

DEPARTMENT OF ECONOMICS, FINANCE AND ADMINISTRATION

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STATE HIGHWAY PERSONNEL PRACTICES

A PROGRESS REPORT

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SYNOPSIS

In recognition of the need for attention to, and an attack upon, the problems of highway administration and management of road systems, there was created in January 1946, a Committee on Highway Organization and Administration in the Department of Economics, Finance and Administration of the Highway Research Board. The Committee, in its early deliberations mapped out a broad line of attack and isolated several problems to which study could usefully be given.

One of the phases of administration on which the Committee has been accumulating, coordinating, and analyzing information, is that of personnel practices in highway organizations. Inasmuch as industries and segments of governmental service are, in effect, in competition for personnel, the personnel policies of a given industry or service may have important influence upon the effectiveness of that industry or service. It would appear wise therefore for any group to take stock periodically, to assess its position personnel-wise.

This paper is concerned with recent developments and trends in salary and wage practices, personnel management, merit and retirement systems, and recruitment and training programs. Principal attention is given, however, to a summary of salary and wage practices and attention is largely confined to State highway department practices. This paper is a progress report, principally giving recent developments. Other personnel practices, such as those relating to hours-of-work, vacations, sick leaves, etc., have also been a subject of study by the Committee, and a report has recently been submitted to the Highway Research Board for possible publication as a Bulletin.

The study presented herein is by no means exhaustive. In order to deal briefly with the apparent trends, the information is presented largely in terms of averages and ranges. There are dangers in the use of averages which should be recognized: in cases at the low end of the scale situations causing difficulties go unrecognized, while in cases at the high end of the scale a possible indictment implied by an average may be entirely unjustified. Nevertheless, at a time when highway administration may again be about to enter a stringent period, a critical self-evaluation may be beneficial, and it is in a spirit of helpfulness that this brief study is offered.

SALARIES AND WAGES

Three years ago, at the 27th Annual Meeting of the Highway Research Board, the Committee on Highway Organization and Administration reported on the salary problem of State highway departments. Its findings were subsequently published as

Highway Research Board Bulletin No. 9, *Salary and Wage Practices of State Highway Departments*. That report called attention to the critical situation which then existed and offered a number of remedial measures, among which was a general salary increase. It appears that highway departments are

again entering a period in which manpower shortages threaten to impair highway progress. Trouble may lie ahead for those organizations which do not or cannot adjust to the competition for personnel. Because of the imminent shortage of manpower, the

TABLE 1
FREQUENCY DISTRIBUTION BY RANGES OF
CHIEF ADMINISTRATIVE OFFICIALS' AND
CHIEF ENGINEERS' SALARIES,
1947 AND 1950

Salary Range	Chief Administrative Official				Chief Engineer			
	1947		1950		1947		1950	
	Number	Accumulative total	Number	Accumulative total	Number	Accumulative total	Number	Accumulative total
\$3,001-4,000	2	2	0	0	0	0	0	0
4,001-5,000	7	9	2	2	4	4	1	1
5,001-6,000	7	16	3	5	15	19	2	3
6,001-7,000	6	22	5	10	2	21	8	11
7,001-8,000	10	32	12	22	13	34	12	23
8,001-9,000	1	33	5	27	6	40	5	28
9,001-10,000	3	36	5	32	5	45	11	39
10,001-11,000	1	37	1	33	0	45	3	42
11,001-12,000	2	39	3	36	0	45	3	45
12,001-13,000	1	40	2	38	1	46	1	46
13,001-14,000	0	40	0	38	2	48	2	48
14,001-15,000	2	42	4	42	0	48	0	48
15,001-16,000	0	42	0	42	0	48	0	48
16,001-17,000	0	42	0	42	0	48	0	48
17,001-18,000	1	43	1	43	0	48	0	48
Total	43		43		48		48	

TABLE 2
AVERAGE SALARIES FOR TWELVE TOP
POSITIONS IN STATE HIGHWAY
DEPARTMENTS, 1947 AND 1950

Position	Average Salary		Percent Increase
	1947	1950	
Chief Administrative Officer	\$7,753	\$9,143	17.9
Chief Engineer	7,461	8,603	15.3
Bridge Engineer	5,593	6,519	16.6
Construction Engineer	5,693	6,585	15.7
Maintenance Engineer	5,756	6,763	17.5
Materials or Testing Engineer	5,316	6,301	18.5
Office Engineer	4,854	5,734	18.1
Right-of-Way Engineer	4,835	5,767	19.3
Highway Planning Engineer	5,117	6,164	20.5
Personnel Officer	4,379	5,540	26.5
Auditor, Comptroller	5,154	6,101	18.4
District or Division Engineer	5,059	5,966	17.9

matter of salaries looms importantly, and in this report, as in the last, particular emphasis is placed on the salary problem.

General Trends—In general, some progress has been made in the adjustment of State salaries to the general increases in price and wage levels. In all but three of the States,

general salary increases have taken place since 1947. In a few States, salaries have been raised more than once, but the majority have had only one advance. These advances were naturally not of the same amount or extent, but average approximately 25 percent for all highway employees as a group.

It is gratifying to report that recognition long overdue, has been given to top posts in highway departments by legislatures in a number of states which have raised the ceilings on top positions. As a result, 11 chief administrative officers now receive over \$10,000 as against seven in 1947. Likewise, nine chief engineers receive that salary as against three in 1947. The comparative salary ranges of these officials for 1947 and 1950 are shown in Table 1.

However, despite this material improvement in the status of top employees, the disinclination of public authorities to recognize the importance and responsibility of positions at the top is still very much in evidence, as is reflected in the salary changes at various levels of responsibility. Percentage increases were largest in lower pay classes, and were substantially less for higher-paid professional employees. For example, chief engineers received salary boosts averaging about 15 percent since 1947, and for top officials as a whole the increases were appreciably less than the average (25 percent) for all employees. A comparison of the average salaries for 12 top positions in highway departments for 1947 and 1950 is shown in Table 2.

Comparison with Other State Services—The highway salary log-jam of recent years seems to have been broken and the lot of highway employees to have improved. It is of interest to compare average State highway salaries with those in the other State services. There is a rather prevalent notion that highway employees are better paid than employees of other State departments. The facts are, however, that this is not the case as shown in Table 3. It will be noted that highway salaries over the years have been consistently less than the average for all State non-school employees, although the gap in income has been somewhat narrowed in recent years.

To portray more accurately the relative position of highway employees and other

State employees engaged in the various major State functions, comparative salary data are presented in Table 4. In both years, 1947 and 1950, the average highway salary approximated the average salary of all employees. The highway function ranked seventh in the array of major State services in 1947, and although the salary increase amounted to 25 percent, by 1950 the highway service ranked eighth. Note particularly the percentage salary increases in the various functions: average salaries of employees in

TABLE 3
AVERAGE ANNUAL INCOME OF STATE
NON-SCHOOL, STATE HIGHWAY AND
FEDERAL EMPLOYEES FOR
SELECTED YEARS.^a

Year	State Non-school		State Highway		Federal	
	Amount	Percent Increase	Amount	Percent Increase	Amount	Percent Increase
1940	\$1,308	—	\$1,146	—	\$1,826	—
1941	1,349	3.1	1,174	2.4	1,809	-0.9
1942	1,380	2.3	1,297	10.5	2,178	20.4
1943	1,602	16.1	1,455	12.2	2,411	10.7
1944	1,663	3.8	NA	—	2,506	3.9
1945	1,844	10.9	NA	—	2,466	-1.6
1946	1,925	4.4	NA	—	2,560	3.8
1947	2,081	8.1	1,992	36.9	2,821	10.2
1948	2,302	1.1	2,256	13.3	3,069	8.8
1949	2,465	7.1	2,356	4.4	3,079	0.3
1950 ^b	2,635	2.8	2,484	5.4	3,371	9.5
Increase, 1950 over 1940	1,227	93.8	1,338	116.8	1,545	84.6
Increase, 1950 over, 1947	454 ^c	21.8	492	24.7	550	19.5

Note: NA = not available

^a Estimates based on Government employment statistics, Bureau of Census, U. S. Department of Commerce.

^b Estimate based on nine months.

seven of the major services show an increase equal to or greater than that received by highway employees. In other words, the latter were not given preferential treatment; on the contrary, they were unable to maintain their relative position since 1947.

Comparison with the Federal Service—Experience in recent years has shown that the State service has served as a training ground and in some areas at least, a very convenient and productive source of federal employees, and some explanation is afforded by a study of the comparative salaries in Table 3. To illustrate, in 1940 the average highway employee salary was \$1,146 as compared

with \$1,826 for employees in the federal service, a difference of \$680 or 37 percent less. For 1950 the average highway salary increased by 117 percent, and it was \$887, or 26 percent less than the average federal salary. However, while there was a gain percentage-wise for highway employees, the actual dollar difference was increased by more than \$200. Since 1947 the comparison, while somewhat less pronounced, is still very unfavorable. In that year the average highway employee received \$1,992 while the federal worker's income was \$2,821, a difference of \$829 or 29 percent less. By 1950, the

TABLE 4
CHANGE IN AVERAGE MONTHLY EARNINGS
FOR STATE EMPLOYEES IN VARIOUS
MAJOR FUNCTIONS BETWEEN
1947 AND 1950^a

Major Function	1947		1950		Percent Increase
	Salary	Rank	Salary	Rank	
General control.	\$230	1	\$237	3	3
Public safety	192	2	256	1	33
State enterprises	188	3	211	6	12
Employment security administration	183	4	241	2	32
Health	175	5	219	5	25
Public welfare	167	6	195	9	17
Highways	166	7	207	8	25
Correction	161	8	235	4	46
Natural resources	159	9	209	7	31
Schools	151	10	190	10	26
Hospitals and institutions for the handicapped	143	11	182	11	27
All other	185	—	204	—	10
All employees	164	—	205	—	25

^a Data are for the month of April in each case. Based on *State Employment, 1947 and 1950*, Bureau of Census, U. S. Department of Commerce.

corresponding figures were \$2,484 and \$3,371 for these employees, a difference of \$887 or 26 percent less, the net dollar gain over 1947 being \$58 in favor of the federal worker. During this period the average highway employee's earnings increased about 25 percent, while the federal employee's was increased 20 percent.

On the subject of salaries in the federal service, it is of interest to note the recent federal grade reclassification and corresponding adjustment of salaries. Classification and salary data for 1947 and 1950 are shown in Table 5, particularly as they apply to technical and professional positions. It will be noted that the reclassification eliminated the previous distinction of professional and sub-

Related Economic Considerations—It is generally considered that public employees are better off during periods of depression, and suffer in periods of prosperity, provided they are able to keep their jobs. Earlier in the year 1950 it seemed that highway employees would be benefited indirectly because of the then impending deflation. But such hope was short lived. While before the Korean incident the cost of living began to drop slightly, since then it has surged and is rising steadily. It may be argued that inflation cannot go on forever, that deflation will soon ensue, and that the lot of State highway employees will be improved once prices begin a downward trend. However there is little basis for any suggestion that a deflationary period like previous ones will occur in the near future. Powerful inflationary forces such as the huge federal and military spending programs, partial mobilization, and re-armament, will tend to force the cost of living higher. Should a deflationary period come, it probably will not follow previous patterns.

A further disconcerting factor is that there are signs of personnel shortages, particularly of the technical and engineering class. The reappearance of advertising in trade journals by State highway departments for engineering help is evidence. Another omen is the effort on the part of some States to recruit out-of-state engineers. The much publicized and premature talk of a surplus of engineering college graduates has dissipated in the face of reality. Informed estimates now conclude that there will be a shortage of engineering graduates to fill the needs of the rapidly expanding economy. The facts seem to be that the partial mobilization and expansion of war industries already have absorbed any surplus of engineering graduates, if such ever existed, and that shortages of technical talent are to become more critical. In view of these conditions, the relatively unattractive salaries offered by some highway departments will make difficult the recruitment of competent help for the highway service.

Accordingly, it becomes necessary for the States to re-examine the salaries of their highway employees. High level employment is already with us, and promises of good pay in all sorts of war industries are already in evidence. The temptation of highway

employees to look for greener pastures elsewhere will be great, especially in those States where the level of pay has fallen too greatly behind that in private industry.

Summary—The foregoing analysis indicates clearly that highway employees, as a group, compared with other groups are relatively little better off than they were in 1940. Salary increases since 1947 have been substantial; nevertheless, the income of highway employees has not caught up with the level of salaries in industry and the federal service, nor, for that matter, has it kept pace with income earned by employees in other State services. Consequently, highway departments remain at a serious disadvantage in competition for qualified personnel.

It is readily evident that early, and now long-standing salary deficiencies are chief reasons for the lag. Increases in the last few years apparently have kept pace with salary increases in public services and industry, but the comparative level of salaries and wages of highway employees over the years has been so low that their relative status has remained unchanged. One reason for the condition, is that rapid salary and wage adjustments are often impossible, because of legislative or budgetary provisions which permit salary adjustments only at specific times. Perhaps the most important factor, however, is the still prevalent notion among some legislators that the State service should be a cheap service rather than an efficient service.

OTHER PERSONNEL PRACTICES

This second part of the report deals with trends and developments in policy, organization and management of the personnel function since 1947. Additionally, progress made in merit and retirement system administration and related items are briefly reviewed.

Upgrading of the Personnel Function—There has been a very wholesome growth in the interest of highway administrators in personnel matters, which has resulted in a general upgrading of the personnel function in a number of States. Although only one additional State has created a separate personnel unit since 1947, almost all existing units have acquired increased stature. This recognition is reflected in part by the salary increases given

personnel officers, which average about 50 percent greater than the average increase for the 12 top positions, as shown in Table 2. In 1947 five personnel directors made \$6,000 or over; 15 received that salary in 1950. Last year seven personnel officers made more than \$7,000, two more than \$8,000, and one over \$9,000. In 1947 none made over \$7,000. On the debit side, however, are more than one-third of the States in which there is no designated or established personnel unit, and in which the personnel function is an adjunct of another office or operation.

Merit and Retirement Systems—By 1947, 19 States had formalized civil service or merit systems covering highway employees in operation. Since then four States have adopted merit systems. Similarly, whereas there were 33 States having retirement plans in 1947, 38 States now have retirement schemes. The mere existence of merit or retirement systems, however, does not presuppose their adequacy. For example, some of the merit systems cover only a part of the highway employees; the benefits under a considerable number of retirement plans are inadequate if measured against employee benefits in the federal service or in the larger industries.

Recruitment and Training—Highway administrators during the past few years appear to have directed more attention to the problems of recruitment and training. According to reports this interest has already paid dividends in performance and efficiency. Recruiting is changing from a haphazard to a well-organized and systematic procedure in a number of States, which has been helpful in alleviating the personnel situation.

A notable development has been the establishment of closer relationships between colleges and universities and highway departments. Many departments have effected educational and training arrangements of some kind with universities, and a few have established an "internship" program. The latter have been set up primarily for the benefit of students interested in careers in the highway service, and the school curriculum has been adjusted to give the students a proper background for the job. The chief advantage of such arrangements is that they provide actual experience and training in the

field under the supervision of highway personnel. Additionally, these programs assist in recruitment, stimulate interest on the part of students, and afford them an opportunity to begin a career while still in school. Another important effect is the fostering of a general awareness that the highway department has carefully selected and highly-trained employees, and is entitled to public respect and confidence.

There is also ample evidence that staff training is being recognized as a function of administration and management. While this concept is not new, there has been a transition from acceptance of the idea to active use of training as an effective aid. Ideas appear to be changing from specialized training to supply personnel in fields where shortages exist, to the point where there are appearances of a practical and orderly plan for the systematic development of the skill, knowledge and ability of all personnel.

The growth of training programs is salutary. In the highway business, a public service which is sensitive to public relations, the development of employees in the highway profession is becoming increasingly important. It is undeniable that State highway departments have a greater number of responsibilities in a greater number of areas in our economic life than 20 or 30 or even 10 years ago. The need for capable highway employees to discharge these added responsibilities is greater than ever before. Training programs tailored to meet the needs are the best means of bettering the quality of the highway service, because they are designed to improve administration within the department. In the process, employees, new and old, gain a wider understanding of the department's responsibilities and objectives because top administrative officials share their knowledge and experience with other employees.

An understanding by men in operations of what a department is planning and accomplishing is fundamental to the development of organizational strength. It follows then that there may be a progressive process in training from the induction of the new employee through the various stages of advancement and reassignment, and continuous refinement of skills and abilities in conformity with new policies and programs.

CONCLUSION

The material improvement in salaries since 1947 has failed to change the unfavorable status of highway employees in comparison with industrial or federal workers. To equalize the competition for qualified employees and to raise the standard of living of highway workers to a basis comparable with that of other workers, a general salary increase appears to be necessary in a number of the States. Further, it is suggested that the States adopt some kind of a flexible wage adjustment scheme, which will permit periodic salary adjustments, if necessary, between legislative sessions to compensate for changes in the cost of living. A few States, a number of cities, and many large industries have such arrangements in effect. A reserve fund, authorized by the legislatures, is one device for providing an interior adjustment.

The primary responsibility of securing an adequate and efficient highway service rests with state legislatures, which will undoubtedly consider salary problems in the near future. Those empowered to do so, should present the real situation of highway compensation. It is not so much a question of whether the States can afford to pay adequate salaries, but whether they can afford not to do so. Highway departments, like other State departments, deserve the best talent available to administer this important function.

The present industrial expansion has already placed a premium on the services of competent and qualified personnel, and the harmful effects on state highway programs are appearing. Expansion of industry is only beginning, and unless realistic adjustments in salaries are made, the promises of good pay in all sorts of industries will lure many

highway employees, which will in turn jeopardize highway progress.

Highway administrators must not relax their efforts and interest in personnel problems. Extension of the merit principle would have a stabilizing effect on highway organization. Few people will argue that merit systems are not a step forward, or that they do not make personnel objectives easier to achieve. In view of the obvious advantages, it is surprising that so little progress is being made in the adoption of merit systems.

Establishment of adequate retirement systems in those States which do not now have them should also be an objective. Extension of the coverage to all employees and more liberal retirement allowances in many States which have such plans in operation are necessary. A recent study of the Committee on Highway Organization and Administration indicates that improvement in employment conditions, such as vacation and sick leave and hours of work, where conditions are substandard, would immeasurably increase the attractiveness of highway employment.

The marked progress made in connection with personnel problems in recent years attests to the active concern of highway administrators in these matters, and only with their continued support can further gains be made. They have the responsibility for progressive and efficient management of the highway service.

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