GVS Minnesota Memo #10
February 18, 1966

# ADDITIONAL DISCUSSION OF STATE POLICE OFFICERS' VALUATION REPORT AS OF JUNE 30, 1965

The purpose of this memo is to discuss further the valuation of the State Police Officers' Pension Plan as of June 30, 1965 with particular emphasis on an alternative method of analyzing the changes in cost which resulted from increasing the limit on covered salary from $4,800 to $7,200.

The Entry Age Normal Cost Method is used in valuing this Plan, and our Memo No. 5 dated December 17, 1965 summarized the results of the valuation by this method. The report showed that the Normal Cost increased from $107,000 to $128,000 between January 1, 1964 and June 30, 1965, but as a percentage of covered payroll it decreased from 13.6% to 12.3%. This decrease results from relating the Normal Cost to the larger covered payroll.

Over the same period, the Unfunded Liability or Deficit increased from $1,654,000 to $2,224,000, an increase of $570,000. We have estimated that $34,000 of this increase resulted from a contribution rate which was 2.9% short of that required to meet minimum funding requirements. The remaining $536,000 of the increase resulted from larger benefits produced by the increase in the limit on covered salary. It is a characteristic of the Entry Age Normal Cost Method that any improvement in prospective retirement benefits will cause an increase in the deficit at the time the improvement is made. This has been a point of discussion in previous Commission meetings.

In Memo No. 5, it is shown that the contribution necessary to amortize the new deficit by 1997 is 10.3% of covered payroll. It is estimated that the portion of this 10.3% which arose from the increase in pension benefits is 2.5%. Therefore, one way of analyzing the total required contribution would be to state that 12.3% plus 2.5% or 14.8% is required for costs which are being shared jointly by the employer and the participants.

The above statement is still within the framework of the valuation method being used. Perhaps a more realistic view of the effect of increasing the limit on covered salary could be obtained by determining the contribution necessary to amortize the increase in deficit from this source over the average remaining working lifetime of the participants rather than extending the amortization period to 1997. We have estimated that the annual contribution necessary to amortize the $536,000 deficit over the shorter period is $45,000 which is 4.3% of covered payroll. With this approach, the total cost which is regarded as divided between employer and participants would be the 12.3% Normal Cost plus 4.3% or 16.6% of covered payroll.


FILE COPY

It should be remarked that the approach used in the above paragraph produces the same result that would be obtained if the Normal Cost for the increase in benefits were calculated using each participant's attained age rather than his age at entry.

Although the discussion above has been directed specifically toward the State Police Officers' Pension Plan, the same thoughts can be applied to any of the other retirement plans.

In view of the questions and points of discussion which have arisen in this case, it may be that the Commission will want to require that each actuarial valuation report contain an analysis of any increase in the unfunded liability or deficit. The elements might be classified in the following manner:

1. Deficits caused by inadequate funding (i.e., failure to pay Normal Cost plus interest on the deficit shown in the previous valuation).

2. Deficits produced by increases in benefits (e.g., State Police Officers' Plan results discussed above).

3. Deficits resulting from the actual experience of the Fund in regard to investment earnings, mortality, etc. which is less favorable than the assumptions on which the cost calculations were based. (It should be noted that in a given year the actual experience might produce a gain to the Fund rather than an increase in the deficit.)

Cost Method.

Our method of calculation of Entry Age Normal Cost takes into account the group of covered individuals as it exists on the valuation date. The prospective benefits are found in regard to each active member and a level cost from entry age is found based on these data, which is then related to current payroll.

In the case of the State Police Officers, the retirement benefit as of June 30, 1965, was based upon two separate covered salaries: $4,800 limit up to June 30, 1965 and $7,200 limit thereafter. The result of this calculation was a Normal Cost of 12.3% of covered payroll.

If the benefit of a $7,200 limit had been made retroactive as to past service as well as future service, the prospective pensions would have been increased and an increased Normal Cost would have resulted. We estimate that the effect would have been to increase the Normal Cost to a percentage of payroll in excess of 13% - possibly to the 13.6% Normal Cost shown in our valuation as of January 1, 1964.

Gerald G. Toy
Fellow, Society of Actuaries
GEORGE V. STENNES AND ASSOCIATES
Commission Actuaries