

# RECORD OF SOCIETY OF ACTUARIES 1982 VOL. 8 NO. 3

## RETIREMENT AGE ISSUES, TRENDS AND ASSUMPTIONS

*Moderator: MICHAEL J. GULOTTA. Panelists: DONALD B. BISHOP, THOMAS P. BLEAKNEY, RAYMOND E. PINCKOWSKI, JR.*

For large and small pension plans, a discussion of current practice and expectations relating to retirement ages will be covered.

1. Trends in experience, especially as they may be influenced by:
  - a. Changes in Social Security;
  - b. Government regulation, such as Age Discrimination in Employment Act;
  - c. Early retirement incentives, such as bonuses or subsidized early retirement factors; and
  - d. Cost-of-living supplements to retirees.
2. Plan design for early and postponed retirement.
3. Effects of deferred retirement on actuarial costs.
4. Trends in actuarial assumptions.

MR. MICHAEL J. GULOTTA: When the late Calvin Coolidge sent his annual dues to the National Press Club, he had to fill out the usual card giving his name, address and occupation. His occupation, he wrote, was "retired". The remaining few lines of the card were invitingly blank and were headed "Remarks". Mr. Coolidge, who made remarks with impunity now that the government was off his shoulders, wrote "Glad of it". It seems that as the years go by, retirees are more and more "glad of it". The image of the retiree rocking on the front porch is an anachronism. Today is the day of the younger retiree, golf club or tennis racket in hand, an active social schedule, enjoying the retired years as much or more than the carefree youth years. In spite of economic uncertainty, including episodes of extraordinary inflationary pressures during the 1970's, retirements are occurring significantly earlier than they were even just 20 years ago. At least this is true in the Bell System. Not only is this trend sociologically noteworthy, but it is also significant from the actuary's point of view since the cost of a pension plan depends not only on who will receive a pension and for what amount, but also, on when that pension will commence and for how long it will be paid.

First, I will share the experience of the Bell System with respect to retirement over the 20-year period beginning in 1960. Then I will briefly identify the changes in conditions which could have an impact on retirement rates in the future. Also, I'll briefly describe the retirement assumptions made in the valuation of the Bell System pension plans.

The exposure for the 20-year period being reviewed, on which the analysis of the Bell System experience is based, includes approximately 15 million life years of active employee exposure. The employee group analyzed includes all employees of AT&T and its operating telephone companies. It

does not include the employees of Bell Laboratories or our manufacturing arm, Western Electric Company. The employee group is geographically disbursed since in virtually every part of this country there are people with the need to "reach out and touch someone". In Figure 1, the large bars are active employee exposures during the years 1960-79. We begin with about 617,000 active employees. A high of 826,000 is reached in 1975. In 1979, the exposure is about 823,000. The middle bars are the numbers of employees eligible to retire in those years, 87,000 in 1960, 109,000 in 1975, up to 134,000 in 1979. The lowest bars are the actual numbers of people retiring in those years. The percent of employees eligible to retire has varied widely over that 20-year period. This is primarily due to different hiring patterns particularly during and after World War II.

The percent eligible to retire (see Table 1) was just above 8% in 1970, but was much higher in the early 1960's and also in the late 1970's, reaching 16.9% in 1978. Since age distribution can have a very significant impact on actual average retirement age trends, we have analyzed these trends by applying the actual retirement rates in each year to a constant exposure (the exposure on December 31, 1978). The purpose is to neutralize the impact of different hiring patterns and different age distributions of employees eligible to retire.

In 1960, this adjusted average retirement age (see Figure 2) was 60.68 years for males and 58.30 for females. Note the close to 2½ year difference in the average retirement age between the sexes. In 1960, the eligibility requirements were essentially a "rule of 75" for females and "rule of 80" for males, except that one could retire at any age with 30 years of service.

The decision to retire is impacted by one's ability to afford retirement, the economic environment, expectations about the economic environment, provisions of the Social Security law, and the provisions of the employer's private pension plan, how the plan has changed and how it is expected to change. In moving from one time period to the next in Figure 2, I'll note how our plan changed over the period and, in some cases, I'll also identify some significant changes in the Social Security Act.

Between 1960 and 1964, there were two significant changes affecting retirement patterns (see Table 2). One was that the Social Security Act was amended to allow males to receive a reduced benefit between ages 62 and 64. The other was that the Bell System Plan, which had provided a benefit of 1% of final five average salary per year of service less one-half of PIA, was amended in 1963 to reduce the offset to one-third of PIA. Moving from 1960 to 1965, we might have expected a decrease in the average retirement age. Actually, there is an increase in the average for both sexes with a more significant increase for the males (see Figure 2). There is another point to be made about 1965. It was a year in which collective bargaining was taking place in the Bell System. This takes place every three years. I have a theory about what happens to the average retirement age in the year of bargaining: it doesn't move, it doesn't move very much, or it could even increase as seen here.

Between 1965 and 1970, our Plan was again amended (see Table 3) and the Social Security offset was eliminated entirely. In 1970, the average age of retirement for the males starts to decline and the average age for

Figure 1  
**ANALYSIS OF BELL SYSTEM RETIREMENTS**

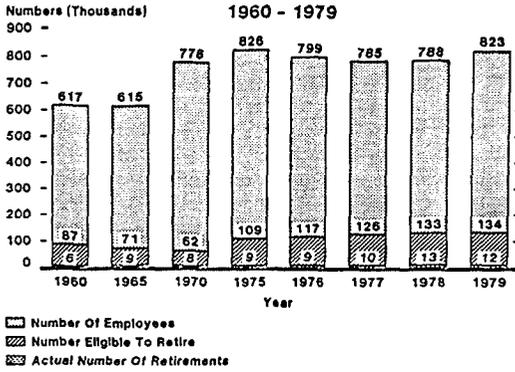
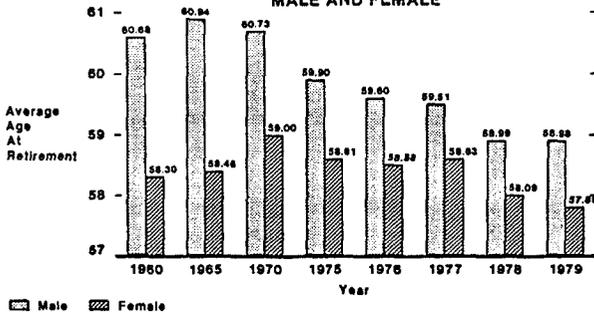


Table 1  
**ANALYSIS OF BELL SYSTEM RETIREMENTS**  
 1960 - 1979

	1960	1965	1970	1975	1976	1977	1978	1979
Employee Population	617,275	614,921	778,244	826,447	799,405	784,929	787,832	822,860
Number Eligible To Retire	86,775	71,423	61,843	109,162	117,187	125,921	133,045	133,785
Percent Eligible To Retire	14.1	11.6	7.9	13.2	14.7	16.0	16.9	16.3
Number Of Retirements	6,274	8,519	7,769	8,570	9,441	9,745	12,862	11,535
Percent Of Eligibles Retiring	7.2	11.9	12.6	7.9	8.1	7.7	9.7	8.6

Figure 2  
**TREND IN AVERAGE RETIREMENT AGE FOR BELL SYSTEM EMPLOYEES**  
 (BASED ON OBSERVED RATES OF RETIREMENT AND EXPOSURE AT 12/31/78)  
 MALE AND FEMALE



females reaches its maximum at 59 years (see Figure 2). Note that the difference between the average retirement age of males versus females is down to about 1.7 years.

Between 1970 and 1975 (see Table 4), the retirement eligibility requirements for males and females were equalized, an early retirement reduction of  $\frac{1}{2}\%$  per month prior to age 55 was introduced, and we changed our formula to provide a 1.5% credit for each year of service after attainment of age 55. Obviously, we intended to backload the formula to create an incentive to stay on. However, we find that in 1975 (see Figure 2), the average retirement age for males dropped significantly. It moved from 60.73 to 59.9. The average age for females also decreased.

In 1975, we again amended the plan (see Table 5). The 1% credit for years of service prior to age 55 was increased to 1.1% and the early retirement reduction for employees who retire with at least 30 years of service prior to age 55 was reduced from  $\frac{1}{2}\%$  per month to  $\frac{1}{4}\%$  per month. In 1976, there was another decline in the average retirement age (see Figure 2) of .3 years for males and almost no change for females.

In 1976, we again amended the plan (see Table 6). The 1.1% factor was increased to 1.25% and the 1.5% credit, which was previously provided for years of service after the attainment of age 55, was now provided after attainment of age 52. We also introduced a step-rate integrated formula in 1976 and provided that the pension to be paid would be the maximum of two formulas.

In 1977, another bargaining year (see Table 7), we have very small changes in the average retirement age (see Figure 2). The reason is that employees were waiting to see what the results of union bargaining might be and this postponed their decision to retire. In 1978, the impact of the decision not to retire in 1977, plus the "normal" movement in the trend produced a very significant decline in the average retirement age (see Figure 2) both for the males and the females.

In 1978, we again amended the pension plan formula (see Table 8), but not in any way that would impact significantly on the decision to retire early. Thus, in 1979, there is almost no change for the males and a slight decrease for the females in the average retirement age (see Figure 2).

What does this experience demonstrate? Over the 20-year period being reviewed, there was a modest decline in the adjusted average retirement age for females and a very significant decline for males (1.7 years). Also, the difference in the average retirement age of males and females decreased from 2.38 in 1960, to just over one year in 1979.

How does the experience of the Bell System compare with Social Security? In January, 1970, just 24% of eligible workers between the ages of 62 and 64 were receiving Social Security Retirement Benefits. That percentage was 35% in 1979, and 37% in 1980.

There are five factors, in addition to the ones discussed earlier, which will play a role in shaping retirement patterns in the future:

1. the possibility that pension plans may be required to provide for a

Table 2

**PLAN AMENDMENTS 1960-1964**

<u>Year</u>	<u>Change</u>
1960	Minimum Pensions Increased
1961	Social Security At 62 For Males
1963	- Reduction In Offset Adjustment - Age 65 Retirement With 15-20 Years Service - Joint And Survivor Annuity - Automatic Survivor Annuity

Table 3

**PLAN AMENDMENTS 1965-1969**

<u>Year</u>	<u>Change</u>
1967	Reduction In Offset Adjustment
1969	- Elimination Of Offset Adjustment - Minimum Pension At 65 Increased - Highest 5 Consecutive Years' Wages For Computing Pensions

Table 4

**PLAN AMENDMENTS 1970-1974**

<u>Year</u>	<u>Change</u>
1971	- Improvement In Pension Formula - Minimum Pensions Increased - Earlier Retirements Allowed - Early Retirement Reduction For Early Retirements - Males And Females Can Retire At Same Ages - No Sex Differentiation In Paying Survivor Annuities

Table 5

**PLAN AMENDMENTS**

<u>Year</u>	<u>Change</u>
1975	- Decrease In Early Retirement Discount - Elimination Of Early Retirement Discount For Automatic Annuitant - New Joint And Survivor Benefit - Revised Pension Formula - Minimum Pensions Increased

Table 6

**PLAN AMENDMENTS**

<u>Year</u>	<u>Change</u>
1976	Improvement In Pension Formula

Table 7

**PLAN AMENDMENTS**

<u>Year</u>	<u>Change</u>
1977	Improvement In Pension Formula

- pension benefit accrual after age 65;
2. Social Security replacement ratios will stabilize over the future as opposed to the fairly rapid increase in those ratios during the 1970's;
  3. the expectation of reduced inflation in the 1980's;
  4. the extent to which employees' savings are used in the future to supplement private plan benefits and Social Security benefits through IRA's, etc.; and
  5. the possibility of an increase in the Social Security retirement age from 65 to 68.

What's the net effect of these factors? I would not anticipate any sharp increases in the average retirement age nor do I believe that average retirement ages will decrease very significantly in the future. In short, in light of recent trends and the potential for changing circumstances in the future, I would base actuarial assumptions on recent past experience, but would also keep a close eye on emerging developments and patterns.

I will now review briefly the assumptions that we are currently using in the Bell System with respect to retirement age (see Table 9). The rates are different by age at entry and length of service. We do not use average retirement ages. We find that the higher the ages at entry, the lower the rates of early retirement. We use different rates by sex and we use different rates for our management and non-management employees. Further, our rates are based on the observation period 1975 through 1978.

Figure 3 is one example of the management retirement assumptions. I have selected an average age at entry of 24. At the early ages of eligibility, the retirement rates are higher for females than they are for males. The rates merge at about age 60. The non-management employee pattern is very similar (see Figure 4). The magnitude of the rates is not the same, but the pattern is very similar.

MR. DONALD B. BISHOP: I've been a pension actuary for about 17 years. During those 17 years I have worked with UAW pattern plans. I want to share what I see in those plans with this group. These plans cover auto companies, auto-related companies, construction machinery companies and agricultural equipment companies.

These plans typically have a provision that allows people who have 30 years of service retire and receive an immediate benefit with no actuarial reduction and an extra amount until age 62 with the idea that Social Security will begin after 62.

In the past, plan design has affected the decision to retire. About seventeen years ago, these plans would provide that if one had 30 years of service one could retire, but if one retired earlier than one's late 60's, the benefit would be cut way back. Gradually, through negotiations, one could retire at 59 and there wouldn't be so much of a reduction. Now one can retire at any age with 30 years of service and there is no benefit reduction.

Table 8

**PLAN AMENDMENTS**

<u>Year</u>	<u>Change</u>
1978	- Improvement In Pension Formula
	- Eligibility To Service Pension At Age 65 Lowered To 10 Years Of Service
	- Minimum Pensions Increased

Table 9

**RETIREMENT ASSUMPTIONS**

- Select Rates By Age-At-Entry And Term-Of-Service, Not Average Retirement Ages
- Separate Rates By Sex
- Separate Rates For Management And Non-Management
- Rates Based On Observation Period 1975-1978

Figure 3

**ACTUARIAL ASSUMPTIONS  
RETIREMENT RATES  
MANAGEMENT EMPLOYEES  
AVERAGE AGE-AT-ENTRY 24**

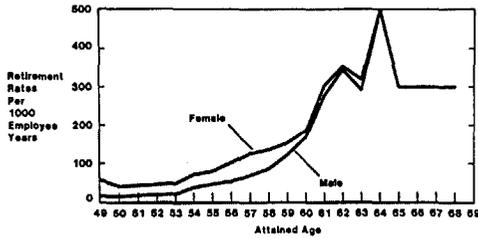
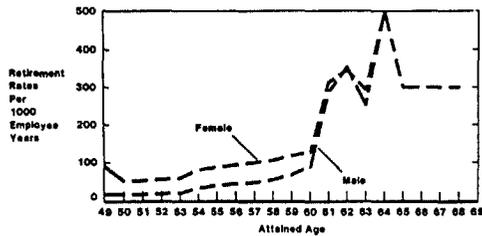


Figure 4

**ACTUARIAL ASSUMPTIONS  
RETIREMENT RATES  
NON-MANAGEMENT EMPLOYEES  
AVERAGE AGE-AT-ENTRY 25**



Any time the eligibility provisions are liberalized, people take advantage of them regardless of how good the benefits are. When the benefits are improved in addition to the eligibility provisions, more people retire early. As these changes have been made over time, employees have been retiring earlier. This can be seen in the experience on a year-by-year basis.

Some employees who have 30 years of service don't retire immediately. Many of these retire at age 62 when Social Security benefits are available. The age at which Social Security starts does affect when employees retire.

What about the other participants who don't have these subsidies? They tend to retire in a group around 62, when Social Security starts. Their retirement pattern is significantly different from the employees who have subsidies. This ties into the pattern in the AT&T plan. The Bell System plan provides subsidies, so the experience under that plan might be more comparable to the 30-and-out experience that I've seen.

A typical assumption might be that people who have 30 years will retire at 58 and everybody else at 62. If there is no 30-years-of-service provision, then everybody will go out at 62. Both of these assumptions will need to fit in with the actual experience of the plans.

There is one other significant factor outside of plan design and Social Security. That factor is the economy. Most of the plans I deal with are in industries that today are in a recessionary or depressionary environment. Over the recent past, there have been significant numbers of retirees who have retired because of the bad business situation, taking advantage of these subsidies.

What is the effect of these supplements and early retirement subsidies on cost? If the average lifetime of a 65-year-old retiree is 15 years and if that person is encouraged to retire at age 60, about five years are added to his benefit payments. He's being paid 30% more benefits, plus there is not as much time to fund those benefits. So, these early retirements are very costly.

What will happen in the future? In setting the assumptions for the plan, I do very much what Mike has described. I take a look at the experience over the near past and use that as the basis for trying to figure out what the trend will be in the future. I don't look way ahead; I try to take advantage of emerging experience as it occurs. What will happen in the future depends very much on Social Security and on the economy. If Social Security is changed by raising the eligibility age, people are going to start retiring later, because Social Security is a very important source of income. In addition, if plans are designed to discourage early retirement, then employees are going to start retiring later. Those two factors are extremely important and neither can be predicted. I don't know what Congress is going to do with Social Security, but I know they're talking about it. Also, I happen to have two relatively large clients who have had early retirement subsidies, but are currently considering deleting those subsidies.

MR. RAYMOND E. PINCKOWSKI, JR.: I'm standing in for Tom Bleakney this morning and I'd like to attribute the credit for all of the work, research

and assembling of the numbers to Tom, and assume the blame, myself, for any errors that I might make in presenting his work.

This is an analysis regarding early retirement and the impact of incentive bonuses that Tom developed approximately one year ago. The incentive bonus in this case is a lump sum related to current salary and is used to motivate employees to retire earlier.

In this era of tight money, school districts are increasingly encouraging their high-paid, long-serviced teachers to retire at the earliest possible date. This results in either a reduction in force, with a lopping off of salaries in the top ranges, or the ability to maintain or even expand the number of teachers without an increase in total payroll, since the replacements are much further down the salary ladder.

One type of incentive program involves payment of bonuses to teachers taking early retirement. Although the cost of the bonus itself will be borne by the local school district as an additional payroll cost, the companion effect on retirement costs is often neither known nor charged to the local school district.

Thus, the local district may be acting very narrowly in its own self-interest, but contrary to the interests of the state as a whole. This does not only take place in the public sector. I have observed the same situation in a corporate plan where the objective is to reduce payroll at all costs and simply ignore any impact on pension plan costs.

The accompanying charts present information integrating the effects of payroll costs, pension costs, the costs of incentive bonuses, and illustrate the following points:

1. the full costs of an incentive program should be known before it is implemented; and
2. An incentive program may well lead to more generous early retirement benefits and greater cost-of-living adjustments.

#### CHART 1

In order to illustrate some typical costs of an early retirement incentive program, hypothetical school districts were set up. For simplicity, all newly hired teachers in each district were assumed to be age 27. One of the districts was assumed to have a normal distribution of employees, with relatively few retirements occurring before age 60. The other school district, although of the same size, has all of its retirements occurring at age 55.

The calculations were largely based upon statistics developed from experience of the California State Teachers' Retirement System. Chart 1 shows the benefits provided by the California Teachers' System and some of the actuarial assumptions used in our calculations. It was assumed for this purpose that a bonus of 75% of annual salary would be provided at age 55 in order to effect full retirement at that age.

DISCUSSION – OPEN FORUM

Chart 1  
BASES OF ILLUSTRATION

AGE 27 ENTRANT

CALIFORNIA TEACHERS SYSTEM BENEFITS

- 2% PER YEAR OF SERVICE
- FINAL 3-YEAR AVERAGE SALARY
- EARLY RETIREMENT REDUCTION: 6% PER YEAR UNTIL AGE 60
- COLA: 2% PER YEAR, NOT COMPOUNDED
- NO SOCIAL SECURITY

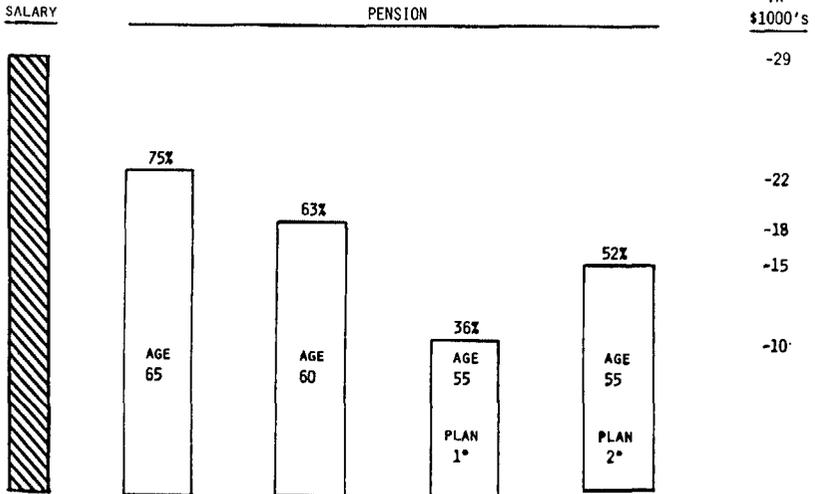
CALIFORNIA TEACHERS SYSTEM ASSUMPTIONS

- 7% ANNUAL SALARY GROWTH PLUS STEP INCREASES
- 8% ANNUAL RETURN ON INVESTMENTS

SALARIES PROJECTED TO 1982

AGE 55 INCENTIVE BONUS: 75% OF ANNUAL SALARY

Chart 2  
PENSIONS AT RETIREMENT FOR VARIOUS AGES  
COMPARED TO  
CURRENT SALARY OF AVERAGE 54-YEAR OLD TEACHER



\*PLAN 1: ACTUARIAL REDUCTION AT AGE 55  
PLAN 2: FULL ACCRUED BENEFIT AT AGE 55

CHART 2

This chart introduces the benchmark I will use in future comparisons. That benchmark is the current salary of a 54-year-old teacher and averages about \$29,000 in this System. Chart 2 also shows the pensions at retirement for various retirement ages of our 27-year-old entrant. For those retiring at age 55, two separate plans are assumed. One of these is the existing California Plan, which provides a 30% reduction in the accrued benefit for retirement at age 55 (Plan 1). The other plan (Plan 2) provides for no reduction of immediate accrued benefits at age 55. Obviously, the more generous the early retirement factor, the more effective the early retirement incentive program will be. Thus, there will be a tendency to move from a benefit structure like Plan 1 to one like Plan 2 if early retirement is to become public policy.

CHART 3

The white bars on this chart show the decline in the pension relative to current salaries for the retiree who has become age 75. The benchmark used is the salary of a 54-year-old teacher. Even with the automatic cost-of-living adjustments (COLA) paid by the California System (2% per year), the benefit becomes marginal at best for the 65-year-old retiree, and woefully inadequate for the younger retiree. As a consequence, it is likely that continued high inflation will cause a more generous COLA to be sought as an automatic program or in the form of ad-hoc increases.

The hatchmarked bars on this chart show the benefits available if the pension is fully indexed by salaries. Such a benefit will keep the pension at a more or less constant percentage of current salaries for active teachers. Thus, it might be considered to be the most generous of COLA's; the actual adjustment might well be somewhat less than the full salary-based COLA.

CHART 4

One step in determining the overall cost of an incentive program involves assessing its cost effects on the retirement system. Chart 4 shows these costs in terms of 1982 normal cost for the various alternatives available: the 2% COLA plan (the current California System) versus a salary-based COLA plan; Plan 1 (30% reduction at age 55 versus Plan 2 (no reduction at age 55); and normal retirement patterns as expressed by recent experience versus the assumed pattern of all retiring at age 55. The normal costs here are the combined employer and employee costs of the retirement program for the average new entrant. These costs do not include the effect of amortizing the unfunded actuarial accrued liability, which most systems will have as an additional burden. As Chart 4 shows, the normal costs of a retirement system decline if everyone retires at age 55, provided actuarial reduction is maintained (Plan 1). However, if the actuarial reduction is eliminated and all retirements occur at age 55, the costs go up. A more obvious fact disclosed by Chart 4 is that the costs are significantly higher if a salary-based COLA is used in place of a 2% COLA.

DISCUSSION - OPEN FORUM

Chart 3  
 PENSIONS AT AGE 75 FOR VARIOUS RETIREMENT AGES  
 COMPARED TO  
 CURRENT SALARY OF AVERAGE 54-YEAR OLD TEACHER

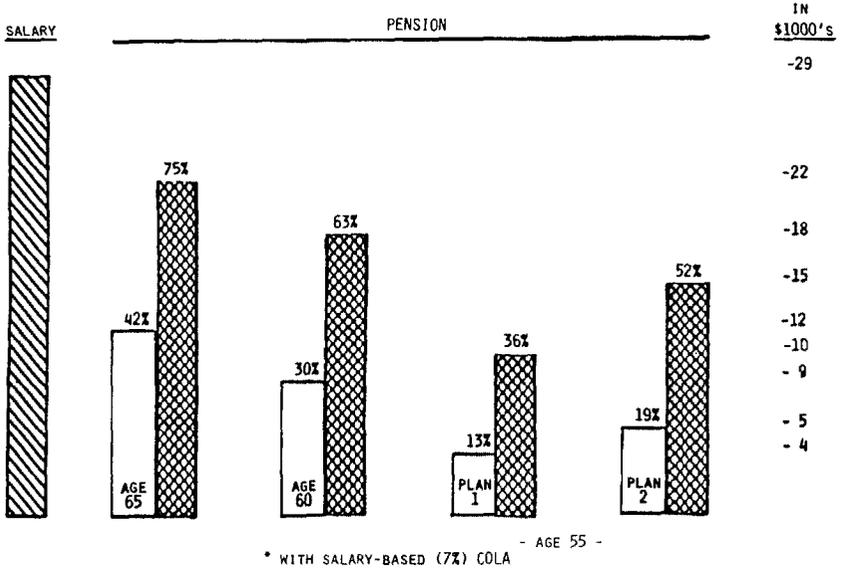


Chart 4  
 1982 NORMAL COSTS PER TEACHER

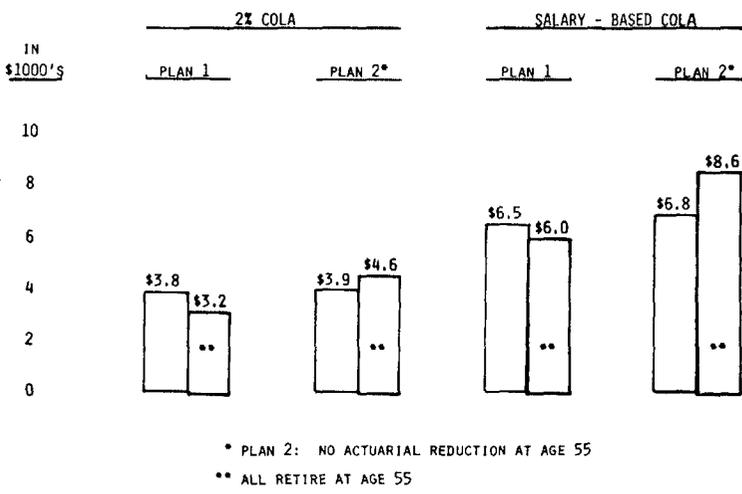


CHART 5

Chart 5 summarizes the total costs of the various programs studied. The total costs include the salary costs, the normal costs of the pension plan, and the costs of the incentive bonus. Again, the amortization payment on the unfunded actuarial accrued liability is omitted. As in Chart 4, the total costs decline somewhat if an actuarial reduction is maintained at age 55 (Plan 1). On the other hand, if the actuarial reduction is eliminated, the costs increase. Moreover, the cost is substantially higher if a salary-based COLA is introduced.

CHART 6

The data presented in Chart 5 are shown in numerical form in Chart 6. As this chart indicates, there are payroll savings if retirements all occur at age 55. In the upper left-hand corner, we see that the payroll of \$23,670 is the average salary of all employees in this System. If all retirements occur at age 55, the number just to the right of that, \$22,524, indicates that if people retire early, they come out of the higher paid categories and are replaced by people further down the salary ladder. On the other hand, the pension costs, which are shown as item B, depend upon whether actuarial reductions occur and the extent of the COLA. Total costs will increase if no actuarial reduction at age 55 occurs and the full 7% COLA is implemented. The 102% (on the lowest line, in the center of the chart) indicates that if all retirements occur at age 55, if there are no incentive bonuses, but if full accrued benefits and a 7% COLA are provided, the total costs, salary costs plus pension costs, actually increase. In addition, even without the 7% COLA, but with a full accrued benefit at age 55, total costs increase if all employees retire at age 55 and the incentive bonuses are paid. The 101% number (in the right-hand column, third from the bottom) indicates that, if all employees retire at age 55, if they receive the full accrued benefit with only the existing 2% COLA, and if they receive the 75% bonuses, costs have actually gone up when we thought they might go down.

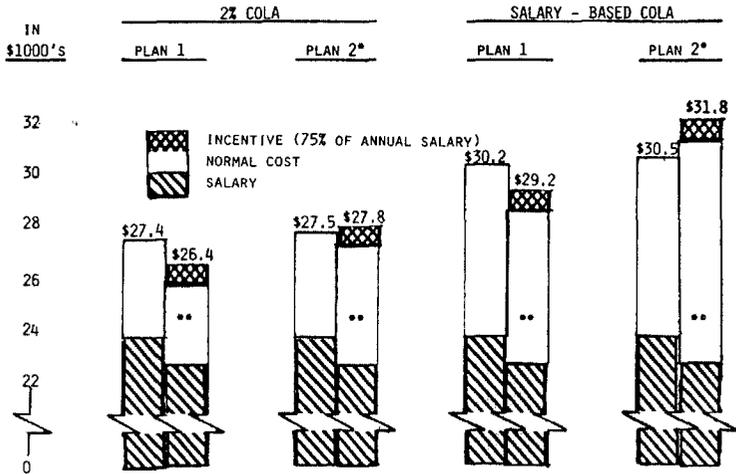
MR. GULOTTA: I will now give you the benefit of what we have in draft form from the Society of Actuaries Committee on Pensions. The Committee is currently doing a study on the effect of postponed retirement on pension costs.

The objective of this study is to analyze the effect of deferred retirement on pension costs as well as to provide a practical guide for actuaries in evaluating the pension cost implications of deferring retirement beyond age 65.

We have analyzed all common types of defined benefit plans: final pay; career average; unit benefit; final pay, step-rate integrated; and final pay, offset. We have also analyzed various methods of crediting benefits beyond age 65, including allowing salary increases only, service increases only, salary and service, actuarial increase, salary, service and actuarial increases, a flat percentage increase and no increase at all.

DISCUSSION - OPEN FORUM

Chart 5  
1982 COSTS PER TEACHER



\* PLAN 2: NO ACTUARIAL REDUCTION AT AGE 55  
\*\* ALL RETIRE AT AGE 55

Chart 6  
1982 COSTS PER TEACHER

BENEFIT AT AGE 55	COLA	REGULAR RETIREMENT PATTERN	ALL RETIRE AT AGE 55, NO INCENTIVE BONUS		ALL RETIRE AT AGE 55, INCENTIVE BONUS PAID*	
			DOLLARS	% OF REGULAR	DOLLARS	% OF REGULAR
<b>A. PAYROLL</b>						
		\$23,670	\$22,524	95%	\$23,180	98%
<b>B. NORMAL COST</b>						
REDUCED	2% SIMPLE	\$ 3,756	\$ 3,198	85%	\$ 3,198	85%
FULL	2% SIMPLE	3,931	4,569	116	4,569	116
REDUCED	7% COMPOUND	6,513	5,999	92	5,999	92
FULL	7% COMPOUND	6,820	8,571	126	8,571	126
<b>C. PAYROLL + NORMAL COST</b>						
REDUCED	2% SIMPLE	\$27,426	\$25,722	94%	\$26,378	96%
FULL	2% SIMPLE	27,601	27,093	98	27,749	101
REDUCED	7% COMPOUND	30,183	28,523	95	29,179	97
FULL	7% COMPOUND	30,490	31,095	102	31,751	104

\*75% OF ANNUAL SALARY

We used three sets of interest rate and salary scale assumptions: 6% interest, 4% salary scale; 8% interest, 4% salary scale; and 8% interest, 7% salary scale. We chose those three sets of assumptions so that one can move between the three sets of assumptions and estimate the impact of a change in salary scale or a change in interest rate without any other change. We used the UP 1984 table for mortality. The cost parameters we used were: PVB, defined as the ratio of the present value at age 65 of benefits payable at deferred retirement to the present value of normal retirement benefits payable at age 65; EANC, defined as the ratio of the entry age normal costs for benefits payable at deferred retirement to entry age normal costs for benefits payable beginning at age 65; and UC, defined as the ratio of projected unit credit cost (service pro-rate) for benefits payable at deferred retirement to such unit credit cost at age 65.

The summary and conclusions (these may change slightly as we modify the drafts) are as follows:

1. All estimates of the effect on pension costs of adjusting for benefit accruals beyond age 65 can be computed or derived from the PVB 's;
2. UC is a simple linear function of PVB ;
3. EANC is also a function of PVB, where such function is the ratio of temporary annuities, the numerator being the salary-weighted temporary annuity from entry age to age 65 and the denominator being the salary-weighted temporary annuity from entry age until the actual retirement age beyond age 65 (in general this ratio is very minimally affected by the level of pre-retirement turnover);
4. In estimating the effect on pension cost, the change in the present value of benefits must be computed based upon the present value of benefits for retirement at age 65;
5. Introduction of an adjustment to the benefits becoming payable after age 65 will, in itself, affect retirement patterns and resulting expected changes in retirement rates should be taken into consideration in estimating the effects on costs;
6. Tabular PVB 's for no adjustment, service credit only, actuarial increase, or percentage increase are independent of type of plan;
7. For other methods of crediting, i.e., salary credit only, salary and service credit, or salary, service, and actuarial increase, the value of PVB does vary by plan type;
8. PVB 's are presented reflecting male mortality only. PVB 's reflecting female mortality can be derived from the male PVB 's by a multiplicative adjustment factor; and
9. PVB 's are shown for each age at retirement 66 through 70 and for three different terms of service at age 65. If retirement rates are assumed in the valuation as opposed to an average retirement age, the average PVB must be determined based upon the tabular PVB 's at each age by weighting the PVB 's by the proportion of participants assumed to retire at each retirement age.

MR. WILLIAM E. NEAL: I'd like to know if you are basing your retirement rates on lives only or on some other factor?

MR. GULOTTA: We've looked at ours both based on lives and wages. Theoretically, the best way to do it is to base rates on reserves, but we use the next best proxy and that is wages.

MR. PINCZKOWSKI: For a consultant, it depends on the budget. It's easiest to do it by a body count, but budget permitting, I prefer the reserve method.

MR. BISHOP: I do it generally by either body count, weighted by service, or by reserve when we have a big enough budget.

MR. JAMES L. COWAN: In analyzing your retirement rates, have you looked into any other factors other than service, such as marital status or whether the skills obtained in your company are transferrable? Are the people who have transferrable skills the most apt to take retirement? In this case, economic conditions would have a very significant effect on future retirement rates.

MR. GULOTTA: The answer to the first question is no, we do not have the luxury of taking into account whether or not marriage is a factor. The answer to the second question is that we base our assumptions on salary. That is, we compute the salary retiring divided by salary exposed and that is the basis on which we establish retirement assumptions. If you accept for the moment that skills and salary levels are correlated, we are implicitly taking into account the job level by establishing assumptions based upon salaries as opposed to lives.

MR. COWAN: Actually, salary is not really a measure of marketable skills. There could be a skill which is usable only for the Bell System, which would not be transferrable to any other occupation, and the salary would still be high. When I was with Railroad Retirement, we found that those people who had transferrable skills were the ones who were most apt to take early retirement; the ones who had skills that were strictly usable in the railroad industry just did not take it.

MR. GULOTTA: Of course, the way you define marketable skills is very critical and is not straight-forward.

MR. COWAN: Another factor which comes into it is job satisfaction. The man on the production line is more apt to want to go out as early as possible.

MR. PINCZKOWSKI: That's a facet of the same factor of marketable skills. Any number of people on the Ford assembly line could go to the GM assembly line.

I never really looked at marital status, but it is important to get the disability retirements out of the study if you are looking for real rates of retirement of healthy lives. Also, the retirement age is affected by the availability of Social Security at age 62.

MS. ROBIN BLACK: Has anyone noticed any effect of pre-retirement counseling on the rates of early retirement? We have a theory that a pre-retirement counseling program will encourage those older people, who are not really successful employees, to retire, while the more successful employees will be encouraged to continue working.

MR. BISHOP: We have a client that put in an early retirement window. For one year, anyone eligible for early retirement could retire and get special subsidies. A lot of people retired, more than the company wanted. In addition, it was the better people, the ones the company wished to retain, who retired. The company had to hire them back at higher wages.

MR. GULOTTA: When we do open the window, we do it very carefully by asking employees to let us know if they would be interested in retiring. That is, one may apply to take advantage of financial incentives which may be granted for electing to retire early, but there is no guarantee that, just because one applies, he will be given this subsidy. This is not reflected in the data that I presented earlier. It is one of the reasons I excluded our Western Electric manufacturing arm, because it has happened there.

MR. JOSH BANK: One factor which bears heavily on retirement rates is the kind of pension plan you have, what the benefits are like, and so forth. I work on our corporate pension plans and they provide very low benefits. Because they are career average plans, there are some cases in which the amount of the pension benefit decreases even though additional accruals are being earned. We have cases of long-service, lower-paid employees who are retiring with 17-25% of their final year salary. It is important to think about whether these people can afford to retire under such a pension plan.

MR. GULOTTA: We did mention affordability, and yes, it is true that if you have a plan that provides 17% of final pay, you are apt not to get early retirements. Ours is a plan without reduction between 55 and 65. I agree with your point.

MR. PINCKZKOWSKI: I think the definitive study of that point was done by the faculty of the University of Michigan about ten years ago. A correlation analysis between different factors affecting retirement rates was done based on a study of the UAW plans in the late 1960's. The highest correlation turned out to be with the dollar amount of pension benefit.

MR. WILLIAM A WOOD, III: If someone is ill, are there factors affecting whether he delays retirement or retires early?

MR. GULOTTA: The data that I presented excludes disability retirements as defined by our plan but could include service retirements for persons who may be disabled.

MR. BISHOP: I see that quite a bit in multi-employer plans, but there we are not talking about early retirement. The definitions of disability retirement tend to be very loose and depend on the plan and the trustees.

MR. PINCKZKOWSKI: On your charts, Mike, you showed retirement rates by age that were actually higher in the mid-40's than they were in the early 50's. Do you have people really going out at those ages?

MR. GULOTTA: We do. You can retire at any age with 30 years of service. I find that the retirement rates are higher at first eligibility, then they trend down and finally pick up again.

MR. BRUCE E. GOLD: One thing I expected from this lecture was comments regarding the effect of inflation on when people retire. In a career average plan, people can't afford to retire at age 65 because the benefits are not sufficient. Wouldn't inflation also delay retirement in final average plans as people try to keep up with inflation by working as long as possible?

MR. GULOTTA: I think that there are a number of factors involved. During the 70's, when we did have significant inflation, we had decreasing average retirement ages. One of the reasons for that is that we extended benefit increases to those already retired. In other words, what we bargained for the active people, we extended to those already retired. If the employees have an expectation that that will continue in the future, or if the plan automatically provides for protection against inflation, I think they feel sort of insulated from the economy. But, for plans that have not historically made commitments or do not make them formally in the plans, yes, inflation, or the economic environment, will play a very significant role in the retirement patterns.

MR. BISHOP: In many of the plans that I've worked with over the past few years, I did not see people postponing retirement because of inflation. I saw people retiring because of bad business conditions. Although you might have expected people to delay, I just didn't see it. That might be because Social Security has gone up quite a bit over the last few years and made up for it.

MR. GREG DELAMARTER: The existence of other plans in addition to defined benefit plans will also have an effect on early retirement. Profit sharing plans or money purchase plans may also be in existence so that perhaps the 17% defined benefit pension may not be the total story.

MR. RAY SHAPIRO: The automotive plans that we discussed tend to make the heavily subsidized early retirement dependent upon an agreement to restrict a retiree's re-entry into the work force with a 2-for-1 penalty for earnings in excess of the Social Security limits. Does AT&T provide for that and have there been any studies on the extent to which the people going out in their early 50's or late 40's do remain out of the work force?

MR. GULOTTA: Once you retire you can go to work for a non-Bell System employer without penalty. However, if you are re-employed by an AT&T company, there is a suspension of pension benefits. I am not aware of any studies of re-entry of Bell retirees into the work force.

MR. SHAPIRO: Has any data been collected as to which of those employees who retire at the super early ages do re-enter the work force?

MR. GULOTTA: I don't have that information. In the actuarial area, we have not done such a study.

MR. RICHARD S. RASKIN: The point that was just made is a good one. You are dealing with two different factors: retirement when people leave the work force, and that's probably what happens when people leave at age 60 and over; and something that is not really retirement at the younger ages. By averaging to get 58 as a retirement age, you really analyzed two trends that are very different and that does not tell us much about the retirement pattern of leaving the work force for the people who are at older ages. Maybe the information you have from Social Security tells us something, but looking at any company with highly subsidized early retirement benefits does not reveal anything about the work force.

As the work force starts to shrink at the end of this decade, it is going to put a lot of pressure on plans that have these very liberal early retirement factors at younger ages. We will to see a lot of people have two careers. AT&T is substituting itself for the government or the military when 10% of the work force leave at age 45.

Don, you said that bad conditions in the economic environment are causing people to retire at early ages. I'd like you to explain why people would voluntarily retire during bad economic conditions unless the employer is doing something to give them a boost out.

MR. BISHOP: There could be a boost out; it could be a choice of not working or retiring, so someone decides that now is the time to retire and get out. It could be the closing of part of a plant.

MR. GULOTTA: You make a good point about distinguishing between leaving the work force and leaving a particular plan. The data that I presented was with respect to leaving our particular plan. If one does have a marketable skill and chooses to commence a second career, so be it. Our plan gives one that luxury. From this data, it is true that you would not be able to gauge whether the employees are leaving the work force entirely.

MR. RALPH E. EDWARDS: I wonder if the answer in the auto industry might be that one would retire rather than accept layoffs.

MR. ROY A. FERGUSON: Under the program enacted about three years ago, a couple of things have happened in relation to Social Security benefits: the increase in benefits for working between age 62 and 65 is a lot less than it used to be; and the benefit of someone retiring at age 50 or 55 who starts claiming benefits at age 62 is going to be relatively high. Have any effects of these changes have shown up in the retirement rates?

MR. GULOTTA: I don't think you can isolate any one factor. We don't have a laboratory-type environment in which to do these studies.

