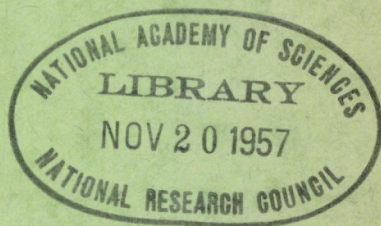


HIGHWAY RESEARCH BOARD

Bulletin 85

***Experiment in Extension
Programs***

For County Highway Engineers



**National Academy of Sciences—
National Research Council**

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1953

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The opinions and conclusions expressed in this publication are those of the authors
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HIGHWAY RESEARCH BOARD

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Experiment in Extension Programs

PRESENTED AT THE

Thirty-Second Annual Meeting

January 13-16, 1953

1953

Washington, D. C.

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Experiment in Extension Programs

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Kandiyohi County, Minnesota

Highway engineers of the 87 counties in Minnesota organized the Minnesota County Highway Engineers' Association in 1932. Since 1945 the association has held its annual meetings in conjunction with the University of Minnesota's Extension Division and is known as the "Minnesota County Highway Engineers' Institute." The 4-day program is formulated by the Institute Committee, the Executive Committee of the County Highway Engineers' Association, and the engineer of the County Division of the Minnesota Highway Department.

Some accomplishments of the institute to date have been: (1) adoption of a code of ethics; (2) uniform accounting system in use in every county of the state; (3) standardized bridge designs for various types of super- and sub-structures; (4) a high level of uniformity between counties on design standards; and (5) a broader use of highway-planning-survey data and other criteria recognized and used by the states.

● THE Minnesota County Highway Engineers' Institute, still in an experimental stage, is an annual 4-day seminar sponsored by the Minnesota County Highway Engineers' Association, attended by Minnesota county highway engineers and invited state and federal personnel, for the purpose of acquainting county highway engineers with the latest developments in the field of highway administration.

To those who have watched the development and progress of county highway departments in Minnesota over the years, some of the outstanding factors in their growth have been: (1) the far-sighted laws establishing those departments; (2) the cooperative spirit established by the founders between the state and county highway departments; (3) the growth of a strong, healthy county Highway Engineers Association; (4) the establishment of a county division in the Minnesota Highway Department; and (5) the Minnesota County Highway Engineers' Institute.

I recently read the recommendations from the legislative research study of county highways in one of our agricultural states. Recommended were an elected policy-making board of county commissioners, with a county highway engineer in each county directly responsible for the supervision of all county road construction and maintenance, and the establishment of a cooperative working relationship between the counties and the state highway department. These recommendations or

conditions were embodied in the laws establishing county highway departments in Minnesota as they were enacted about 1910 and are still in effect.

There are 87 counties in Minnesota. Each county has an elected administrative body called the Board of County Commissioners. One of the duties of this board is to appoint a county highway engineer, who shall be a registered professional engineer. He shall have charge of the highway work of the county and the forces employed thereon.

Minnesota has had county highway engineers since 1911, and for several years those pioneer county engineers performed all the administrative, technical, and supervisory duties of the office. Each was an engineer, draftsman, bookkeeper, and construction superintendent.

As the county highway engineers office became more established and accepted by the public, the administrative duties of the office increased and the engineer found it necessary to employ aides to do most of the technical and detail work, so he could assume the more-important duties of administration, a position for which he had not been prepared by either training or experience.

As the administrative duties increased, the county engineer found it desirable, even necessary, to get together with other county engineers to discuss their common problems and methods of handling them; finally, in 1932, they formed the Minnesota County

Highway Engineers' Association, which holds numerous committee meetings and an annual business meeting each year.

These annual meetings were held in downtown hotels at the same time and often at the same hotel, as the convention of the boards of county commissioners. There were many distractions, and it was difficult to hold attendance and attention for more than a 3- or 4-hr. session, but as difficult as it was, considerable progress was made.

It soon became evident, however, that it would require more than these half-day meetings for the engineer to keep up with the ever changing and expanding industry and a growing demand by the public that the engineer take an active part in the promotion of county highway legislation and financing.

It was under the pressure of these accumulated demands of the public, and in an effort to produce and maintain progressive highway management, that the idea of an annual seminar or institute was adopted.

The duties of the county highway engineer have changed. The major problems are no longer strictly those of engineering. The era of the nineteenth-century road policy has given way to a professional approach which recognizes public relations, economic, and political problems as an important part of highway administration.

County highway administration, no less than business, must utilize all the fundamental tools of management:

(1) Personnel relations, (2) administrative law and legal interpretations, (3) state-county relations, (4) road policy and legislation, (5) costs, revenues and benefits, and (6) uniform accounting.

How best can the practicing county engineer-administrator acquire the knowledge of today's management techniques so essential to the administration of his department?

If the technically trained county highway engineer is going to develop into and maintain the stature expected of the highway administrator today, it is necessary that he have access to the recommendations of leading authorities and that periodically he be brought up to date by being exposed to some conference type of program where expert opinion is available and group discussion permits questions to be fully explored.

Recognizing that Minnesota County Highway Engineers are technically competent by virtue of required registration, the institute program is devoted primarily to filling the gap between technology and administrative techniques.

The institute is a part of the University of Minnesota's extension program. It is held in the Continuation Center on the campus during December of each year.

The Continuation Center Building is admirably designed and staffed for the purposes of the institute. There are car-storage facilities in the basement, sleeping rooms on the second and third floors, a dining room and banquet hall in a sub-basement, classrooms on all three floors, and a large, comfortably furnished lobby on the main floor where those in attendance can sit around and visit.

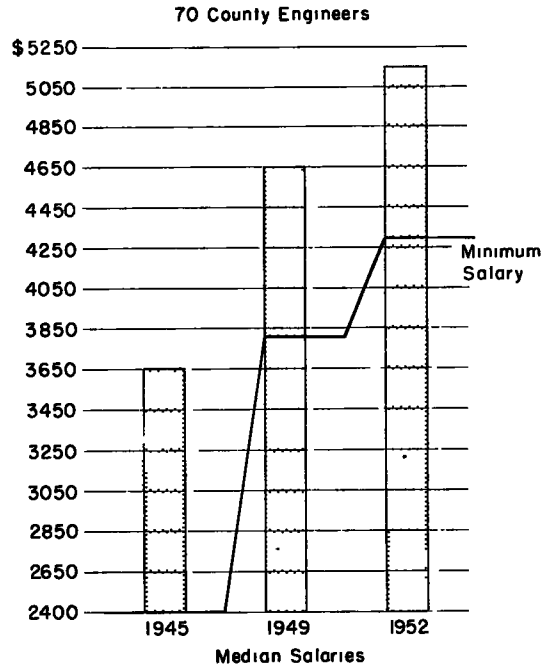


Figure 1.

The institute is open to all Minnesota county highway engineers and invited federal, state, and county engineering personnel of Minnesota and neighboring states.

Sales organizations and the allied trades have been requested to refrain from visiting the center or planning any entertainment for the engineers during this 4-day period.

The institute committee of the County Highway Engineers' Association has an-

nually canvassed the membership for suggestions on topics to be covered at the institute. The committee attempts to have the subject matter of all papers and lectures prepared and delivered at, or near, the normal level of county practice.

After reviewing suggestions and selecting subjects, the program is developed in a conference attended by the institute committee, the executive committee of the County Highway Engineers' Association and the engineer of the county division of the state highway department.

The actual preparation of the program is taken care of by the University of Minnesota's extension division.

The institute is administered by the Institute Committee of the County Highway Engineers' Association. The faculty is composed of: (1) highway engineers, (2) personnel administrators, (3) state officers, (4) university professors, and (5) specialists.

Programs since the first institute in 1945 have included lectures on: (1) public relations and administration of public offices; (2) uniform accounting problems and procedures; (3) federal-aid secondary policies; (4) legal aspects of the county engineers' office; (5) the roll of the county engineer in today's transportation picture; (6) economic factors governing the county engineers' choice of improvement types; (7) bituminous and related construction and maintenance methods, and (8) personnel practices and policies.

The proceedings of the institute are printed and bound and together with a certificate of attendance are presented to each county engineer who has attended.

There are luncheon and dinner speakers each day and one evening is devoted to the annual meeting of the County Highway Engineers Association, the election of officers, report of committees, and routine business.

In any group of professional men such as the County Highway Engineers Association you will find that due to differences in training, interest and experience, many of the members have developed some phase of the work far above the average. The institute committee has taken advantage of this condition by having these engineers submit papers on their specialty. These papers are read at the institute and then printed and bound and the other county engineers use this book as a guide to good

practice. This not only has raised the standard of operations but has also brought about a uniformity of procedure throughout the counties that seems to be appreciated by that part of the public that has business in more than one county.

This brief summary sets up the broad institute pattern. What we are primarily interested in, however, is a measurement of what the institute has done for Minnesota county highway engineers. Has it been successful in accomplishing its purpose? Has institute attendance added to the professional status and stature of engineers? And, finally, what do the engineers themselves think of it?

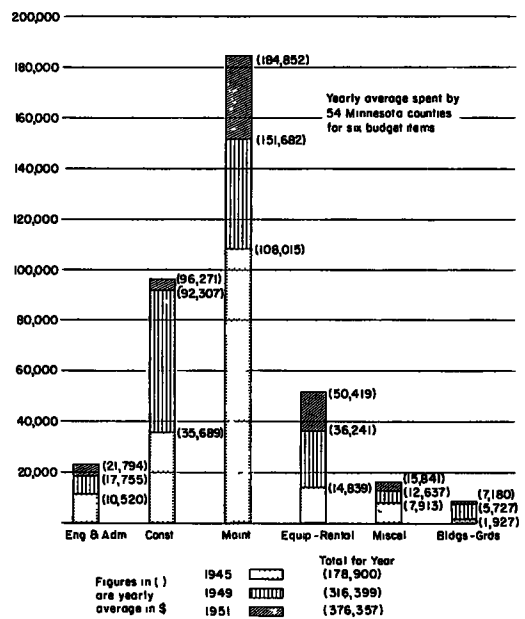


Figure 2.

To find answers to these and other questions, the continuation center of the University of Minnesota prepared and circulated a questionnaire, and also tabulated the results, in an effort to evaluate the effect in institute programs since its inception 8 yr. ago. Questionnaire and replies are shown in the appendix.

The results of the tabulation give us a composite Minnesota county highway engineer, if we can visualize such an individual, as being 52 yr. of age, he has served as a county engineer 15 yr., 12 of which have been at the same location. His salary in 1945 was \$279 and in 1952 it was \$472 per month. He had attended five institutes and had participated in some program. His

request to attend the institute was willingly granted him by the county board.

To say that the evaluation of the effect of the institute programs can fully score tangible achievements, is of simplification. Yet the results would indicate some areas where real progress has been made. More than that, problem areas were also highlighted from a listing of subjects suggested for future institutes.

TABLE 1

	<u>Score</u>
1. Relationship with state highway department	354
2. Administration of office	281
3. Public relations	230
4. Cost accounting and records	216
5. Relationship with Bureau of Public Roads	212
6. Technological methods	210

A composite score of areas in which institute programs have helped the most is shown in Table 1. These areas pretty well show where the average county highway engineer is doing his concentrated thinking. It is interesting to see that, by grouping, these areas cover intergovernmental relations, administration, public relations, with the least emphasis on technological methods. This last should not be surprising, since county highway engineers in Minnesota are required to be registered engineers, and as such, are fully competent to deal with engineering problems. Neither is the fact that the other three categories are causing him concern because, broadly speaking, his problems are not a great deal different from those of state highway officials.

If I correctly interpret questionnaire results, there is strong evidence to show that the annual institute has been instrumental in improving intergovernmental relationships, administration and public relations. I will not attempt to document all of the material that forms the basis for my conclusions. Suffice it to say that six out of seven engineers were of the opinion that there had been great improvement in the field of state-local relationships. Similarly, there was definite opinion that there had been a gradual improvement in cooperative services rendered by the state highway department. Eight out of ten who replied in the affirmative to

this question, thought that the area of administration has shown most improvement; while the other two felt that it was in the technical field.

Improved administration was also noticeable from the questionnaire replies. A majority of the engineers now have an employee assigned to take care of office and telephone calls; the number of offices allowing 2 weeks or more vacation and sick leave time for all employees have increased substantially; the uniform accounting procedure has been adopted on a statewide basis; and nearly half of the engineers reporting use a long-range procedure in planning construction programs. Equally important in the field of administration, however, is the fact that county engineers recognize the many vexing problems of personnel administration; thinking in this respect is reflected by the number of questions which were suggested for discussion on future institute programs.

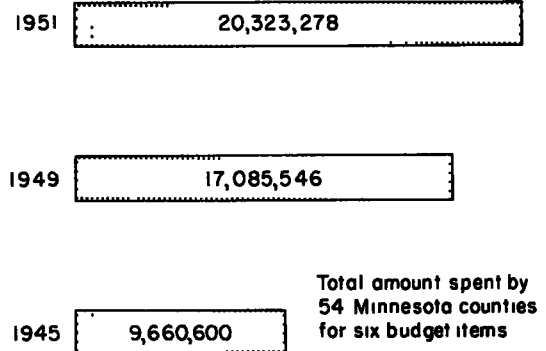


Figure 3.

Progress has also been made in the public relations phase of the work. County engineers continue to furnish road condition information to newspapers and radio stations, but probably more important is the fact that most of them are undertaking public speaking engagements; 39 of them averaging nearly seven speeches per year in 1951.

The state highway department expressed its opinion of the institute in a letter which it wrote to the boards of county commissioners of the 87 counties in which they recommended that the boards send their engineer to the institute, and made the statement that it is evident that absence from the institute does place the engineer at a decided disadvantage.

As I have already mentioned, it is

difficult to accurately measure the net effects of programs such as undertaken by the Minnesota County Highway Engineers' Annual Institute. It is certain, however, that both tangible and intangible benefits are derived from institute attendance. Of several intangible benefits, I am certain of two: one is the feeling of

fellowship that exists among the engineers as a result of close association during the four days and nights spent at the center and the other is the favorable public reaction to the institute. It has increased public confidence in the county engineer and his department, and the result is better public relations.

Appendix

QUESTIONNAIRE

Your cooperation and assistance in completing this questionnaire will be much appreciated. As with other groups, the information secured will assist the University of Minnesota in planning future County Highway Engineers' Institutes.

The questions are to be answered without any indication of the name of the person answering them and personal information secured will remain confidential. All questions should be answered as accurately and completely as possible. In many instances a simple check mark is all that is necessary.

1. Age in years to nearest birthday _____ f. in technological methods _____
2. Annual salary
1945 _____ 1949 _____ 1952 _____
In order to make comparisons, it is necessary to have complete answers for the following questions. If exact figures cannot be given, please estimate as accurately as possible.
3. How many years as County Engineer _____
4. How many at present location _____
5. How many County Highway Engineers' Institutes have you attended _____
6. If you have not attended all of them please circle years you were present
'45, '46, '47, '48, '49, '50, '51
7. Have you participated in programs _____
a. papers presented _____ how many _____
b. panel member _____ no. times _____
8. When you request attendance at the Institutes do your County Commissioners grant the request
reluctantly _____ willingly _____
9. In which of the three following groups has attendance at the Institutes improved your professional standing the most. (Please number 1, 2, 3, in importance.)
a. the commissioners _____
b. the public _____
c. your colleagues _____
10. In which of the six following areas have the Institute programs helped the most. (Please number 1, 2, 3, 4, 5, 6)
a. in public relations _____
b. in relationship with state highway department _____
c. in administration of office _____
d. in relationship with Bureau of Public Roads _____
e. in cost accounting and records _____
11. In addition to yourself, how many persons in your office staff
1945 _____ 1952 _____
12. What is number of regularly employed personnel other than office personnel
1945 _____ 1952 _____
13. Value of office equipment (dollars)
1945 _____ 1952 _____
14. Value of machinery and road equipment
1945 _____ 1952 _____
15. Was any of above equipment purchased directly or indirectly as result of information received at an Institute
yes _____ no _____
Approximately how much \$ _____
16. Which of the following methods are used in your office for expenditure of funds.
a. month-to-month estimate of funds available _____
b. an unofficial budget not approved by county commissioners _____
c. an annual budget approved by the county commissioners _____
17. What procedure do you use in planning your construction programs
a. month-to-month _____
b. year-to-year _____
c. long range (2 to 5 years) _____

(In the following answers, give amount in dollars, eliminate cents.)

18. What was total amount expended in fiscal year
'45 _____ '48 _____ '51 _____
19. Amount spent for Engineering and Administration
'45 _____ '48 _____ '51 _____
20. Amount spent for Construction
'45 _____ '48 _____ '51 _____
21. Amount spent for Maintenance
'45 _____ '48 _____ '51 _____
22. Amount spent for Buildings and Grounds
'45 _____ '48 _____ '51 _____
23. Amount spent for Equipment (including rental)
'45 _____ '48 _____ '51 _____
24. Amount spent for Miscellaneous
'45 _____ '48 _____ '51 _____

(Check answer in following questions which best describes your situation.)

25. In 1945, the County Engineers' office was regularly open to the public each week
6 days _____ 5½ days _____ 5 days _____
4½ days _____ 4 days _____ 3½ days _____
3 days _____ less than 3 days _____
26. In 1952, the County Engineers' office was regularly open to the public each week
6 days _____ 5½ days _____ 5 days _____
4½ days _____ 4 days _____ 3½ days _____
3 days _____ less than 3 days _____
27. Is your office difficult to locate the first time _____
easy to find _____
28. Employee regularly assigned to meet the public and answer the telephone
in 1945: yes _____ no _____
in 1951: yes _____ no _____
29. Approximate number of personal calls weekly
in 1945 _____ in 1951 _____

30. Approximate number of telephone calls weekly
in 1945 _____ in 1951 _____
31. When complaints or inquiries come into your office during your absence, what method do you use in answering
a. personally or by phone _____
b. write a letter _____
c. delegate the answer to a staff member _____
d. other procedure _____
32. About how many speaking engagements at luncheon clubs and public meetings did you have
in 1945 _____ in 1951 _____
33. Have you appeared on a school program
yes _____ no _____
If yes, how often _____
34. Did you have a press release or news story in local paper
in 1945: weekly _____ monthly _____
in 1951: weekly _____ monthly _____
35. If possible, give approximate number of news releases for
1945 _____ 1951 _____
36. Did you have a radio station in your locality
in 1945: yes _____ no _____
in 1951: yes _____ no _____
37. Did you supply them with information in 1945
- | Summer Months | Winter Months |
|----------------------|----------------------|
| daily _____ | daily _____ |
| weekly _____ | weekly _____ |
| when requested _____ | when requested _____ |
| in 1951 | |
38. Have you ever asked a service club or local organization for assistance in informal sampling of public attitude toward a particular project
yes _____ no _____
If yes, did it work _____

39. Have you ever used an advisory body to assist in establishing policies or procedures: yes _____ no _____
If yes, did it work _____
40. Do you have any other method or procedure for improving public relations

41. Are there any topics on public relations you would like to see included on future Institute programs

42. Do you have a standard application for employment form _____
43. Is it acknowledged: yes _____ no _____
by you _____ other staff members _____
44. Do you have examinations for various positions: yes _____ no _____
45. Do you have merit system tied in with pay scale: yes _____ no _____
46. Do you have staff meetings regularly: yes _____ no _____
How often _____
47. Are your employees encouraged to watch their personal appearance and manner with the public: yes _____ no _____
48. Do you have a formal training period (however limited) for those who meet the public: yes _____ no _____
for others in administration: yes _____ no _____
49. Do you encourage staff members to participate in community activities or other interests which will be beneficial to your office as well as themselves: yes _____ no _____
50. Was there uniformity of work and pay schedule with other counties
in 1945: yes _____ no _____
in 1951: yes _____ no _____
- Monthly basis of pay.
51. Did you have guaranteed monthly wage for hourly workers
in 1945: yes _____ no _____
in 1948: yes _____ no _____
in 1952: yes _____ no _____
52. How much vacation for hourly workers in 1945 _____ 1948 _____ 1952 _____
53. How much sick leave for hourly workers in 1945 _____ 1948 _____ 1952 _____
54. What do you consider the most difficult personnel problem today

55. Would you like to have it discussed on an Institute program: yes _____ no _____
56. Do you subscribe to one or more professional magazines or publications: yes _____ no _____
57. In the past seven years have the relationships between county engineers and state highway office shown
no improvement _____
some improvement _____
great improvement _____
58. Has there been gradual improvement in service of the county division of the state highway department:
yes _____ no _____
If answer is yes, which area do you feel has shown most improvement:
administrative _____ technical _____
59. Has there been overemphasis on any areas or topics in past County Highway Engineers' Institutes:
yes _____ no _____
If answer is yes, which ones should be eliminated:
a. administration _____
b. technological _____
c. public relations _____
d. personnel policies and practices _____
e. uniform accounting procedures _____
f. legal aspects of the County Engineers' office _____
g. federal aid secondary policies _____
h. bituminous and related construction _____
i. other _____
60. Should the County Highway Engineers' Institutes be:
continued _____ discontinued _____

REPLIES TO QUESTIONNAIRE

In October of 1952, a questionnaire was sent out to the 87 county highway engineers in Minnesota. The questionnaire was designed for the purpose of: 1) collecting pertinent facts about the engineers, 2) measuring the growth and expansion over a seven year period, of their offices and functions, and 3) attempting some evaluation of the County Highway Engineers' Institute held annually at the University of Minnesota since 1945.

The questionnaire was composed of 60 questions and respondents were asked to return the questionnaire unsigned. Of the 87 engineers queried, 77 replied. Compilation of information is as follows. Following each question, the number in parenthesis is the number reporting on this question.

Question 1 (74)

The range in age was from 40 years to 74 years with the average age of 51 years, 10 months.

Question 2 (70)

Salaries in 1945 ranged from \$2,400 to \$7,500; in 1949, from \$3,600 to \$12,000; and in 1952, from \$4,300 to \$13,200.

In 1945, 34 engineers were in the salary range of \$3,401 to \$3,900; in 1949, 32 engineers were in the salary range of \$4,401 to \$4,900; while in 1952, 26 were in the salary range of \$4,901 to \$5,400. (See Fig. 1.)

Question 3 (77)

The range in number of years as County Engineer was from one year or less (of which there were six) to one who had served for 41 years. Distribution of years was fairly even for those up to ten years service as those with 10 to 20 years. The average number of years as County Engineer was 15.2 years.

Question 4 (77)

Seventy-seven engineers have an average of 12.08 years at the same location. One engineer has been at his location less than one year - another has been at his spot for 41 years.

Question 5 (77)

Thirty-three engineers have attended all of the County Highway Engineers' Institutes while sixteen have attended six. The average attendance was 5.3 institutes for all those reporting.

Question 7 (77)

Twenty-six have participated in the programs of the Institute, twenty presenting papers and 14 as panel members. (Note - some have participated in both.) They gave 36 papers and were panel members 29 times.

Question 8 (77)

Seventy-five of the engineers said their commissioners granted their requests to attend the institutes willingly. One engineer said, "I don't ask them". Two said the request was granted reluctantly. There may be some correlation between Questions 8 and 9 in view of the responses.

Question 9 (77)

Not all responses gave a complete preference rating indicating how attendance at the Institutes had improved their professional standing with three groups. In a few instances where only one item was checked, that particular item was rated as first

choice. We gave an inverse rating of 3 points for first place, two for second place and one point for third place. Thirty-four believe that the institutes improved their professional standing with their commissioners, 23 rated colleagues and 20, the public. In final scoring, the commissioners ranked first, with 150 points; colleagues second, with 131; and the public third, with 117.

Question 10 (77)

Not all of the responses gave a complete preference rating indicating how the Institutes had helped in six areas of their work. As on the previous question, if only one item was checked it was given first place rating.

Relationship with state highway department led the group with 33 first place ratings; public relations was second with 16 firsts; office administration had 14 firsts; technological methods 12; cost accounting 2; and relationship with Bureau of Public Roads none. However, on inverse rating of 6 points for first place and so on down to 1 point for sixth place, the scoring came out as follows:

	Score
* 1. Relationship with state highway department	354
2. Administration of office	281
3. Public relations	230
4. Cost accounting and records	216
5. Relationship with Bureau of Public Roads	212
6. Technological methods	210

Question 11 (68)

Thirty-three reported no change in number of persons on their office staff between 1945 and 1952. Three reported a decrease and 32 reported an increase.

The average number of office employees in 1945 was 2.76.

The average number of office employees in 1952 was 4.02.

Question 12 (62)

Eleven reported no change in number of persons on the rolls of regular personnel other than office personnel. Three reported a decrease while 48 reported an increase.

In 1945, the average number of employees was 27.9.

In 1952, the average number of employees was 35.4.

Question 13 (62)

In 1945, total amount of office equipment in 62 offices was \$116,593, or an average of \$1,895 in each office. Seven years later, the total invested amounted to \$158,459, or an average of \$2,641, an increase of almost 39%. If these averages are projected on a basis of 87 offices the total would be approximately \$229,767 in office equipment today.

Question 14 (62)

Sixty-two engineers reported the total value of their machinery and road equipment in 1945 at \$4,617,827 for an average of \$74,405. In 1952, the total figure was \$8,395,333 for an average of \$135,068, an increase of almost 81%. Projecting the averages for 1952 in 87 counties, the total would be approximately \$11,735,256.

Question 15 (77)

Nine engineers purchased \$163,500 worth of equipment directly or indirectly as a result of information received at an institute, yet no displays or exhibits are included in the Institutes.

* This score seems to be validated further by the answers given to Questions 57 and 58.

Question 16 (77)

In expenditure of funds, 51 reported an annual budget was approved by the county commissioners; 13 use an unofficial budget not approved by the commissioners and 7 use the method of month-to-month estimate of funds available. Six engineers stated they use more than one method.

Question 17 (70)

Thirty engineers use the long range (2 to 5 years) procedure in planning construction programs while 44 plan from year to year. Three engineers reported more than one procedure.

Question 18 to 24 (54)

Reports of these seven questions are reflected in Figures No. 2 and 3. More than 54 engineers supplied information on these questions but some were not complete as to the full seven years' records. Only complete returns are included in the graphs so that actual comparisons could be made.

Question 25 and 26 (75)

In 1945 engineers' offices were open to the public five and one-half days per week, stated 52 engineers, while nineteen reported they were open 6 days, three were open five days and one was open 3 days or less. In 1952, 6 were open six days while 67 were open five and one-half days. Only two were open five days per week.

Question 27 (74)

Sixty-five offices of the engineers are easy to locate, according to reports and only nine are difficult to find. Perhaps that's why the number of personal calls (question 29) showed such an increase in seven years.

Question 28 (75)

In 1945, fifty-two offices had an employee regularly assigned to meet the public and answer the telephone; twenty-one did not. In 1952, fifty-nine had regular assignments while 16 did not.

Question 29 and 30 (46)

Of 46 offices having comparable figures over the seven year period, the average number of personal calls in 1945 was almost 25 per week. In 1951 the average number per week was almost 43 - an increase of 72%. Telephone calls did not show quite this increase. There was an average of 55.5 calls per week in 1945 while in 1951 the average was 91 calls - an increase of 64%.

Question 31 (74)

When complaints or inquiries come into their offices while they are absent, most county engineers answer them personally or by phone. Some engineers checked more than one method of answering. In these instances the same score was given to each method used. The final tabulation showed these results:

Personally or by phone	51
Writing a letter	23
Delegate the answer to a staff member	15
Other procedure	4

Question 32 (77)

It would seem that county engineers are doing more speaking than in previous years. In 1945 only 25 reported as having made speeches at luncheon clubs or public meetings. These 25 average 6.3 speeches a year. In 1951, 39 of them made speeches and averaged 6.9 speeches that year.

Question 33 (77)

Only 14 engineers have appeared on a school program and they have averaged 3.7 programs.

Question 34 and 35 (77)

In 1945 four engineers said they had a weekly news release and ten stated they had monthly releases yet the average reported for the year was only 18. In 1951 four were still sending weekly news releases while eleven were sending them monthly. Three were sending them out occasionally. The average number of news releases was 22 for 1951 for those reported.

Question 36 and 37 (77)

There were 14 radio stations in the 77 counties in 1945. In the summer months, one engineer was supplying information weekly, 13 supplied information when requested. During the winter months, two offices supplied information daily, 12 when requested.

In 1951, there were 38 radio stations. One engineer supplied information weekly during the summer months, 37 when requested. During the winter months, three offices supplied daily information while 35 did when requested.

Question 38 (77)

Twelve engineers reported that they have used a service club or local organization in informal sampling of public attitude toward a particular project. Nine said it worked out, two said only "fair" and one said "no".

Question 39 (77)

Twelve engineers have used an advisory body in establishing policies or procedures. Eleven said it worked out and one said only "fair."

Question 40 (77)

Some other methods or procedures for improving public relations reported by engineers:

- "Circular letters"
- "Group discussion"
- "Answer complaints promptly"
- "Informal talks to individuals"
- "Engineering work for townships donated"
- "Map service"
- "Through county board"
- "Showing facts personally on complaints"
- "Personal visits with farmers"
- "Meeting with township boards and attendance at service clubs"
- "When project is up for consideration, I contact farmers in vicinity"
- "Being pleasant to public at all times"

Question 41 (77)

Topics on public relations to be included in future institute programs.

"How to get best results in getting information to rural constituents"
 "Road restrictions"
 "Field rock in ditches"
 "Public cooperation"
 "Cover general topic each year"

Question 42 (77)

Seventeen engineers have a standard application for employment form.

Question 43 (77)

Only 11 acknowledge the application; nine by the engineer; two by a staff member.

Question 44 (77)

Only five engineers have examinations for various positions — two are written, three are oral.

Question 45 (77)

Fourteen county engineers have a merit system tied in with pay scale.

Question 46 (77)

Of the fourteen engineers who said they have regular staff meetings; four are held monthly, two are bi-monthly, five are quarterly and three are semi-annually.

Question 47 (77)

Employees are encouraged to watch their personal appearance and manner with the public in 61 offices.

Question 48 (77)

Nine offices have a formal training period for those employees meeting the public and ten have a training period for those in administration.

Question 49 (77)

Forty-five engineers encourage staff members to participate in community activities or other interests.

Question 50 (77)

Thirty-five offices had uniformity of work and pay schedules with other counties in 1945. Six years later this number had increased to 55.

Question 51 (77)

A guaranteed monthly wage for hourly workers was reported by 20 offices in 1945; by 26 offices in 1948 and 34 offices in 1952.

Question 52 (77)

The following tabulation is compiled from reports on vacation periods.

	1945	1948	1952
	No. Offices	No. Offices	No. Offices
0 days	61	32	10
5 days			1
5½ days		1	
6 days	4	5	7 (cont'd)

	1945 No. Offices	1948 No. Offices	1952 No. Offices
7 days	4.	9	14
8 days		3	3
10 days		1	
12 days	2	14	20
13 days			1
2 weeks or more	5	11	20
4% based on earnings	1	1	1

Question 53 (77)

The following tabulation is compiled from reports on sick leave for hourly workers.

	1945 No. Offices	1948 No. Offices	1952 No. Offices
0 days	67	51	31
5 days		1	1
6 days	3	8	11
7 days	1	3	6
10 days		1	
12 days	3	7	17
2 weeks or more	3	6	11

Question 54 and 55 (77)

The following statements are some of the answers to the question asking the engineers what did they consider their most-difficult personnel problem:

- "Jealousy of men"
- "Finding men to fit the job on our salary scale"
- "Get some reasonable amount of work for the pay they receive"
- "Getting production"
- "Procuring good skilled help at low county wage salaries"
- "Adequate salaries"
- "To get help to work overtime in emergencies"
- "The manpower situation"
- "Responsibility of duties"
- "Public relations"
- "Competition with private industry"
- "Obtaining good supervisors"
- "Wages"
- "Pay scale"
- "Competition with private industry"
- "Elderly employees - long service - no retirement"
- "Developing cooperation and leadership"
- "Securing industrious and reliable workers"
- "Obtaining trained personnel"
- "Cooperation between maintenance workers"
- "Pay rates too close together between common, semi-skilled and skilled workers"
- "Keeping employees happy"
- "Getting competent men"
- "Keeping competent help"

Question 56 (77)

Seventy-two of the seventy-seven engineers subscribe to one or more professional magazines or publications.

Question 57 (77)

During the past seven years, three engineers reported that relationships between county engineers and the state highway office had shown no improvement. Seventeen stated there had been some improvement and 57 felt there had been great improvement.

Question 58 (77)

When asked if there had been gradual improvement in service of the county division of the state highway department, 70 engineers replied "yes". Of those who replied in the affirmative, 58½ thought the area of administration had shown most improvement while 11½ stated it was technical. (Note: a few answers were checked on both items so the scoring was divided between the two.)

Question 59 (77)

In answering this question, eleven engineers stated that they felt there had been overemphasis on some areas or topics in past institutes and they checked more than one item.

Following is a listing of items and number of times checked.

Administration	1
Technological	1
Public relations	2
Personnel policies	4
Uniform accounting procedures	7
Bituminous and related construction	11

Question 60 (77)

Seventy-six of the seventy-seven engineers checked the item that the County Highway Engineers' Institute should be continued.

In considering Question 54, "What do you consider the most difficult personnel problem today?", an attempt was made to see if there was any correlation between those who answered this question and the answers to the Questions 42 to 53, inclusive. Thirty-eight engineers answered Question 54 in one form or another, which indicated that they might have a personnel problem. We took the questionnaires of these 38 individuals and compiled their replies for Questions 42 to 53 and compared them with the balance of the engineers. To our surprise, we found that with exception of Questions 52 and 53 most of these 38 individuals were giving more attention to Questions 42 through 51 than the other group. Therefore, we cannot draw any conclusion except we might offer this supposition: that possibly in this group of 38 engineers more thought is being given to devices and methods of improving personnel relations because they happen to be cognizant of the personnel problem.

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