Competitor practice.

- Might wish to increase DC section benefits.

- Consider general morale issues

- E.g. Higher member and/or employer contributions for the future.
  - Maybe matching additional member contributions to a maximum of +5%?
  - i.e. help those who want to help themselves.

- Is the employer prepared to consider retrospective improvements?
  - Top-ups to individual funds.
  - Subsidised annuity purchase terms.

- Does similar issues apply to other employees?
  - Put people back in DB section (unlikely! Significant funding strain / substantial cash injection required).

- Manage members' expectations for the future.
  - Review benefit statements.
  - Additional newsletters etc.
  - Staff presentations.

2 (i) *Advantages of remaining in current scheme:*

- More secure (and no PPF levy)
- No costs of setting up new arrangements.
- Employees may prefer pension benefits remaining in government scheme.
- Therefore less disruption for workforce.
- Workforce may be older than average so pay less than accrual cost.
- May benefit from any surplus in existing scheme.
- If unfavourable experience for their workforce e.g. deaths, early retirements.
- Then costs spread across other employers.
- Larger scheme may have more flexible investment policy.
- Leading to higher returns to reduce costs.
- Running costs per member likely to be lower.
- Little or no ongoing management involvement.
- Easier pension issues at end of 5 year period.
- As company not left with closed scheme if they lose contract.

Disadvantages of remaining in current scheme:

- Pay same overall rate as all other employers.
- Which may not be appropriate for their particular workforce.
- Investment policy may be too conservative.
- Due to overall scheme being more mature.
- And therefore increase costs.
- Company doesn't benefit from favourable experience for own employees.
- But may suffer from unfavourable experience from other employers.
- May be subject to changes in benefits of Government scheme outside of their control.
- May be less flexible if they want to set up any special arrangements.

Advantages of Industry Wide Scheme:

- The majority of the advantages of the current scheme still apply re expenses, wider investment powers.
- But will benefit from own favourable experience.
- May have more flexibility for any special arrangements.
- Will pay accrual cost for own workforce which may be lower.
- Won't be paying for deficits.
- assuming reasonable transfer terms.

Disadvantages of Industry Wide Scheme:

- Overall investment strategy may be inappropriate for membership profile.
- Costs and time of communicating change to employees.
- Won't benefit from any surplus/favourable experience of others.
- Might lose employees to other participating employers

Advantages of new scheme:

- Control over setting own strategy for funding.
- And investment.
- Emphasises to employers that they are in new separate company.
- Benefit from favourable experience.

Disadvantages of new scheme:

- Costs of setting up new scheme.
- Concerns/disruption from employees of running new arrangement.
- Finding trustees (with sufficient knowledge).
- Potentially less investment flexibility.

Other considerations:

- Issues relating to potential debts at end of the 5 year period.
- Impact of any future new contracts.
- Time spent on negotiating transfer terms.

(ii) Three possible approaches:

Share of fund

- calculated by looking at the proportion of assets
- represented by dividing transferring liabilities by total scheme liabilities.
- or take out pensioners and then split
- Will transfer proportionately any surplus or deficit
- on the chosen liability basis
- which could be for example be buy out, bond based or valuation assumptions.
- Not particularly sensitive to assumptions chosen.

Past Service Reserve

- based on members accrued service
- but allowing for projected salaries.
- Assumptions could be bond based
- or build in allowance for additional investment performance above bonds.

Value of deferred benefits

- could be buy-out (but unlikely)
- or cash equivalent transfer value available to the normal early leaver.
- CETV is actuary's best estimate of providing alternative deferred pension.
- Likely to be less than past service reserve.
- May not allow for discretionary benefits
- Will mean less benefits in receiving scheme
- or an initial deficit.

(iii) The members will need to consider:

- The benefits to be granted in the new scheme.
- Likely to be year for year retaining link to final salary.
- Expectations on future salary increases important.
- To compare with deferred pension in government scheme.
  or possibly of aggregation of service in future
- Any history of discretionary increases in government scheme?
- Level of security provided by government scheme compared with
  new scheme
- and outlook for new Company.
- Whether they want all benefits in one place.
- Any benefits from transferring to an alternative arrangement (e.g. PP).
- E.g. death benefits/ill health might be important.
- How important is this pension in their overall finances.

- Do they expect to stay with new employer.

(iv) **Training Requirements**

- The trustees must seek to obtain sufficient knowledge of the issues affecting the scheme to enable them to take fully informed decisions on all matters of substance.

- This will be an onerous requirement given the complex technical and financial issues relating to pension schemes.

- The trustees may wish to seek a high level of professional advice to assist the
- and may consider devolving some or all decisions to competent professionals.

- The training requirements can be split in to the following groups:

  (a) legislative environment
  (b) scheme documents
  (c) financial and investment
  (d) general governance issues

legislative issues
- trust law
- specific pensions related legislation
- other legislation with indirect relevance to pensions (e.g. sex discrimination)
- regulatory requirements

scheme documents
- the key discretionary decisions falling to the trustees
- and how to discharge these
- the need to administer the benefits properly
- other decision making obligations (e.g. establishing a contribution rate, agreeing an amendment)

financial and investment
- actuarial funding methods
- actuarial valuation bases
- the distinction between funding and security
- the nature of the different asset classes
- the concept of risk and reward
- the relationship between the liabilities of the scheme and the assets backing them

general governance issues
- overall strategic objectives
- cyclical business plan
- risk and mitigations
- managing conflicts

(v) The Trustees need to consider:

- The nature and term of the liabilities.
- term likely to be longer than typical scheme as actives only initially
- Their attitude to risk and that of the employer.
- in terms of short term volatility in funding levels versus long term cost.
- The financial strength of the employer and level of support.
- The asset classes that they are prepared to invest in.
- and level of training needed on the characteristics of that asset class.
- Expected levels of return for each asset class.
- The level of diversification when choosing asset classes.
- Will they include classes such as Hedge Funds, High Yield Bonds, Commodities, Private Equity.
- Any restrictions under investment powers in the trust deed.
- Any cash flow issues.
- Any specific issues relating to bulk transfer.
  eg, assets not really wanted
- Their overall investment objective and benchmark.
- Will they have an absolute or relative return target.
- Active or passive investment.
- Who will they take advice from.
- Who will manage their day to day investments.
- Pooled funds or segregated?
- Preparing their Statement of Investment Principles.
- Whether or not to have an asset liability modelling exercise.
- Compliance with Myners/SRI/etc
- Potentially shorter time horizon if contract lost in 5 years.

(vi) **Recovery Period**

- From the trustees perspective, they will wish any recovery period to be as short as the company can afford
- and ideally any emerging deficit would be met with an immediate cash payment to eliminate it.
- More realistically this is often higher than companies can afford
- particularly as in this case where they have few assets to call on (e.g. to raise finance against).

- Consider Regulator triggers

- This particular business is cash generative which means that, unless circumstances change, it should be able to finance the deficit over a reasonable period of time.

- It would be sensible for the trustees to conduct a thorough assessment of the strength of the covenant of the sponsoring employer.
- Taking specialist financial accounting advice.
- to gain a better understanding of the security of the ongoing income stream
- and in particular any risks that may threaten it.

- In this situation, the key contract is likely to be the services formerly provided by the government department.
- But it is set for a 5 year term and is subject to review thereafter.
- Loss of the contract at that stage may well threaten the viability of the company

- The trustees should review the company's contingency plans for such an eventuality.
- Although if the likelihood is that the business will transfer back to the government or another third party provider, it may be possible to discharge the pensions obligations at less than the actuarial reserve.

- If the company can afford to pay off the deficit over a period of 5 years or less, it is difficult to see any reason why the trustees should accept a longer period
- unless the company offers some alternative form of security
- such as providing a bank guarantee
- or obtaining default insurance possibly through the CDS market.

- The size of the recovery period should also depend on the strength of the basis that the actuary has used for funding purposes
- and if buyout funding is being used, for example, then a longer recovery period may be appropriate.

- Ultimately, the trustees may need to agree the recovery period with the employer
- or submit to mediation? if agreement cannot be reached.

END OF EXAMINERS' REPORT