Faculty of Actuaries **Institute of Actuaries**

EXAMINATIONS

September 2000

Subject 404 — UK Fellowship Pensions

Paper One

EXAMINERS' REPORT

Comments

Questions 1 and 2

Both these questions were well answered by most well prepared candidates. The main issue being that candidates wrote more than justified by the marks available.

Questions 3 and 4

Both these questions were satisfactorily answered by candidates in the main. Candidates could have scored more marks if they described the points made in more depth.

It is also worth noting that a number of marks are available for straightforward points which candidates often overlook.

Question 5

This question produced a reasonable spread of marks with the better candidates not only calculating the approximate allowance for the favourable terms in the transfer payment but also commenting on its potential deficiencies.

Question 6

This question also produced a good range of marks; these candidates who devoted adequate time to this question and, in particular, to each of the main parts scored reasonably well.

1 Commutation factors are sometimes specified in a scheme's rules.

The theoretically calculated commutation factors will often be smoothed in arriving at a suitable table for use.

Normally commutation factors do not vary with market conditions.

In theory commutation factors which vary with market conditions may appear more satisfactory since there will be no scope for selection against the scheme.

However, in practice there is generally little evidence of selection

since the large majority of members retire and take the maximum cash whatever the market conditions.

Factors which are adjusted automatically to allow for changes in market conditions are rarely used.

Fixed factors provide

- apparent equality
- simpler admin
- aid retirement planning

Factors may be age and/or sex related.

Need to consider what factors to use for ill health cases.

The allowance to be made for discretionary pension increases often wants careful consideration.

To take full account of such increases might be over generous to those commuting pension for a lump sum

whereas to ignore discretionary increases altogether would be regarded as too mean.

One possible solution if to make partial allowance.

Another approach is to make no allowance for increases in the commutation factors

but to base future discretionary increases on the original level of pension before commutation.

The strength of the basis depends only on post-retirement assumptions.

Often cautious assumptions can be adopted without having an affect on the take up of the options.
Need to make suitable assumptions – investment returns are bond related and allowance for mortality needs to be made

Because of the tax advantages to the member of taking this option.

The Inland Revenue impacts in two ways on the commutation of pension for cash.

The amount of cash is restricted by reference to service completed and final remuneration and

limits are imposed on the commutation factors used.
The reasons for limits on commutation factors is to prevent abuse by granting commutation on over generous terms.

2 (i)

- A FURBS is set up under trust
- And receives employee contributions out of net income
- And employer contributions which are taxed as a benefit in kind to the employee
- Which are invested and taxed under the usual tax regime for non tax approved trusts
- Which is however marginally more favourable than that suffered by a private investor
- Before paying out a cash sum at retirement
- Which is not taxed
- The contributions are a business expense
- National Insurance is payable
- FURBS are subject to preservation legislation
- Pension is taxed so paid as cash
- No inheritance tax on death in service lump sums if paid at Trustee discretion

(ii)

- If the senior executive retires from the company after 5 years service (i.e. at age 45) in good health
- It will not be possible to pay any benefit from the exempt approved scheme immediately (because the Inland Revenue permits retirement at age 50 at the earliest)
- And a pension of $\frac{5}{30}$ of the final remuneration (with revaluation) will be provided by the exempt approved scheme from age 50
- Which is much less than the $\frac{2}{3}$ of salary that the senior executive has been promised
- And the FURBS will need to have significant assets in order to meet the full liability
- So that the likelihood is that the company would need to use other resources in addition to the assets held in the FURBS
- Particularly as the FURBS is a money purchase scheme and the promise is final salary
- On the other hand, if the senior executive works for the full 20 years and retires at normal retirement age
- The approved scheme will be able to meet the whole liability ($\frac{20}{30}$ of salary) provided he is earning less than the cap
- In which case, any funds held in the FURBS would be surplus to requirements but preservation could mean he also got the
- Unless some way could be found to offset the benefits from the approved scheme by those provided by the FURBS
- Generally, a FURBS would not be suitable, because the amount required to be provided by the FURBS decreases in absolute terms after the first 5 years of the senior executive's service
- The only other alternatives are unapproved unfunded arrangement
- Which could be established under trust (and therefore the member would enjoy exemption from inheritance tax on life assurance benefits)
- Or to make no special provision other than relying on company resources at the time of payment
- Which are both less secure from the executive's viewpoint than the FURBS

3

- It is reasonable to assume that the discretionary pension increases are allowed for in full in the funding basis
- Because there is a well established practice of awarding them
- However, they will be excluded from the assessment of the schemes liabilities under the Minimum Funding Requirement (MFR)
- So there will be a reduction in the funding level on this basis if the increases are guaranteed
- And depending upon the strength of the basis adopted for funding
- It is conceivable that the award of the guarantee will reduce the MFR funding level to such an extent
- That contributions will be determined under the MFR schedule of contributions
- Thereby preventing the employer from reducing its contribution rate
- In any case, the reduction in the MFR funding level is likely to reduce the investment freedom of the trustees
- And force them to hold a greater proportion of the scheme's investments in bonds (assuming there are significant bond backed liabilities under the MFR)
- Thereby increasing the anticipated long term cost of the scheme
- And if the change in investment holdings were reflected in the valuation basis used to fund the scheme
- A higher contribution rate would arise
- Thereby increasing the short-term cost (in cash terms) to the company
- The finance director is correct in saying there is no direct cost to the employer if the discretionary practice were to continue throughout the lifetime of the scheme
- But there can be no guarantee of this
- And it is possible that increases will need to be awarded as a result of the guarantee which wouldn't have been awarded under the discretionary approach
- If for instance the scheme falls into an MFR deficit

- The increase in the MFR liabilities could also lead to a cost to the employer if the employer decided to wind up the scheme
- And an employer debt (GN19) arose
- Irrespective of the actuarial arguments both parties need to consult the trust deed and rules
- To see whether there is any guidance on the disposition of surplus at a valuation
- Which could constrain the wishes of either the trustee or the company
- The impact on the accounting treatment in the Company's books also needs to be considered
- Other points:
    - Need a section G7 certificate
    - One way option
    - May effect scheme pattern
    - May affect transfer values depending on allowance
    - Legislative constraints

4 (i) The trustees have to consider the rights, expectations and benefit security of all classes of membership.
Examine the Trust Deed and Rules to see what they say about
  transfers in such a situation
  benefits on the wind up of the scheme.
Look at the latest valuation to see how well funded the scheme was.
  on an ongoing, MFR and wind up basis.
Need to investigate current position of the scheme either by rolling forward last valuation or undertaking a full valuation
Ask for information about the experience of the scheme since the valuation.
  salary growth
  membership movements
  fund performance
  contributions paid
  benefit improvements granted.
Compare the valuation basis specified in the sale agreement with that used for the scheme at the last valuation.
Compare with the valuation basis in the event of a wind up

Ask for information about the benefits being offered to transferring members who consent to transfer their past service rights
Consider whether the basis needs amendment for remaining members as well as investment strategy
Trustees are not bound by the Agreement

(ii) The minimum TV would normally be the sum of the individual cash equivalents.
If the scheme was less than 100% funded on the MFR basis, cash equivalent TVs can be reduced to reflect the valuation date MFR shortfall.
However, if there was an MFR shortfall the up to date position should be checked.
If the scheme is in deficit it would be difficult for the Trustees to justify paying more than a share of the fund TV.
If the scheme is in surplus there could be grounds for paying more than a past service TV
especially if the new employer's scheme is going to provide benefits better than the current scheme
The interest adjustment between date of calculation and date of payment is not likely to be suitable.
The TV will probably be a high proportion of the fund
  the fund is likely to be invested in equities, fixed interest and index linked investments and property
  and the actual return earned is unlikely to match the investment return stipulated.
A transfer value cannot be paid unless members consent individually
or the actuary certifies the transfer.
The actuary has to certify
  that transfer credits to be acquired for each member under the receiving scheme are broadly no less favourable than the rights to be transferred
  where there is an established custom under the transferring scheme for discretionary benefits or increases then the is good cause to believe that the award of such benefits will be no less favourable under the receiving scheme
  Allowance should be made for the extent that transfer credits in the receiving scheme are more favourable in assessing this.
GN16 sets out the issues the actuary must consider before signing the certificate.
In particular it says that the actuary should not give the certificate if the benefits of the transferring members would be materially less in the event of immediate wind up of the receiving scheme than they would have been if the transferring scheme wound up immediately before transfer.

The trustees must have an actuary's certificate before they agree to a transfer without consent
but the certificate, by itself, does not give the trustees the authority to pay the transfer.
When the scheme winds up there may be a shortfall in assets compared to liabilities especially if the benefits are brought out with an insurance company
Members who do not transfer could have their accrual benefits cut back
While those transferring will probably set their benefits in full (assuming the purchaser continues to operate the scheme)
Need to consider whether there are any debt on the employer issues

5 **Option (a)** – money purchase (or defined contribution) for past service benefits.

- transfer value could equal the reserve offered as per the sale agreement on individual basis which would transferred to member's individual accounts.
- it is possible to split another way
- e.g. provide a cash equivalent for all then include the overall additional amount payable and distribute in some fashion.

The advantages of this approach are that

- there is no risk associated with the transfer.
- That it provides ease of harmonisation as one can make the new scheme defined benefit for future service as per scheme X.
- It also buys out the early retirement facility fairly.

However it has the following disadvantages

- The basis may not be appropriate for individuals although it may be appropriate overall.
- It does not fit in with scheme X in that DC benefits don't accord with the DB benefits provided.
- If DC is also introduced for future service for consistency then it does not aid integration.

Option (b) – provide a mirror image DB section of scheme Y within scheme X.

This has the advantage that

- there is no change in benefits for scheme Y members.
- It is easy to communicate

Whereas the disadvantages are

- that it does not integrate or harmonise benefits
- It maintains the early retirement facility risk.

Option (c) – provide defined benefit benefits for past service on scheme X's basis.

- This could be achieved by providing a service credit which gave overall actuarial equivalence.
- In respect of the difference in accrual rate this would represent a credit of 1.2 years for each year of service in scheme Y
- but this would mean Y would have to retain the early retirement facility
- but a further service credit could be granted which could buy-out the early retirement facility
- such a credit would be determined broadly as follows, assuming 100 members at age 55 (and ignoring the effect of other decrements)

Age	*Rate*	*Number retiring*	*Number left*
55	3%	3.0	97.0
56	4%	3.9	93.1
57	5%	4.7	88.5
58	6%	5.3	83.2
59	7%	5.8	77.3
60	10%	7.7	69.6
61	10%	7.0	62.6
62	10%	6.3	56.4
63	10%	5.6	50.7
64	10%	5.1	45.7
65	100%	45.7	0

- This means that the average age on retirement (assuming all pre 60 retirees retire at 60 as early retirement factor is broadly neutral below 60) is
- $(0.03 + 0.39 + 0.047 + 0.053 + 0.058 + 0.077) \times 60 + 0.07 \times 61 + 0.063 \times 62 + 0.056 \times 63 + 0.051 \times 64 + 0.457 \times 65 = 63$

- thus the approximate value in the reserve above assuming all retiring at 65 is approximately 8%
- if we assume that each year of age equates to approximately 4% increase in liability
- so we could also give an uplift to everybody of around 8%
- however this would not necessarily be equitable for those age over 55
- and also those under age 55 the value will be less than 8% as some may not reach age 55 so would not get the full value as expressed above of the ERF.
- The uplift could be as a service credit or other benefit which on the sale agreement assumptions provided actuarial equivalence.
- It is also worth bearing in mind what the sale agreement says in particular whether it is a requirement to provide individual actuarial equivalence or just overall.

6 (i) The amount of pension bought with the accumulated fund depends on the annuity rates offered by the life assurance company.
These depend on the assumptions made by the life assurance company regarding
  the interest rate, in excess of inflation which will be earned
  the expenses of paying the pension
  the number of years the pensioner will survive
  whether the pensioner will be married when (s)he dies
  how long the spouse will survive,
the profit which the company wants to make
and any margins which it considers prudent to make or which are required.
Life assurance companies base annuity rates on the yields on fixed interest and index linked gilts and other bonds and the yield on these is low.
Pensioner mortality has been improving and so annuity rates have become more expensive.
It is unlikely that annuity rates will become significantly cheaper and could become more expensive as pensioner mortality continues to improve.
In respect of contributions paid before 6/4/97, pensions do not increase in payment.
Post 5/4/97 funds must be used to provide pensions which increase each year at least in line with the lower of 5% and the increase in the RPI.
Increasing pensions cost significantly more and so less pension is secured with the fund.

As the proportion of the fund relating to post 5/4/97 service increases the pension which can be provided will fall further.
The amount of pension, expressed as a proportion of salary, depends on
the size of the fund
and the salary at retirement
If salary increases are high, especially close to retirement, then investment return on the fund is not likely to keep up. and the pension is likely to be relatively low when compared with final salary
Individuals concerned may have been short serving
They may have taken cash which reduces the pension
The individuals may have gross salaries which substantially exceed basic salary

(ii)

Defined Contribution	**Defined Benefit**
• Benefit for each individual depends on what their fund will provide on retirement or death.	• Benefit on retirement at normal retirement age or on death is known, usually as a proportion of salary.
• The member gets the benefit of good investment returns	• The scheme gains or loses as a result of investment return.
• and suffers from poor investment returns.	• Usually, if the fund experience is poor, the employer pays more.
• Not possible to predict what the benefit will be until very close to retirement.	• If investment returns are higher than expected employer contributions are reduced and / or benefits are improved.
• If the member leaves before retirement age their fund continues to grow at the rate earned on the investments.	• If the member leaves before retirement age their pension is calculated at date of exit and is then revalued by at least the lesser of RPI and 5% per annum to retirement age.
• Transfer values are the value of the accumulated fund.	• Transfer values are the cash equivalent of the leaving service benefit.
• If the member retires early the pension is whatever their fund will buy.	• If the member retires early the pension is calculated in accordance with the rules.

	• The ER pension may be generous, especially if the member is in ill health or retiring at the company's request.
• When the benefits are to be paid the fund, after deduction of the tax free lump sum must be converted to a pension. • Recent changes allow members to take an income from the fund without having to secure a pension until age 75.	• The benefits payable are pension and one or both of lump sum, and dependants' pension.
• More administration • More flexible benefits	• Trustees must Appoint a scheme actuary Have triennial aluations carried out Have MFR valuations carried out Have statutory surplus valuations carried out

(iii) Membership data, individual for executives, grouped for others

Age / date of birth/normal retirement age
Sex
Salary

For executives,

Expectations re salary growth
age at retirement
Information about marital status

For others,

Expectations regarding future payroll growth relative to national average earnings
Expected promotional increases by age / job category.
Any information available re mortality before or after retirement

Investment returns earned in the past few years.
Details of the types of investments held.

Executives

If salaries are not too variable and expectations about salary growth are similar for all members – attained age method.
Funding rate is stable as long as experience is in line with assumptions.

Future service rate is higher than needed initially and increases with age.
Surplus accruing because of the higher than necessary FS rate will offset the increasing FS rate allowing the overall rate to be stable.
If there are some extreme salaries or if salary growth is likely to be very different for some - calculate individual funding rates
It will be virtually impossible to get a stable rate if the rate is calculated on an average basis.

Others
Projected unit method
Funding rate is stable as long as average age remains constant
and experience is in line with assumptions.
Requires a flow of new entrants to maintain average age.

(iv) In respect of past service members could retain rights to their accumulated funds.
These would continue to grow in line with investment returns earned and be used at retirement to provide cash and pension benefits.
Members could be offered a transfer value to the defined benefit arrangement.
They could be offered
Backdating of service
to the date of joining the defined contribution arrangement
or to a date calculated by converting the TV to added years on appropriate assumptions.
or fixed additional benefits of a value equivalent to their accumulated fund.