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WHITHER THE SOCIETY'S PENSION SYLLABUS?

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Recorder: MICHAEL S. JARNES

- o The current syllabus
  - What is it?
  - How did we get to it?
- o The ideal syllabus
  - What should it be?
  - What should it accomplish?
- o How do we get from the current to the ideal?
  - Short-range plan
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MR. CURTIS E. HUNTINGTON: We are going to organize this session somewhat differently than a typical panel discussion. What I propose to do is to first explain the current pension syllabus, some of the history of how it got to be what it is today, and some current issues regarding changes to it. I will then suggest four or five subjects to be discussed by you at each of the round tables. These subjects will be about what a new syllabus might look like and how a syllabus of the future might be constructed to benefit the pension community. After the discussion period, I will ask designated reporters from the tables to present some of the ideas generated at their sessions.

This program is sponsored in conjunction with the SOA Pension Section. The Education and Examination (E&E) Committee, of which I am General Chairman, has an active part in developing the syllabus, thus I am conducting your discussions.

My formal remarks are designed around a presentation I made September 17, 1985 in New York City to a group of pension consultants. The Society has recognized, for a considerable period of time, that the pension syllabus could be improved. We on the E&E Committee have been seeking the active involvement of the pension community in this process, and invited the chief actuaries of the largest pension consulting firms in the U.S. to send representatives to the meeting in New York. There we discussed the syllabus with the aim of gaining the cooperation of the individuals present in designing changes and

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improvements in the pension syllabus. A similar session is planned for the Canadian pension actuaries. The process is ongoing. Today we hope to identify more individuals who would be willing to participate in helping to improve the syllabus.

To give us insight into where we are today, it is helpful to look back to where we were twenty-five years ago. In 1960, the Society's entire syllabus for all candidates consisted of a series of eight exams, numbered 2 to 8. A previous Part 1, which had been an English language aptitude exam, had been abolished. Five exams were required to become an Associate. Part 2 covered general mathematics, Part 3 covered probability and statistics, Part 4-A covered finite differences and compound interest. Part 4-B was a life contingencies exam. Part 5 included construction of mortality tables, sources and characteristics of mortality tables, and selection of risks. Completion of eighteen hours of exams (and the completion of those five topics) produced an Associate designation.

Three additional exams were required to become a Fellow. Part 6 had five subparts--growth premiums for insurance, valuation of liabilities, nonforfeiture values and changes, life insurance law and agency problems--a selection of fairly diverse topics packaged into one six-hour exam. Part 7 covered distribution of surplus, life insurance accounting, the investment of funds and the valuation of assets. It was not until Part 8 that any specialty information was added to the structure. At that time, Part 8 covered group insurance, individual accident and sickness and social insurance. The only place a unique pension content appeared was in the Part 8 syllabus portion on employee benefit plans, and that amounted to a hour-and-a-half of the total syllabus. A candidate took three six-hour exams, a total of eighteen hours, to acquire a Fellowship designation. All candidates took all the exams. There were no options. Everybody was assumed to learn the same amount of material. If someone was an employee benefit specialist, he had to know the three non-pension topics on Part 8. If someone was an insurance person, he also had to know the Part 8 pension topics. For comparison purposes, there were 3,400 candidates writing exams at that time. There were 1,081 Fellows of the Society and 829 Associates.

Since 1960, five major changes occurred within the entire exam syllabus. The most important has been an updating and expansion of material. Second has been specialization. It is no longer reasonable to assume that the same body of knowledge should be required of every candidate going through the system, and that, in fact, if one was in an identified specialty track, one ought to be tested on some specialized material not required of candidates in a different track. Third was a change in national emphasis. The "Canadianization" of the exams is going full force. A significant portion of the material on the Fellowship topics has had Canadian material added to it. In fact, distinct Canadian exams are occurring at this point. Because of the Canadian involvement, all of the Canadian examination material on the Fellowship level is now provided in both French and English. Finally, for those of you in the U.S., major impacts on the syllabus, and on the education of pension actuaries have been created by the Joint Board examinations and by the Employee Retirement Income Security Act (ERISA) of 1974.

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The very simple syllabus we had in 1960 has become complex in 1985. We had eight exams back then, we have ten now. The first five exams are still mathematical. The math topics are similar to those that appeared on the 1960 syllabus. Part 1 covers general math, Part 2 probability and statistics. Part 3 has different subjects which are more advanced, because the role of statistics in mathematics has advanced. It covers applied statistical methods, operations research and numerical methods. Part 4 covers compound interest and life contingencies. Part 5 finishes the coverage of mathematical topics with risk theory, survival models, construction of mortality tables and graduation.

If you take a good look at these mathematical subjects, you will discover that the content has kept pace with developments in universities, particularly in statistical applications. The material tested has been significantly changed and improved. Now twenty hours of exams, up from eighteen on the 1960 syllabus, are required for an Associate designation.

Parts 6, 7, and 8, particularly Parts 6 and 7, introduce actuarial practice. Everyone takes the same Part 6 exam, studying the same material on financial security programs--philosophy, introduction to design, and administration, and taxation. It is a five-hour exam. There is no specialization or nationalization. It is the first of the Fellowship topics and the first time students take an essay examination.

In part 7, specialization and nationalization are introduced. If you are an insurance specialist, you take the 7-I exam which is essentially the same in Canada and the U.S. The emphasis of the material is slightly different, but the subjects are the same--pricing life and health insurance, valuation of liabilities, financial reporting, life company taxation, life insurance law, and (since you are not going to be working in pensions) an introduction to pension funding so you will have a basic understanding of what pension funding is about. If you are in the employee benefits area, you take a different Part 7 exam. Here Canadians, are responsible for topics on the principles of funding and valuation of liabilities for pension plans, the Canadian regulatory environment and an introduction to insurance comparable to the introductory pension topics the insurance people have on Part 7-I.

For the U.S. candidates, the successful completion of the two enrollment exams, Parts EA-1 and EA-2, will give credit for Part 7. Part EA-1 is identified in two subparts as EA-1A and EA-1B. In fact, the Joint Board has agreed to permanently split the EA-1 exam into these two subparts to be administered as separate and distinct exams, but treated as subparts of the EA-1 exam. There will be a two-and-one-half hour exam on life contingencies and compound interest, and a two-and-one-half hour exam on pension mathematics. The EA-2 exam is on the pension regulatory environment and contains mathematical questions in the context of the regulations.

Having gotten through Part 7, all the candidates go into an advanced actuarial practice examination in Part 8. It covers three topics--macro-economics, investment management and corporate finance.

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Pension, insurance and group specialists all go through the same Part 8 funnel.

For Parts 9 and 10, there are three optional specialization areas labeled G, L, P. The first, G, is group life and health and individual health insurance. The L label stands for individual life insurance and annuities, the P label for the pension benefits area. For both Parts 9 and 10, the candidate must select the area of his principal interest, and then take a three-hour exam on the primary subjects in that area. Candidates are asked to select one of the two remaining areas as a secondary topic. If you are an employee-benefit specialist, you must take a two-hour subpart exam on either individual life insurance and annuities or group and individual health topics. You do that for both Parts 9 and 10. You are not obliged to make the same selection for Part 10 that you did for Part 9. Your selections for Parts 7, 9, and 10 can be entirely different. Parts 9 and 10 are each a five-hour exam, exclusively in an essay format. The number of hours for the Fellowship exams is twenty-five, for most people. Adding that to the twenty hours for Associateship, there is an overall forty-five-hour exam structure to become a Fellow.

However, if you are a U.S. pension student, you must take four additional hours of exams. This is the only group that has additional exams. That is because of the decision to have the enrollment exams counted for Part 7. The I students and the P students in Canada take a five-hour exam for Part 7, but a U.S. pension student, sitting for the enrollment exams, takes nine hours of exams. One of the reasons for this is to obtain not only the FSA, but also the EA designation. So you do get something for the extra four hours. It is recognized that the EA-1A portion of the exam compound interest and life contingencies is being double tested since these subjects are also covered on the Part 4 exam. But, the Joint Board is not yet willing to say that Part 4 is equivalent to EA-1A. At some point in the future, depending upon the involvement of the pension community, I think the Joint Board will waive EA-1A for regular Fellowship candidates. At that point the discrepancy in total exam hours between U.S. pension students and others would be only one-and-one-half hours.

For comparison purposes, in the current system we have 15,500 candidates taking exams. We had 5,208 Fellows and more than 4,000 Associates at the end of 1984. The split given in the 1984 Yearbook is that insurance companies employ about 4,700 of those Fellows and Associates, and there are more than 3,000 consulting actuaries.

At the Parts 9 and 10 levels, we should now look specifically at what the U.S. pension candidates are being asked to do. This discussion is designed for the U.S. syllabus, but comparable things are going on in Canada.

In Part 9-P, Primary, you consider problems of the consulting actuary in professional practice, the legislative environment and program design. You would choose between life and group as a secondary topic. If you took the life option, you would be responsible for knowing about the design of individual life products, how they are marketed and how

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the risks are selected. If you took the group option, you would need to know the same things about those products.

In Part 10 P, you are tested on the principles and practices of pension plan valuations, how to report the results of those valuations, and also are tested on an introduction to insurance topics. Remember, the Canadians had an introduction to insurance topics on Part 7. Since in the U.S. EA-1 and EA-2 are sufficient to pass Part 7, the basic broad introduction to insurance topics is not on the U.S. pension exam and we add it here at the Part 10 level.

In the current structure, effective with the 1985 fall exam for Part 9, we have added something called "current issues." We have told the candidates that up to 15 percent of the questions and/or topics on primary material may come from sources not directly listed in the syllabus. However, a number of appropriate publications is cited. This gives an indication of the broad subject areas a candidate should be aware of. If you are practicing in this primary area, you probably are, or ought to be, aware of what is going on within that environment. In the pension environment, in particular, if there are new regulations having a direct bearing upon your practice, we on the E&E Committee would hope that the fact that those came out after the study notes were closed off for exam purposes would not preclude you from keeping current in your own area. We have some responsibility for communicating that through the exam structure.

Let me insert a piece of good news for the pension people. We are moving Part 8 from the spring to the fall starting in the 1987 exam year. This is in direct response to concerns expressed by the pension group that under the current structure, given the location of the EA-1 and EA-2 exams for Part 7, we ask pension students in the U.S. to take four exams in the spring and only two in the fall. In terms of exam balance, we are asking them to write twenty hours of exams in the spring and only nine hours in the fall. Also, spring seems to be a busier time of the year for the pension community than the fall, which compounds the problem. In 1987, we will move Part 8 from a spring exam to a fall exam, and thus we will have three exams in the spring: Parts 6, EA-1 and Part 10. In the fall, there will also be three exams: EA-2, Part 8 and Part 9. In terms of exam hours this change will result in fifteen hours of spring exams and fourteen hours of fall exams. If, at some future point, the Joint Board were to agree to waive the EA-1A exam for Society candidates who had passed Part 4, the spring portion would be reduced by two-and-one-half hours and we would wind up with a twelve-and-one-half hour spring, fourteen-hour fall balance. To ease the transition, we have agreed to administer Part 8 twice in 1986. Thus, no one is disadvantaged since we have added one additional opportunity in 1986. The other benefit of this is that we have structured it to have absolutely no special-case transition arrangements.

Those of you in the pension area are certainly aware of the significance of the EA exams. You may not be fully aware of how they are structured and how they are constructed. The enrollment exams are jointly sponsored by three organizations: the American Society of Pension

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Actuaries (ASPA), the Joint Board for the Enrollment of Actuaries and the Society of Actuaries. There are two exam committees. Those are staffed by both ASPA and SOA members with chairpersons rotating between the two bodies. The exam committees write the exam questions under the direction of the Advisory Committee and the Joint Board. The Advisory Committee consists of nine public representatives: two nominated by the ASPA and selected by the Joint Board, two are nominated by the SOA and selected by the Joint Board, and five nominated and selected from the public at large by the Joint Board. Each of these nine serves in a public capacity, but there are various ways of getting on the Advisory Committee.

The Joint Board, which supervises the entire structure, consists of five full members: three from the Department of the Treasury and two from the Department of Labor. As currently constituted, three are actuaries and two are lawyers. There is also an executive director, Mr. Leslie Shapiro.

The exams are created by an examination committee, reviewed by the Advisory Committee, and then submitted to the three sponsoring organizations for acceptance. The content and structure of the exams, however, is determined by the Joint Board after public meetings and after receiving input from its Advisory Committee. The Advisory Committee, along with the Joint Board, conducts open meetings and does seek input from the public. The public, however is rarely represented at those sessions. I would urge the members of the pension community to attend. Notices about these meetings appear in the trade publications. The government and the advisory committees would like to receive more input from the public. Those of us involved attempt, through the education and examination system, to present what we believe the pension community is looking for and is interested in. It always helps, however, to have pension actuaries present at those sessions.

To give you some sense of the commitment of the pension community to the E&E Committee, we have an Education Committee of fourteen members, four of whom represent or work within the pension environment. On the Examination Committee we have thirteen general officers, two of whom are pension consultants. We have eleven exam committees to administer the ten parts, including three chairmen who are pension actuaries. The chairman of Parts 1 and 2 is a pension actuary. The other two committees that have chairmen from the pension sections are EA-1 and EA-2. We have vice chairmen on each of the specialty exams, 7, 9, and 10, who are from the pension community, as are approximately 25 percent of the members of the Parts 7, 9 and 10 Committees.

I have used this first portion of the program to give you a sense of how we have come from a 1960's syllabus that was a fairly rigid, monolithic structure to the 1985 syllabus which makes significant variation available. One of the architects of that variation is in the room with us today, Mr. Charles Walls. He, more than anyone else, helped to create a system that gave recognition to the needs of the pension community. When the E&E Committee started this restructuring in the late 1970s, we adopted a system that was somewhat parallel to what we were doing in the life areas, but tried to recognize the unique aspects of the pension

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environment. The concern we have at this point is that, while it may have been a very good system in 1980, we are increasingly hearing that the syllabus content, subject material and study notes are not all that relevant today. Therefore the next portion of this program will be devoted to round-table discussions of the issues involved in designing what I have described as the ideal syllabus. What should it be, what should it accomplish?

I have four basic areas of questions for the groups to begin with. One question area to consider is: What subjects ought to be required for a pension actuary? We currently go through a system where the same material is required of everyone through the first five parts. Is that desirable for the ASA level? Are all the mathematical topics needed by pension actuaries who are going to have an FSA designation? At the Fellowship level, how important is it to have those introduction-to-insurance topics, some of the parallel structures that are in place?

Second, what sources should be used for study material? There is controversy in the pension area, and if it's not there, I certainly hope I can stimulate it, as to whether or not candidates should read only original source material. Should study notes be specifically written for the SOA E&E system? Should there include material available in the public domain, either within your individual firms or from the trade press?

Third, some dislocation is created for pension actuaries by the existence of the enrollment exams in the middle of the SOA syllabus. Is that desirable? Should the enrollment exams count for Society credit? Should they be embedded within the SOA system or should they have a separate identity outside of the FSA designation? We on the E&E Committee have experienced controversy over what the pass marks ought to be on the EA exams versus what they are on the Society exams because they serve different purposes. The Society exams are designed to test how well a basic education objective has been accomplished, mostly by self-study. With ten exams there is a significant number of opportunities to see how well a candidate has been performing. The enrollment exams though, serve a licensing function that is different from testing of educational objectives. There are only two opportunities (now three with the split of EA-1) to review performance. The different pass marks have created problems for individual candidates.

Finally, a major idea under consideration as flexible education is to enhance the entire syllabus with types of educational experiences in addition to straight self-study. There could be requirements for oral presentations before a designation of ASA or FSA would be earned. A candidate might have to participate in some sort of activity demonstrating communication skills: seminars, meetings, things like that. There might be a requirement that more active use of computer resources be embedded within the structure of the education of actuaries. Case studies would be designed for personal computers in the employment environment (or home). This work would be followed by one or two week seminars where the case studies would be discussed and analyzed. There is a possibility of recognizing research papers. It is conceivable that one way of keeping the syllabus current would be to acknowledge

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research papers accepted in recognized journals, (for instance, the Transactions of the Society). A candidate might then receive a waiver for a portion of an exam (for instance, Part 9-P). Is that, or is that not, a desirable feature, in terms of an idealized pension actuary and the education of that person?

MR. HUNTINGTON: I have available, as a handout at the end of this session, a copy of the current SOA pension syllabus split into twenty-five major areas with existing study notes identified. See [Attachment.] The E&E Committee would be more than happy to have assistance from anyone attending the meeting today who would like to participate in writing study notes, or who knows an expert to write on a particular area.

TABLE 1 SPOKESPERSON: The first question we addressed was: "Should the EA exams be retained as part of the Society's pension syllabus?" We unanimously decided that they should be part of the SOA syllabus. We want to do our best to keep the pension actuaries inside the Society exam process. To separate those would encourage a flood of pension actuaries to operate outside of the Society.

The second question we addressed was: "What about the required subjects?" We were all pretty much in agreement that the lower exams are appropriate for pension people, that all pension actuaries need a mastery of a wide range of mathematical subjects. There was nothing we felt should be deleted or added. Regarding the upper exams, we were of diverse opinion, but primarily we thought that the pension material may be too narrow in focus. There is too much defined-benefit-single-employer-corporate-type emphasis and not enough of a range of employee-benefit topics on a variety of types of defined-benefit plans. For example, there is not enough emphasis on the public and the multi-employer plans. We all came to the conclusion that insurance topics for pension actuaries should be a part of the syllabus.

TABLE 2 SPOKESPERSON: We began with the question: "What subjects should be required for a pension actuary?" We unanimously felt that the FSA who is a pension actuary should be required to have a broad base of education, and thus testing on secondary topics is useful. It is an acceptable career course for an individual to be an enrolled actuary and not be a FSA, that just connotes different backgrounds. The FSA should have a broader background, which would be helpful in dealing with executive compensation programs and funding instruments for small retirement plans, and in maintaining career flexibility for the individual. This is particularly true in an insurance company environment where the pension actuary might eventually be dealing with other things. There was some concern that keeping the broader topics on the Society's syllabus might drive some people away from it, but we decided that was acceptable. They could still become enrolled actuaries and not do anything else.

The question about sources of material recognizes an increasing problem of staying current. Textbooks are hard to keep current and often do not address the required material. It is hard to find authors for study notes and hard to get them through the publication process, but if they



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can be found, that would be a good way to go. Most of us felt that the text of codes and regulations should be included as appropriate material. Students ought to start learning how to read the actual codes and regulations, because they will have to do that later on in their jobs. The majority of us felt that the pension exams and the enrollment exams should be incorporated in the Society syllabus, but there were strong minority opinions.

We talked briefly about flexible education, particularly with respect to computer literacy. Most of us agreed that that is an important skill. At the same time, we want to make sure that we do not excuse the student from knowing the fundamentals of the actuarial process as in the case studies. One way to incorporate both would be to build errors into some computer models and ask the student to find the errors. We felt oral presentations would be difficult to evaluate.

TABLE 3 SPOKESPERSON: Our group did not decide anything earth-shatteringly different from the first two, so I will try to expand on those findings. We agreed that a broader range of employee-benefits topics is needed, especially in the area of defined-contribution plans. We questioned whether Part 5, in particular, was appropriate for a pension actuary. Mr. Linden Cole has assured us that changes may be made with respect to modeling topics that would make it very appropriate for us. He also said, and we agreed that a seminar setting to discuss computer case studies may be appropriate.

We believe very strongly that testing on a secondary topic is appropriate, and it is just a question of degree as to what the balance should be between primary and secondary subjects. One idea we had was that Part 8 could introduce all of the topics that are mandatory for everyone, with Parts 9 and 10 devoted entirely to the individual's primary topic. One weakness both in that proposal and in the current arrangement is that you really do not get to the substance of your specialty until the very end, and by that time not everybody is still taking the exams.

We had concerns about the readability of study notes and also recognized the ongoing efforts to make the study notes more current. Maybe it would be worthwhile to explain something differently to someone taking a topic as a primary emphasis than to someone taking it as a secondary emphasis. If it is a secondary emphasis maybe you do not need to know how to do something, but you need to know what it is all about. Maybe the same source materials are inappropriate in serving both of those purposes. We think that the tax code needs supplementation in study notes, and perhaps there could be a syllabus with respect to the tax code. One does not need to know every nook and cranny of every regulation, but it would help to be told what parts one needs to know.

Finally, we think publishing is a good idea, with some limitations. It would improve the quality of research. There is a certain lofty goal about educating yourself and the other members of the Society, and that is worth something, perhaps a portion of an exam. But we also think there needs to be a limit so we do not have people making a

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career out of publishing articles without taking any exams. We recognized that there would be some implementation difficulties to overcome, such as getting some papers published and deciding which papers should receive exam credit.

TABLE 4 SPOKESPERSON: Overall, we felt that the first five exams are appropriate, perhaps with the exception of Part 5.

The second area we discussed was: "Should EA-1 and EA-2 be in or out of the syllabus?" The material tested in EA-2 is partially covered in another part of the syllabus, but in essay form as opposed to multiple choice. That led us to a discussion of reading original source material on ERISA versus derivative materials. We talked about whether or not we should ask large insurance companies and large consulting firms for the use of their internally-distributed documents, for use on Parts 9 and 10. One problem we saw was with the proprietary nature of these. Another problem is that if a lot of information had been generated as a result of the fees paid by one large client, it would not be fair to release it to the general body of actuaries.

We discussed how you would administer an oral-presentation exam. Scheduling one-day seminars where a person's active participation would be judged is one way to administer it. We talked about having a management exam, and an ethical exam. One strong opinion was that those are not within the role of the Society. It is the responsibility of the consulting firm or the insurance company to make managers out of people, to make computer-literate persons out of the actuaries.

MR. HUNTINGTON: The proposed flexible education system, under active discussion in the Society at this time provides an appropriate opportunity to implement some of the ideas discussed today, to consider ways of incorporating directional changes in the future education of actuaries, pension actuaries in particular.

One of the benefits of, and one of the driving reasons for flexible education is the recognition of specialization. In fact, the educational needs of a pension actuary may be different from those of a life insurance actuary or a health actuary. If a structure of flexible education is put into place, there will be ample opportunities over the next few years to design, with the assistance of people like you who are active in the pension community, an educational system that will meet your needs and the needs of those entering your profession.

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Attachment

SOCIETY OF ACTUARIES PENSION SYLLABUS  
(Fellowship Examinations)

Compiled by Linden Cole from 1986 Course of Reading

1. Introductory material on pensions  
Rejda, chapter 4  
Allen, Melone & Rosenbloom, chapter 1
2. Introduction to employee benefit planning  
6-new-86 Employee Benefits in Canada  
Rosenbloom & Hallman, chapters 1, 3, 6, 9 (part)  
Allen, Melone & Rosenbloom, chapter 2
3. Introduction to pension regulation and taxation  
McGill, chapter 2  
6-129-85 The Pension Benefits Act in Canada  
7BA-410-85 Principles of Taxation
4. Pension design and administration  
McGill, chapters 3-9  
Allen, Melone & Rosenbloom, chapters 4-6  
7EU-703-76 Insured Pension Plans  
9PU-919-85 Limited Period Early Retirement Incentive Programs
5. Regulatory requirements for pension plans  
7BA-702-79 Disclosure of Actuarial Information for Pension  
Plans--U.S.  
7EU-607-80 Design Constraints of ERISA  
"Retirement Equity Act of 1984; Law and Explanation", CCH  
9PU-809-82 Limits on Benefits and Contributions for Tax-Qualified  
Defined Benefit & Defined Contribution Plans  
9PU-816-83 TEFRA: Effect of Maximum Limitations on Pension  
Benefits and Contributions  
9PU-818-84 Actuarial Aspects of the Age Discrimination in  
Employment Act  
9PU-820-85 Internal Revenue Code Sections, Revenue Rulings,  
Revenue Procedures (many)  
9PU-821-85 Actuarial Aspects of Sex Discrimination  
6-125-85 Sex Discrimination Regulations (subset of above) "New  
Pension Rules under 1982 Tax Law", pub. #4972, C.C.H.

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[Joint Board Exam References:  
ERISA (the actual legislation)  
IRC code sections (many)  
Schedule B of Form 5500; Form 5310  
Joint Board regs (section 901.20)  
IRS reg, revenue procedures, revenue rulings (many)]

6. Pension Plan Terminations  
7EU-606-80 Pension Plan Terminations  
9PU-810-82 Withdrawal Liability
7. Multi-Employer Pension Plans  
7EU-609-82 Multiemployer Pension Plan Amendments Act of 1980
8. Actuarially Equivalent Benefits  
7BA-605-80 Actuarially Equivalent Benefits
9. Integration with Social Security  
McGill, chapter 10  
9PU-814-83 Checklist of Integration Limits and Possible Adjustments  
9PU-902-81 IRS Limits on Integration of Defined Benefit Pension  
Plans with U.S. Social Security
10. The U.S. Social Security System  
Rejda, chapter 2  
Myers, chapters 1, 2, 4, 5, 10, 17 (Part)  
6-123-84 Social Security Programs in the U.S.
11. Taxation of pension payment recipients  
Stanley & Kilcullen's Federal Income Tax Law, many sections Allen,  
Melone & Rosenbloom, chapter 19.
12. Pension funding and valuation  
McGill, chapters 12-16  
Anderson, A.W., chapters 1-7
13. Projection valuation methods for pension funding  
"Characteristics and Operation of Projection Valuation Methods for  
Pension Plan Funding", by R. J. Schnitzer, TSA XXIX, pp.  
269-298.

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14. Selection of Assumptions

8-201-79 Interest Rate Assumptions and the Relationship Between  
Asset & Liability Structure  
10PB-717-86 Mortality Tables for Pension Plans  
10PB-719-85 Group Annuitant Mortality and Turnover

15. Investment and Management of Pension Fund Assets

McGill, chapters 19-21  
8-205-85 Risk vs. Return in Pension Fund Investment  
8-206-85 Structures of Investment Management Organizations and  
Other Readings  
10PB-808-80 Measurement of Investment Return

16. Pension funding instruments

McGill, chapters 22-23  
Allen, Melone & Rosenbloom, chapters 10-13  
7BA-612-82 Group Pension Dividends  
"The Guaranteed Investment Contract (GIC)" by John Stiefel, TSA  
XXXVI (preprint)

17. Matching of assets and liabilities

8-203-85 Optimal Cash Flow Matching  
8-204-85- Duration: Its Development and Use in Bond Portfolio  
Management

18. Actuarial malpractice

PCAPP XXXII, p. 480-534

19. Actuarial determinations in divorce and accident situations

Anderson, D. R., chapters 2, 4-14  
"Pension Valuations for Marital Dissolutions", PCAPP XXXI, pp.  
434-447.

20. Public pension plans

Bleakney, chapters 1-4, 9

21. Reporting the Results of Retirement Plan Valuations

10PU-802-81 Accounting and Reporting Defined Benefit Pension  
Plans  
Addendum to above note  
10PU-805-81 Reporting to Pension Plan Participants in the U.S.  
"What Should be the Content of a Soundly Conceived Pension  
Actuarial Report", by B. H. Hazelhurst, PCAPP, XXI, pp.  
138-151.  
AAA, 1986 Yearbook, "Guides to Professional Conduct," "Pension  
Plan Recommendations and Interpretations."

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22. Other types of money-accumulation plans

Allen, Melone & Rosenbloom chapters 14-17, 23-24  
Rosenbloom & Hallman, chapter 4 (part) and 12

23. Accounting for pension plans

McGill, chapter 18  
10PU-801-76 Accounting for the Cost of Pension Plans--U.S.  
10PU-802-81 Accounting and Reporting by Defined Benefit Pension  
Plans  
10PU-803-81 Statement of Financial Accounting Standards No. 36

24. Current thinking and trends in pension plans

6-201-81 Benefits Plan Design Issues Today and Through the  
1980's

25. Impact of Inflation on Pensioner Income

McGill, chapter 11  
Allen, Melone & Rosenbloom, chapter 7