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Recommendations of the Railroad Retirement Board

based on the Actuarial Valuation,

as of December 31, 1938,

of the Assets and Liabilities under the Railroad Retirement Acts

With the report of the Board's
Actuary and statement of approval
of the Actuarial Advisory Committee

RAILROAD RETIREMENT BOARD
WASHINGTON, D. C.

AUGUST, 1940

LETTER OF TRANSMITTAL

Railroad Retirement Board,
Office of the Chairman,
Washington, D.C., August 15, 1940.

To the President of the United States:

Subsection (d) of section 15 of the Railroad Retirement Act of 1937 provides that at intervals of not longer than three years, the Railroad Retirement Board shall make an estimate of the liabilities created by that Act and the Railroad Retirement Act of 1935 and shall include such an estimate in its annual report. Subsection (c) of the same section directs the Board to select two actuaries who, together with an actuary designated by the Secretary of the Treasury, shall be known as the Actuarial Advisory Committee with respect to the Railroad Retirement Account. In pursuance of these directions the Board has caused a valuation of the liabilities under the Railroad Retirement Acts to be made and has selected two actuaries who with the actuary designated by the Secretary of the Treasury have been in consultation with the actuary of the Board in the preparation of the valuation. The results of the actuarial valuation will be published in the forthcoming annual report of the Board, which will not be available until the first of 1941. The Board is therefore making the report and its recommendations available in advance of publication in its annual report.

Respectfully,

Murray W. Latimer, Chairman.

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RECOMMENDATIONS OF THE RAILROAD RETIREMENT BOARD BASED ON THE ACTUARIAL VALUATION AS OF DECEMBER 31, 1938 OF THE ASSETS AND LIABILITIES UNDER THE RAILROAD RETIREMENT ACTS

The preparation of an actuarial valuation is not a simple matter. It must take into account many factors which are the result of compilations based on the records of separate individuals numbering more than two millions. The accumulation of the necessary data is itself a task of rather large dimensions. In order to secure a valuation as of the present time, the terminal point for the data used had to be placed at some time in the past. Wage records are accumulated by the Board on an annual basis for calendar years, beginning in 1937. The wage records for the year 1939 were not available before June 1940. The basic valuation, therefore, had to be dated December 31, 1938; use, however, has been made of more recent data on retirements and mortality.

When the Railroad Retirement Act of 1937 was under consideration in Congress, cost estimates were made by this Board. The sources of the data and the assumptions involved in the initial cost calculations were as follows:

1. The primary data were collected by the Federal Coordinator of Transportation from the following 13 railroads for the period July 1, 1924-December 31, 1933: Atchison, Topeka & Santa Fe; Atlantic Coast Line; Baltimore & Ohio; Boston & Albany; Central of New Jersey; Chicago, Burlington & Quincy; Delaware & Hudson; Kansas City Southern; Minneapolis, St. Paul & Sault Ste. Marie; Northern Pacific (Western Grand division); Oregon Short Line; Southern Pacific (Oakland division); and Texas & New Orleans.

2. Withdrawal rates were based on the experience of these 13 roads in the period 1925-28, inclusive. A separation from any of the above roads was counted as a withdrawal. While the shift of employees from one carrier to another has not been allowed for directly (except insofar as these were recorded, an infrequent occurrence), we believed that the withdrawal rates used were reasonable. The period covered was one when

withdrawals were lower than they have been before or since, over an equal time interval. If an employee left service prior to the end of 1928, and returned before the end of 1933, no withdrawal was recorded.

3. The rate of mortality in active service was based on the experience under group life-insurance plans on railroads in the period 1927-32. The rate of disability was taken from the same experience, but for the 5-year period 1930-34, inclusive.

4. The salary scale used (which was select throughout) was developed from the experience of the following railroads in 1929: Baltimore & Ohio; Boston & Albany; Delaware & Hudson; Kansas City Southern; Minneapolis, St. Paul & Sault Ste. Marie; Northern Pacific (Western Grand division); and Oregon Short Line. The actual scale used for the calculations was taken at 5 per cent below the 1929 level. A salary scale was worked out for all 13 roads on a 10-year select and ultimate basis.

5. For age retirements the mortality basis was the combined annuity table; for disability retirements the mortality basis was the experience among disabled lives under group life-insurance plans in all industries. These mortality rates follow closely the mortality experience with age and disability retirements under voluntary railroad pension plans in the period 1921-33. Had actual railroad experience been used the costs would be about 1 per cent less (about 0.07 per cent of pay roll). Since mortality experience had been improving this slight scaling down of the mortality rates (and scaling up of costs) was clearly necessary.

6. The initial age and service distribution was based on that of the 13 roads on December 31, 1933. Service was counted from date of original entry.

7. It was assumed that the number of employees would remain constant and that new entrants to replace employees withdrawing, dying and retiring would be distributed as to age as were entrants into the service of the seven railroads listed under item 4, in the period July 1, 1924-July 1, 1929. This distribution was used because, in using the 13 road data, tabulations were made on an annual census basis and new entrants were not separately distinguished. The assumption was also made that the aggregate pay roll would be constant at the present level $2,200,000,000 annually.

8. Interest on accumulated funds at the rate of 3 per cent per annum was used.

9. Healthy employees who do not previously withdraw were assumed to retire from rail service at 70, disabled lives upon becoming disabled; annuities for those employees who leave railroad service before qualifying for an immediate annuity (those under age 65 or who are not 60 with 30 years of service or under 60, if disabled) were started at 67-1/2, except for those who were disabled at or after leaving service, when 65 was taken as the commencement date.

The present valuation is essentially an inquiry as to whether the experience under the Railroad Retirement Acts and the additional data which have been collected, and which have a bearing on costs, are consistent with the initial assumptions. It is to be expected that in some respects the actual experience under any retirement system will not be in exact conformity with estimates of cost made before the system begins to operate. The questions, therefore, might perhaps better be stated not as to whether the experience is consistent, but the degree to which it is inconsistent.

The report prepared by the actuaries indicates that with respect to certain factors the variation of experience from what was anticipated was not sufficiently serious to result in any noticeable change in cost. These factors were: mortality among employees in active service; mortality among non-disability annuitants; mortality among pensioners; salary scales; and withdrawals from service for causes other than death, disability and retirement. The nature of the retirement system is such that a very hign withdrawal rate will not produce a cost markedly different from that which would result if there were no withdrawals other than for death, disability and retirement.

There are other points, however, at which differences have developed which, if persistent, will result in substantial changes in estimated costs. First, the age and service distributions prepared on the basis of the data collected by the Federal Coordinator of Transportation have proved to be somewhat in error. There are somewhat larger numbers of men in the upper age groups than was indicated to be the case by the original data. Second, apart from the service of persons who have

retired, no service periods have been secured from railroad records. Instead, the length of service of railroad employees as a whole has been estimated on the basis of a sample of 250,000 statements of service made by employees themselves. The sample indicates the possibility that the initial estimates of service were, on the whole, too low.

Third, the average pay roll for the years 1937, 1938 and 1939 has been $2,108,000,000 as compared with the estimate of $2,200,000,000. More serious than any of the foregoing, however, has been the fact that the retirement rate has been such that the average age of retirement has been less than 66, rather than 67-1/2 as estimated. This result has been caused both by a higher than anticipated rate among persons 65 years of age and over, and by a rate of disability retirement about twice as high as anticipated. Finally, the mortality rate among persons retired on account of disability has been lower than expected.

If the initial experience under the Railroad Retirement system were to continue without substantial change, and if the taxes under the Carriers Taxing Act were to be fixed on the same assumptions as those originally made, with respect to interest and the investment of excess of income over disbursements, the tax rates would be raised immediately to almost 11 per cent (taking the pay roll at $2,108,000,000).

This finding raises two major questions: first, is the initial experience likely to be typical of that over a long run of years; and second, if the answer to the first question is in the affirmative, should the taxes levied for the support of the Railroad Retirement system be raised to the full amount indicated to be permanently required?

There appear to be sound reasons for hesitating to accept at this time the initial experience as permanently valid. It is to be noted first of all that shortly after the Railroad Retirement Act became law, employment in the railroad industry turned sharply downward. General business receded during the latter part of 1937, taking place at an almost unprecedented rate. The decline in railroad employment, of course, resulted from the effect of the general business depression on railroad traffic. A substantial number of persons in the railroad industry found their incomes declining because of short time in shops, closing down or partial operation of other facilities, demotions resulting out of the operation of the seniority system, and so on. Many persons affected were advanced in years and found the annuity available under the Railroad Retirement Act a substantial fraction, if indeed, not as much as the compensation which they could earn by continuing in active service. Even where under the seniority rules a worker had rights to a job which provided compensation of the normal amount, he found himself subjected to pressure from younger employees whose incomes were reduced by the decline in employment.

The operation of private retirement systems in the railroad field had been curtailed for some years before the enactment of the Railroad Retirement Act of 1937. There had been, moreover, but very few annuities granted under the Railroad Retirement Act of 1935, because most employees who had a choice were unwilling to relinquish their rights until the legality of the Railroad Retirement system had been determined. It appears true also that many employees who were suffering from substantial disabilities had been retained in light jobs or had been holding on

to employment rights in order to qualify for retirement under the governmental system. The effect of this accumulation of delayed retirements affected the picture to an overwhelming degree in 1937; and there is no reason to suppose that its effects have been completed even yet. That, however, the initial rates were much larger than they have been subsequently is clearly indicated by the studies made by the actuaries.

To a considerable degree the experience under a retirement system will reflect general business conditions. If for some time to come business conditions are good and railroad traffic is in large volume, with prospects of increased traffic so that the railroads find it necessary to keep substantial maintenance forces continuously at work, the income to railroad employees will be substantial as compared with the annuities, persons on the rosters will secure reasonably full employment, and the retirements will consequently drop. The result will come about both because older employees will not wish to retire, and because there will be a diminution in the pressure on them exercised by younger men. There are substantial reasons to suppose that we are entering a period of expanded domestic business. The rearmament program which is just getting under way, if carried to a point of constructing a large new navy, and of securing military equipment sufficient to defend the Western Hemisphere, will necessarily mean a large increase in industrial activity. This increase will be reflected in railroad traffic and in railroad employment and payrolls in the incomes of individual railroad workers. In addition to this, it may well be that the railroads, which themselves are an essential and highly important part of the national defense, will find

it desirable to enter into a program of rehabilitation which will require substantial employment itself. With retirements falling and payrolls and payroll tax receipts rising, the balance between the receipts and disbursements of the retirement system will change for the better.

It may very well be that some increase in taxes will be required for the support of the Railroad Retirement system. We believe, however, that such an increase ought not now to be made. First, the extent of a desirable increase cannot now be determined because of doubts as to the validity in the long run of the initial experience; and second, because the policy with respect to contributions, if any, from the general revenues has not been determined.

We recommend therefore first, that no tax increase be made at the present time; second, that a revaluation be made, based on experience to the end of 1941 as soon after the end of 1941 as data can be made available. The results should be secured in time for a report to be made to Congress and action be taken in the 1942 session, effective January 1, 1943.

We recommend further that Congress outline a definitive policy with respect to contributions from the general revenue. In this connection we feel that the contribution to the Railroad Retirement system should be, as nearly as can be determined, the additional contribution which would be made to the general old age and survivors' insurance system if the coverage under the Railroad Retirement system were included under the general system. We recommend finally that any changes in the retirement system in the direction of liberalization should be accompanied immediately by increases in the taxes under the Carriers Taxing Act

sufficient to cover the full costs of the changes on the basis of the factors indicated by the experience to date.

Sub-section (d) of section 15 of the Railroad Retirement Act of 1937 provides that the actuarial report shall contain an estimate of the reduction in liabilities under Title II of the Social Security Act arising as a result of the maintenance of the Railroad Retirement Acts of 1935 and 1937. Since the 1937 Retirement Act was passed, Title II of the Social Security Act has been completely rewritten. It now includes not only old age, but dependents' and survivors' benefits. The operations of the Railroad Retirement Acts have yielded no data on which to base any estimate of reduction in liabilities under Title II of the Social Security Act. No attempt to make a guess seems warranted now and the estimate has therefore been omitted.

STATEMENT OF THE ACTUARIAL ADVISORY COMMITTEE

July 18, 1940

Railroad Retirement Board,
Washington, D. C.

Gentlemen:

The Actuarial Advisory Committee appointed in accordance with Section 15 of the act of June 24, 1937 has held several meetings to consider the data and the methods to be employed in their use in the development of an actuarial valuation of the assets and liabilities under the Railroad Retirement Act as of December 31, 1938. The results of this valuation appear in the report of the actuary of the Railroad Retirement Board, Mr. Joseph B. Glenn, as such report was submitted to the Committee under date of May 29, 1940.

The report recites the benefits of the system and then gives the number of employees and of pensioners used as a basis for the valuation as follows:

1,029,094	active employees entitled to prior service credit
230,411	inactive and terminated employees entitled to prior service credit
89,898	pensioners

After reciting the various methods by which the liabilities and contingent assets were computed the report gives the present value of the liabilities on account of employees and retired members, which in round figures is $4,462,400,000. To cover this liability there were funds amounting to $75,700,000 in hand which leaves a balance of $4,386,700,000 as the liabilities to be covered by future contributions. The report then indicates that the future contributions of employees and of the railroads, at the rates set under the act, which now provide for an increase in the combined rate from 6 per cent to a combined rate of 7-1/2 per cent in 1949 are inadequate.

The valuation report shows that a level contribution of approximately 11.11 per cent of the payroll is needed to finance the liabilities from now on. If the present rates were subjected to an increase of .98 per cent instead of .25 per cent of the payroll for both the railroads and the employees for each of the next three scheduled increases, the liability would be covered. In the judgment of the Actuarial Advisory Committee the important result of the valuation to the employees of the railroads, the railroads themselves and the general public, is the statement of the contributions needed to support the benefits, because it shows that the rates set in the tax act are insufficient and that some additional source of revenue is necessary if the prescribed benefits are to be maintained.

Railroad Retirement Board

The Actuarial Advisory Committee does not take a position on the question of the method to be followed in increasing the rates of payment by the railroads and the employees thereof to those indicated by this valuation to be required. While a first valuation gives the best indication available at the outset of the probable future cost, it is true that the basic assumptions as to mortality and service experience have not been tested by actual experience under the fund and may be subject to adjustments in future years. Inasmuch as the act provides for an increase in the rate of tax for a number of years in the future, there may be some question as to the advisability of making an immediate change in the current rates of tax until after the next valuation, although an immediate increase in the present rate or in the future increase in the rates as provided in the law would be the more conservative course to follow.

In the opinion of the Actuarial Advisory Committee the valuation has been prepared in accordance with sound actuarial practice and it is a reliable presentation of the actual financial condition of the system.

Respectfully submitted,

GEORGE B. BUCK

ROBERT D. HOLRAN

R. R. REAGH

Actuarial Advisory Committee

II

THE REPORT OF THE ACTUARY

COVERAGE AND BENEFIT PROVISIONS

Coverage

The Railroad Retirement Act of 1935 is now in force only with respect to employees who relinquished rights and became eligible for annuities prior to June 24, 1937. The beneficiaries under this Act therefore constitute a closed group. The future benefits to this group consist of life annuities, or joint-and-survivor annuities where an optional form of settlement is elected upon making application for annuity, and a death benefit equal to 12 monthly instalments at one-half of the monthly rate to which the annuitant was entitled. This death benefit is payable to the surviving spouse, or if there is no surviving spouse then to the next of kin if dependent on the annuitant, and if neither of these exist then no death benefit is payable. The monthly amount of annuity is calculated by the same formula as under the 1937 Act.

The Railroad Retirement Act of 1937 is now in force with respect to all other persons. This Act covers employees of railroads, express companies, and sleeping car companies subject to Part I of the Interstate Commerce Act, and any company which is directly or indirectly owned or controlled by one or more of these if it is engaged in performing any non casual service (other than trucking) in connection with the transportation of passengers or property by railroad. It does not include a street, interurban or suburban electric railway unless it is operating as part of a railway system. It covers employees of railroad associations, traffic associations, tariff bureaus, demurrage bureaus, weighing and inspection bureaus, collection agencies, and other associations, bureaus, agencies, or organizations controlled or maintained by the employers covered under the Act. It also covers officials and employees of railway labor organizations.

Benefits

The amount of annuity payable under the Act is calculated by taking 2 percent of the first $50 of average monthly earnings excluding compensation in excess of $300 in any month, 1½ percent of the next $100 and 1 percent of the next $150 and multiplying by the number of years of service, not exceeding 30 years if any service prior to January 1, 1937 is included but otherwise without limit. This basic amount is reduced for certain classes of retirements before age 65.

Individuals who were "employees" on August 29, 1935 may receive credit for service rendered prior to January 1, 1937 while others may receive credit only for service rendered after January 1, 1937. An individual was an "employee" on August 29, 1935 if he was in service on that date or if he was in an "employment relation." A person is in the "employment relation" if he is not in service but is, in accordance with an established rule or practice in effect on the employer, on furlough, leave of absence or absent on account of sickness or disability.

Service rendered after June 30, 1937 by an employee age 65 or over is not creditable, but his earnings after that date may be used in determining his average earnings if the effect is to increase his average.

The average monthly earnings of an employee are computed as follows: The number of months of service prior to January 1, 1937 is multiplied by the average monthly amount earned by the employee in the 8 year period 1924-1931 and to this product is added the gross amount earned after January 1, 1937. This sum is divided by the total number of months, giving the average monthly earnings on which the annuity is calculated. In determining the average, any earnings in excess of $300 in any month are excluded. Where the service in the period 1924-1931 is insufficient to constitute an equitable basis for determining the monthly compensation for service prior to January 1, 1937 the Board is authorized to determine the average on some basis that is fair and equitable.

Employees are entitled to immediate annuities if they satisfy one of the following conditions:

1. Are age 65 or over, irrespective of the length of service or physical condition.

2. Are age 60 to 65 and have 30 or more years of service, irrespective of physical condition. The basic amount of annuity is reduced by 1/180 for each month the employee is under age 65 at the time the annuity begins to accrue.

3. Are under 65 and have 30 or more years of service, and are permanently and totally disabled for regular employment for hire.

4. Are age 60 to 65 and are permanently and totally disabled for regular employment for hire, irrespective of the length of service. The basic amount of annuity is reduced by 1/180 for each month the employee is under age 65 at the time the annuity begins to accrue.

An applicant need not be an employee at the time of retirement. Any employee whose service is terminated for any cause prior to retirement age is entitled to a deferred annuity of an amount computed in the same way and beginning upon attaining eligibility under one of the four conditions above.

An applicant is not eligible for an annuity until he has ceased all employment irrespective of whether it is covered under the Act. After the annuity has been granted, it will not be paid with respect to any month in which he re-engages in employment under the Act or with his last outside employer.

If an applicant for an annuity was an employee under the Act on attaining age 65 and had at least 20 years of service, he is entitled

to a minimum annuity of at least $40 monthly if his average monthly compensation is $50 or more, or if his average earnings were less than $50 monthly he is entitled to an annuity of 80 percent of his average earnings, but if this is less than $20 he is entitled to $20 or the same amount as his average earnings, whichever is less.

A death benefit is payable in event of the death of any person employed after January 1, 1937. The amount is 4 percent of the total creditable compensation earned by the employee after January 1, 1937, less any annuity payments received. It is payable even though the employee may have separated from service before the time of death.

In lieu of the regular life annuity an employee may receive a joint-and-survivor annuity by making advance election or by furnishing proof of health. The amount of the joint-and-survivor annuity is the actuarial equivalent, and thus involves no additional cost.

On July 1, 1937 the Railroad Retirement Board assumed the payment of future benefits to individuals who were not eligible for annuities under the Act but who were on the employers' pension rolls on March 1, 1937. The amount of benefits to this group is the amount previously paid by the employer, but with a restoration of any general reduction in amounts made after December 31, 1930. The benefit is a life annuity only; there is no death benefit and no right to elect a joint-and-survivor option. The employers' pension plans were completely unfunded, and no assets were acquired in the transfer.

SOURCE AND CONSTRUCTION OF BASIC TABLES

Number of Individuals Entitled to Credit for Service Rendered Prior to January 1, 1937.

As previously stated, individuals who were "employees" on August 29, 1935 may receive credit for service rendered prior to January 1, 1937. The term "employee" includes those who were actually in service and those who were in the "employment relation."

The individuals entitled to credit for prior service have never been enumerated. The enumeration of those actually at work would not be very difficult, but a complete enumeration of those in the employment relation would involve a considerable amount of difficulty, particularly in those cases where the relationship exists through a custom or practice. A substantial number of instances would require detailed individual consideration. However, the total number of individuals entitled to prior service credit can be estimated with a high degree of accuracy.

Class I railroads report to the Interstate Commerce Commission the number of employees actually at work on the middle day of each calendar month. On August 15, 1935 they reported 1,011,030 employees and on September 15, 1,008,606 employees. While the number decreased slightly

from August 15 to September 15 the figure of 1,011,030 may be taken as the number at work on August 29, 1935 on Class I railroads. Reports to the Railroad Retirement Board for 1937 and 1938 show that the compensation of all employees covered under the Act is 16.7 percent greater than the compensation of Class I railroad employees. Increasing the above figure by 16.7 percent gives 1,179,872 as the number of persons at work on August 29, 1935 for all employers covered under the Act.

The Board has asked each employer to state the number of persons who were in the employment relation to him on August 29, 1935 and the number of names appearing on the last payroll (semi-monthly in almost all cases) for August 1935. Replies were received from employers having 946,509 names on this payroll stating that they had 145,736 persons in the employment relation, or 15.4 percent as many as names on the payroll. The remaining employers did not reply or replied that they did not know the number. An examination of annuity claims approved indicates that the employers who did not reply had about 75 percent more persons in the employment relation in proportion to the number of active employees than did the employers who replied. Increasing 15.4 by 75 percent gives 27.0 as the percentage for employers who did not reply. The percentage in the employment relation on August 29, 1935 cannot be derived directly from annuity claims approved since persons in the employment relation tend to be younger than those in active service as a result of the seniority system and therefore the percentage in approved annuity claims is lower.

Reports to the Interstate Commerce Commission showed that the number of different individuals receiving pay for any part of the month of August 1935 was 11.9 percent greater than the number of persons employed on the middle day of the month. Taking a 6 percent increase as the proper figure to obtain the number on the payroll in the last half of the month we multiply 1,179,872 by 1.06 and obtain 1,250,664 as the total number on the payroll during the last half of August. Subtracting 946,509 from 1,250,664 leaves 304,155 and multiplying this by 27.0 percent gives 82,122 as the number in the employment relation to employers who did not reply. Adding this 82,122 to 145,736 gives 227,858 as the total number of persons in the employment relationship.

Adding 1,179,872 and 227,858 gives 1,407,730 as the total number of persons entitled to prior service credit on August 29, 1935. By applying a mortality table to an age distribution of railroad employees on January 1, 1937 we find that the average annual rate of mortality is .01243. Multiplying 1,407,730 by .01243 gives 17,498 deaths per year. Deducting these deaths we have the following number of persons living on the date specified who were entitled to prior service credit.

August 29,1935	1,407,730
December 31, 1936	1,384,399
December 31, 1937	1,366,901
December 31, 1938	1,349,403

This number includes any retired employees who were receiving annuities on the date specified. If they are deducted the remainder represents living, non-retired persons entitled to credit for prior service.

Age and Service Distribution of Employees in Active Service December 31, 1938.

For information on the age and service distribution of employees entitled to credit for service rendered prior to January 1, 1937 the Board has available approximately 875,000 prior service forms filled out by employees. The claimed service has not been verified and verification would be an extensive undertaking, but judging from comparisons of claimed and proved service on applications for annuities the claimed service is generally accurate.

The prior service forms were distributed to employees near the end of 1938. In most instances the forms were delivered only to employees in active service but in some cases the forms were obtained and filled out by inactive or terminated employees. The Pennsylvania Railroad undertook to fill out the forms from personnel records for the employee's signature and completed the forms for employees whose name began with A or B, but then discontinued the work. Except for this instance completed forms were obtained from apparently 90 percent of employees in service at the end of 1938. The remainder either did not receive forms or failed to return them.

The prior service forms showed the employee's name, Social Security account number, date of birth, service prior to January 1, 1937, and occupation. Every third form in the order received was selected and a punch card was prepared showing all of this information except the name. An exception was made in the case of the Pennsylvania Railroad, where all of the forms were used, still leaving this railroad under-represented. To allow for breaks in service an equated date of entry was used.

Beginning January 1, 1937 the employers under the Act reported current service and earnings to the Board. The reports show the number of calendar months in which an employee has earnings and the amount of earnings not exceeding $300 in any calendar month. A punch card for every employee with service in 1937 or 1938 was available for use in this valuation. In addition to service and earnings these current service report cards show the Social Security account number, the year of birth given on the application for account number, and the last occupation. Service and earnings for 1939 were not available until after the valuation was completed.

The prior service cards were matched by account number with the current service cards by the use of collating machines. When a match was obtained the service and earnings for 1937 and 1938 were reproduced on the prior service cards. The prior service card for a particular individual then showed his reported service and earnings subsequent to January 1, 1937 as well as his claimed service prior thereto. By this matching it was determined that the 272,178 prior service cards were distributed as follows:

Group 1.	No service after January 1, 1937	1,692
Group 2.	Service in 1937 only	4,955
Group 3.	Service in both 1937 and 1938	264,370
Group 4.	Service in 1938 only	1,161
	Total	272,178

The prior service cards in groups 3 and 4 were sorted by year of birth and occupation and compared with similar tabulations from the current service and earnings cards. As nearly as could be determined the prior service cards were free from bias as far as age and earnings were concerned, and no other characteristics could be compared. Groups 1 and 2 appeared not to be representative of the whole group of which they form a part, a point which will be discussed later.

It would have been mechanically possible to determine from the current service reports which of the prior service cards pertained to employees who were in service at some time during the month of December 1938, though it is not possible to ascertain which ones were at work on December 31. In the time available it was impractical even to determine which ones were employed in December. Since the prior service forms were distributed near the end of 1938 and since from the figures above it appears that in all except a small fraction of the cases the forms were filled out only by employees in active service, it seemed reasonable to use the prior service cards of employees having earnings in 1938 (groups 3 and 4) to represent the age and service distribution of employees entitled to prior service credit who were in service on December 31, 1938.

Class I railroad reports to the Interstate Commerce Commission showed 943,682 employees on December 15, 1938 and 931,849 on January 15, 1939. Averaging these gives 937,766 on December 31. Increasing this by 16.7 percent to include employees of other than Class I railroad employers covered under the Act gives a total of 1,094,373 employees in service on December 31, 1938. This of course includes a number of employees not entitled to credit for service prior to January 1, 1937.

The number of employees in service December 31, 1938 who were entitled to prior service credit can be determined only by indirect methods. The total number of cards in groups 3 and 4 above is 265,531. If these were increased proportionally to a figure greater than 1,029,000 the number of employees at the high ages who are entitled to prior service credit would exceed the total number of employees in service at such ages. On the other hand if the number is less than 1,029,000 there would be a substantial number of employees in service at the higher ages who are not entitled to prior service credit, whereas very few new employees are hired at such ages. Accordingly, the age and service distribution of the 265,531 was increased proportionally to 1,029,000.

The difference between 1,094,000 and 1,029,000 represents employees in service December 31, 1938 who either had no service prior to January 1, 1937 or who were not entitled to credit for it under the Act by reason of not being an employee on August 29, 1935. From a small number of prior

service forms filled out by such employees (even though they did not claim any prior service credit) and from general considerations it seemed probable that 80 percent of these were entitled to credit beginning in 1937 and the other 20 percent beginning in 1938. The age distribution of those entering in 1938 can be determined from tabulations of current service cards of employees who had service in 1938 and not 1937. No similar distribution is available for those entitled to credit beginning in 1937 and consequently the same distribution was used as for 1938. The number of employees entitled to credit beginning in 1937 may seem high but it can be accounted for by two causes (a) it includes employees who entered service after August 29, 1935 and before January 1, 1937 who therefore are entitled to credit only for service after January 1, 1937 (b) railroad employment was higher in 1937 than in preceding and following years. In subsequent valuations the age and service distribution of employees entitled to credit for subsequent service only will presumably be obtained by direct tabulation but it was not practicable in this case.

After assembling the age and service distribution in the manner described above, it was adjusted slightly at the extreme high ages to bring the number of employees into line with tabulations of all persons employed during 1938 after excluding deaths and retirements; to eliminate the repetition of 4's that resulted from increasing proportionally the age and service distribution of the prior service cards, and to avoid negative results in the age distribution of inactive and terminated employees. This adjustment had no effect on the overall averages but it did change the number of persons slightly from the numbers stated above. The final result is shown in Table 1.

Two previous age and service distributions including a substantial part of the coverage under the Act are available for comparison with the distribution as of December 31, 1938. The first of these was compiled from reports of Class I railroads to the Association of American Railroads on December 31, 1931. The second was compiled by the Federal Coordinator of Transportation as of December 31, 1933 from the personnel records of 13 railroads employing about 22 percent of the total number of railroad employees. The first appears to include only the service with the employer on December 31, 1931, and in some cases perhaps only the <u>continuous</u> service with such employer, while the second included an average of 1.0 years of service with previous employers. After the strike in 1922 a substantial number of employees secured employment with a different railroad without giving a record of previous railroad employment. For this reason the personnel records appear to omit an average of about 1.0 years of service with a previous employer, which means that the total service with previous employers is about 2.0 years. For comparison the December 31, 1931 distribution should have 2.0 years added to the service and 2.0 years deducted from the age at entry, while the correction for the December 31, 1933 distribution is 1.0 years. A comparison of the percentage distributions by attained age, by length of service, and by age at entry, without any corrections having been made is shown in Table 2.

Owing to the fact that about two-thirds of the retirements are affected by the 30 year maximum service credit that applies when any service prior to January 1, 1937 is included, the effect of variations in the initial

Table 1.

AGE AND SERVICE DISTRIBUTION OF EMPLOYEES IN ACTIVE SERVICE DECEMBER 31, 1938

Actuarial Year of Entry

Year of Birth	Total
1844	1
1845	
1846	
1847	
1848	2
1849	1
1850	1
1851	5
1852	3
1853	10
1854	9
1855	9
1856	21
1857	23
1858	62
1859	61
1860	85
1861	118
1862	113
1863	178
1864	333
1865	530
1866	783
1867	1,194
1868	2,386
1869	3,639
1870	4,527
1871	6,374
1872	8,004
1873	11,616
1874	14,109
1875	16,817
1876	17,009
1877	19,711
1878	20,953
1879	23,580
1880	23,740
1881	27,619
1882	27,899
1883	31,660
1884	31,226
1885	32,618
1886	31,188
1887	37,004
1888	35,484
1889	34,163
1890	33,327
1891	38,102
1892	35,056
1893	35,582
1894	33,379
1895	34,023
1896	32,309
1897	33,958
1898	30,717
1899	35,403
1900	28,968
1901	29,062
1902	26,660
1903	24,004
1904	23,014
1905	21,613
1906	19,889
1907	18,161
1908	15,810
1909	14,112
1910	11,366
1911	9,933
1912	8,476
1913	7,736
1914	7,087
1915	6,972
1916	6,229
1917	3,283
1918	2,584
1919	1,914
1920	617
1921	226
1922	92
1923	20
1924	3
1925	1
1926	
TOTAL	1,094,921

Actuarial Year of Entry	TOTAL
1877	5
1878	7
1879	9
1880	18
1881	13
1882	38
1883	56
1884	96
1885	150
1886	335
1887	601
1888	835
1889	1,152
1890	1,559
1891	1,862
1892	2,185
1893	2,112
1894	2,352
1895	3,204
1896	3,528
1897	4,264
1898	6,276
1899	7,790
1900	10,265
1901	12,360
1902	15,736
1903	17,776
1904	17,589
1905	22,104
1906	26,795
1907	29,650
1908	22,180
1909	26,217
1910	29,349
1911	26,109
1912	31,099
1913	30,781
1914	25,586
1915	26,758
1916	36,144
1917	40,764
1918	52,099
1919	36,130
1920	16,369
1921	25,485
1922	53,515
1923	18,181
1924	33,237
1925	35,468
1926	35,750
1927	29,026
1928	26,508
1929	26,956
1930	15,310
1931	11,165
1932	8,897
1933	10,142
1934	11,974
1935	15,786
1936	5,075
1937	52,342
1938	13,095

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Table 2.

COMPARISON OF 3 AGE AND SERVICE DISTRIBUTIONS BY ATTAINED AGE, BY LENGTH OF SERVICE, AND BY AGE AT ENTRY

	By Attained Age				By Length of Service				By Age at Entry		
Age	Dec. 31 1931	Dec. 31 1933	Dec. 31 1938	Service	Dec. 31 1931	Dec. 31 1933	Dec. 31 1938	Age	Dec. 31 1931	Dec. 31 1933	Dec. 31 1938
-15	-	-	-	0- 4	15.8	5.0	9.2	11-15	1.6	2.1	2.7
15-19	.5	.1	.5	5- 9	27.1	16.5	6.6	16-20	20.1	24.9	29.1
20-24	5.5	2.7	2.9	10-14	19.7	25.1	14.7	21-25	28.2	30.1	30.7
25-29	10.3	8.2	5.4	15-19	11.7	17.5	19.4	26-30	17.6	16.7	17.3
30-34	13.4	12.7	9.7	20-24	9.5	13.5	17.4	31-35	12.4	10.9	9.5
35-39	14.6	14.6	13.7	25-29	7.8	10.4	13.1	36-40	8.9	7.4	5.5
40-44	15.1	15.7	15.5	30-34	3.9	6.4	10.9	41-45	6.1	4.6	3.1
45-49	14.2	15.9	16.1	35-39	2.0	2.5	5.8	46-50	2.8	2.0	1.3
50-54	10.4	12.4	15.0	40-44	1.7	2.0	1.8	51-55	1.4	.9	.5
55-59	7.6	8.5	11.3	45-49	.6	.9	.9	56-60	.7	.3	.2
60-64	5.0	5.6	7.3	50-54	.2	.2	.2	61-65	.2	.1	.1
65-69	2.6	2.8	2.3	55 & over	-	-	-	66-70	-	-	-
70-74	.6	.6	.3					71-75	-	-	-
75-79	.2	.2	-					76-80	-	-	-
80 & over	-	-	-								
TOTAL	100.0	100.0	100.0	TOTAL	100.0	100.0	100.0	TOTAL	100.0	100.0	100.0
Average Age	42.5	44.1	45.4	Average Service	14.5	17.7	20.3	Average Age	28.0	26.4	25.1

age and service distribution is limited. To show the effect of variations a number of cost computations have been made that are identical in every respect except for the initial age and service distribution. The scale of benefits is that provided under the Railroad Retirement Act of 1937, and the cost as a percentage of payroll includes interest on the initial deficit as well as the cost of currently accruing annuity credits.

Age and Service Distribution	Average Years of Service	Average Age	Cost as Percent of Payroll
A	14.5	42.5	8.390
B	17.7	44.1	9.050
C	19.3	45.0	9.480
D	20.8	46.3	10.008

Allowing credit for only 30 years considerably limits the financial effect of a change in average prior service. Increasing the service by 43 percent from 14.5 to 20.8 years results in an increase in cost of only 19 percent.

Age Distribution and Total Service of Inactive and Terminated Employees on December 31, 1938

As previously stated, the total number of living persons on December 31, 1938 who were entitled to prior service credit was 1,349,403.

These are accounted for as follows:

Retired and receiving annuities	89,898
In active service December 31, 1938	1,029,094
Inactive and terminated on December 31, 1938	230,411
Total	1,349,403

The term "inactive and terminated" is used advisedly because of the fact that a number of the individuals included in this group probably will return to service at a later date.

The Railroad Retirement Act does not provide for the forfeiture of annuity or insurance credits in event of separation from service prior to retirement and it is therefore necessary to include these credits in the valuation. The same rules for crediting service and calculating the amount of annuity or death benefit apply to separations as to those who remain in service to retirement age.

The inactive and terminated group consists of three classes, (a) those having service prior to January 1, 1937 only (b) those having service prior and subsequent to that date and (c) those having service subsequent to that date only. It is convenient to obtain the prior service of (a) and (b) separately, and the subsequent service of (b) and (c) together.

The total number of inactive and terminated employees entitled to prior service credit was stated above to be 230,411. As nearly as can be

determined 159,463 of these had no service after January 1, 1937 while the remaining 70,948 did have service after that date. For indications of the age and prior service of these the Board has only the tabulations of the prior service cards in groups 1 and 2 above. An examination of these groups leads to the conclusion that they are not a fair sample but are older and have longer service than the whole group of which they are a part. This bias might have been expected since the prior service forms in this case were filled out by persons who had not been in railroad service for some time prior to the date when the forms were distributed. The older employees with longer service probably remain in closer touch with the previous employer than do the younger employees with shorter service, and were more likely to obtain and complete a prior service form.

The 159,463 individuals who had no service after January 1, 1937 include a substantial number of seasonal or short term employees on August 29, 1935 who have a much lower average age than permanent employees. For this reason the age distribution (reduced in number) of employees separating from service in 1937 as determined from the current service reports was substituted for the age distribution obtained from the prior service cards in group 1 above. The average prior service at each attained age was calculated from the cards in group 1 and applied to the substituted age distribution to obtain the total amount of prior service. The resulting amount of service seemed out of line with the average age of the group and the amount of service was reduced, the reduction being greater proportionally at the younger ages where the bias in the prior service cards is probably greater. The amount of this reduction may possibly have been somewhat too large.

For the 70,948 employees entitled to both prior and subsequent service credit the age and service distribution from the cards in group 2 above was used even though the average age and service probably is greater than for the whole group of which it is a part. The number at each age and length of service in group 2 was increased proportionally so that the total became 70,948.

The service rendered prior to January 1, 1937 by inactive and terminated employees has thus been determined. The determination of the amount of service rendered subsequent to January 1, 1937 is an easier matter. The Board has tabulations by year of birth of service rendered by all employees in 1937 and 1938 from which the subsequent service of inactive and terminated employees can be obtained by a process of elimination. The tabulated total service rendered in 1937 was 1,392,056 service years and in 1938 was 1,189,679. This may be accounted for as follows:

	Service Rendered in 1937	1938	Total
Terminated by:			
Retirements in 1937	28,738	-	28,738
Deaths in 1937	8,293	-	8,293
Retirements in 1938	27,414	15,386	42,800
Deaths in 1938	13,089	6,820	19,909
Included in census of active employees December 31, 1938	1,019,431	1,020,727	2,040,158
Included in census of inactive and terminated employees	295,091	146,746	441,837
Total subsequent service years	1,392,056	1,189,679	2,581,735

The amount of service pertaining to each year of birth was determined in this way and the number of persons entitled to subsequent service was determined by a similar process of elimination. The final result appears in Table 3.

Age Distribution of New Employees

The method employed in calculating costs is to calculate first the level percentage of payroll necessary to support benefits to a group of new employees, then to calculate the initial deficit for the initial group of employees as the difference between the present value of benefits and the present value of contributions at the rate determined for new employees. The annual interest on the initial deficit is expressed as a percentage of the assumed payroll and this percentage is added to the percentage for new employees, giving the total rate required permanently to support benefits.

The age distribution of new employees is therefore a matter of considerable importance. The only available age distribution of new employees is one obtained by the Federal Coordinator of Transportation in the survey of 13 railroads previously mentioned. This age distribution includes new employees entering the service of 7 of the 13 railroads in the period 1924-29, new employees on the remaining 6 railroads were not tabulated.

Two other age distributions are available for comparison, though they include a substantial number of employees returning to service in addition to the strictly new employees. The first of these consists of individuals who were reported to the Board as having earnings in 1938 but not in 1937, that is, who were new employees or old employees returning after an absence of at least one year. The second of these is a sample of new registration forms received in the latter part of 1939 for the purpose of setting up a wage record under the current service reporting system, representing new employees or old employees who had not been in railroad service for nearly two years. A comparison of these distributions with the age distribution of new employees in the Federal Coordinator's survey and with the distribution by age at entry of employees in active service December 31, 1938 appears in Table 4.

The average age at entry in the Federal Coordinator's distributi is lower than for either of the two distributions obtained from the currer reporting system, as the two include a substantial number of returning employees who are somewhat older, but it is higher than the average age at entry of the active employees. The higher average age for new employees than for active employees can be explained by three causes (a) the age di tribution of new employees may include some returning employees whose previous service was not shown on the personnel records (b) the lower hiring

Table 3.

AGE DISTRIBUTION AND TOTAL SERVICE OF INACTIVE AND TERMINATED EMPLOYEES
DECEMBER 31, 1938

Year of Birth	Number of Individuals Entitled to: Prior Service Credit Only	Prior & Subsequent Credit	Subsequent Service Credit Only	Total	Years of Service: Prior	Subsequent	Total
1846							
1847			1	1		1	1
1848			2	2		2	2
1849			1	1		1	1
1850							
1851			3	3		2	2
1852			2	2		2	2
1853			9	9		12	12
1854			7	7		8	8
1855							
1856							
1857			1	1			
1858			16	16		17	17
1859			10	10		9	9
1860			12	12		10	10
1861	2		5	7	44	4	48
1862	7			7	154		154
1863	15		1	16	329		329
1864	11	10	5	26	522	14	536
1865	15	21	6	42	889	25	914
1866	15	42	17	74	1,449	57	1,506
1867	21	56	168	245	1,944	215	2,159
1868	37	99	100	236	3,409	189	3,598
1869	86	128	69	283	5,208	187	5,395
1870	123	128	68	319	5,921	185	6,106
1871	198	215	22	435	9,605	220	9,825
1872	228	228	81	537	10,354	287	10,641
1873	276	514	477	1,267	18,310	917	19,227
1874	298	686	146	1,130	22,658	757	23,415
1875	389	586	263	1,238	21,374	764	22,138
1876	524	772	969	2,265	27,711	1,555	29,266
1877	599	1,016	1,202	2,817	34,103	1,870	35,973
1878	633	1,102	2,250	3,985	35,899	3,533	39,432
1879	791	1,116	2,474	4,381	37,779	3,261	41,040
1880	703	1,202	2,235	4,140	37,444	2,790	40,234
1881	784	1,316	3,596	5,696	40,130	4,630	44,760
1882	849	1,431	3,152	5,432	42,397	4,006	46,403
1883	1,006	1,760	2,025	4,791	50,089	3,154	53,243
1884	1,137	1,431	2,029	4,597	43,357	2,336	45,693
1885	1,558	1,732	2,938	6,228	52,765	3,981	56,746
1886	1,471	1,560	4,619	7,650	46,555	4,984	51,539
1887	1,533	1,732	6,562	9,827	48,632	6,614	55,246
1888	1,260	1,846	5,941	9,047	46,010	6,277	52,287
1889	2,427	2,304	5,541	10,272	62,692	5,864	68,556
1890	2,551	1,832	5,498	9,881	52,821	5,396	58,217
1891	2,593	2,104	8,817	13,514	55,065	7,645	62,710
1892	2,632	2,032	8,606	13,270	51,434	6,525	57,959
1893	2,861	2,433	9,314	14,608	56,552	7,790	64,342
1894	3,116	2,190	9,605	14,911	51,404	8,037	59,441
1895	3,594	2,175	10,629	16,398	50,899	8,515	59,414
1896	3,275	2,333	11,115	16,723	48,370	8,974	57,344
1897	3,894	2,334	13,609	19,837	48,230	10,677	58,907
1898	3,505	2,176	11,095	16,776	41,508	7,354	48,862
1899	4,212	2,846	16,073	23,131	49,288	9,999	59,287
1900	4,092	2,692	11,369	18,153	43,647	7,841	51,488
1901	4,393	2,277	15,090	21,760	36,808	10,263	47,071
1902	4,526	2,248	13,912	20,686	33,881	8,157	42,038
1903	4,655	2,048	16,452	23,155	29,193	10,894	40,087
1904	5,310	2,219	16,120	23,649	28,998	10,021	39,019
1905	5,279	2,062	16,824	24,165	24,638	10,443	35,081
1906	5,513	1,790	20,028	27,331	18,935	12,702	31,637
1907	6,259	2,390	19,786	28,435	22,378	12,528	34,906
1908	6,274	1,475	21,025	28,774	13,366	12,063	25,429
1909	7,444	1,289	24,080	32,813	10,508	13,348	23,856
1910	8,069	1,375	24,887	34,331	9,021	14,952	23,973
1911	9,549	1,031	30,298	40,878	5,568	18,021	23,589
1912	11,935	745	33,240	45,920	3,427	19,363	22,790
1913	9,920	659	39,633	50,212	2,340	23,211	25,551
1914	6,138	587	47,541	54,266	1,529	26,818	28,347
1915	6,069	229	41,080	47,378	392	18,126	18,518
1916	3,329	186	29,968	33,483	149	12,996	13,145
1917	1,017	100	26,302	27,419	40	13,113	13,153
1918	351	29	15,455	15,835	6	5,016	5,022
1919	69	29	6,422	6,520	3	1,613	1,616
1920	28		2,057	2,085		411	411
1921	11		565	576		99	99
1922	4		147	151		22	22
1923			54	54		7	7
1924			12	12		2	2
1925							
Unknown			230,097	230,097		40,155	40,155
TOTAL	159,463	70,948	853,830	1,084,241	1,498,131	441,837	1,939,968

Table 4.

PERCENTAGE AGE DISTRIBUTIONS OF NEW OR RE-EMPLOYED EMPLOYEES

Age at Entry or Re-entry	Federal Coordinator New Employees 1924-29	Earnings in 1938 but not in 1937	New Account Applications Sample, 1939	Active Employees Dec. 31, 1938 Age at Entry
15 and under	.35	.12	.08	2.71
16-20	26.85	11.93	15.91	29.12
21-25	26.38	30.68	32.74	30.72
26-30	14.85	17.94	14.80	17.26
31-35	10.89	12.43	10.12	9.50
36-40	9.19	9.81	8.95	5.46
41-45	6.69	6.86	6.76	3.05
46-50	2.07	4.43	4.24	1.34
51-55	1.37	2.88	3.25	.54
56-60	.85	1.70	1.51	.20
61-65	.29	.77	.97	.07
66-70	.16	.32	.38	.02
71-75	.05	.09	.22	.01
76-80	.01	.04	.07	-
TOTAL	100.00	100.00	100.00	100.00
Average age	27.62	30.42	29.86	25.13

age limit has been raised over the last 20 or 30 years (c) deaths and retirements reduce the average age at entry of those continuing in service.

The financial effect of different age distributions is shown by the following four cost computations which are on an identical basis except for the age distribution used for new employees. The figures include the initial group of employees in addition to the cost for new employees.

Age Distribution for New Entrants	Cost as Percent of Payroll
Federal Coordinator's survey 1924-29	9.480
New account registrations 1939	9.585
Earnings in 1938 and not in 1937	9.621
Active employees 12-31-38 by age at entry	9.363

The substantial decline in railroad employment that has taken place in recent years has resulted in the existence of a considerable body of experienced workers who may be re-employed to fill the vacancies that occur. For some time in the future the proportion of strictly new employees is likely to be low, and therefore the average age of accessions will be higher than the average in the Federal Coordinator's distribution, but eventually the difference will probably disappear.

In the discussion of withdrawal rates it is shown that the withdrawal rate has only a negligible effect on the total cost. It is therefore unnecessary to take temporary separations from service into account in the computations, and employees may be assumed to remain in service until final separation. An age distribution of re-employed individuals is therefore not required in the computations.

Salary Scale

As previously stated, the service and earnings for 1937 and 1938 from the current service cards were reproduced on the prior service cards. The prior service cards were sorted by age and length of service, and tabulated to provide material for a salary scale.

The unit of service under the Act is a service month. A service month is any calendar month in which an employee has earnings, whatever the amount. Twelve service months, consecutive or otherwise, constitute a service year. The average earnings used in calculating the amount of annuity is the average per service month. No earnings in excess of $300 in any service month are shown on the current service cards, as the excess is not used in calculating the average earnings.

The available material for the construction of a salary scale covered 270,486 employees, 6,105,989 service months, and $907,192,216 of earnings in the calendar years 1937 and 1938, about equally divided between the two years. As nearly as could be determined this material was free from bias.

The ungraduated average earnings are shown in Tables 5 and 6 and the graduated averages in Table 7. The figures shown are 12 times the average earnings per service month rather than the average per service month.

The use of earnings for the two years 1937 and 1938 is appropriate as 1937 was a relatively prosperous year while 1938 was a year of severe recession. A variation is introduced by the wage increase that was granted in the latter part of 1937 and which can be seen in the earnings for 1938; however, the effect is not large.

In the same way that a salary scale is used to represent future earnings it may sometimes be used to represent earnings in the past. The average earnings applicable to prior service under the Act is the average monthly amount earned by the employee during the 8 year period 1924-31. Because of the wage increase granted in 1937, however, it seems advisable to use only 97 percent of the earnings in the salary scale when obtaining earnings for prior service.

By using 97 percent of the earnings in the salary scale for prior service, we obtain the following comparison between actual and theoretical earnings on annuities in force December 31, 1939:

Year of Birth	Number of Annuitants	Average Mo. Earnings Actual	Average Mo. Earnings Expected	Percent Ratio
1874-1870	33,665	$153.05	$158.90	96.3
1869-1865	23,790	157.76	158.86	99.3
1864-1860	4,345	143.45	162.09	88.5
1859-1855	891	129.08	160.21	80.6
1854-1850	107	132.63	147.60	89.9
TOTAL	62,798	$153.80	$159.10	96.7

Retirements tend to occur mainly among employees with lower than average earnings. This has the double effect of increasing the earnings in the salary scale which is based on employees remaining in service, and of depressing the average earnings on retirements. This accounts for the small discrepancy between the actual and theoretical earnings.

Except for the wage increase granted in 1937, the general wage level in 1937 and 1938 was much the same as during the period 1924-31. The general reductions that were made during the depression took effect after the end of the 1924-31 period and were restored before 1937. The use of the salary scale with the 3 percent reduction to obtain average earnings for prior service appears to be appropriate.

With respect to inactive and terminated employees it is convenient to use a different salary scale because of the manner in which these employees have been tabulated and because terminated employees have lower average earnings than continuing employees. The average earnings of inactive and terminated employees in Table 8 was derived from tabulations of earnings in 1937

Table 5.

UNGRADUATED AVERAGE EARNINGS IN 1937 AND 1938
BY YEAR OF BIRTH AND BY ADJUSTED YEAR OF ENTRY

(12 Times the Average Earnings per Service Month)

Year of Birth	1937	1938
1922	$ 14	$ 14
21	---	---
20	517	672
19	902	929
18	852	905
1917	963	982
16	1,076	1,093
15	1,084	1,117
14	1,116	1,128
13	1,161	1,161
1912	1,206	1,217
11	1,257	1,256
10	1,273	1,273
09	1,329	1,323
08	1,352	1,354
1907	1,406	1,395
06	1,451	1,445
05	1,467	1,462
04	1,512	1,501
03	1,569	1,563
1902	1,608	1,602
01	1,657	1,654
00	1,629	1,631
1899	1,701	1,710
98	1,723	1,732
1897	1,740	1,746
96	1,767	1,771
95	1,778	1,787
94	1,799	1,816
93	1,823	1,834
1892	1,840	1,855
91	1,892	1,908
90	1,890	1,915
89	1,925	1,944
88	1,888	1,910
1887	1,948	1,980
86	1,942	1,975
85	1,939	1,967
84	1,939	1,972
83	1,978	2,010
1882	1,939	1,965
81	1,936	1,975
80	1,943	1,978
79	1,960	2,004
78	1,948	1,988
1877	1,965	1,994
76	1,944	1,986
75	1,919	1,962
74	1,932	1,975
73	1,937	1,981
1872	1,991	2,028
71	1,995	2,047
70	2,080	2,123
69	2,041	2,088
68	2,007	2,038
1867	1,993	2,035
66	2,043	2,111
65	1,867	1,874
64	1,808	1,800
63	1,679	1,710
1862	1,926	1,967
61	1,689	1,655
60	2,031	2,009
59	1,586	1,700
58	1,785	1,736
1857	1,526	1,695
56	962	1,114
55	---	---
54	---	---
53	3,600	3,600
1852	2,452	2,525
51	985	1,059
ALL	$1,773	$1,793

Year of Entry	1937	1938
1936	$1,035	$ 987
35	1,125	1,117
34	1,172	1,177
33	1,172	1,173
32	1,198	1,168
1931	1,244	1,222
30	1,254	1,239
29	1,288	1,276
28	1,304	1,292
27	1,353	1,344
1926	1,395	1,386
25	1,434	1,424
24	1,473	1,456
23	1,535	1,520
22	1,644	1,622
1921	1,592	1,579
20	1,691	1,701
19	1,688	1,695
18	1,726	1,742
17	1,802	1,820
1916	1,832	1,841
15	1,856	1,868
14	1,857	1,877
13	1,925	1,943
12	1,963	1,984
1911	1,988	2,017
10	2,049	2,083
09	2,088	2,116
08	2,093	2,133
07	2,184	2,228
1906	2,221	2,263
05	2,232	2,279
04	2,240	2,290
03	2,281	2,332
02	2,345	2,395
1901	2,361	2,407
00	2,365	2,418
1899	2,426	2,483
98	2,418	2,476
97	2,417	2,481
1896	2,422	2,477
95	2,454	2,506
94	2,467	2,525
93	2,492	2,536
92	2,488	2,552
1891	2,576	2,626
90	2,566	2,617
89	2,710	2,752
88	2,634	2,674
87	2,756	2,795
1886	2,622	2,701
85	2,571	2,629
84	2,629	2,666
83	2,568	2,606
82	2,319	2,408
1881	3,067	3,045
80	3,093	3,468
79	3,041	2,851
78	2,790	2,880
77	2,844	2,882
ALL	$1,773	$1,793

Table 6.

UNGRADUATED AVERAGE EARNINGS IN 1937 AND 1938 COMBINED
BY AGE AND LENGTH OF SERVICE

(12 Times the Average Earnings per Service Month)

Duration	Central Age at Entry 13	18	23	28	33	38	43	48	53	58	63	68
½	$	$ 906	$1,004	$1,063	$1,156	$1,094	$1,127	$1,063	$1,007	$1,150	$1,001	$
1½	362	1,017	1,101	1,142	1,174	1,137	1,119	1,142	972	1,063	836	713
2½	598	1,081	1,163	1,181	1,182	1,134	1,171	1,163	989	1,116	928	512
3½	579	1,139	1,199	1,217	1,191	1,118	1,160	1,135	949	1,120	1,031	1,064
4½	716	1,143	1,222	1,231	1,202	1,143	1,168	964	1,007	1,017	938	997
5½	868	1,201	1,263	1,245	1,215	1,169	1,157	958	1,091	1,035	780	370
6½	999	1,255	1,298	1,260	1,226	1,156	1,154	1,088	1,083	1,099	554	507
7½	1,110	1,292	1,317	1,291	1,244	1,209	1,159	1,128	1,115	1,001	751	
8½	1,127	1,310	1,339	1,307	1,258	1,237	1,178	1,116	1,102	1,025	1,033	
9½	1,126	1,364	1,369	1,336	1,285	1,254	1,210	1,150	1,083	1,043	1,125	
10½	1,189	1,406	1,446	1,382	1,327	1,273	1,216	1,145	1,133	1,065	964	
11½	1,201	1,445	1,493	1,420	1,370	1,283	1,247	1,128	1,127	1,036	1,015	
12½	1,229	1,502	1,522	1,459	1,410	1,299	1,265	1,200	1,117	1,232		
13½	1,361	1,566	1,580	1,520	1,441	1,337	1,297	1,257	1,220	1,249		
14½	1,453	1,628	1,667	1,610	1,547	1,453	1,387	1,343	1,350	1,048		
15½	1,503	1,655	1,701	1,632	1,582	1,471	1,389	1,370	1,336	1,139		
16½	1,588	1,731	1,754	1,657	1,567	1,443	1,353	1,296	1,267	1,067		
17½	1,632	1,779	1,795	1,691	1,581	1,475	1,401	1,322	1,330			
18½	1,742	1,804	1,806	1,702	1,594	1,477	1,417	1,393	1,177			
19½	1,835	1,857	1,862	1,763	1,629	1,495	1,415	1,442	1,114			
20½	1,835	1,926	1,913	1,788	1,638	1,495	1,409	1,444	1,039			
21½	1,838	1,976	1,919	1,793	1,624	1,514	1,471	1,433	846			
22½	1,863	2,021	1,929	1,792	1,600	1,470	1,428	1,529				
23½	1,938	2,044	1,970	1,814	1,621	1,485	1,386	1,732				
24½	1,963	2,064	2,021	1,864	1,682	1,531	1,444	1,594				
25½	2,023	2,114	2,051	1,855	1,693	1,553	1,478	1,114				
26½	2,110	2,161	2,098	1,881	1,714	1,548	1,472	1,219				
27½	2,169	2,208	2,144	1,920	1,746	1,632	1,634					
28½	2,226	2,235	2,159	1,917	1,759	1,786	1,718					
29½	2,227	2,285	2,208	1,969	1,860	1,831	1,876					
30½	2,294	2,346	2,250	2,053	1,907	1,796	1,515					
31½	2,299	2,367	2,263	2,083	1,905	1,887	1,630					
32½	2,305	2,361	2,281	2,092	1,906	1,888						
33½	2,308	2,360	2,318	2,112	1,981	1,834						
34½	2,325	2,417	2,364	2,145	2,082	1,968						
35½	2,392	2,462	2,389	2,191	2,042	2,378						
36½	2,420	2,459	2,375	2,247	1,993	2,906						
37½	2,452	2,458	2,417	2,319	2,023	2,286						
38½	2,448	2,496	2,435	2,384	2,250	1,362						
39½	2,473	2,517	2,402	2,373	2,352	1,452						
40½	2,529	2,492	2,432	2,258	2,243							
41½	2,561	2,474	2,460	2,328	1,938							
42½	2,516	2,498	2,474	2,422								
43½	2,523	2,515	2,474	2,569								
44½	2,503	2,518	2,516	2,274								
45½	2,574	2,573	2,560	1,796								
46½	2,549	2,604	2,659	1,683								
47½	2,594	2,654	2,770									
48½	2,701	2,717	2,654									
49½	2,624	2,769	2,551									
50½	2,568	2,802	2,872									
51½	2,573	2,728	2,621									
52½	2,647	2,705										
53½	2,550	2,687										
54½	2,625	2,567										
55½	2,752	2,926										
56½	2,904	3,260										
57½	2,905											
58½	-											
59½	2,870											
60½	3,010											
61½	-											

Table 7.

GRADUATED SALARY SCALE 1937-38

(12 Times the Average Earnings per Service Month)

Duration	Central Age at Entry 13	18	23	28	33	38	43	48	53	58	63	68
0	$ 442	$ 956	$1,053	$1,098	$1,121	$1,061	$1,114	$1,037	$ 954	$ 926	$840	$673
1	517	1,002	1,091	1,126	1,140	1,084	1,124	1,046	971	954	855	690
2	592	1,047	1,128	1,153	1,158	1,105	1,133	1,054	988	980	872	705
3	667	1,091	1,164	1,179	1,175	1,124	1,141	1,061	1,005	1,000	893	718
4	742	1,134	1,199	1,205	1,192	1,141	1,149	1,067	1,022	1,018	914	729
5	818	1,177	1,234	1,230	1,207	1,158	1,156	1,072	1,039	1,030	932	738
6	894	1,219	1,269	1,254	1,224	1,176	1,164	1,078	1,055	1,040	946	745
7	969	1,262	1,304	1,280	1,242	1,194	1,173	1,087	1,071	1,052	958	740
8	1,039	1,304	1,341	1,307	1,264	1,214	1,184	1,100	1,089	1,070	969	
9	1,105	1,346	1,379	1,338	1,291	1,237	1,199	1,120	1,109	1,092	978	
10	1,164	1,391	1,421	1,373	1,323	1,262	1,218	1,144	1,132	1,113	984	
11	1,221	1,437	1,467	1,413	1,359	1,290	1,242	1,172	1,158	1,134	986	
12	1,277	1,486	1,515	1,456	1,399	1,321	1,268	1,203	1,185	1,154	987	
13	1,337	1,536	1,566	1,501	1,441	1,352	1,295	1,234	1,210	1,176		
14	1,402	1,588	1,617	1,547	1,481	1,383	1,322	1,265	1,229	1,196		
15	1,471	1,640	1,667	1,591	1,517	1,412	1,347	1,296	1,239	1,218		
16	1,542	1,692	1,715	1,633	1,548	1,436	1,368	1,327	1,239	1,239		
17	1,611	1,744	1,760	1,670	1,573	1,456	1,385	1,358	1,231	1,260		
18	1,677	1,795	1,800	1,703	1,591	1,470	1,398	1,388	1,219			
19	1,735	1,844	1,837	1,732	1,604	1,479	1,406	1,415	1,208			
20	1,788	1,891	1,872	1,756	1,614	1,485	1,413	1,438	1,198			
21	1,836	1,937	1,905	1,778	1,622	1,490	1,419	1,455	1,189			
22	1,881	1,981	1,937	1,797	1,632	1,497	1,429	1,467	1,181			
23	1,926	2,023	1,970	1,816	1,644	1,510	1,445	1,476				
24	1,973	2,064	2,004	1,836	1,661	1,530	1,468	1,484				
25	2,021	2,105	2,039	1,857	1,683	1,557	1,497	1,491				
26	2,071	2,145	2,075	1,880	1,710	1,592	1,530	1,497				
27	2,120	2,185	2,112	1,906	1,741	1,632	1,565	1,502				
28	2,166	2,224	2,149	1,936	1,776	1,679	1,600					
29	2,208	2,261	2,184	1,968	1,812	1,731	1,634					
30	2,244	2,296	2,218	2,002	1,850	1,790	1,667					
31	2,274	2,328	2,251	2,038	1,887	1,855	1,699					
32	2,300	2,357	2,281	2,075	1,924	1,925	1,729					
33	2,324	2,383	2,309	2,114	1,960	1,998						
34	2,348	2,407	2,334	2,154	1,995	2,071						
35	2,372	2,427	2,357	2,195	2,030	2,144						
36	2,397	2,445	2,376	2,236	2,064	2,217						
37	2,423	2,459	2,392	2,275	2,097	2,290						
38	2,448	2,471	2,406	2,306	2,130							
39	2,470	2,480	2,420	2,328	2,163							
40	2,489	2,488	2,434	2,335	2,195							
41	2,506	2,496	2,452	2,328	2,226							
42	2,520	2,507	2,473	2,309	2,256							
43	2,533	2,523	2,499	2,284								
44	2,546	2,545	2,529	2,259								
45	2,559	2,573	2,561	2,233								
46	2,570	2,603	2,594	2,206								
47	2,580	2,634	2,626	2,178								
48	2,588	2,663	2,658									
49	2,594	2,689	2,690									
50	2,601	2,712	2,722									
51	2,611	2,733	2,754									
52	2,628	2,754	2,786									
53	2,652	2,775										
54	2,685	2,796										
55	2,723	2,817										
56	2,765	2,838										
57	2,806	2,859										
58	2,847											
59	2,887											
60	2,927											
61	2,965											
62	3,000											

Table 8.

AVERAGE EARNINGS OF INACTIVE AND TERMINATED EMPLOYEES

Year of Birth	Average Earnings per Service Year	Year of Birth	Average Earnings per Service Year
1846	$	1886	$1,172
1847		1887	1,151
1848	799	1888	1,130
1849	883	1889	1,110
1850	960	1890	1,090
1851	1,030	1891	1,070
1852	1,093	1892	1,053
1853	1,149	1893	1,036
1854	1,198	1894	1,020
1855	1,240	1895	1,004
1856	1,278	1896	990
1857	1,310	1897	976
1858	1,341	1898	964
1859	1,368	1899	953
1860	1,395	1900	942
1861	1,426	1901	932
1862	1,461	1902	919
1863	1,500	1903	906
1864	1,542	1904	890
1865	1,580	1905	872
1866	1,610	1906	852
1867	1,629	1907	831
1868	1,633	1908	810
1869	1,623	1909	792
1870	1,599	1910	774
1871	1,566	1911	758
1872	1,530	1912	742
1873	1,494	1913	726
1874	1,462	1914	706
1875	1,434	1915	682
1876	1,409	1916	650
1877	1,386	1917	617
1878	1,364	1918	575
1879	1,340	1919	518
1880	1,316	1920	434
1881	1,291	1921	346
1882	1,266	1922	289
1883	1,241	1923	251
1884	1,217	1924	227
1885	1,194	1925	216

of employees who separated from service in 1937 as shown by the current service cards. This is the only year for which tabulations of terminations were available in time for the valuation.

The majority of inactive and terminated employees were hired after the end of the 1924-31 period used as a base for prior service earnings. Their earnings for prior service probably will be based on their earnings during the period of actual employment, though that is a matter to be determined by the Board when an application for an annuity is filed. The use of Table 8 for the average earnings of this group appears to be reasonable.

Withdrawal Rates

The rates of withdrawal for causes other than death, disability or retirement in Table 9 are double the withdrawal rates for the period 1925-28 obtained by the Federal Coordinator from the personnel records of 13 railroads. The source of the discrepancy appears to be that personnel records are not maintained for certain classes of employees with high withdrawal rates, and that the procedure followed in the survey omitted a number of withdrawals where records were available.

By applying the withdrawal rates in Table 9 to an age and service distribution of employees in service in 1937 we obtain 473,008 expected withdrawals while the actual number obtained from the current service cards was 519,444 or a ratio of 109.8 percent. The number of withdrawals was obtained from the current service cards by considering as a withdrawal any employee who had earnings in 1937 and not in 1938, excluding deaths and disabilities calculated from mortality and disability tables and retirements from annuities approved by the Board. Figures are not yet available for any year after 1937.

Withdrawal rates have a negligible effect on the total cost of a retirement system such as the Railroad Retirement Act. To demonstrate this rather unusual result two computations have been made which are on an identical basis in every respect except that in one case the withdrawal rates in Table 9 have been used while in the other the rates are 50 percent of those in Table 9. The figures represent the percentage of payroll required permanently to support the benefits.

	Table 9	50 Percent of Table 9
Retirement annuities	4.942%	5.825%
Non-disability	1.513	1.856
Disability	2.676	1.510
Withdrawal deferred annuities	.807	.817
Death benefits	9.938%	10.008%
Total		

The effect of decreasing the withdrawal rate is a negligible increase in the total cost, indicating that the contributions with respect to withdrawing employees are about equal to the cost of the deferred annuities to which

Table 9.

RATES OF WITHDRAWAL FOR CAUSES OTHER THAN DEATH, DISABILITY OR RETIREMENT

Duration	Central Age at Entry										
	13	18	23	28	33	38	43	48	53	58	63
0	.62320	.63580	.64000	.63580	.62320	.60220	.57280	.53500	.48880	.43420	.37140
1	.29748	.30080	.29940	.29810	.29520	.28894	.27670	.26720	.25502	.23598	.20968
2	.19536	.19700	.19540	.19468	.19340	.19008	.18240	.17808	.17252	.16202	
3	.14544	.14646	.14502	.14454	.14382	.14162	.13604	.13352	.13034	.12334	
4	.11584	.11656	.11530	.11494	.11446	.11284	.10848	.10682	.10474	.09958	
5	.09624	.09680	.09568	.09540	.09506	.09380	.09020	.08900	.08754	.08350	
6	.08232	.08276	.08178	.08154	.08128	.08024	.07718	.07628	.07520	.07188	
7	.07192	.07228	.07140	.07120	.07100	.07012	.06746	.06674	.06590		
8	.06386	.06416	.06336	.06318	.06302	.06226	.05990	.05932	.05866		
9	.05742	.05768	.05694	.05678	.05666	.05598	.05388	.05340	.05284		
10	.05216	.05238	.05170	.05156	.05146	.05086	.04896	.04854	.04808		
11	.04778	.04798	.04736	.04722	.04714	.04658	.04484	.04450	.04410		
12	.04408	.04426	.04368	.04356	.04348	.04298	.04138	.04108			
13	.04090	.04108	.04054	.04042	.04036	.03990	.03842	.03814			
14	.03816	.03832	.03780	.03770	.03764	.03722	.03584	.03560			
15	.03576	.03590	.03542	.03534	.03528	.03488	.03360	.03336			
16	.03366	.03378	.03332	.03324	.03318	.03282	.03160	.03140			
17	.03178	.03190	.03146	.03138	.03134	.03100	.02984				
18	.03010	.03020	.02980	.02972	.02968	.02936	.02826				
19	.02858	.02870	.02830	.02822	.02818	.02788	.02686				
20	.02722	.02732	.02694	.02688	.02684	.02654	.02556				
21	.02598	.02608	.02572	.02564	.02562	.02534	.02440				
22	.02484	.02494	.02460	.02452	.02450	.02424					
23	.02380	.02388	.02356	.02350	.02346	.02322					
24	.02284	.02292	.02262	.02256	.02252	.02228					
25	.02196	.02204	.02174	.02168	.02166	.02142					
26	.02114	.02122	.02092	.02088	.02086	.02064					
27	.02038	.02046	.02018	.02012	.02010						
28	.01968	.01976	.01948	.01944	.01940						
29	.01902	.01910	.01882	.01878	.01876						
30	.01842	.01848	.01822	.01818							
31	.01784	.01790	.01764	.01760							
32	.01730	.01736	.01710								
33	.01678	.01684	.01660								
34	.01630	.01636	.01612								
35	.01584	.01590	.01568								
36	.01542	.01548	.01526								
37	.01502	.01506									
38	.01462	.01468									
39	.01426	.01430									
40	.01392	.01396									
41	.01358	.01362									
42	.01326										
43	.01296										
44	.01268										
45	.01240										
46	.01214										

they are entitled. While the total cost is unaffected, the distribution of the cost among the various causes of separation is substantially affected and for some purposes this may be important.

The withdrawal rates in Table 9 are almost identical with the rates obtained in a valuation of the Pennsylvania Railroad pension plan made by Fackler and Breiby. The rates of separation required for the valuation of the Railroad Retirement Act are rates of separation from the entire railroad industry rather than separation from a particular unit in the industry. There is a certain amount of shifting of employees from one railroad to another which does not constitute separation from the industry. While the Pennsylvania rates quite properly included these transfers as separations, they are offset by the fact that withdrawal rates on the Pennsylvania are lower than average.

Disability Rates

The rates of disability in Table 10 are double the permanent and total disability rates in the group life insurance experience on steam railroad employees for the years 1930-34. This experience is compiled and published privately by the 7 largest life insurance companies writing group insurance.

Using these rates and approximate age and service distributions for 1937, 1938 and 1939 it is possible to get a comparison of actual and expected disabilities for employees with 30 or more years of service and under age 65 and for employees age 60-65 irrespective of service, as such employees are eligible for immediate annuities under the Act. Owing to the usual lag in filing and approving disability claims it is necessary to make an allowance for pending applications and for incurred but not yet reported claims, in addition to those already approved. The comparison is as follows:

Year	Exposure	Expected Disabilities	Actual Disabilities			Percent Ratio
			Approved	Additional	Total	
1937	252,147	6,016	6,705	468	7,173	119.2
1938	247,138	5,944	5,539	1,273	6,812	114.6
1939	245,131	5,774	1,725	3,962	5,687	98.5
TOTAL	744,416	17,734	13,969	5,703	19,672	110.9

The operation of the Act does not provide any disability experience at the lower ages. It is possible that the number of terminations by reason of disability is lower than Table 10 indicates at the lower ages in the absence of immediate annuity benefits. However, if the Act were amended to provide immediate annuities at the lower ages, as frequently proposed, it is probable that the disability rates would be in line with the present experience at the higher ages.

Table 10.

RATES OF PERMANENT AND TOTAL DISABILITY

Age	Rate	Age	Rate
13	.00226	38	.00508
14	.00238	39	.00536
15	.00248	40	.00566
16	.00260	41	.00600
17	.00270	42	.00636
18	.00280	43	.00676
19	.00290	44	.00718
20	.00300	45	.00764
21	.00308	46	.00812
22	.00318	47	.00866
23	.00326	48	.00926
24	.00334	49	.00986
25	.00344	50	.01046
26	.00352	51	.01114
27	.00360	52	.01198
28	.00370	53	.01306
29	.00378	54	.01418
30	.00386	55	.01530
31	.00396	56	.01672
32	.00406	57	.01872
33	.00418	58	.02166
34	.00432	59	.02476
35	.00448	60	.02866
36	.00464	61	.03362
37	.00484	62	.03992
		63	.04798
		64	.05834

Table 11.

RAILWAY EMPLOYEES MORTALITY TABLE AND MONETARY VALUES AT 3%

Age x	l_x	d_x	q_x	D_x	N_x	M_x	$v_x(12)$
13	100,000	205	.00205	68,095.10	1,807,617.48	15,446,083	26.0038
14	99,795	206	.00206	65,976.27	1,739,522.38	15,310,554	25.8242
15	99,589	207	.00208	63,922.39	1,673,546.11	15,178,330	25.6392
16	99,382	209	.00210	61,931.58	1,609,623.72	15,049,334	25.4487
17	99,173	210	.00212	60,001.25	1,547,692.14	14,922,886	25.2526
18	98,963	213	.00215	58,130.37	1,487,690.89	14,799,533	25.0506
19	98,750	215	.00218	56,315.74	1,429,560.52	14,678,062	24.8430
20	98,535	219	.00222	54,556.46	1,373,244.78	14,559,022	24.6294
21	98,316	223	.00227	52,849.67	1,318,688.32	14,441,299	24.4100
22	98,093	229	.00233	51,194.05	1,265,838.65	14,324,917	24.1846
23	97,864	235	.00240	49,586.91	1,214,644.60	14,208,885	23.9536
24	97,629	242	.00248	48,027.02	1,165,057.69	14,093,281	23.7167
25	97,387	250	.00257	46,512.62	1,117,030.67	13,977,700	23.4739
26	97,137	259	.00267	45,041.94	1,070,518.05	13,861,776	23.2254
27	96,878	269	.00278	43,613.41	1,025,476.11	13,745,177	22.9712
28	96,609	280	.00290	42,225.57	981,862.70	13,627,603	22.7111
29	96,329	293	.00304	40,876.83	939,637.13	13,508,786	22.4453
30	96,036	306	.00319	39,565.58	898,760.30	13,388,074	22.1740
31	95,730	321	.00335	38,290.76	859,194.72	13,265,678	21.8970
32	95,409	336	.00352	37,050.84	820,903.96	13,141,022	21.6144
33	95,073	351	.00369	35,844.99	783,853.12	13,014,341	21.3262
34	94,722	367	.00387	34,672.51	748,008.13	12,885,859	21.0318
35	94,355	383	.00406	33,532.16	713,335.62	12,755,433	20.7315
36	93,972	400	.00426	32,423.35	679,803.46	12,623,286	20.4248
37	93,572	417	.00446	31,345.03	647,380.11	12,489,293	20.1117
38	93,155	436	.00468	30,296.43	616,035.08	12,353,674	19.7919
39	92,719	456	.00492	29,276.40	585,738.65	12,216,005	19.4655
40	92,263	477	.00517	28,283.87	556,462.25	12,076,215	19.1325
41	91,786	501	.00546	27,318.08	528,178.38	11,934,246	18.7927
42	91,285	528	.00578	26,377.62	500,860.30	11,789,478	18.4464
43	90,757	559	.00616	25,461.24	474,482.68	11,641,351	18.0938
44	90,198	594	.00659	24,567.41	449,021.44	11,489,095	17.7354
45	89,604	634	.00708	23,694.79	424,454.03	11,332,018	17.3717
46	88,970	680	.00764	22,841.89	400,759.24	11,169,247	17.0032
47	88,290	731	.00828	22,007.08	377,917.35	10,999,751	16.6308
48	87,559	787	.00899	21,189.19	355,910.27	10,822,850	16.2551
49	86,772	849	.00978	20,387.08	334,721.08	10,637,944	15.8766
50	85,923	915	.01065	19,599.64	314,334.00	10,444,281	15.4960
51	85,008	986	.01160	18,826.13	294,734.36	10,241,647	15.1139
52	84,022	1,060	.01262	18,065.82	275,908.23	10,029,639	14.7307
53	82,962	1,139	.01373	17,318.32	257,842.41	9,808,364	14.3467
54	81,823	1,219	.01490	16,583.07	240,524.09	9,577,523	13.9625
55	80,604	1,303	.01616	15,860.21	223,941.02	9,337,664	13.5780
56	79,301	1,387	.01749	15,149.35	208,080.81	9,088,744	13.1936
57	77,914	1,474	.01892	14,450.87	192,931.46	8,831,494	12.8092
58	76,440	1,562	.02043	13,764.55	178,480.59	8,566,071	12.4250
59	74,878	1,651	.02205	13,090.55	164,716.04	8,292,994	12.0411
60	73,227	1,743	.02380	12,429.04	151,625.49	8,012,765	11.6576
61	71,484	1,838	.02571	11,779.78	139,196.45	7,725,538	11.2749
62	69,646	1,937	.02781	11,142.66	127,416.67	7,431,476	10.8933
63	67,709	2,041	.03014	10,517.24	116,274.01	7,130,602	10.5139
64	65,668	2,149	.03273	9,903.13	105,756.77	6,822,807	10.1374
65	63,519	2,260	.03558	9,300.01	95,853.64	6,508,165	9.7651
66	61,259	2,370	.03869	8,707.91	86,553.63	6,186,908	9.3980
67	58,889	2,478	.04208	8,127.21	77,845.72	5,859,827	9.0367
68	56,411	2,581	.04575	7,558.45	69,718.51	5,527,802	8.6822
69	53,830	2,675	.04970	7,002.53	62,160.06	5,192,050	8.3351
70	51,155	2,756	.05388	6,460.72	55,157.53	4,854,206	7.9957
71	48,399	2,821	.05828	5,934.64	48,696.81	4,516,268	7.6638
72	45,578	2,867	.06291	5,425.92	42,762.17	4,180,436	7.3394
73	42,711	2,894	.06776	4,936.54	37,336.25	3,849,068	7.0215
74	39,817	2,900	.07284	4,468.02	32,399.71	3,524,321	6.7098
75	36,917	2,885	.07815	4,021.92	27,931.69	3,208,380	6.4032
76	34,032	2,878	.08458	3,599.63	23,909.77	2,903,228	6.1006
77	31,154	2,851	.09150	3,199.24	20,310.14	2,607,683	5.8067
78	28,303	2,798	.09886	2,821.81	17,110.90	2,323,438	5.5221
79	25,505	2,725	.10684	2,468.78	14,289.09	2,052,603	5.2462
80	22,780	2,628	.11538	2,140.80	11,820.31	1,796,516	4.9797
81	20,152	2,508	.12446	1,838.67	9,679.51	1,556,737	4.7227
82	17,644	2,368	.13419	1,562.94	7,840.84	1,334,573	4.4750
83	15,276	2,208	.14454	1,313.77	6,277.90	1,130,920	4.2368
84	13,068	2,034	.15568	1,091.14	4,964.13	946,559	4.0078
85	11,034	1,848	.16751	894.48	3,872.99	781,673	3.7882
86	9,186	1,654	.18003	722.97	2,978.51	636,228	3.5781
87	7,532	1,455	.19320	575.54	2,255.54	509,843	3.3773
88	6,077	1,261	.20747	450.83	1,680.00	401,902	3.1848
89	4,816	1,071	.22245	346.88	1,229.17	311,077	3.0018
90	3,745	892	.23830	261.88	882.29	236,184	2.8274
91	2,853	726	.25454	193.69	620.41	175,625	2.6614
92	2,127	581	.27292	140.20	426.72	127,771	2.5020
93	1,546	449	.29060	98.93	286.52	90,590	2.3545
94	1,097	339	.30909	68.16	187.59	62,694	2.2105
95	758	250	.32960	45.72	119.43	42,246	2.0705
96	508	178	.34944	29.75	73.71	27,605	1.9359
97	330	124	.37689	18.76	43.96	17,484	1.8016
98	206	80	.38899	11.37	25.20	10,639	1.6747
99	126	54	.42500	6.75	13.83	6,351	1.5072
100	72	34	.47813	3.75	7.08	3,541	1.3463
101	38	18	.48572	1.92	3.33	1,823	1.1927
102	20	11	.56667	.98	1.41	.940	.8971
103	9	9	1.00000	.43	.43	.416	.4583

Mortality Rates

While the Act provides for the payment of a death benefit in event of death before retirement, or after retirement before annuity payments exceed the death benefit, no application is received for this benefit in many instances where it is due, either because the amount is too small or for lack of an interested party to serve as a claimant. Mortality tables must therefore be obtained from other sources.

The best source for active life mortality is the group life insurance experience on steam railroad employees compiled annually by the 7 largest insurance companies engaged in this line. The most recent material is for the years 1932-38. This material is confined to policies which were issued without a disability provision.

Table 11 has been prepared in this office from this material. A comparison of the actual and expected deaths on the basis of this table appears in Table 12.

Table 12. COMPARISON OF ACTUAL AND EXPECTED DEATHS BASED ON GROUP LIFE INSURANCE EXPERIENCE

Central Age	Years of Exposure	Deaths Actual	Deaths Expected	Ratio Actual to Expected
18	5,274	10	11.34	88.2
23	35,561	92	85.35	107.8
28	72,644	194	210.67	92.1
33	116,958	456	432.74	105.4
38	148,478	708	696.36	101.7
43	163,474	975	1,010.27	96.5
48	166,612	1,563	1,504.51	103.9
53	143,426	1,971	1,982.15	99.4
58	102,771	2,128	2,121.19	100.3
63	68,160	2,088	2,085.70	100.1
68	40,139	1,883	1,879.31	100.2
73	15,956	1,116	1,119.15	99.7
78	7,138	722	742.35	97.3
83	2,212	352	344.63	102.1
88	498	112	115.28	97.2
93	55	16	18.70	85.6
98	2	1	.97	103.1
TOTAL	1,089,358	14,387	14,360.67	100.2

While the group life insurance experience is almost entirely limited to employees in active service the mortality table derived from it may be used also to represent the mortality of non-disability retirements. A comparison of actual and expected deaths by this table for non-disability annuitants under the Railroad Retirement Act appears in Table 13. The proportion of female lives in this experience is less than 1 percent.

Table 13. MORTALITY OF NON-DISABILITY ANNUITANTS
June 1, 1936 to June 30, 1939

Attained Age	Exposure		Actual Deaths		Expected Deaths		Ratio of Actual to Expected	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount
50-54	63	$ 840	$		.86	$ 11.79	-	-
55-59	292	10,133	6	224.95	5.71	202.28	105.1	111.2
60-64	3,997	252,893	88	5,232.86	117.83	7,541.40	74.7	69.4
65-69	67,896	4,408,983	3,347	215,377.07	2,914.44	189,340.89	114.8	113.8
70-74	50,552	3,305,802	2,832	176,947.83	3,060.41	199,646.71	92.5	88.6
75-79	11,715	687,982	1,020	57,425.11	1,039.07	60,872.64	98.2	94.3
80-84	2,934	158,162	313	16,071.63	377.02	20,278.64	83.0	79.3
85-89	438	22,543	70	3,101.62	80.30	4,130.63	87.2	75.1
90-94	35	1,736	11	531.01	9.46	446.90	116.3	118.8
95-99	5	141	1	2.04	1.62	50.26	61.7	4.1
TOTAL	137,927	$8,849,215	7,688	$474,914.12	7,606.72	$482,522.14	101.1	98.4

Table 13 includes annuitants who were retired under the Act. In Table 14 appears a comparison of actual and expected deaths for non-disability pensioners who retired under the railroad pension plans existing before the passage of the Act, and who were taken over by the Board on July 1, 1937. The proportion of female lives in Table 14 is less than 1 percent.

Table 14. MORTALITY OF NON-DISABILITY PENSIONERS
July 1, 1937 to June 30, 1939

Attained Age	Exposure		Actual Deaths		Expected Deaths		Ratio of Actual to Expected	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount
45-49	1	$ 23	-	$ -	.01	$ .22	-	-
50-54	16	656	1	50.00	.20	8.54	500.0	585.5
55-59	23	945	-	-	.46	19.10	-	-
60-64	74	3,948	6	215.10	2.14	113.91	280.4	188.8
65-69	786	48,308	31	1,977.70	36.88	2,275.13	84.1	86.9
70-74	10,749	689,696	711	44,899.71	723.17	46,406.24	98.3	96.8
75-79	17,483	1,071,623	1,667	102,046.05	1,587.96	97,147.79	105.0	105.0
80-84	8,015	440,129	1,118	58,270.43	1,042.23	56,878.50	107.3	102.4
85-89	2,394	106,829	517	22,810.97	446.98	19,830.99	115.7	115.0
90-94	419	15,700	113	3,819.67	108.87	4,056.46	103.8	94.2
95-	45	1,587	15	518.63	15.69	551.54	95.6	94.0
TOTAL	40,005	$2,379,444	4,179	$234,608.26	3,964.59	$227,288.42	105.4	103.2

Table 15.

SELECT AND ULTIMATE RATES OF MORTALITY AMONG DISABLED LIVES

Age at Disability	Duration Since Disability 0	1	2	3	4	5	6	7	Attained Age	8 and over
16	.336	.203	.152	.120	.097	.080	.063	.049	24	.037
17	.324	.193	.142	.110	.089	.073	.057	.044	25	.034
18	.313	.184	.133	.101	.082	.067	.052	.040	26	.031
19	.301	.175	.124	.093	.076	.061	.047	.037	27	.028
20	.290	.166	.115	.086	.070	.056	.043	.034	28	.026
21	.279	.157	.106	.079	.064	.052	.040	.032	29	.025
22	.268	.149	.098	.073	.060	.048	.038	.030	30	.024
23	.256	.141	.091	.068	.056	.045	.036	.029	31	.024
24	.246	.134	.085	.064	.053	.043	.035	.029	32	.024
25	.238	.128	.080	.061	.051	.041	.034	.029	33	.024
26	.229	.122	.076	.058	.049	.040	.034	.028	34	.024
27	.221	.117	.073	.056	.047	.039	.033	.028	35	.024
28	.215	.113	.071	.054	.046	.038	.032	.028	36	.025
29	.209	.109	.069	.052	.044	.037	.032	.028	37	.025
30	.203	.106	.067	.050	.043	.037	.032	.029	38	.026
31	.198	.103	.066	.048	.042	.037	.033	.029	39	.026
32	.194	.101	.065	.047	.042	.037	.033	.029	40	.026
33	.191	.100	.064	.046	.042	.038	.034	.030	41	.026
34	.188	.099	.064	.046	.042	.038	.034	.030	42	.026
35	.185	.098	.064	.047	.043	.039	.035	.031	43	.027
36	.181	.097	.064	.048	.043	.039	.035	.031	44	.027
37	.179	.096	.064	.049	.044	.039	.035	.031	45	.027
38	.176	.096	.064	.049	.044	.039	.035	.031	46	.027
39	.175	.096	.065	.050	.044	.039	.035	.031	47	.028
40	.174	.097	.067	.050	.044	.039	.035	.031	48	.029
41	.174	.099	.069	.051	.045	.040	.035	.031	49	.030
42	.174	.102	.071	.051	.046	.041	.036	.032	50	.031
43	.174	.104	.074	.052	.047	.042	.037	.034	51	.033
44	.175	.106	.077	.054	.049	.044	.039	.036	52	.035
45	.175	.109	.080	.056	.050	.045	.042	.039	53	.039
46	.175	.112	.083	.059	.052	.047	.045	.043	54	.044
47	.176	.115	.085	.062	.054	.050	.048	.048	55	.049
48	.178	.117	.086	.065	.056	.053	.051	.052	56	.053
49	.179	.118	.087	.068	.059	.056	.054	.055	57	.056
50	.180	.118	.089	.070	.062	.059	.057	.058	58	.058
51	.181	.119	.091	.072	.065	.062	.060	.060	59	.060
52	.183	.119	.093	.074	.068	.065	.063	.062	60	.062
53	.184	.119	.094	.076	.070	.067	.066	.064	61	.065
54	.184	.119	.096	.078	.072	.070	.068	.067	62	.069
55	.184	.120	.098	.080	.075	.073	.071	.071	63	.073
56	.184	.120	.100	.083	.078	.076	.075	.076	64	.077
57	.184	.121	.102	.086	.081	.080	.080	.081	65	.081
58	.184	.122	.103	.090	.085	.084	.085	.085	66	.085
59	.184	.122	.105	.095	.090	.089	.089	.089	67	.088
60	.184	.123	.107	.099	.094	.093	.093	.092	68	.091
61	.184	.123	.109	.102	.098	.097	.096	.095	69	.094
62	.184	.124	.112	.106	.102	.100	.098	.097	70	.096
63	.184	.125	.115	.109	.105	.102	.100	.098	71	.098
64	.184	.127	.117	.111	.107	.103	.101	.100	72	.099
65	.183	.129	.118	.112	.108	.104	.102	.101	73	.101
66	.184	.131	.119	.113	.108	.105	.103	.102	74	.103
67	.184	.132	.120	.114	.109	.106	.104	.104	75	.106
68	.184	.132	.120	.115	.110	.107	.106	.107	76	.110
69	.184	.133	.121	.116	.111	.109	.109	.111	77	.115
70	.184	.134	.122	.117	.113	.112	.113	.116	78	.122
71	.184	.135	.124	.119	.116	.116	.118	.123	79	.132
72	.185	.136	.126	.122	.120	.121	.125	.133	80	.144
73	.185	.137	.128	.125	.124	.127	.133	.144	81	.159
74	.186	.138	.130	.128	.129	.134	.144	.159	82	.174
75	.186	.138	.132	.131	.135	.144	.159	.174	83	.192
76	.186	.138	.134	.135	.144	.159	.174	.192	84	.211
77	.186	.138	.135	.144	.159	.174	.192	.211	85	.236
78	.187	.141	.144	.159	.174	.192	.211	.236	86	.266
79	.188	.144	.159	.174	.192	.211	.236	.266	87	.303
80	.189	.159	.174	.192	.211	.236	.266	.303	88	.347
81	.190	.174	.192	.211	.236	.266	.303	.347	89	.396
82	.191	.192	.211	.236	.266	.303	.347	.396	90	.455
83	.192	.211	.236	.266	.303	.347	.396		91	.532
84	.211	.236	.266	.303	.347	.396			92	.634
85	.236	.266	.303	.347	.396				93	.734
86	.266	.303	.347	.396					94	.857
87	.303	.347	.396						95	1.000
88	.347	.396								
89	.396									

Table 11 appears to be satisfactory for use in obtaining deaths in active service and after non-disability retirement. It may be used also to obtain deaths after withdrawal for causes other than disability.

The mortality experience of disability retirements under the Act is of too short duration to permit the construction of a disabled life mortality table. The mortality of these disability annuitants may be compared with the select and ultimate mortality rates in Table 15 which were derived from the disabled life mortality under group life insurance. This group life disability mortality experience has never been published but is commented on in Transactions of the Actuarial Society of America, XXXIII, page 337. A comparison of actual and expected deaths by this table on a calendar year basis appears in Table 16. It is evident that Table 15 is not suitable to represent the mortality in this group.

Table 16. MORTALITY OF DISABILITY ANNUITANTS
June 1, 1936 to December 31, 1939

Year of Retirement	Year of Exposure	Exposure		Actual Deaths		Expected Deaths		Ratio of Actual to Expected	
		Number	Amount	Number	Amount	Number	Amount	Number	Amount
1936	1936	260	$20,161.53	31	$2,091.57	47.85	$3,706.72	64.8	56.4
	1937	663	51,672.52	96	7,166.76	101.95	7,943.92	94.2	90.2
	1938	567	44,505.76	64	4,906.01	65.80	5,162.41	97.3	95.0
	1939	503	39,599.75	51	3,758.73	52.04	4,090.56	98.0	91.9
	All	1,993	155,939.56	242	17,923.07	267.64	20,903.61	90.4	85.7
1937	1937	3,496	247,531.52	381	27,333.74	642.71	45,500.39	59.3	60.1
	1938	6,611	467,729.31	710	50,345.23	1,016.67	71,876.90	69.8	70.0
	1939	5,901	417,384.08	492	34,784.60	686.38	48,385.19	71.7	71.9
	All	16,008	1,132,644.91	1,583	112,463.57	2,345.76	165,762.48	67.5	67.8
1938	1938	3,192	222,185.16	386	27,507.65	586.77	40,843.39	65.8	67.3
	1939	5,997	416,862.66	656	48,505.67	921.75	64,021.40	71.2	75.8
	All	9,189	639,047.82	1,042	76,013.32	1,508.52	104,864.79	69.1	72.5
1939	1939	1,981	140,808.46	232	17,354.35	364.16	25,881.39	63.7	67.1
TOTAL		29,171	$2,068,440.75	3,099	$223,754.31	4,486.08	$317,412.27	69.1	70.5

During 1936 the Railroad Retirement Act was the subject of litigation. As a result relatively few disability retirements occurred and their mortality corresponded fairly closely to Table 15. In 1937 the litigation was terminated; the number of disability retirements increased and the mortality decreased. In view of the rates of disability that were found to exist in the years 1937-39 the mortality of retirements in these years is not surprising.

Table 16 excludes disability annuitants who were not in railroad service after January 1, 1936. Under the "employment relation" provision of the Act a number of individuals who had been disabled for a considerable period of time were entitled to annuities. The mortality cards show durations computed from the beginning date of the annuity and in order to prevent the disabilities of long standing from distorting the results they have been excluded. About 20 percent of the total number of retirements were excluded. Except for these employment relation" cases the average interval between date of last employment and the beginning date of the annuity is 4 months.

Where an applicant dies after filing an application and before the application is approved the claim sometimes is settled as a death claim by the payment of 4 percent of earnings after January 1, 1937. In other cases the application lapses through lack of an interested party to serve as a secondary claimant. As a result probably 10 percent of the deaths occurring in the first 6 months are omitted from the exposure and the actual deaths, thereby understating the mortality. This accounts for the lower mortality in the year of retirement.

The disability pensioners taken over by the Board on July 1, 1937 present a problem from a mortality standpoint. In this group the fact of disability was determined by the railroads rather than by the Board. The standard of disability varied from one railroad to another and frequently also from one age to another on the same railroad. The result is a heterogeneous composite that cannot be expected to follow any mortality table very closely. A comparison of the actual mortality with the expected according to Table 15 indicates that that table is not suitable.

The aggregate rates of mortality among disabled lives in Table 17 have been obtained by graduating the experience on disabled pensioners for the period July 1, 1937 to June 30, 1939. A comparison of the actual and expected according to this table appears in Tables 18 and 19.

Table 17.

DISABLED RAILWAY EMPLOYEES MORTALITY TABLE
AND MONETARY VALUES AT 3% INTEREST

Age x	l_x	d_x	q_x	D_x	N_x	M_x	$a_x(12)$
13	2,774,938	645,478	.23261	1,889,596.81	11,202,153.91	1,563,321.9	5.3867
14	2,129,460	442,736	.20791	1,407,824.34	9,312,557.10	1,136,584.8	6.0732
15	1,686,724	314,152	.18625	1,082,644.04	7,904,732.76	852,409.3	6.7597
16	1,372,572	229,727	.16737	855,341.58	6,822,088.72	656,640.2	7.4342
17	1,142,845	172,558	.15099	691,439.51	5,966,747.14	517,651.7	8.0878
18	970,287	132,745	.13681	569,941.73	5,275,307.63	416,292.0	8.7142
19	837,542	104,383	.12463	477,638.48	4,705,365.90	340,589.4	9.3096
20	733,159	83,529	.11393	405,932.54	4,227,727.42	282,795.0	9.8732
21	649,630	67,912	.10454	349,207.96	3,821,794.88	237,894.1	10.4025
22	581,718	56,136	.09650	303,594.55	3,472,586.92	202,451.3	10.8966
23	525,582	46,404	.08829	266,308.19	3,168,992.37	174,007.6	11.3581
24	479,178	38,809	.08099	235,723.95	2,902,684.18	151,179.9	11.7722
25	440,369	32,468	.07373	210,322.88	2,666,960.23	132,644.5	12.1386
26	407,901	27,407	.06719	189,141.65	2,456,637.35	117,589.2	12.4467
27	380,494	23,343	.06135	171,294.21	2,267,495.70	105,250.9	12.6958
28	357,151	20,065	.05618	156,102.49	2,096,201.49	95,048.2	12.8867
29	337,086	17,522	.05198	143,041.10	1,940,099.00	86,533.7	13.0216
30	319,564	15,489	.04847	131,656.21	1,797,057.90	79,314.9	13.1080
31	304,075	13,884	.04566	121,626.05	1,665,401.69	73,119.5	13.1511
32	290,191	12,647	.04358	112,691.90	1,543,775.64	67,727.8	13.1574
33	277,544	11,524	.04152	104,641.30	1,431,083.74	62,959.6	13.1344
34	266,020	10,643	.04001	97,375.29	1,326,442.44	58,741.3	13.0803
35	255,377	9,870	.03865	90,756.64	1,229,067.15	54,958.9	13.0008
36	245,507	9,238	.03763	84,707.77	1,138,310.51	51,553.4	12.8964
37	236,269	8,725	.03693	79,146.10	1,053,602.74	48,458.9	12.7705
38	227,544	8,280	.03639	74,003.22	974,456.64	45,621.3	12.6261
39	219,264	7,935	.03619	69,233.49	900,453.42	43,006.8	12.4644
40	211,329	7,599	.03596	64,784.38	831,219.93	40,574.3	12.2889
41	203,730	7,416	.03640	60,635.75	766,435.55	38,312.6	12.0983
42	196,314	7,234	.03685	56,726.70	705,799.80	36,169.7	11.9004
43	189,080	7,064	.03736	53,045.07	649,073.10	34,140.3	11.6946
44	182,016	6,948	.03817	49,576.06	596,028.03	32,216.2	11.4808
45	175,068	6,826	.03899	46,294.81	546,451.97	30,378.9	11.2621
46	168,242	6,721	.03995	43,193.95	500,157.16	28,626.4	11.0377
47	161,521	6,732	.04168	40,260.56	456,963.21	26,950.9	10.8085
48	154,789	6,741	.04355	37,458.78	416,702.65	25,321.8	10.5826
49	148,048	6,755	.04563	34,783.88	379,243.87	23,738.0	10.3612
50	141,293	6,795	.04809	32,229.92	344,459.99	22,197.2	10.1459
51	134,498	6,828	.05077	29,786.33	312,230.07	20,692.3	9.9407
52	127,670	6,853	.05368	27,450.71	282,443.74	19,224.2	9.7475
53	120,817	6,818	.05643	25,220.55	254,993.03	17,793.6	9.5689
54	113,999	6,651	.05834	23,104.18	229,772.48	16,411.8	9.4034
55	107,348	6,460	.06018	21,122.54	206,668.30	15,103.1	9.2426
56	100,888	6,257.9	.06203	19,273.24	185,545.76	13,869.0	9.0855
57	94,630.1	6,045.0	.06388	17,551.23	166,272.52	12,708.3	8.9319
58	88,585.1	5,829.8	.06581	15,951.52	148,721.29	11,619.8	8.7817
59	82,755.3	5,584.3	.06748	14,467.70	132,769.77	10,600.6	8.6353
60	77,171.0	5,343.3	.06924	13,098.47	118,302.07	9,652.78	8.4901
61	71,827.7	5,099.8	.07100	11,836.41	105,203.60	8,772.26	8.3465
62	66,727.9	4,857.8	.07280	10,675.80	93,367.19	7,956.34	8.2040
63	61,870.1	4,610.6	.07452	9,610.28	82,691.39	7,201.78	8.0628
64	57,259.5	4,359.7	.07614	8,635.08	73,081.11	6,506.48	7.9216
65	52,899.8	4,093.9	.07739	7,745.22	64,446.03	5,868.16	7.7791
66	48,805.9	3,834.7	.07857	6,937.71	56,700.81	5,286.22	7.6312
67	44,971.2	3,584.2	.07970	6,206.43	49,763.10	4,756.99	7.4763
68	41,387.0	3,345.3	.08083	5,545.40	43,556.67	4,276.75	7.3129
69	38,041.7	3,120.2	.08202	4,948.69	38,011.27	3,841.57	7.1394
70	34,921.5	2,910.7	.08335	4,410.48	33,062.58	3,447.50	6.9547
71	32,010.8	2,718.0	.08491	3,925.13	28,652.10	3,090.59	6.7580
72	29,292.8	2,541.4	.08676	3,487.22	24,726.97	2,767.02	6.5491
73	26,751.4	2,391.8	.08941	3,091.93	21,239.75	2,473.29	6.3277
74	24,359.6	2,253.5	.09251	2,733.49	18,147.82	2,204.89	6.0974
75	22,106.1	2,126.6	.09620	2,408.35	15,414.33	1,959.39	5.8587
76	19,979.5	2,009.3	.10057	2,113.27	13,005.98	1,734.45	5.6128
77	17,970.2	1,900.0	.10573	1,845.38	10,892.71	1,528.12	5.3610
78	16,070.2	1,820.9	.11331	1,602.20	9,047.33	1,338.69	5.1051
79	14,249.3	1,732.1	.12156	1,379.28	7,445.13	1,162.43	4.8562
80	12,517.2	1,630.6	.13027	1,176.33	6,065.85	999.652	4.6149
81	10,886.6	1,515.31	.13919	993.293	4,889.52	850.876	4.3809
82	9,371.29	1,388.17	.14813	830.128	3,896.23	716.647	4.1519
83	7,983.12	1,256.62	.15741	686.564	3,066.10	597.262	3.9242
84	6,726.50	1,124.40	.16716	561.643	2,379.54	492.338	3.6951
85	5,602.10	997.12	.17799	454.134	1,817.90	401.188	3.4613
86	4,604.98	877.76	.19061	362.430	1,363.76	322.711	3.2212
87	3,727.22	766.50	.20565	284.804	1,001.33	255.640	2.9742
88	2,960.72	669.15	.22601	219.644	716.527	198.776	2.7205
89	2,291.57	574.75	.25081	165.053	496.883	150.580	2.4688
90	1,716.82	481.91	.28070	120.054	331.830	110.389	2.2223
91	1,234.91	390.614	.31631	83.8393	211.776	77.6713	1.9843
92	844.296	302.494	.35828	55.6509	127.937	51.9243	1.7573
93	541.802	220.654	.40726	34.6721	72.2860	32.5665	1.5432
94	321.148	148.977	.46389	19.9529	37.6139	18.8573	1.3435
95	172.171	91.044	.52880	10.3854	17.6610	9.8710	1.1589
96	81.127	48.890	.60263	4.7510	7.2756	4.5392	.9897
97	32.237	22.116	.68603	1.8329	2.5246	1.7594	.8357
98	10.121	7.891	.77963	.5587	.6917	.5386	.6964
99	2.230	1.971	.88408	.1195	.1330	.1156	.5713
100	.259	.259	1.00000	.0135	.0135	.0131	.4583

Table 18. MORTALITY OF DISABILITY PENSIONERS BY ATTAINED AGE
July 1, 1937 to June 30, 1939

Attained Age	Exposure		Actual Deaths		Expected Deaths		Ratio	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount
35-39	11	$ 267.79	-	$ -	.40	$ 9.83	-	-
40-44	49	2,142.25	4	109.00	1.82	79.31	219.8	137.4
45-49	324	11,811.11	19	742.56	13.90	507.80	136.7	146.2
50-54	996	41,478.57	52	1,997.26	53.97	2,253.84	96.3	88.6
55-59	2,025	92,860.24	125	5,930.74	130.25	5,977.77	96.0	99.2
60-64	3,810	193,082.70	271	14,275.41	278.86	14,142.85	97.2	100.9
65-69	9,778	560.270.04	793	44,993.17	785.00	45,005.07	101.0	100.0
70-74	17,112	1,055,424.81	1,490	92,084.76	1,493.15	92,097.29	99.8	100.0
75-79	11,688	696,439.22	1,269	72,613.20	1,235.82	73,469.17	102.7	98.8
80-84	4,631	236,649.38	691	34,530.00	668.43	33;992.97	103.4	101.6
85-89	1,275	57,941.85	254	11,418.06	254.70	11,539.49	99.7	98.9
90 & over	217	7,506.04	66	2,233.41	77.89	2,576.50	84.7	86.7
TOTAL	51,916	2,955.874.00	5,034	280,927.57	4,994.19	281,651.89	100.8	99.7

Table 19. MORTALITY OF DISABILITY PENSIONERS BY DURATION SINCE RETIREMENT

Duration	Exposure	Actual Deaths	Expected Deaths	Ratio
0	31	4	1.80	222.2
1	217	15	12.17	123.3
2	2,095	193	161.92	119.2
3	4,672	395	378.96	104.2
4	5,432	487	450.87	108.0
5	5,582	438	473.07	92.6
6	5,812	481	507.06	94.9
7	5,349	481	478.97	100.4
0-7	29,190	2,494	2,464.82	101.2
8 & over	22,726	2,540	2,529.40	100.4
TOTAL	51,916	5,034	4,994.22	100.8

At the lower ages where no experience is available Table 17 has been extended in such a manner that the immediate annuity values tend to approximate those obtained by using 70 percent of the rates in Table 15, except at the very low ages where they approach 100 percent of Table 15. A comparison of immediate annuity values payable monthly calculated at 3% interest appears in Table 20.

Table 20. COMPARISON OF DISABLED LIFE ANNUITY VALUES

Age	Table 17	70 percent of Table 15	Table 15
20	9.8732	12.2303	8.7463
25	12.1386	13.5692	10.3239
30	13.1080	13.9458	10.9409
35	13.0008	13.5831	10.7602
40	12.2889	12.8691	10.2030
45	11.2621	11.6080	9.0578
50	10.1459	10.3871	7.9721
55	9.2426	9.4355	7.1830
60	8.4901	8.5180	6.4476
65	7.7791	7.7968	5.9224

While the mortality experience of disability annuitants (as distinguished from disability pensioners) is of too short duration to give much of an indication of the future mortality of this group it is evident that Table 15 is not suitable as long as disability rates remain at their present level. If the future mortality is in line with the past experience then the annuity values by Table 17 are adequate. Table 17 has therefore been used to represent the future mortality of both disability annuitants and disability pensioners. It is used also to represent the mortality of employees separating from service by reason of disability before they are eligible for immediate annuities.

Non-Disability Retirement Rates

The operation of the Act yields the necessary data for the construction of non-disability retirement rates for employees who were in service after January 1, 1937. The necessary exposures for constructing retirement rates applicable to persons who terminated service prior to that date are not available at present, though the number of retirements is available.

For the exposures at ages over 65 of employees in service after January 1, 1937 the Board has tabulations compiled from the current reports of service and earnings of individuals covered under the Act. The applications for account numbers filed by employees for the purpose of setting up individual wage records gave the year of birth, and this year of birth appears on the punch card which carries the record of earnings. For exposures at ages under 65 where the employee is eligible for retirement only if he has 30 years of service, it is necessary to obtain an approximate percentage of the employees at a given age who have 30 years of service and apply these percentages to the tabulations of the wage record cards. The approximate percentages are obtained by constructing an age and service distribution in the same manner that the distribution on December 31, 1938 was constructed.

For the number of retirements the Board has tabulations of annuities approved. To the number of annuities approved must be added an allowance for pending and incurred but not yet reported claims. The number approved and the estimated number of additional cases are as follows:

Year	Approved	Additional	Total
1937	39,332	409	39,741
1938	19,590	1,012	20,602
1939	9,077	5,377	14,454
ALL	67,999	6,798	74,797

Crude retirement rates for the calendar years 1937-39 are shown in Table 21. The age at retirement has been obtained by subtracting the calendar year of birth from the calendar year of retirement and then deducting ½ year to obtain the age on January 1.

Table 21. CRUDE RATES OF NON-DISABILITY RETIREMENT 1937-1939

Age at Retirement	Crude Rate of Non-Disability Retirement				
	1937	1938	1939	1937-39	1938-39
75½ & over	.7972	.8195	1.0000	.8613	1.0000
74½	.7907	.9321	1.0000	.9096	1.0000
73½	.7868	.9547	1.0000	.8376	.9878
72½	.8234	.6701	1.0000	.8268	.8335
71½	.7414	.7128	.5983	.7136	.6686
70½	.7356	.5820	.4762	.6524	.5350
69½	.7434	.6289	.7026	.7028	.6603
68½	.5197	.3953	.2712	.4269	.3403
67½	.4692	.3288	.2566	.3800	.2985
66½	.4250	.3186	.2007	.3326	.2589
65½	.4027	.2891	.2458	.3214	.2698
64½	.3597	.3974	.3773	.3774	.3873
63½	.0832	.0716	.0230	.0590	.0472
62½	.0372	.0273	.0131	.0254	.0199
61½	.0185	.0199	.0097	.0161	.0149
60½	.0134	.0149	.0069	.0116	.0107
59½	.0097	.0117	.0053	.0088	.0084

During 1937, the first year of full operation of the Act, the retirement rate was higher than in 1938 or 1939 due to the pressure of the accumulated number of employees over the retirement age. The rates in 1938 and 1939 are substantially the same, though 1939 is somewhat lower.

The non-disability retirement rates used in constructing the service tables appear in Table 22.

Table 22. NON-DISABILITY RETIREMENT RATES

Age	Rate	Age	Rate	Age	Rate
60	.02	65	.45	70	.75
61	.02	66	.30	71	.70
62	.02	67	.35	72	.75
63	.03	68	.40	73	.80
64	.15	69	.60	74	.90
				75	1.00

The rates in Table 22 are on a life year basis instead of the calendar year basis of Table 21. The rates in Table 22 are based on the crude retirement rates for 1938-39 though obviously they are not derived from them by any mechanical process. By constructing a service table at ages 64½ and over using the crude retirement rates in Table 21 and mortality rates from Table 11 it is possible to obtain a comparison between the present values at age 64½ of 1 per annum payable monthly beginning at retirement based on the crude rates and on the rates in Table 22.

Rates	Present Value	Percent Ratio
Crude 1937	8.2332	103.1
Crude 1938	8.0411	100.7
Crude 1939	7.7784	97.4
Crude 1937-39	8.0781	101.2
Crude 1938-39	7.9221	99.2
Table 22	7.9843	100.0

The financial effect of the use of retirement rates based on a different period apparently would not be large. The pressure of the accumulation of employees over retirement age in 1937 makes it appear inadvisable to use the experience of that year.

A substantial number of age discrepancies are found between the age given on the application for account number and the age proved when an annuity is granted. These discrepancies complicate matters in obtaining retirement rates and have the effect of slightly overstating the rate. They explain the rates of 1.0000 obtained at certain ages.

In the calendar year in which the employee attains age 65 about 85 percent of the retirements occur after the birthday. Retirements at 65 and 70 tend to occur immediately after the birthday but at other ages they are more of less evenly distributed over the interval between birthdays.

FORMULAS AND GENERAL PROCEDURE

Service Tables

The service tables, Table 25, were derived from the rates of mortality in active service q_x from Table 11, the rates of disability $(iq)_x$ from Table 10, and the probabilities of withdrawal q_x^w from Table 9 by means of the formulas

$$d_x^s = l_x^s q_x \{1 - \tfrac{1}{2}[q_x^w + (iq)_x]\} \qquad (1)$$

$$i_x = l_x^s (iq)_x \{1 - \tfrac{1}{2}[q_x^w + q_x]\} \qquad (2)$$

$$w_x = l_x^s q_x^w \qquad (3)$$

The values of q_x^w were derived originally as probabilities and hence their different treatment. At those ages in the service table where an employee is eligible for an immediate annuity on separation from service the non-disability retirement probabilities from Table 22 are used in formula (3).

Amount of Annuity

The usual procedure of using the salary scale as a rate of increase rather than as an absolute amount cannot be followed in this instance, as the amount of annuity payable under the Act depends on the absolute amount of the average earnings. The present values are therefore obtained in dollars per capita rather than as a percentage of the current earnings.

The assumption is made with respect to service rendered subsequent to December 31, 1938 that an employee will receive credit for 11 service months for each year of elapsed time between that date (or the date of employment for new employees) and the date of final termination, excluding service after attaining age 65. The figure of 11 months has been derived from the prior service cards by comparing the net service as indicated by the equated date of entry with the elapsed time since the date of original entry. The same figure was obtained in the survey of the Federal Coordinator based on the personnel records of 13 railroads.

With respect to service rendered prior to January 1, 1937 this adjustment is not required. The service prior to January 1, 1937 was tabulated on a net basis in obtaining the age and service distribution of active employees on December 31, 1938. Theoretically the adjustment should be made for service in 1937 and 1938 but it has been omitted in this instance.

Let $\bar{S}_x^t$ represent the <u>average</u> earnings of an employee at attained age x who entered at age k and has t years of service prior to January 1, 1939. Then in general

$$\bar{S}_x^t = \frac{p\bar{S}^p + S_{k+t-2} + S_{k+t-1} + \frac{11}{12}\sum_{k+t}^{x-1} S_r}{p + 2 + \frac{11}{12}(x-k-t)} \qquad (4)$$

and when $t = 0$, $\bar{S}_x^0 = \dfrac{\sum_{k}^{x-1} S_r}{x-k}$ (5)

where p is the credited service prior to January 1, 1937. $\bar{S}^p$ denotes the average earnings applicable to service rendered prior to January 1, 1937 and S_r is 12 times the average earnings per service month at attained age r of an employee entering at age k from Table 7. When the credited service subsequent to December 31, 1936 is equal to or greater than 30, $p = 0$. When it is less than 30, $p = t-2$ with $30 - m$ as a maximum where m is the credited service after December 31, 1936. The value of m is limited by the attained age on June 30, 1937 as follows:

m = 1/2 for age 65 or over

m = 3/2 for age 64

m = $2 + \frac{11}{12}$ (x-k-t) for age 63 and under, where x cannot be assigned a value greater than 65.

Where $p \leq 5$, $\bar{S}^p = \dfrac{.97 \sum_{k+t-2-p}^{k+t-3} S_r}{p}$ (6)

Where $13 > p > 5$, $\bar{S}^p = \dfrac{.97 \sum_{k+t-2-p}^{k+t-8} S_r}{p-5}$ (7)

Where $p \geq 13$, $\bar{S}^p = \dfrac{.97 \sum_{k+t-15}^{k+t-8} S_r}{.8}$ (8)

The reason for the .97 factor was given previously in the discussion of the derivation of the salary scale.

The Act provides that earnings after attaining age 65 shall be included if the effect is to increase $\bar{S}_x^t$. The slope of Table 7 is such that there is in fact no upper limit on x in formulas (4) and (5) except that there is a limit imposed on x in obtaining m.

Let ${}^aB_x^t$ represent the basic annual amount of annuity payable monthly either as an immediate or deferred annuity to an employee separating from service at attained age x and having t years of service prior to January 1, 1939. This basic amount of annuity is subject to reduction in certain classes of retirements before age 65.

If $\bar{S}_x^t \leq 600$, $\quad {}^aB_x^t = .02\,\bar{S}_x^t(p+m)$ (9)

If $1800 \geq \bar{S}_x^t > 600$, $\quad {}^aB_x^t = (3+.015\,\bar{S}_x^t)(p+m)$ (10)

If $3600 \geq \bar{S}_x^t > 1800$, $\quad {}^aB_x^t = (12+.01\,\bar{S}_x^t)(p+m)$ (11)

when $t=0$, the factor $(p+m)$ becomes $\frac{11}{12}(x-k)$ where x cannot be assigned a value greater than 65.

Amount of Death Benefit

The death benefit provided under the 1937 Act is 4 percent of the employee's earnings after December 31, 1936. For an employee entering at age k and having t years of service prior to January 1, 1939 the death benefit for service to age $x + \frac{1}{2}$ is

$$ {}^dB_{x+\frac{1}{2}}^t = \frac{44}{12}\left\{.01\left[\sum_{k+t}^{x-1} S_r + \frac{1}{2}S_x + \frac{12}{11}(S_{k+t-2} + S_{k+t-1})\right]\right\} \qquad (12) $$

This amount of death benefit is reduced by the amount of annuity payments received by the employee, or if a joint-and-survivor option has been elected it is reduced by the amounts received by the employee and the surviving spouse. When $t=0$, S_{k+t-2} and S_{k+t-1} are omitted.

Monetary Values

The monetary values are defined as follows:

$$ {}^{wa}C_x^s = v^{x+t} \cdot w_x \cdot a_{x+t}^{(12)} \tag{13} $$

$$ {}^{ia}C_x^s = v^{x+t} \cdot i_x \cdot a_{x+t}^{i(12)} \tag{14} $$

$$ {}^{wda}C_x^s = v^{x+t} \cdot w_x \cdot {}_{66-x-t}|a_{x+t}^{(12)} \tag{15} $$

$$ {}^{ida}C_x^s = v^{x+t} \cdot i_x \cdot {}_{65-x-t}|a_{x+t}^{i(12)} \tag{16} $$

$$ {}^{d}C_x^s = v^{x+t} \cdot d_x^s \tag{17} $$

$$ {}^{wA}C_x^s = v^{x+t} \cdot w_x \cdot \bar{A}^{1}_{\overline{x+t}:\overline{66-x-t}|} \tag{18} $$

$$ {}^{iA}C_x^s = v^{x+t} \cdot i_x \cdot \bar{A}^{i\,1}_{\overline{x+t}:\overline{65-x-t}|} \tag{19} $$

$$ D_x^s = v^x l_x^s \tag{20} $$

The deferred annuities to employees withdrawing on account of disability are assumed to begin at age 65. For other withdrawals the requirement of the cessation of outside employment is assumed to defer the beginning date of the annuity for 1 year beyond age 65. While in some cases the withdrawing employee may receive a reduced annuity before age 65 the amount of the reduced annuity is sufficiently close to the actuarial equivalent that the additional cost of earlier retirement may be neglected.

Insurance or annuity values involving a disabled life are taken from Table 17, while active life values are taken from Table 11. The rate of interest is 3%.

Present Values of Benefits

The present value at age k + t of the various benefits expressed in dollars per capita are as follows.

Non-disability retirements

$$\frac{\sum_{\beta}^{64} {}^{wa}C_x^s \left(\frac{2x-99}{30}\right) {}^{a}B_{x+\frac{1}{2}}^{t} + \sum_{65}^{\omega} {}^{wa}C_x^s \cdot {}^{a}B_{x+\frac{1}{2}}^{t}}{D_{k+t}^s} \qquad (21)$$

where β is 60 or the age on completing 30 years of service or $k + t$ whichever is greatest. The age on completing 30 years of service may or may not be $k + 30$ because of the assumption made above that the employee will receive credit for 11 months of service for each year of elapsed time after December 31, 1938. If $k + t > 65$ the second summation starts at $k + t$.

Disability retirements

$$\frac{\sum_{60}^{\alpha-1} {}^{ia}C_x^s \left(\frac{2x-99}{30}\right) {}^{a}B_{x+\frac{1}{2}}^{t} + \sum_{\alpha}^{64} {}^{ia}C_x^s \cdot {}^{a}B_{x+\frac{1}{2}}^{t}}{D_{k+t}^s} \qquad (22)$$

where α is the attained age on completing 30 years of service. If $\alpha \leq 60$ the first summation disappears while if $\alpha \geq 65$ the upper limit of the first summation is 64 and the second summation disappears. If $k + t$ is greater than the lower limit in either summation, the summation starts at $k + t$.

Withdrawal deferred annuities

$$\frac{\sum_{k+t}^{\beta-1} {}^{wda}C_x^s \cdot {}^{a}B_{x+\frac{1}{2}}^{t} + \sum_{k+t}^{\gamma-1} {}^{ida}C_x^s \cdot {}^{a}B_{x+\frac{1}{2}}^{t}}{D_{k+t}^s} \qquad (23)$$

where $\gamma = \alpha$ or 60, whichever is less.

Death in active service

$$\frac{\sum_{k+t}^{\omega} {}^{d}C_x^s \cdot {}^{d}B_{x+\frac{1}{2}}^{t}}{D_{k+t}^s} \qquad (24)$$

Death after withdrawal and before retirement

$$\frac{\sum_{k+t}^{x-1} {}^{i}A_{x}^{s} \cdot {}^{d}B_{x+\frac{1}{2}}^{t} + \sum_{k+t}^{\beta-1} {}^{wd}C_{x}^{s} \cdot {}^{d}B_{x+\frac{1}{2}}^{t}}{D_{k+t}^{s}} \qquad (25)$$

After retirement the death benefit is reduced by the amount of annuity payments made. The maximum duration of the benefit after retirement is about 30 months. The present value is small and is difficult to calculate, and it has therefore been omitted.

Present value of 1 percent of earnings

$$\frac{.01\left(\frac{11}{12}\right)\sum_{k+t}^{\omega} S_{x} \cdot D_{x+\frac{1}{2}}^{s}}{D_{k+t}^{s}} \qquad (26)$$

General

The annuity values used in the formulas assume that the annuity begins at retirement and that the first monthly payment is made one month after retirement. If we take the date of last employment as the date of retirement there is actually an interval of 1½ and 4 months between retirement and the beginning date of the annuity for non-disability and disability retirements respectively. The first payment is made on a pro-rata basis on an average of 2/3 of a month after the beginning date. There is no payment for any part of the calendar month in which the annuitant dies.

General Procedure

Active employees

The age and service distribution of employees in active service December 31, 1938 as shown in Table 1 was summarized in 5 year groups by age at entry and length of service as shown in Table 23. The present value of future benefits and the present value of 1 percent of earnings were calculated on a dollars per capita basis for the mid-point of each of the age and service groups and multiplied by the number of employees in the group. Employees over the highest age in the service tables were valued as immediate annuities at an average amount of annuity derived from annuities already approved by the Board at the corresponding ages.

Table 23.

AGE AND SERVICE DISTRIBUTION OF EMPLOYEES
IN ACTIVE SERVICE DECEMBER 31, 1938 IN 5 YEAR GROUPS

Completed Years of Service	Central Age at Entry														
	13	18	23	28	33	38	43	48	53	58	63	68	73	78	All Ages
0-2	271	12,431	20,037	11,796	8,440	6,418	4,657	2,845	1,875	999	465	187	59	22	70,502
3-7	165	10,917	19,789	12,222	7,179	4,660	3,022	1,641	874	446	156	49	27	4	61,151
8-12	1,416	36,258	37,797	22,427	14,439	9,918	6,376	3,138	1,616	479	71	30	5		133,970
13-17	2,913	47,971	53,857	35,996	23,703	15,933	9,658	4,680	1,251	199	21	7			196,189
18-22	7,188	65,219	60,939	39,755	24,544	14,806	8,157	2,229	313	40	6				223,196
23-27	4,760	44,436	45,480	24,979	13,219	5,953	1,285	122	24	9					140,267
28-32	5,057	46,184	47,238	24,141	9,676	1,786	197	29	9	4					134,321
33-37	3,706	31,486	33,442	14,433	2,583	203	30	8	2	2					85,895
38-42	1,697	13,421	13,743	2,841	200	27	2								31,931
43-47	1,298	7,439	3,195	289	30	4									12,255
48-52	1,064	2,813	557	27	1										4,462
53-57	136	160	36	7											339
58-62	17	24	2												43
TOTAL	29,688	318,759	336,112	188,913	104,014	59,708	33,384	14,692	5,964	2,178	719	273	91	26	1,094,521

To allow for the cost of the minimum annuity provision the present value of benefits for non-disability retirement was increased by .83 percent. The figure of .83 percent was derived from the non-disability annuities in force December 31, 1939 by comparing the actual payment with the formula amount. The amount of annuity calculated from the salary scale exceeds the minimum at every point where the minimum is applicable, but the minimum provision nevertheless results in an increase in cost.

The Act contains a provision that in no case "shall the value of the annuity be less than the value of the additional old-age benefit he would receive under Title II of the Social Security Act if his service as an employee after December 31, 1936 were included in the term 'employment' as defined therein." In the opinion of the Board's General Counsel this language does not incorporate the amendments to the Social Security Act which were adopted subsequent to the enactment of the Railroad Retirement Act. While the cost of this provision does not admit of precise calculation it was felt that the cost would be negligible and no cost was included for it in the valuation.

Inactive and terminated employees

The annual amount of annuity per year of service was calculated for each year of birth from Table 8 by taking 2 percent of the first $600 of earnings, 1½ percent of the next $1200 and 1 percent of the next $1800. This amount of annuity was multiplied by the total number of years of service, both prior and subsequent, giving the total annuity credits for each year of birth. The total annuity credits were multiplied by the present value of an annuity deferred to age 66 calculated from Table 11. While the inactive and terminated group includes a number of employees who separated from service because of disability and who are assumed in other parts of the valuation to retire at age 65 instead of 66, the great majority in the group consist of active lives. It is impossible on the basis of available information to separate the active and disabled lives, and therefore the active life values were applied to the entire group.

The amount of death benefit per year of service was calculated by taking 4 percent of the amounts in Table 8 and multiplying by the number of years of subsequent service. The total insurance credits for each year of birth was then multiplied by $\bar{A}^{1}_{x+\frac{1}{2}:\overline{66-x-\frac{1}{2}}|}$ from Table 11. At attained ages over 66 no death benefit was included as the assumption had been made that persons at such ages would retire immediately. In obtaining the present values of both the annuity and insurance credits the employees with unknown year of birth were taken at the average age of those with a known year of birth.

Probably 175,000 or 200,000 of the inactive and terminated employees will return to service at a later date. They will thus accumulate additional annuity and insurance credits and will receive compensation for their services. The present value of the additional benefits and the present value of 1 percent of earnings for the future service of this group has been omitted from the valuation. The result of this omission is a slight understatement of the rate required to support benefits.

Retired employees and surviving spouses

The present value of annuity benefits to retired employees was obtained from tabulations of annuities and pensions in force by attained age, by multiplication with the annuity values from Tables 11 and 17. An additional amount of $6,000,000 was included to cover future increases in the amount of annuity. About 11,000 of the annuities were in force on a partial approval basis, that is, the annuities had been certified for payment before all of the service had been proved or before some other point affecting the amount of annuity had been cleared up. This practice was followed in order to give the applicant a partial income while an investigation was made as to the remainder. Upon final approval the future rate is increased and a retroactive adjustment is made which on the average covers 10 months. From observations of such matters in the past it was concluded that about 7,500 of the 11,000 partial annuities would be recertified for an average increase of $90 in annual annuity. Multiplying $90 by 7,500 and by the average annuity value applicable to all annuities in force, and adding 10 months retroactive adjustment gives a present value of future rate increases of approximately $6,000,000. Of this amount $840,000 has been allocated to disability annuities and the remainder to non-disability annuities.

The annuities to employee's surviving spouses resulting from joint-and-survivor elections which were in course of payment on December 31, 1938 were valued by multiplying the amount of annuity at any attained age by annuity values from Table 11 with a 4 year rate down in age. Nearly all of the survivorship annuitants are female lives while Table 11 represents mortality among male lives. The actual mortality of this group has not yet been investigated.

The present value of survivorship annuities payable in event of future deaths of retired employees on December 31, 1938 has been obtained by taking the present value of the difference between the original and reduced amount of annuity to the employee. This involves the assumptions that the joint-and-survivor annuities are actuarially equivalent to the single life annuities both at the time of retirement and subsequently. Actually some of the joint-and-survivor options for employees retiring under the 1935 Act are larger than the actuarial equivalent, and of course the equivalence that existed at the time of retirement on the others does not exist subsequently. The necessary tabulations for a more precise procedure were not available as of December 31, 1938. Another difficulty was the fact that some of the options were calculated on non-Makehamized tables. Partial calculations show that the value of the benefit is understated by not more than 2 percent by the method used.

Prior to January 1, 1938 the joint-and-survivor options could be elected at the time of retirement. Thereafter an employee was required to elect the option at least 5 years in advance or furnish a medical examination unless he had filed an election prior to January 1, 1938. A considerable amount of adverse selection resulted on optional annuities beginning prior to 1938. While the matter has not been fully investigated the excess mortality appears to be in line with the excess mortality on conversions of group

life insurance. No allowance for this adverse selection has been made in the valuation. For future retirements the amount of optional annuity is the actuarial equivalent and no additional cost is involved.

The 1935 Act provided that on the death of an annuitant there should be paid 12 monthly instalments at one-half of the rate received by the retired employee. This benefit was payable to the surviving spouse if any, and if none then to the next of kin if dependent on the annuitant, and if neither of these existed then no benefit was payable. The experience under this provision is that the benefit is payable in about 90 percent of the cases of death. The present value of this benefit at attained age x is the monthly amount of annuity received by the retired employee multiplied by $5.4\,\bar{A}_x\,a_{\overline{n}|}^{(12)}$ where $\bar{A}_x$ is taken from Table 11 or Table 17 depending on the cause of retirement. If the employee had elected a joint-and-survivor optional annuity this death benefit is calculated as one-half of the rate he would have received if he had not made the election. The annuitants under the 1935 Act constitute a closed group so this benefit is not involved in future retirements. The death benefits in course of payment December 31, 1938 have been valued as 6 times the monthly rate in force.

New employees

The cost of benefits to new employees expressed as a percentage of earnings was obtained by use of the foregoing formulas and the age distribution of new employees. If $(PB)_k$ represents the present value of all of the various benefits to an employee entering at age k; n_k the number of employees entering at age k; and $(PE)_k$ the present value of 1 percent of earnings, the cost of benefits as a percentage of earnings is

$$\frac{\Sigma (PB)_k \cdot n_k}{\Sigma (PE)_k \cdot n_k} \qquad (27)$$

where the summations extend over all ages at entry. Since n_k is involved in both the numerator and denominator the absolute number of new employees is immaterial as far as this result is concerned as long as the relative age distribution remains unchanged.

The increase of .83 percent for minimum annuities applied to the present value of non-disability retirement annuities to employees in active service December 31, 1938 has not been applied to new employees. New employees may receive credit for more than 30 years of service while the .83 percent increase was derived from annuities in force which were subject to the 30 year maximum. While some of the new employees will no doubt be affected by the minimum, the omission of the increase is offset by the fact that some of the employees in active service December 31, 1938 will receive credit for more than 30 years of service and the cost of the minimum provision to them will be less than the .83 percent that was used.

General

Section 15(d) of the Act requires that the Actuarial report "shall also contain an estimate of the reduction in liabilities under Title II of the Social Security Act arising as a result of the maintenance of this Act and the Railroad Retirement Act of 1935." The reference is to the Social Security Act as originally enacted and not as subsequently amended. The material necessary for the preparation of the estimate could not be obtained and the estimate is omitted.

RESULTS OF CALCULATIONS

The present value of future benefits to active employees, inactive and terminated employees, and retired employees and surviving spouses as of December 31, 1938 appears in Table 24. The figure for funds on hand is the amount standing to the credit of the Railroad Retirement Account in the statement of the United States Treasury.

The present value of 1 percent of the earnings of employees in service December 31, 1938 is $178,430,448. The cost of benefits on account of new employees is 5.591 percent of earnings.

Multiplying $178,430,448 by 5.591 results in $997,604,635 and subtracting this from the balance of $4,386,699,899 gives $3,389,095,264 as the amount by which income at the rate of 5.591 percent of payroll would fall short of covering future disbursements. Three percent of $3,389,095,264 amounts to $101,672,858 which expressed as a percentage of a $2,000,000,000 payroll is 5.084 percent. The actual payroll has been as follows:

1937	$2,231,987,479
1938	1,979,574,567
1939	2,115,000,000 (est.)
Average	$2,108,854,015

Adding 5.591, 5.084 and .125 for administrative cost gives 10.800 as the percentage of payroll required to support benefits beginning January 1, 1939. During 1939 however the income of the Board amounted to approximately 5½ percent and during 1940 the amount will be about 6 percent. A correction for the deficiency is therefore required.

The present value of a permanent rate of 10.800 is 360.000. Accumulating this at interest for two years and deducting the accumulation of 5.5 and 6.0 gives 370.259 as the present value of the rate required beginning January 1, 1941. Taking 3 percent of 370.259 gives 11.108 percent as the level rate required from that date to support the benefits provided under the Act.

If an increasing rate is desired instead of a level rate beginning January 1, 1941, there are many possibilities. One such possibility having the same present value is

Years	Percent of Payroll
1941-42	9.81
1943-45	10.31
1946-48	10.81
1949 and subsequent	11.31

TABLE 24

PRESENT VALUE OF FUTURE BENEFITS AS OF DECEMBER 31, 1938

1. Benefits to active employees:		
Retirement annuities		
(a) Non-disability	$2,146,211,708	
(b) Disability	714,434,487	
Withdrawal benefits		
(c) Deferred annuities	518,957,131	
(d) Death benefits	34,674,020	
(e) Benefits for death in active service	120,292,576	$3,534,569,922
2. Benefits to inactive and terminated employees:		
(a) Deferred annuities	$ 149,270,470	
(b) Death benefits	2,898,439	$ 152,168,909
3. Benefits to retired employees and surviving spouses:		
(a) Non-disability annuities	$ 467,343,714	
(b) Disability annuities	109,504,751	
(c) Non-disability pensions	74,471,680	
(d) Disability pensions	101,162,461	
Survivorship annuities		
(e) In course of payment 12-31-38	8,507,993	
(f) Prospective benefits for future beneficiaries	9,052,704	
1935 Act death benefit temporary annuities		
(g) In course of payment 12-31-38	153,288	
(h) Prospective benefits for future beneficiaries	5,464,477	$ 775,661,068
4. Total		$4,462,399,899
5. Funds on hand 12-31-38		75,700,000
6. Balance		$4,386,699,899

SERVICE TABLES USED IN THE VALUATION.

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 13

Age	l_x^s	d_x^s	i_x	w_x	${}^{d}C_x^s$	${}^{iA}C_x^s$	${}^{wA}C_x^s$	${}^{ida}C_x^s$	${}^{wda}C_x^s$	${}^{ia}C_x^s$	${}^{wa}C_x^s$	D_x^s	D_{x+1}^s
13	1,000,000	1,410	1,550	623,200	946.1	858.8	58,192.9	38.0	510,468.9	5,959.2	10,835,755.1	680,951	464,052
14	373,840	654	755	111,210	426.0	395.6	10,253.8	23.8	91,279.8	3,155.6	1,864,115.0	247,152	207,410
15	261,221	488	585	51,032	308.6	289.7	4,647.3	23.0	41,973.5	2,625.9	824,430.0	167,668	148,991
16	209,116	406	504	30,414	249.3	235.7	2,735.9	24.1	25,067.5	2,402.0	473,422.5	130,314	118,940
17	177,792	354	452	20,595	211.0	199.7	1,830.1	25.7	17,010.5	2,264.1	308,798.8	107,567	99,715
18	156,391	319	416	15,051	184.6	173.6	1,321.5	27.7	12,457.9	2,170.1	217,316.6	91,863	86,024
19	140,605	294	391	11,575	165.2	154.2	1,004.1	30.0	9,601.5	2,107.2	160,889.2	80,185	75,624
20	128,345	275	371	9,231	150.0	138.3	791.3	32.3	7,674.4	2,051.9	123,481.2	71,062	67,372
21	118,468	259	353	7,565	137.2	124.5	640.8	34.5	6,303.3	1,991.5	97,356.9	63,682	60,621
22	110,291	249	340	6,333	128.0	113.4	530.1	37.0	5,289.2	1,945.1	78,385.8	57,560	54,968
23	103,369	241	328	5,392	120.3	103.7	445.8	39.3	4,513.7	1,894.4	64,164.4	52,376	50,147
24	97,408	236	318	4,654	114.4	95.3	380.2	41.6	3,905.6	1,842.3	53,228.6	47,918	45,976
25	92,200	231	310	4,064	108.7	88.4	327.9	44.0	3,419.0	1,793.5	44,656.1	44,035	42,326
26	87,595	229	301	3,583	104.6	81.7	285.5	46.0	3,022.2	1,728.5	37,811.9	40,617	39,100
27	83,482	227	295	3,186	100.7	76.5	250.7	48.2	2,694.9	1,674.4	32,281.5	37,583	36,225
28	79,774	227	290	2,853	97.8	71.9	221.5	50.3	2,419.9	1,618.0	27,741.8	34,867	33,644
29	76,404	228	283	2,572	95.3	67.3	197.1	51.9	2,188.1	1,545.6	23,991.7	32,422	31,314
30	73,321	229	278	2,330	93.0	63.6	176.1	53.7	1,988.4	1,482.3	20,841.2	30,207	29,200
31	70,484	232	274	2,122	91.4	60.4	158.1	55.5	1,816.8	1,420.7	18,194.3	28,193	27,272
32	67,856	235	271	1,939	89.9	57.6	142.4	57.5	1,665.8	1,363.2	15,928.8	26,351	25,506
33	65,411	237	269	1,780	88.0	55.2	128.7	59.6	1,534.9	1,309.4	14,005.7	24,662	23,884
34	63,125	241	269	1,640	86.9	53.4	116.8	62.1	1,419.4	1,264.9	12,351.5	23,107	22,388
35	60,975	244	270	1,515	85.4	51.8	106.2	64.9	1,316.5	1,223.6	10,916.7	21,669	21,004
36	58,946	248	269	1,403	84.3	50.0	96.7	67.3	1,224.3	1,174.3	9,667.9	20,338	19,720
37	57,026	251	272	1,302	82.8	49.0	88.2	70.7	1,141.0	1,140.3	8,573.3	19,103	18,528
38	55,201	255	277	1,212	81.7	48.4	80.7	74.7	1,067.1	1,114.0	7,623.8	17,953	17,416
39	53,457	259	283	1,130	80.6	47.9	73.9	79.1	999.8	1,089.1	6,785.5	16,879	16,377
40	51,785	264	289	1,055	79.7	47.4	67.7	83.9	938.2	1,064.5	6,043.4	15,875	15,404
41	50,177	270	297	987	79.2	47.3	62.1	89.4	882.1	1,045.1	5,388.5	14,934	14,492
42	48,623	278	305	925	79.2	47.0	57.0	95.3	831.7	1,024.0	4,812.3	14,050	13,634
43	47,115	286	315	868	79.1	47.0	52.4	102.3	784.9	1,009.3	4,297.7	13,218	12,826
44	45,646	297	324	814	79.7	46.8	48.0	109.4	741.0	989.3	3,835.5	12,433	12,062
45	44,211	309	334	765	80.5	46.6	44.0	117.2	701.0	970.0	3,425.4	11,691	11,340
46	42,803	323	343	718	81.7	46.3	40.3	125.3	662.7	948.1	3,054.0	10,989	10,656
47	41,419	339	354	675	83.3	46.0	36.8	134.7	628.2	929.4	2,726.2	10,324	10,008
48	40,051	356	366	634	84.9	45.8	33.5	145.6	595.2	914.2	2,429.1	9,692	9,392
49	38,695	374	377	597	86.6	45.2	30.5	157.0	565.7	895.1	2,167.8	9,091	8,805
50	37,347	393	386	561	88.3	44.2	27.7	168.7	537.1	871.8	1,930.0	8,519	8,246
51	36,007	412	396	526	89.9	43.2	24.9	181.9	509.3	850.5	1,713.1	7,974	7,714
52	34,673	432	410	494	91.5	42.3	22.4	198.8	484.3	839.3	1,522.2	7,455	7,207
53	33,337	451	429	464	92.8	41.6	20.0	219.9	460.6	836.7	1,350.3	6,959	6,722
54	31,993	470	447	434	93.9	40.5	17.7	243.3	437.4	832.5	1,193.9	6,484	6,256
55	30,642	488	462	406	94.6	38.8	15.6	267.3	415.4	821.1	1,053.5	6,029	5,812
56	29,286	505	482	380	95.1	37.0	13.6	296.8	395.4	817.1	929.6	5,595	5,386
57	27,919	520	514	354	95.0	35.8	11.7	337.7	375.3	831.7	816.3	5,178	4,978
58	26,531	533	565	329	94.6	35.0	9.9	396.9	355.9	872.6	714.4	4,777	4,583
59	25,104	543	611	305	93.5	32.9	8.2	460.3	336.7	901.7	622.1	4,389	4,201
60	23,645	549	663	473	91.8	30.1	11.1	535.9	534.8	933.6	907.0	4,013	3,816
61	21,960	549	721	439	89.1	26.2	8.8	626.8	509.1	969.0	790.3	3,619	3,430
62	20,251	546	789	405	86.1	21.1	6.5	738.9	482.1	1,011.8	682.9	3,240	3,058
63	18,511	536	862	555	82.0	14.2	6.6	871.1	680.5	1,054.2	876.6	2,875	2,686
64	16,558	485	878	2,484	72.1	4.9	18.5	960.0	3,146.0	1,024.5	3,673.0	2,497	2,179
65	12,711	350		5,720	50.5						7,906.7	1,861	1,402
66	6,641	218		1,992	30.5						2,571.7	944	778
67	4,431	154		1,551	20.9						1,868.4	612	488
68	2,726	100		1,090	13.2						1,224.4	365	282
69	1,536	53		922	6.8						965.2	200	136
70	561	19		421	2.4						410.3	71	43
71	121	5		85	0.6						77.3	15	10
72	31	1		23	0.1						19.4	4	2
73	7			6							4.8	1	1
74	1			1							0.7		
75													

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 18

Age	l_x^s	d_x^s	i_x	w_x	${}^{d}C_x^s$	${}^{iA}C_x^s$	${}^{wA}C_x^s$	${}^{ida}C_x^s$	${}^{wda}C_x^s$	${}^{ia}C_x^s$	${}^{wa}C_x^s$	D_x^s	D_{x+1}^s
18	1,000,000	1,460	1,910	635,800	845.0	797.1	55,823.5	127.1	526,257.4	9,962.7	9,180,083.1	587,395	396,586
19	360,830	668	888	108,538	375.4	350.2	9,415.6	68.1	90,033.0	4,786.1	1,508,653.4	205,776	172,302
20	250,736	501	677	49,395	273.3	252.4	4,234.0	58.9	41,065.4	3,743.9	660,747.1	138,827	123,212
21	200,163	420	570	29,316	222.5	201.0	2,483.2	55.7	24,426.5	3,215.1	377,278.8	107,597	98,122
22	169,857	372	508	19,799	191.3	169.5	1,657.1	55.2	16,535.6	2,906.5	245,057.1	88,647	82,117
23	149,178	340	462	14,440	169.7	146.1	1,194.0	55.4	12,087.8	2,668.1	171,835.1	75,587	70,738
24	133,936	317	429	11,085	153.7	128.6	905.5	56.2	9,302.4	2,485.5	126,779.9	65,888	62,103
25	122,105	302	404	8,826	142.1	115.1	712.2	57.4	7,425.2	2,336.8	96,982.6	58,318	55,259
26	112,573	290	383	7,223	132.5	104.0	575.5	58.5	6,092.6	2,200.0	76,226.7	52,200	49,662
27	104,677	282	365	6,038	125.1	94.6	475.0	59.6	5,107.2	2,070.9	61,177.9	47,124	44,977
28	97,992	276	353	5,133	118.9	87.6	398.6	61.2	4,353.8	1,969.0	49,911.4	42,830	40,984
29	92,230	273	339	4,425	114.1	80.7	339.0	62.2	3,764.6	1,851.3	41,277.2	39,137	37,530
30	87,193	271	329	3,859	110.0	75.3	291.6	63.6	3,293.3	1,754.1	34,518.6	35,922	34,508
31	82,734	271	320	3,399	106.8	70.5	253.3	64.9	2,910.1	1,658.7	29,143.9	33,093	31,836
32	78,744	272	313	3,017	104.1	66.5	221.5	66.4	2,592.0	1,574.9	24,785.3	30,579	29,454
33	75,142	272	308	2,698	101.0	63.2	195.1	68.2	2,326.3	1,499.5	21,227.7	28,330	27,318
34	71,864	273	305	2,428	98.5	60.5	172.9	70.5	2,101.4	1,434.5	18,286.0	26,305	25,388
35	68,858	275	303	2,197	96.3	58.2	154.0	72.9	1,909.1	1,373.8	15,830.8	24,471	23,636
36	66,083	277	301	1,996	94.2	55.9	137.6	75.2	1,741.8	1,312.9	13,754.0	22,801	22,038
37	63,509	279	302	1,823	92.1	54.4	123.5	78.4	1,597.7	1,266.0	12,005.0	21,274	20,574
38	61,105	281	306	1,669	90.0	53.4	111.1	82.5	1,469.4	1,230.7	10,497.4	19,873	19,228
39	58,849	285	311	1,535	88.7	52.7	100.4	87.0	1,358.1	1,198.1	9,217.2	18,582	17,984
40	56,718	289	316	1,415	87.3	51.9	90.8	91.8	1,258.1	1,164.5	8,104.6	17,387	16,834
41	54,698	294	323	1,306	86.2	51.4	82.2	97.2	1,167.5	1,136.3	7,131.3	16,280	15,765
42	52,775	301	331	1,210	85.7	51.0	74.6	103.4	1,087.7	1,111.3	6,294.0	15,250	14,770
43	50,933	309	339	1,123	85.4	50.6	67.7	110.0	1,015.5	1,085.8	5,560.7	14,289	13,840
44	49,162	320	348	1,043	85.9	50.3	61.5	117.4	949.2	1,062.1	4,913.3	13,390	12,969
45	47,451	331	357	971	86.2	49.9	55.9	125.2	889.8	1,036.9	4,348.4	12,548	12,152
46	45,792	345	367	905	87.3	49.5	50.7	134.0	835.3	1,013.7	3,849.4	11,757	11,384
47	44,175	361	377	844	88.7	49.0	46.0	143.6	785.5	990.4	3,408.6	11,011	10,659
48	42,593	378	389	787	90.1	48.6	41.6	154.8	738.9	971.8	3,015.6	10,307	9,974
49	41,039	396	399	735	91.7	47.8	37.6	166.2	696.7	947.4	2,669.8	9,642	9,327
50	39,509	415	407	686	93.3	46.6	33.8	177.8	656.8	919.0	2,360.0	9,012	8,714
51	38,001	435	417	640	94.9	45.4	30.3	191.6	619.8	895.8	2,084.6	8,416	8,133
52	36,509	454	431	597	96.2	44.4	27.1	208.9	585.1	881.8	1,839.1	7,850	7,581
53	35,027	474	451	557	97.5	43.8	24.0	231.4	553.3	880.3	1,622.1	7,312	7,056
54	33,545	492	468	519	98.3	42.4	21.2	254.8	522.7	871.7	1,426.6	6,799	6,554
55	32,066	510	483	483	98.9	40.5	18.5	279.2	494.0	857.8	1,252.9	6,310	6,077
56	30,590	527	503	449	99.2	38.7	16.1	309.9	467.2	853.1	1,098.6	5,844	5,622
57	29,111	542	536	416	99.1	37.3	13.7	352.5	440.9	868.0	958.9	5,399	5,186
58	27,617	554	588	386	98.3	36.4	11.6	413.2	417.5	908.3	838.0	4,973	4,767
59	26,089	564	634	355	97.2	34.1	9.6	477.4	392.5	935.0	725.2	4,561	4,363
60	24,536	570	688	491	95.3	31.2	11.6	556.2	555.1	968.9	941.4	4,165	3,960
61	22,787	570	749	456	92.6	27.2	9.1	650.9	528.4	1,006.3	820.2	3,755	3,558
62	21,012	567	819	420	89.4	21.9	6.8	766.9	500.2	1,050.0	708.6	3,362	3,172
63	19,206	556	894	576	85.1	14.8	6.9	903.5	706.9	1,093.3	910.7	2,983	2,787
64	17,180	504	911	2,577	74.9	5.1	19.2	996.1	3,263.6	1,062.9	3,810.3	2,591	2,261
65	13,188	364		5,935	52.5						8,203.8	1,931	1,455
66	6,889	227		2,067	31.8						2,668.4	979	806
67	4,595	160		1,608	21.8						1,937.6	634	506
68	2,827	103		1,131	13.6						1,270.3	379	293
69	1,593	55		956	7.0						1,000.3	207	140
70	582	20		437	2.5						425.9	74	44
71	125	5		88	.6						79.5	15	10
72	32	1		24	.1						20.1	4	2
73	7			6							4.8	1	1
74	1			1							.7		
75													

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 23

Age	l_x^s	d_x^s	i_x	w_x	$^dC_x^s$	$^{iA}C_x^s$	$^{wA}C_x^s$	$^{idu}C_x^s$	$^{wdu}C_x^s$	$^{ia}C_x^s$	$^{wa}C_x^s$	D_x^s	D_{x+1}^s
23	1,000,000	1,630	2,210	640,000	813.8	698.7	52,919.7	264.8	535,747.7	12,761.0	7,615,944.7	506,692	340,950
24	356,160	748	1,011	106,634	362.6	303.2	8,710.9	132.4	89,486.2	5,858.1	1,219,577.3	175,297	146,771
25	247,767	572	768	48,414	269.2	218.9	3,906.5	109.0	40,730.2	4,442.5	531,987.9	118,335	105,076
26	198,013	489	646	28,716	223.4	175.4	2,288.1	98.7	24,222.3	3,711.0	303,052.0	91,818	83,762
27	168,162	439	570	19,389	194.7	147.7	1,525.4	93.1	16,399.8	3,233.6	196,450.3	75,705	70,144
28	147,764	408	520	14,138	175.7	129.0	1,097.9	90.2	11,991.7	2,900.4	137,471.9	64,584	60,447
29	132,698	386	480	10,852	161.4	114.3	831.5	88.0	9,232.2	2,622.1	101,227.6	56,310	53,076
30	120,980	371	450	8,638	150.6	103.0	652.8	86.9	7,371.7	2,398.8	77,267.5	49,842	47,224
31	111,521	361	427	7,066	142.3	94.1	526.5	86.6	6,049.7	2,213.9	60,585.3	44,607	42,432
32	103,667	354	408	5,903	135.5	86.7	433.4	86.6	5,071.5	2,052.1	48,495.0	40,258	38,415
33	97,002	348	394	5,015	129.3	80.9	362.7	87.3	4,324.0	1,918.9	39,456.5	36,572	34,986
34	91,245	344	384	4,321	124.1	76.2	307.7	88.7	3,739.9	1,806.1	32,544.0	33,400	32,016
35	86,196	341	377	3,765	119.4	72.4	263.9	90.7	3,271.7	1,709.2	27,130.3	30,633	29,414
36	81,713	340	371	3,313	115.6	68.9	228.4	92.7	2,890.9	1,618.3	22,828.1	28,194	27,109
37	77,689	339	368	2,937	111.9	66.3	199.0	95.6	2,574.0	1,542.8	19,341.3	26,024	25,052
38	74,045	340	369	2,623	109.0	64.4	174.7	99.4	2,309.5	1,482.8	16,499.9	24,081	23,204
39	70,713	341	372	2,356	106.1	62.9	154.0	104.0	2,084.3	1,432.0	14,146.2	22,328	21,532
40	67,644	343	376	2,128	103.6	61.7	136.5	109.1	1,892.2	1,385.2	12,189.2	20,737	20,011
41	64,797	347	382	1,931	101.8	60.8	121.5	115.0	1,726.2	1,343.9	10,544.3	19,285	18,620
42	62,137	353	388	1,758	100.5	59.8	108.3	121.3	1,580.3	1,303.6	9,144.2	17,955	17,343
43	59,638	361	397	1,607	99.8	59.3	96.9	128.8	1,453.2	1,271.2	7,957.7	16,731	16,166
44	57,273	371	404	1,473	99.6	58.4	86.8	136.2	1,340.6	1,232.7	6,938.9	15,600	15,076
45	55,025	384	414	1,354	100.1	57.8	77.9	145.3	1,240.8	1,203.1	6,063.7	14,551	14,062
46	52,873	398	422	1,246	100.7	56.9	69.9	154.2	1,150.3	1,166.6	5,300.7	13,574	13,119
47	50,807	414	433	1,149	101.7	56.3	62.6	164.8	1,069.3	1,136.9	4,640.2	12,664	12,238
48	48,811	432	445	1,061	103.0	55.6	56.1	177.0	996.0	1,111.1	4,064.6	11,812	11,412
49	46,873	451	455	981	104.4	54.5	50.2	189.4	929.6	1,079.7	3,562.4	11,013	10,638
50	44,986	472	463	908	106.1	53.1	44.8	202.3	869.4	1,045.5	3,123.8	10,262	9,908
51	43,143	493	473	840	107.6	51.5	39.8	217.3	813.2	1,015.9	2,735.3	9,555	9,222
52	41,337	514	487	778	108.9	50.2	35.3	236.1	762.3	996.7	2,396.0	8,888	8,573
53	39,558	535	508	721	110.0	49.3	31.1	260.6	716.0	991.3	2,099.1	8,258	7,959
54	37,794	554	527	667	110.6	47.7	27.2	286.6	672.0	980.8	1,834.2	7,660	7,376
55	36,046	573	542	616	111.1	45.5	23.6	313.5	630.2	963.1	1,598.3	7,093	6,824
56	34,315	590	564	570	111.1	43.4	20.4	347.5	593.3	956.7	1,395.1	6,555	6,300
57	32,591	606	599	525	110.7	41.7	17.3	393.8	556.3	969.8	1,210.0	6,045	5,801
58	30,861	619	656	484	109.8	40.6	14.5	461.1	523.5	1,013.7	1,050.8	5,557	5,322
59	29,102	629	707	444	108.4	38.1	11.9	532.4	490.6	1,042.9	906.5	5,088	4,862
60	27,322	634	766	546	106.0	34.7	12.9	619.1	617.3	1,078.4	1,046.9	4,637	4,410
61	25,376	635	834	508	103.1	30.3	10.1	724.8	589.1	1,120.5	914.4	4,182	3,963
62	23,399	631	912	468	99.5	24.4	7.5	854.2	557.7	1,169.6	789.9	3,744	3,533
63	21,388	619	995	642	94.7	16.4	7.7	1,005.9	787.9	1,247.2	1,015.0	3,322	3,104
64	19,132	561	1,014	2,870	83.4	5.7	21.4	1,108.6	3,635.2	1,183.1	4,244.2	2,885	2,518
65	14,687	405		6,609	58.4						9,135.1	2,150	1,620
66	7,673	252		2,302	35.3						2,971.7	1,091	898
67	5,119	178		1,792	24.2						2,159.0	706	564
68	3,149	115		1,260	15.2						1,415.0	422	326
69	1,774	62		1,064	7.9						1,113.8	231	156
70	648	22		486	2.7						473.7	82	50
71	140	5		98	.6						88.5	17	10
72	37	1		28	.1						23.7	4	2
73	8			6							4.8	1	1
74	2			2							1.3		
75													

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 28

Age	l_x^s	d_x^s	i_x	w_x	${}^dC_x^s$	${}^{iA}C_x^s$	${}^{wA}C_x^s$	${}^{ida}C_x^s$	${}^{wda}C_x^s$	${}^{ia}C_x^s$	${}^{wa}C_x^s$	D_x^s	D_{x+1}^s
28	1,000,000	1,970	2,520	635,800	848.4	625.2	49,371.9	437.2	539,282.2	14,059.2	6,182,290.5	437,077	294,859
29	359,710	928	1,155	107,230	388.0	274.9	8,216.0	211.8	91,226.0	6,309.0	1,000,253.1	152,641	127,900
30	250,397	719	871	48,747	291.9	199.3	3,683.8	168.2	41,601.4	4,642.6	436,049.5	103,160	91,590
31	200,060	620	734	28,917	244.4	161.8	2,154.5	148.8	24,758.2	3,805.5	247,943.2	80,021	72,978
32	169,789	562	649	19,516	215.0	137.9	1,433.0	137.7	16,767.0	3,264.1	160,331.6	65,935	61,068
33	149,062	523	592	14,221	194.3	121.5	1,028.5	131.2	12,261.8	2,882.3	111,888.7	56,200	52,575
34	133,726	495	554	10,904	178.5	109.9	776.5	128.0	9,437.5	2,605.5	82,123.2	48,950	46,113
35	121,773	476	525	8,670	166.7	100.8	607.6	126.2	7,534.1	2,380.0	62,475.4	43,276	40,978
36	112,102	462	502	7,083	157.1	93.3	488.2	125.5	6,180.6	2,190.7	48,805.8	38,679	36,768
37	104,055	450	488	5,908	148.5	87.9	400.4	126.8	5,177.8	2,045.7	38,906.0	34,857	33,236
38	97,209	442	480	5,012	141.6	83.8	333.7	129.4	4,412.8	1,929.5	31,525.7	31,615	30,218
39	91,275	437	476	4,310	136.0	80.6	281.8	133.2	3,812.8	1,833.0	25,878.0	28,820	27,600
40	86,052	434	475	3,748	131.1	78.0	240.5	137.9	3,332.6	1,749.8	21,467.6	26,380	25,302
41	81,395	434	477	3,290	127.3	75.9	207.0	143.6	2,940.9	1,678.7	17,964.2	24,225	23,266
42	77,194	436	480	2,910	124.1	74.0	179.4	150.1	2,615.9	1,612.7	15,136.8	22,306	21,444
43	73,368	442	486	2,593	122.2	72.5	156.4	157.7	2,345.1	1,556.2	12,841.2	20,583	19,804
44	69,847	451	492	2,322	121.0	71.1	136.9	165.9	2,113.5	1,501.0	10,939.4	19,024	18,316
45	66,582	462	499	2,089	120.4	69.7	120.2	175.1	1,914.4	1,449.5	9,355.1	17,607	16,959
46	63,532	476	506	1,888	120.4	68.2	105.9	184.8	1,743.0	1,398.2	8,031.8	16,311	15,716
47	60,662	493	516	1,712	121.1	67.1	93.4	196.4	1,593.3	1,355.1	6,914.3	15,121	14,572
48	57,941	512	527	1,557	122.1	65.9	82.4	209.7	1,461.7	1,316.3	5,965.2	14,022	13,512
49	55,345	532	536	1,419	123.2	64.3	72.6	223.2	1,344.6	1,272.5	5,152.9	13,003	12,530
50	52,858	553	543	1,296	124.3	62.2	63.9	237.1	1,240.8	1,225.3	4,458.3	12,057	11,616
51	50,466	575	552	1,186	125.5	60.2	56.2	253.7	1,148.2	1,186.2	3,861.9	11,176	10,765
52	48,153	597	567	1,086	126.5	58.5	49.3	274.8	1,064.4	1,159.9	3,345.4	10,354	9,968
53	45,903	619	589	995	127.3	57.1	43.0	302.2	988.3	1,149.7	2,897.4	9,582	9,220
54	43,700	640	609	912	127.8	55.1	37.3	331.3	918.7	1,133.7	2,507.6	8,857	8,516
55	41,539	659	624	836	127.8	52.3	32.1	360.9	855.6	1,108.8	2,169.8	8,174	7,852
56	39,420	677	647	766	127.4	49.7	27.4	398.6	797.4	1,097.3	1,874.8	7,531	7,228
57	37,330	693	686	701	126.6	47.7	23.1	451.0	743.1	1,110.6	1,616.3	6,924	6,636
58	35,250	706	749	641	125.3	46.4	19.3	526.5	693.0	1,157.4	1,390.9	6,347	6,072
59	33,154	715	805	584	123.2	43.4	15.7	606.3	645.2	1,187.6	1,192.0	5,796	5,533
60	31,050	721	870	621	120.6	39.5	14.6	703.1	702.5	1,224.9	1,191.3	5,270	5,011
61	28,838	722	947	577	117.2	34.4	11.5	823.2	669.0	1,272.7	1,038.6	4,752	4,503
62	26,592	717	1,036	532	113.0	27.7	8.6	970.0	634.0	1,328.2	898.0	4,254	4,015
63	24,307	704	1,131	729	107.7	18.7	8.7	1,143.2	894.5	1,383.4	1,152.3	3,776	3,528
64	21,743	638	1,153	3,261	94.8	6.4	24.3	1,260.2	4,130.4	1,344.8	4,822.4	3,279	2,862
65	16,691	460		7,511	66.4						10,382.6	2,444	1,842
66	8,720	287		2,616	40.2						3,377.3	1,240	1,022
67	5,817	202		2,036	27.5						2,453.2	803	642
68	3,579	131		1,432	17.3						1,609.0	480	371
69	2,016	70		1,210	9.0						1,266.5	262	178
70	736	25		552	3.1						537.9	93	56
71	159	6		111	.7						100.5	19	12
72	42	2		32	.2						27.3	5	3
73	8			6							4.8	1	1
74	2			2							1.3		
75													

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 33

Age	l_x^s	d_x^s	i_x	w_x	${}^dC_x^s$	${}^{iA}C_x^s$	${}^{wA}C_x^s$	${}^{ida}C_x^s$	${}^{wda}C_x^s$	${}^{ia}C_x^s$	${}^{wa}C_x^s$	D_x^s	$D_{x+\frac{1}{2}}^s$
33	1,000,000	2,530	2,870	623,200	939.9	589.0	45,073.8	636.0	537,347.9	13,975.1	4,903,271.0	377,026	256,488
34	371,400	1,222	1,363	109,637	440.7	270.4	7,807.4	314.9	94,892.1	6,410.8	825,727.4	135,949	114,028
35	259,178	949	1,047	50,125	332.3	201.0	3,512.7	251.8	43,557.8	4,747.0	361,194.7	92,107	81,774
36	207,057	816	890	29,779	277.4	165.4	2,052.7	222.5	25,985.3	3,883.4	205,195.3	71,441	65,128
37	175,572	736	799	20,096	242.9	143.9	1,361.9	207.5	17,612.9	3,348.5	132,342.3	58,814	54,440
38	153,941	685	744	14,634	219.5	129.9	974.4	200.6	12,884.4	2,990.8	92,048.8	50,066	46,801
39	137,878	649	707	11,207	201.9	119.7	732.8	197.8	9,914.4	2,722.9	67,289.8	43,536	40,976
40	125,315	623	682	8,897	188.2	111.9	570.9	197.9	7,910.9	2,511.9	50,960.1	38,416	36,338
41	115,113	607	667	7,254	178.0	106.1	456.4	163.9	6,484.4	2,347.1	39,609.5	34,261	32,530
42	106,585	597	657	6,039	170.0	101.3	372.2	205.4	5,428.8	2,207.3	31,413.6	30,799	29,328
43	99,292	594	652	5,110	164.2	97.3	308.2	211.6	4,621.1	2,088.1	25,304.4	27,856	26,584
44	92,936	596	650	4,381	160.0	93.9	258.3	219.2	3,987.5	1,983.2	20,639.5	25,313	24,200
45	87,309	602	650	3,796	156.9	90.8	218.5	228.1	3,478.8	1,888.8	17,000.1	23,088	22,104
46	82,261	613	652	3,320	155.1	87.9	186.2	238.1	3,065.1	1,801.2	14,124.6	21,119	20,240
47	77,676	628	657	2,924	154.2	85.4	159.4	250.3	2,721.0	1,726.3	11,807.7	19,361	18,570
48	73,467	646	666	2,592	154.0	83.2	137.1	264.9	2,433.3	1,662.9	9,930.3	17,779	17,062
49	69,563	666	671	2,308	154.2	80.4	118.1	279.3	2,187.0	1,592.4	8,381.2	16,344	15,690
50	65,918	688	675	2,066	154.6	77.3	101.9	294.8	1,978.1	1,523.6	7,107.6	15,036	14,438
51	62,489	710	682	1,855	154.9	74.3	87.9	313.3	1,795.9	1,464.8	6,040.5	13,839	13,288
52	59,242	733	696	1,669	155.3	71.8	75.7	337.5	1,635.6	1,424.6	5,140.9	12,738	12,229
53	56,144	756	719	1,507	155.5	69.7	65.1	368.8	1,496.6	1,403.0	4,387.9	11,720	11,247
54	53,162	776	738	1,362	155.0	66.8	55.6	401.6	1,372.2	1,374.2	3,745.5	10,774	10,334
55	50,286	797	754	1,232	154.5	63.2	47.3	436.1	1,261.0	1,339.8	3,197.9	9,895	9,485
56	47,503	814	778	1,114	153.2	59.8	39.9	479.1	1,159.5	1,318.9	2,726.4	9,075	8,692
57	44,797	830	821	1,009	151.7	57.1	33.3	539.5	1,069.7	1,328.5	2,326.6	8,309	7,948
58	42,137	842	893	913	149.4	55.3	27.4	627.5	987.3	1,379.4	1,981.7	7,588	7,246
59	39,489	851	957	824	146.6	51.6	22.2	720.8	910.1	1,412.0	1,681.4	6,904	6,580
60	36,857	856	1,033	741	143.2	46.9	17.4	835.1	837.7	1,454.7	1,420.7	6,256	5,948
61	34,227	857	1,125	664	139.2	40.9	13.3	977.9	769.7	1,511.9	1,194.9	5,640	5,346
62	31,581	852	1,231	592	134.3	32.9	9.5	1,153.0	705.0	1,578.7	998.6	5,053	4,772
63	28,906	837	1,345	867	128.1	22.2	10.4	1,359.9	1,063.6	1,645.6	1,370.2	4,490	4,194
64	25,857	758	1,371	3,879	112.6	7.6	28.9	1,498.5	4,912.8	1,599.1	5,735.9	3,899	3,402
65	19,849	547		8,932	78.9						12,346.8	2,906	2,190
66	10,370	341		3,111	47.8						4,016.0	1,474	1,214
67	6,918	240		2,421	32.6						2,916.5	955	762
68	4,257	156		1,703	20.6						1,912.7	570	441
69	2,398	83		1,439	10.6						1,505.7	312	212
70	876	30		657	3.7						640.5	111	67
71	189	7		132	.8						119.3	23	14
72	50	2		38	.2						32.3	6	4
73	10			8							6.2	1	1
74	2			2							1.3		
75													

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 38

Age	l_x^s	d_x^s	i_x	w_x	${}^dC_x^s$	${}^iA_x^s$	${}^wA_x^s$	${}^{ida}C_x^s$	${}^{wda}C_x^s$	${}^{ia}C_x^s$	${}^{wa}C_x^s$	D_x^s	$D_{x+\frac{1}{2}}^s$
38	1,000,000	3,260	3,540	602,200	1,044.7	618.0	40,098.9	954.4	530,207.1	14,231.3	3,787,907.3	325,226	224,343
39	391,000	1,642	1,787	112,976	510.9	302.5	7,387.0	499.9	99,946.8	6,881.4	678,344.4	123,460	103,820
40	274,595	1,280	1,403	52,195	386.6	230.3	3,349.0	407.2	46,410.4	5,167.6	298,964.4	84,179	74,786
41	219,717	1,112	1,222	31,116	326.1	194.5	1,957.7	368.0	27,815.1	4,300.6	169,905.7	65,394	59,614
42	186,307	1,013	1,114	21,018	288.4	171.8	1,295.5	348.2	18,894.5	3,742.2	109,331.9	53,835	49,799
43	163,122	954	1,047	15,301	263.7	156.3	923.0	339.8	13,837.6	3,353.5	75,771.6	45,763	42,740
44	145,820	919	1,002	11,701	246.6	144.8	689.9	338.0	10,649.7	3,057.8	55,123.6	39,717	37,338
45	132,198	899	972	9,270	234.2	135.8	533.5	341.1	8,495.2	2,824.3	41,514.4	34,958	33,019
46	121,057	892	949	7,537	225.6	128.0	422.6	346.7	6,957.9	2,622.6	32,063.3	31,080	29,458
47	111,679	895	936	6,252	219.8	121.7	340.9	356.5	5,818.2	2,458.9	25,248.2	27,837	26,454
48	103,596	903	930	5,269	215.3	116.3	278.7	370.0	4,946.1	2,322.7	20,185.1	25,070	23,870
49	96,494	917	924	4,495	212.3	110.8	230.0	384.6	4,259.4	2,193.2	16,323.2	22,671	21,618
50	90,158	935	918	3,875	210.2	105.1	191.2	400.9	3,709.6	2,071.9	13,329.1	20,566	19,632
51	84,430	954	916	3,369	208.2	99.8	159.7	420.8	3,261.8	1,967.8	10,970.9	18,698	17,862
52	79,191	975	925	2,947	206.6	95.4	133.6	448.4	2,887.8	1,893.0	9,076.5	17,027	16,273
53	74,344	996	947	2,593	204.9	91.9	111.9	485.8	2,574.7	1,847.9	7,548.6	15,519	14,834
54	69,808	1,016	966	2,291	202.9	87.5	93.6	525.6	2,308.0	1,798.4	6,299.9	14,148	13,522
55	65,535	1,035	979	2,032	200.7	82.1	78.0	566.2	2,079.6	1,739.3	5,274.0	12,895	12,321
56	61,489	1,051	1,004	1,805	197.8	77.2	64.6	618.5	1,878.9	1,702.6	4,417.9	11,747	11,218
57	57,629	1,065	1,053	1,607	194.6	73.3	53.0	692.0	1,703.7	1,704.0	3,705.6	10,689	10,198
58	53,904	1,075	1,140	1,431	190.7	70.6	43.0	801.4	1,547.4	1,761.7	3,106.0	9,706	9,246
59	50,258	1,081	1,215	1,274	186.2	65.4	34.3	914.9	1,407.8	1,792.2	2,600.9	8,786	8,355
60	46,688	1,082	1,306	1,132	181.0	59.2	26.7	1,055.4	1,279.8	1,838.6	2,170.6	7,924	7,519
61	43,168	1,078	1,416	1,002	175.0	51.4	20.0	1,230.6	1,161.7	1,902.5	1,803.4	7,114	6,730
62	39,672	1,069	1,544	884	168.5	41.3	14.2	1,445.8	1,053.4	1,979.7	1,492.1	6,347	5,983
63	36,175	1,052	1,691	775	161.0	27.9	9.3	1,709.2	950.6	2,068.4	1,224.6	5,619	5,272
64	32,657	1,027	1,854	674	152.6	10.3	5.0	2,026.7	827.0	2,162.8	997.1	4,925	4,593
65	29,102	802		13,096	115.7						18,102.5	4,261	3,211
66	15,204	500		4,561	70.0						5,888.1	2,161	1,780
67	10,143	352		3,550	47.9						4,276.4	1,400	1,118
68	6,241	228		2,496	30.1						2,803.6	836	647
69	3,517	122		2,110	15.6						2,208.7	458	310
70	1,285	43		964	5.4						939.6	162	98
71	278	11		195	1.3						177.0	34	22
72	72	3		54	.4						45.2	9	6
73	15	1		12	.1						9.6	2	1
74	2			2							1.3		
75													

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 43

Age	l_x^s	d_x^s	i_x	w_x	${}^dC_x^s$	${}^{iA}C_x^s$	${}^{wA}C_x^s$	${}^{ida}C_x^s$	${}^{wda}C_x^s$	${}^{iu}C_x^s$	${}^{wa}C_x^s$	D_x^s	$D_{x+\frac{1}{2}}^s$
43	1,000,000	4,370	4,800	572,800	1,208.0	716.7	34,552.4	1,557.9	518,016.6	15,374.6	2,836,551.2	280,543	197,202
44	418,030	2,362	2,575	115,669	633.9	372.1	6,820.1	868.6	105,275.4	7,858.8	544,912.9	113,860	96,256
45	297,424	1,906	2,058	54,250	496.6	287.4	3,122.1	722.0	49,715.3	5,978.6	242,949.1	78,651	70,032
46	239,210	1,696	1,804	32,542	429.0	243.3	1,824.7	659.0	30,042.2	4,985.3	138,439.2	61,414	56,028
47	203,168	1,585	1,656	22,040	389.3	215.3	1,201.7	630.6	20,510.8	4,349.9	89,007.6	50,641	46,844
48	177,887	1,519	1,565	16,045	362.2	195.6	848.7	622.5	15,061.4	3,908.1	61,466.1	43,048	40,174
49	158,758	1,484	1,497	12,253	343.6	179.5	626.9	623.3	11,610.8	3,553.9	44,495.8	37,300	35,020
50	143,524	1,470	1,442	9,682	330.4	165.2	477.7	629.8	9,269.1	3,255.0	33,305.2	32,739	30,868
51	130,930	1,465	1,406	7,843	319.7	153.2	371.8	645.9	7,593.2	3,020.2	25,539.5	28,996	27,422
52	120,216	1,467	1,392	6,477	310.8	143.6	293.7	674.7	6,347.2	2,848.2	19,950.0	25,848	24,497
53	110,880	1,475	1,403	5,429	303.4	136.1	234.4	719.7	5,391.3	2,737.7	15,806.4	23,146	21,967
54	102,573	1,483	1,411	4,599	296.2	127.8	187.9	767.5	4,633.2	2,627.2	12,646.6	20,788	19,748
55	95,080	1,493	1,413	3,934	289.5	118.5	151.0	817.3	4,025.7	2,510.9	10,209.3	18,709	17,783
56	88,240	1,501	1,434	3,390	282.5	110.2	121.3	883.2	3,528.4	2,431.4	8,296.2	16,857	16,025
57	81,915	1,507	1,492	2,936	275.4	103.8	96.9	980.8	3,112.8	2,415.2	6,770.3	15,193	14,438
58	75,980	1,510	1,601	2,553	267.9	99.1	76.7	1,115.4	2,760.9	2,474.1	5,541.5	13,682	12,988
59	70,316	1,507	1,695	2,222	259.6	91.3	59.8	1,276.4	2,455.1	2,500.3	4,536.0	12,293	11,654
60	64,892	1,499	1,810	1,936	250.7	82.1	45.6	1,462.8	2,189.2	2,548.2	3,712.8	11,014	10,422
61	59,647	1,486	1,951	1,686	241.3	70.9	33.7	1,695.7	1,955.0	2,621.6	3,034.8	9,829	9,276
62	54,524	1,466	2,117	1,465	231.1	56.6	23.6	1,982.2	1,744.8	2,714.1	2,471.5	8,723	8,204
63	49,476	1,436	2,308	1,265	219.8	38.1	15.1	2,332.7	1,551.7	2,822.8	1,999.0	7,685	7,196
64	44,467	1,395	2,520	1,085	207.3	14.1	8.1	2,755.0	1,374.0	2,940.0	1,604.1	6,706	6,242
65	39,467	1,088		17,760	157.0						24,549.0	5,778	4,354
66	20,619	678		6,186	95.0						7,986.0	2,931	2,414
67	13,755	478		4,814	65.0						5,799.4	1,898	1,516
68	8,463	310		3,385	40.9						3,802.5	1,134	877
69	4,768	166		2,861	21.3						2,994.3	620	420
70	1,741	59		1,306	7.3						1,272.3	220	133
71	376	14		263	1.7						238.6	46	29
72	99	4		74	0.5						62.5	12	7
73	21	1		17	0.1						13.0	2	1
74	3			3							2.0		
75													

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 48

Age	l_x^s	d_x^s	i_x	w_x	${}^dC_x^s$	${}^{iA}C_x^s$	${}^{wA}C_x^s$	${}^{ida}C_x^s$	${}^{wda}C_x^s$	${}^{ia}C_x^s$	${}^{wa}C_x^s$	D_x^s	$D_{x+\frac{1}{2}}^s$
48	1,000,000	6,540	6,740	535,000	1,559.5	842.5	28,297.6	2,680.6	502,205.6	16,829.4	2,049,517.3	241,999	174,066
49	451,720	3,808	3,835	120,700	881.6	459.7	6,175.8	1,596.4	114,373.8	9,103.1	438,312.9	106,132	89,948
50	323,377	3,121	3,062	57,587	701.5	350.7	2,841.3	1,337.2	55,132.0	6,911.8	198,097.2	73,765	65,629
51	259,607	2,793	2,682	34,663	609.5	292.3	1,643.1	1,232.0	33,558.4	5,760.8	112,872.3	57,493	52,341
52	219,469	2,605	2,471	23,444	551.9	254.9	1,063.1	1,197.7	22,974.4	5,056.1	72,210.8	47,189	43,525
53	190,949	2,488	2,366	16,994	511.8	229.5	733.6	1,213.6	16,875.9	4,616.9	49,477.4	39,861	37,066
54	169,101	2,406	2,288	12,899	480.5	207.2	526.9	1,244.9	12,995.2	4,259.7	35,470.7	34,272	32,042
55	151,508	2,348	2,223	10,112	455.2	186.4	388.2	1,285.7	10,347.9	3,949.7	26,242.9	29,812	27,976
56	136,825	2,303	2,200	8,116	433.5	169.1	290.4	1,355.1	8,447.4	3,730.5	19,862.2	26,139	24,588
57	124,206	2,266	2,241	6,633	414.1	155.9	218.9	1,472.9	7,031.9	3,626.9	15,294.4	23,037	21,698
58	113,066	2,229	2,364	5,488	395.5	146.4	164.9	1,661.4	5,934.4	3,652.3	11,911.3	20,360	19,182
59	102,985	2,193	2,465	4,583	377.8	132.7	123.3	1,856.1	5,063.5	3,635.7	9,355.1	18,004	16,958
60	93,744	2,153	2,600	3,851	360.1	117.9	90.7	2,101.2	4,354.7	3,660.3	7,385.4	15,911	14,970
61	85,140	2,111	2,771	3,247	342.8	100.7	64.8	2,408.2	3,764.4	3,723.0	5,843.5	14,030	13,176
62	77,011	2,061	2,976	2,742	324.9	79.6	44.2	2,786.5	3,266.7	3,815.4	4,627.2	12,321	11,538
63	69,232	2,001	3,217	2,310	306.3	53.1	27.6	3,252.1	2,833.4	3,935.4	3,650.1	10,754	10,030
64	61,704	1,929	3,484	1,938	286.6	19.4	14.4	3,808.5	2,454.7	4,064.2	2,865.9	9,305	8,632
65	54,353	1,499		24,459	216.3						33,809.6	7,958	5,997
66	28,395	934		8,519	130.8						10,998.2	4,036	3,325
67	18,942	658		6,630	89.5						7,987.6	2,614	2,088
68	11,654	427		4,662	56.4						5,237.0	1,562	1,208
69	6,565	228		3,939	29.2						4,122.7	854	578
70	2,398	81		1,799	10.1						1,753.1	303	184
71	518	20		363	2.4						329.3	64	40
72	135	5		101	.6						84.7	16	10
73	29	1		23	.1						17.9	3	2
74	5			5							3.9	1	1
75													

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 53

Age	l_x^s	d_x^s	i_x	w_x	${}^dC_x^s$	${}^{iA}C_x^s$	${}^{wd}C_x^s$	${}^{ida}C_x^s$	${}^{wda}C_x^s$	${}^{ia}C_x^s$	${}^{wa}C_x^s$	D_x^s	D_{x+1}^s
53	1,000,000	10,280	9,780	488,800	2,114.5	948.5	21,099.4	5,016.1	485,398.5	19,082.4	1,423,107.7	208,750	154,144
54	491,140	6,331	6,026	125,251	1,264.3	545.7	5,116.5	3,278.8	126,184.0	11,219.3	344,423.0	99,539	84,551
55	353,532	5,176	4,900	60,991	1,003.5	410.9	2,341.3	2,833.9	62,414.2	8,705.8	158,285.7	69,563	61,762
56	282,465	4,576	4,373	36,816	861.4	336.2	1,317.1	2,693.4	38,319.4	7,415.1	90,099.7	53,961	48,931
57	236,700	4,201	4,156	24,792	767.7	289.2	818.1	2,731.8	26,282.7	6,726.7	57,165.6	43,901	40,277
58	203,551	3,931	4,171	17,819	697.5	258.3	535.4	2,931.8	19,269.0	6,445.2	38,675.9	36,653	33,854
59	177,630	3,721	4,185	13,358	641.0	225.4	359.4	3,151.3	14,757.7	6,172.9	27,265.5	31,054	28,797
60	156,366	3,545	4,280	10,305	592.9	194.1	242.7	3,459.2	11,651.7	6,025.8	19,760.8	26,540	24,660
61	138,236	3,390	4,451	8,109	550.4	161.7	161.9	3,868.4	9,401.6	5,980.5	14,594.4	22,780	21,172
62	122,286	3,243	4,685	6,462	511.2	125.3	104.1	4,387.4	7,697.8	6,007.3	10,903.8	19,565	18,162
63	107,896	3,096	4,974	5,188	473.8	82.2	62.0	5,028.0	6,364.1	6,084.5	8,198.5	16,759	15,516
64	94,638	2,939	5,309	4,174	436.7	29.6	31.1	5,803.5	5,286.2	6,193.2	6,171.7	14,272	13,154
65	82,216	2,267		36,997	327.0						51,140.8	12,037	9,072
66	42,952	1,413		12,886	197.9						16,636.5	6,106	5,030
67	28,653	995		10,029	135.3						12,082.4	3,954	3,158
68	17,629	645		7,052	85.2						7,921.5	2,362	1,827
69	9,932	346		5,959	44.3						6,236.7	1,292	875
70	3,627	122		2,720	15.2						2,650.4	458	277
71	785	30		550	3.6						498.9	96	60
72	205	8		154	.9						130.0	24	14
73	43	2		34	.2						26.8	5	3
74	7			6							4.6	1	1
75	1			1							.6		

Central Age at Entry 58

58	1,000,000	15,770	16,740	434,200	2,798.0	1,036.4	13,045.8	11,765.8	469,530.8	25,865.1	942,420.5	180,070	136,651
59	533,290	10,229	11,503	125,846	1,762.0	619.5	3,385.7	8,661.9	139,035.3	16,967.0	256,873.7	93,232	79,350
60	385,712	8,304	10,029	62,493	1,388.8	454.8	1,471.8	8,105.7	70,661.5	14,120.0	119,839.0	65,468-	57,855
61	304,886	7,223	9,485	37,605	1,172.8	344.6	750.8	8,243.7	43,598.7	12,744.6	67,679.5	50,242	45,166
62	250,573	6,482	9,366	24,952	1,021.8	250.5	402.1	8,770.6	29,723.5	12,009.0	42,102.6	40,089	36,336
63	209,773	5,907	9,492	17,516	904.1	156.8	209.4	9,595.0	21,487.1	11,611.1	27,680.9	32,584	29,628
64	176,858	5,412	9,778	12,713	804.2	54.5	94.7	10,688.3	16,101.4	11,405.8	18,798.8	26,671	24,240
65	148,955	4,107		67,030	592.5						92,655.0	21,809	16,436
66	77,818	2,559		23,345	358.4						30,139.1	11,062	9,114
67	51,914	1,802		18,170	245.0						21,889.8	7,165	5,722
68	31,942	1,169		12,777	154.3						14,353.2	4,280	3,310
69	17,996	626		10,798	80.2						11,301.7	2,341	1,586
70	6,572	221		4,929	27.5						4,802.8	830	502
71	1,422	54		995	6.5						901.7	174	109
72	373	15		280	1.8						235.5	44	26
73	78	3		62	.3						48.7	9	5
74	13	1		12	.1						8.5	1	1
75													

Table 25

SERVICE TABLE AND MONETARY VALUES AT 3% INTEREST

Central Age at Entry 63

Age	l_x^s	d_x^s	l_x	w_x	${}^dC_x^s$	${}^{ia}C_x^s$	${}^{wa}C_x^s$	${}^{ida}C_x^s$	${}^{wda}C_x^s$	${}^{ia}C_x^s$	${}^{wa}C_x^s$	D_x^s	D_{x+1}^s
63	1,000,000	23,820	38,350	371,400	3,645.7	633.6	4,440.6	38,765.1	455,608.8	46,910.2	586,939.1	155,330	120,376
64	566,430	16,053	29,041	118,769	2,385.4	161.9	884.5	31,745.5	150,420.9	33,876.8	175,620.8	85,421	72,181
65	402,567	11,099		181,155	1,601.2						250,408.4	58,941	44,418
66	210,313	6,917		63,094	968.8						81,455.1	29,896	24,630
67	140,302	4,871		49,106	662.4						59,159.5	19,363	15,465
68	86,325	3,159		34,530	417.1						38,789.0	11,567	8,947
69	48,636	1,692		29,182	216.9						30,542.7	6,327	4,285
70	17,762	598		13,322	74.4						12,980.2	2,243	1,357
71	3,842	146		2,689	17.6						2,437.3	471	296
72	1,007	40		755	4.7						636.2	120	72
73	212	9		170	1.0						133.2	25	14
74	33	1		30	.1						21.6	4	2
75	2			2							1.3		

Central Age at Entry 68

68	1,000,000	36,600	400,000	4,832.0	449,332.4	133,989	103,640
69	563,400	19,601	338,040	2,512.4	353,801.1	73,290	49,638
70	205,759	6,930	154,319	862.4	150,364.3	25,987	15,722
71	44,510	1,686	31,157	203.7	28,239.0	5,458	3,424
72	11,667	459	8,750	53.8	7,370.0	1,389	836
73	2,458	100	1,966	11.4	1,537.2	284	164
74	392	16	353	1.8	255.7	44	24
75	23	1	22	.1	15.0	3	2

G. Cucich

Employees' Exhibit No. 24
Witness: George M. Cucich

HISTORICAL DEVELOPMENT OF THE RAILROAD WAGE STRUCTURE

HISTORICAL DEVELOPMENT OF THE RAILROAD WAGE STRUCTURE

By
B. M. Jewell
and
George M. Cucich

RAILWAY EMPLOYES' DEPARTMENT
American Federation of Labor

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FOREWORD

The material for this study was originally assembled and presented before the Emergency Board appointed by the President on September 27, 1938, under the Railway Labor Act, to investigate a wage dispute involving nineteen Standard Railroad Labor Organizations and substantially all of the railroads in the United States. This material has been revised and brought up to date for publication in order to meet the need for this character of information by the students of railroad labor problems as well as those who are required to deal with such problems in the railroad industry.

This study on the Historical Development of the Railroad Wage Structure is divided into two parts. Part I entitled "Summary" brings together in brief form the outstanding facts developed in Part II which is a more detailed presentation of the manner in which the present wage rates of railroad employes were evolved. The Appendix contains a series of tables to which reference is made in Part II showing the actual rates of the various classes of railroad employes and the changes which were made from time to time by various wage tribunals and through negotiation.

The facts developed by this study show that (1) the railroad wage structure was in a chaotic condition prior to Federal control of the railroads and the wage rates of railroad employes were shockingly low, (2) a fairly well balanced wage structure was established by the middle of 1920 as the result of a most intensive and searching review by various wage tribunals, and (3) the wage rates in effect at the present time, which were established as the result of

negotiation, mediation and arbitration, are substantially the same as they were in 1920, twenty years ago, indicating that little or no progress has been made in wage rates during that period.

The preparation of this study has been greatly facilitated by the helpful suggestions and material contributed by the various Standard Railroad Labor Organizations and their research staffs to whom acknowledgement is gratefully made.

March 1941.

B. M. J.
G. M. C.

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HISTORICAL DEVELOPMENT OF THE RAILROAD WAGE STRUCTURE

PART I

HISTORICAL DEVELOPMENT OF THE RAILROAD WAGE STRUCTURE

SUMMARY

I

Prior to Federal control of the railroads, the railroad wage structure was in a chaotic condition. There was no sane relation between the wages paid to different classes of railroad employes, and the wages of all railroad employes were exceedingly low, causing their standard of living to be badly depressed, particularly with the cost of living sky-rocketing as the result of the conditions growing out of the European war. The wage increases granted during this period were not uniform and far from adequate when compared with wages paid in other industries.

II

The acute railroad labor situation was given as one of the primary reasons why the Federal government assumed control of the railroads of the country on December 28, 1917. When Mr. McAdoo, upon taking over his duties as Director General of the railroads, inquired of one of his advisors on labor matters as to what the "most exigent problem" other than the congestion of traffic that confronted the railroads, his advisor, Mr. A. H. Smith, former president of the New York Central Railroad, answered, "Labor—Wages—That is certainly the first thing." When Mr. McAdoo asked how far the Railroad Administration should go in that direction, Mr. Smith replied, "You will have to go a long way to bring wages up to a normal level, railroad labor is grossly underpaid."

III

The Railroad Wage Commission, known as the Lane Commission, which was appointed by the Director General to make an investigation of railroad wages, found that contrary to popular belief, railroad wages

were not high and, in fact, extremely low. The investigation showed that during the month of December, 1917, 51 per cent of all railroad employes received $75 a month or less, and 80 per cent of all railroad employes received $100 a month or less; that even among locomotive engineers the majority received less than $170 a month and that between the grade receiving from $150 to $250 per month there was less than 3 per cent of all the employes aggregating less than 60,000 men out of 2,000,000. In order to quickly meet the emergency the Commission recommended a sliding scale percentage increase in wages based on monthly wages in effect December 31, 1915, and the establishment of a permanent wage tribunal to continue the study of railroad labor problems.

IV

Acting upon the recommendations of the Lane Commission, the Director General put the sliding scale of wages into effect by General Order No. 27, effective January 1, 1918, and created the Board of Railroad Wages and Working Conditions composed of an equal number of railroad and employe representatives experienced in railroad labor problems to hear and investigate matters presented by railroad employes regarding wages and working conditions because "no problem so vast and intricate as that of doing practical justice to the 2,000,000 railroad employes of the country can be regarded as completely settled and disposed of by any one decision or order."

V

The thorough and comprehensive investigations and the extensive hearings conducted subsequently by the Board of Railroad Wages and Working Conditions constitute the first scientific examination of the railroad wage structure as a whole, and consequently, the wages in effect prior to that time cannot be used as a fair basis for comparing subsequent wage adjustments.

VI

General Order No. 27, its various supplements, amendments, addenda and interpretations, together with certain special decisions of the Director General and the President of the United States, all issued during the period of Federal control and based upon the findings of the Lane Commission and its successor, the Board of Railroad Wages and Working Conditions, as well as upon the advice of prominent railroad officials and labor experts on the immediate staff of the Director General, contributed in large measure toward the establishment of a railroad wage structure in which there was an intelligent, justifiable and fairly well balanced relationship between the rates fixed for the various classes of employes. But wages failed to keep pace with the cost of living, and

as admitted by the Director General, were lower than wages in other industries, and therefore, railroad workers, toward the end of Federal control, generally had made requests for increases in wages. The Railroad Administration took the position, however, that no further increases would be granted except where unequal treatment could be shown for the reason that the government at that time was trying to check the upward movement of prices and it was believed that any increase in wages would have militated against the success of the undertaking.

VII

Substantiating the findings of the Lane Commission, the Railroad Labor Board disclosed subsequently in one of its first surveys that the average daily earnings of all railroad employes during the month of December, 1917, were only $2.87 and the average monthly earnings were $77.93. The increases granted by the Director General raised the average daily compensation to $4.24 per day for the month of January, 1920, and the average monthly compensation to $115.82, representing a general increase of 48.6 per cent.

VIII

It is significant that the Director General when acting on the recommendations of the Board of Railroad Wages and Working Conditions, followed almost exclusively the recommendations of the railroad management members as to the amount of increase in issuing the various wage orders. The wage rates established during Federal control of the railways, therefore, cannot be criticised as excessive and, in fact, were far from adequate.

IX

Just prior to the termination of Federal control, the railroad workers laid their case personally before the President of the United States, who took the position that the short time which remained before the roads were to be returned to the managements precluded any satisfactory action, but he assured the employes that he would take "such steps as would assure them that their claims would be properly and promptly disposed of."

X

The Railroad Labor Board, when it assumed jurisdiction over labor matters at the end of Federal control, promptly increased wage rates by Decision No. 2, effective May 1, 1920, thereby establishing the validity of the claims made by the employes for a wage increase just prior to the termination of Federal control. The increase granted was only about 60 per cent of the amount requested. Finding, however, that the scale of wages paid railroad employes was substantially below that

paid for similar work in other industries, and recognizing the public necessity for the efficient operation of an essential industry, the Board, by adding a flat amount to the rates established under Federal control, granted increases ranging from 12.5 per cent for supervisory forces to 26.2 per cent for stationary engineers and firemen, and increased the average monthly rate of $115.82 in effect just prior to the effective date of the decision to $141.56. Based on the statistics compiled by the Interstate Commerce Commission, the average hourly earnings of all employes excluding executives, officials and staff assistants during the year ended June 30, 1921, when Decision No. 2 was in effect, were 70.4 cents.

XI

Thus, as the result of a most searching review of the railroad wage structure, a series of wage awards were made which by 1920 established for the first time in the history of the industry a wage structure which was fairly well balanced with regard to the relation of the rates fixed for the various classes of employes, and consequently it forms the only basis on which subsequent wage adjustments can be accurately compared.

XII

The wages of all railroad employes were reduced 12.2 per cent by Decision No. 147 of the Railroad Labor Board, effective July 1, 1921. The average monthly rate was reduced to $124.27 as compared to $141.56 under Decision No. 2.

XIII

The wage rates of the maintenance of way employes, mechanical trades employes, clerical and station forces, signal department employes, stationary firemen and oilers and certain miscellaneous employes were again reduced by Decision Nos. 1028, 1036 and 1074 of the Railroad Labor Board, effective July 1, 1922, so that the increase granted by Decision No. 2 was more than wiped out for these employes. The average hourly earnings of all railroad employes excluding officials declined to 59.8 cents in 1923. The injustice of these reductions were protested by the employes and resulted in a suspension of work by the mechanical trades employes on July 1, 1922, which had the effect of putting an end to any further reductions.

XIV

The unsatisfactory functioning of the Railroad Labor Board, the flouting of its decisions by the railway managements, its policies in connection with the suspension of work by the mechanical trades and other factors practically destroyed all respect for the Board by the

end of 1922. From that time until the existence of the Board was terminated by the Railway Labor Act in 1926, it was practically ignored by both the railroad employes and the carriers, insofar as any major adjustment of wages was concerned.

XV

From 1923 to 1929, a period of unprecedented prosperity for the railroads, minor adjustments upward were made in the wages of all employes as the result of negotiations, and mediation and arbitration following the enactment of the Railway Labor Act in 1926, but wage rates for most employes in 1929 were still below what they were under Decision No. 2, rendered by the Railroad Labor Board in 1920. The average hourly earnings of all railroad employes excluding officials in 1929 were 65.1 cents, as compared with 70.4 cents for the year ended June 30, 1921. No changes of any importance, either in the form of increases or decreases, were made in the railroad wage structure between the Fall of 1929 and January, 1932.

XVI

Effective February 1, 1932, 10 per cent was deducted from the pay check of each employe, as the result of an agreement which was entered into between the representatives of all of the twenty-one standard railroad labor organizations and the management officials speaking for practically the entire operated mileage. This agreement, which was entered into for one year, was twice extended, and on April 26, 1934, another agreement was entered into providing for the restoration of 2½ per cent of the deduction on July 1, 1934, 2½ per cent on January 1, 1935, and the remaining five per cent on April 1, 1935. Under this arrangement, basic rates remained unchanged.

XVII

Studies of the actual earnings records of railroad employes made by the Federal Coordinator of Transportation reveal that in 1933, employes of Class I railroads excluding executives and staff assistants received an average annual wage of $1,225 or about $100 a month, and that in November, 1933, more than 155,000 railroad workers—14 per cent of all railroad employes—were actually receiving 35 cents an hour or less for their labor. In commenting on this situation, the Coordinator said that while it was true the railroad industry was faced with difficult problems, it should not pay lower wages than other industries. "For it to continue to do so," he said, "will certainly not be in the public interest, and will in the end adversely affect the railroads concerned themselves. Underpaid and exploited workers are no asset to the industry which employs them, nor to the communities in which

they live. They are poor producers, poor consumers, and poor contributors to the well being of such communities."

XVIII

In the Fall of 1937, voluntary national agreements were entered into as the result of negotiations between the representatives of the standard railroad labor organizations and the railroad managements of substantially all of the railroads in the United States, providing for an increase in wages of approximately 5 cents an hour. With the enactment of the Fair Labor Standards Act of 1938, a statutory minimum rate of 25 cents an hour became effective on October 28, 1938, and by operation of the law this was increased to 30 cents an hour a year later. Subsequently, minimum rates of 36 cents an hour for the trunk line railroads and 33 cents an hour for the short lines were established by the Wage and Hour Administrator, effective March 1, 1941. Average hourly earnings of all railroad workers excluding officials according to the Commission's figures, were 69.2 cents in 1937 and 72.9 cents in 1938. Thus average earnings were only slightly higher in 1938 than they were under Decision No. 2, rendered by the Railroad Labor Board in 1920, eighteen years earlier.

XIX

When substantially all of the railroads in the United States served notice of their intention to reduce the wage rates of their employes by 15 per cent in 1938, an Emergency Board appointed by the President recommended that wages should not be reduced, with the result the notices were withdrawn. The Board commented in part as follows with respect to railroad wages:

> Examination of the data above detailed leads us consequently to the conclusion that the level of wages of railway labor is not high when compared with wage levels in other industries. Nor do wage trends show that railway wages have advanced proportionately greater than wages in other industries. Instead they seem to show a slight lag, though, on the other hand, they show greater resistance to decline than wages in other industries. Furthermore, no justification arises for a wage reduction from the current wage situation in other industries. There, no general movement to reduce wages has made its appearance. These considerations lead us to the conclusion that the carriers' proposal can derive no sustenance from the contention that railway wages as a whole are too high.

In 1940, the average hourly earnings of all railroad workers excluding officials, based on data compiled by the Interstate Commerce Commission were 73.3 cents, practically the same as they were in 1938.

PART II

HISTORICAL DEVELOPMENT OF THE RAILROAD WAGE STRUCTURE

INTRODUCTION

The "modern era" of railroad wage determination, as differentiated from the medieval period when railroad wage rates were established generally through the operation of the economic law of supply and demand, was ushered in by the series of events leading up to the enactment of the Adamson Law, September 3, 1916.

The movement to establish the basic eight hour day, prosecuted by the railroad train and engine service organizations during 1916, constituted the first national movement undertaken by any group of railroad employes for the betterment of working conditions. The Adamson Law, which applied only to the train and engine service employes, established eight hours as "the measure or standard of a day's work for the purpose of reckoning the compensation for services," and provided that for a period of about ten months subsequent to the date of enactment the compensation of the train and engine service employes covered by the legislation should not be reduced below the standard day's wage in effect at that time. Time in excess of eight hours was to be paid for on a pro rata basis.[1]

The law also established the "eight-hour commission" "to observe the operation and effects of the institution of the eight-hour standard workday." The statute, however, laid down no procedure for the commission to follow, designated no date as to when the observation was to begin, and gave no indication as to how the commission's "observations" were to be made, or as to what its investigation should include. The commission had no power to compel the submission of reports, subpoena witnesses or otherwise to proceed according to the manner usually followed by administrative tribunals, and as a result its observations with respect to railroad wages—which were confined to the train and engine service employes—contributed practically nothing even in the way of taking cognizance of the chaotic condition of the

[1] 39 U. S. *Statutes at Large*, p. 721.

railroad wage structure, much less suggesting any remedies to correct the situation.

The 1916 dispute between the railroads and the train and engine service organizations was not settled by the Adamson Law. The controversy was actually terminated by the award of an emergency committee, which had been appointed by President Wilson. This award granted to the train and engine service employes the same compensation for eight hours work that had formerly been paid for ten hours work.

The Adamson Law, merely as an enactment, was of no significance to other than train and engine service employes who, prior to 1916, had not become sufficiently organized to effectively submit any general claims for the adjustment of wages and working conditions to railroad management.

The real significance of the Adamson Law, however, to all railroad employes, lay in the fact (1) that railway labor, from an organizational standpoint, had reached the point where it could effectively bring to the attention of railroad management and the American public the disgracefully low wages and intolerable working conditions prevailing in the railroad industry; and (2) the American public for the first time in August, 1916, stopped to consider the vital relationship between the social and economic security of the American people and efficient and dependable rail transportation, as well as the serious consequence which would result from the sudden termination of railroad transportation.

Inasmuch as living costs were rising by leaps and bounds due to war conditions, and other industries were granting wholesale wage increases, all classes of railroad employes during 1917 became impressed with the necessity of some action to correct the chaotic condition of railroad wages. There was no sane relation as to wages paid to different groups of employes, and furthermore, wages were extremely low, thus causing the standard of living of large numbers of railway workers to be badly depressed. Consequently, during the summer of 1917 the several railway labor organizations took steps to lay wage increase proposals before the railroad management.

PERIOD OF FEDERAL CONTROL, 1917-1920

On December 28, 1917, the Federal Government assumed direct control of the railroads, and William G. McAdoo was appointed Director General. It is significant at the present time that one of the primary reasons given for the Government assuming control of the railroads in 1917 was the acute labor situation in the industry.[2]

When Mr. McAdoo, upon taking over his duties as Director General of the railroads inquired of one of his advisors on labor matters as to

[2] W. J. Cunningham, *American Railroads; Government Control and Reconstruction Policies* (New York, 1922), pp. 35, 102.

what was the "most exigent problem" other than the congestion of traffic that confronted the railroads, his advisor, Mr. A. H. Smith, former President of the New York Central Railroad, answered, "Labor —Wages—That is certainly the first thing." When Mr. McAdoo asked how far the railroad administration should go in that direction, Mr. Smith replied, "You will have to go a long way to bring wages up to a normal level, railroad labor is grossly underpaid."[3]

As shall be seen, Mr. Smith's conclusion was later definitely supported by special investigation.

Railroad Wage Commission.—Impressed with the chaotic condition of railroad wages, the Director General created a railroad wage commission on January 18, 1918, to make a "general investigation of the compensation of persons in the railroad service, the relation of railroad wages to wages in other industries, the conditions respecting wages in different parts of the country, the special emergency respecting wages which exists at this time owing to war conditions and high cost of living, as well as the relations between different classes of railroad labor."[4]

This commission, later known as the Lane Commission, was composed of Franklin K. Lane, Secretary of Interior at the time and formerly a member of the Interstate Commerce Commission, who acted as chairman; William R. Willcox, former Chairman of the New York Public Service Commission; J. Harry Covington, Chief Justice, Supreme Court of the District of Columbia; and Charles C. McChord, member of the Interstate Commerce Commission.

Due to the much higher wages being paid in outside industries, an exodus of railroad workers to these industries became so acute that in order to check the outflow the Director General on February 21, 1918, made a number of changes in the working rules of railroad employes and announced that any wage increase granted as a result of the Lane Commission's investigation would be made retroactive to January 1, 1918.[5]

The Lane Commission conducted a painstaking and exhaustive investigation of the actual wages of railroad employes. Its procedure has been described as follows:

> A large number of public hearings were held at which representatives of all classes of employees in the service of the railroads, organized and unorganized, appeared and presented their views and arguments for higher wages. The hundreds of letters, petitions, and written statements received by the Commission from individual employees and organizations of employees were classified, analyzed, and considered in connection with the oral testimony. Interviews with the working classes and inspection of their simple books of accounts, as well as budgets and statistics of living costs gathered

[3] W. G. McAdoo, *Crowded Years* (New York, 1931), p. 470.
[4] General Order No. 5, issued January 18, 1918, *U. S. Railroad Administration, Bulletin No. 4* (revised), p. 148.
[5] General Order No. 8, issued February 21, 1918, *Ibid.*, pp. 167-169.

by newspapers co-operating in the work, made the investigation an actual study from life rather than one based upon theoretical budgets. Representatives of the railroads likewise were heard in order to throw still more light upon the problem of existing differentials, the extent to which increases had been given, and the extent to which still further increases should be made.[6]

The report which the Commission submitted to the Director General on April 30, 1918, pointed out that the popular impression that the railroad employes were among the most highly paid workers, (which conclusion doubtlessly rested in large part upon estimated average earnings,) was grossly inaccurate.[7]

The investigation showed that during the month of December, 1917, 51 per cent of all railroad employes received $75 per month or less, and 80 per cent of all railroad employes received $100 a month or less; that even among locomotive engineers the majority received less than $170 a month and that between the grades receiving from $150 to $250 per month there was less than 3 per cent of all the employes aggregating less than 60,000 men out of 2,000,000. The observations of the Commission were as follows:

It has been a somewhat popular impression that railroad employees were among the most highly paid workers. But figures gathered from the railroads disposed of this belief. Fifty-one per cent of all employees during December, 1917, received $75 per month or less. And eighty per cent received $100 per month or less. Even among the locomotive engineers, commonly spoken of as highly paid, a preponderating number receives less than $170 per month, and this compensation they have attained by the most compact and complete organization handled with a full appreciation of all strategic values. Between the grades receiving from $150 to $250 per month, there is included less than three per cent of all the employees (excluding officials) and these aggregate less than sixty thousand men out of a grand total of two million.

The greatest number of employees, on all the roads, fall into the class receiving between $60 and $65 per month — 181,693; while within the range of the next ten dollars in monthly salary there is a total of 312,761 persons. In December, 1917, there were 111,477 clerks receiving annual pay of $900 or less. In 1917, the average pay of this class was but $56.77 per month. There were 270,855 section-men whose average pay as a class was $50.31 per month; 121,000 other unskilled laborers whose average pay was $58.25 per month; 130,075 station service employees whose average pay was $58.57 per month; 75,325 road freight brakemen and flagmen whose average pay was $100.17 per month; and 16,465 road passenger brakemen and flagmen whose average pay was $91.10 per month.

These, it is to be noted, are not pre-war figures; they represent conditions after a year of war, and two years of rising prices. And each dollar now represents in its power to purchase a place in which to live, food to eat, and clothing to wear, but 71 cents as against the 100 cents of January 1, 1916. That there has been such steadfast loyalty to the railroads, and so slight a disposition to use the lever of their necessity and their opportunity to compel, by ruthless action, an increase of wages, is not without significance and should not be passed without public recognition.[8]

The Lane Commission, in accordance with its findings, recommended

[6] Harry D. Wolf, *The Railroad Labor Board* (Chicago: University of Chicago Press, 1927), pp. 15, 16.
[7] *Report of the Railroad Wage Commission* (April 30, 1918), p. 17.
[8] *Ibid.*, pp. 17-19.

a general sliding scale percentage increase of wages to be based on the monthly wage in effect December 31, 1915. For employes whose monthly wage as of that date was $46 or less, a flat increase of $20 a month was recommended. For employes who received from $46.01 to $47, an increase of 43 per cent was proposed. So up the line as the wage rate increased the percentage increases recommended decreased, until for the few employes receiving $250 a month or more no increase at all was proposed.[9]

The Commission stated that where wages were paid on an hourly, daily, or piece-work basis proper adjustments should be made to insure the appropriate increase, and that in all individual cases where the same service was rendered the same wages should obtain "without regard to sex or race."[10]

Finally the Lane Commission suggested that the Director General set up a permanent wage tribunal to continue the study of railroad labor problems, and to further correct remaining inequities in the railroad wage structure.[11]

General Order No. 27.—On May 25, 1918, Director General McAdoo issued General Order No. 27, which put into effect the wage increases recommended by the Lane Commission, such increases to be retroactive to January 1, 1918.[12] Thus the total compensation of railroad employes on January 1, 1918, was increased about $360,000,000[13] and the Director General's move constituted a bold step forward toward the establishment of a new rational and balanced wage structure.

As recommended by the Commission, a Board of Railroad Wages and Working Conditions, composed of six members, three representing the railroad managements and three representing labor, was created, to advise the Director General and make recommendations as to further adjustment in the wage structure,[14] because "no problem so vast and intricate as that of doing practical justice to the 2,000,000 railroad employes of the country, can be regarded as completely settled and disposed of by any one decision or order."[15]

Immediately after the issuance of General Order No. 27, employes of practically all classes filed protests with the Director General against its provisions, asserting that many employes had already received, since 1915, increases equal to those granted by the new wage scale, and that by basing the increase on wages paid in December, 1915, the effect of the order, if applied literally, would be actually to reduce the wages of

[9] *Ibid.*, pp. 19-27.
[10] *Ibid.*, pp. 28-31, 39.
[11] *Ibid.*, pp. 41, 42.
[12] *General Order No. 27 with its Supplements, Addenda, Amendments and Interpretations issued by the United States Railroad Administration*, Compiled by the National Railroad Adjustment Board (Chicago, 1935), p. 7.
[13] Interstate Commerce Commission, Bureau of Statistics, *Changes in Wages and Working Conditions of Railway Employes, 1918-1922*, prepared by J. A. Emmart (Washington, D. C., 1922), p. 150.
[14] General Order No. 27, *op. cit.*, p. 27.
[15] *Ibid.*, p. 8.

many employes. Moreover, the increases granted by the Director General were neither in line with those granted in outside industries, nor with the cost of living, which was increasing constantly, and they insisted that further increases should be granted.[16]

Consequently, by the time the Board of Railroad Wages and Working Conditions was organized on June 1, 1918, practically all classes of employes had requested further hearings. The Board decided to consider the petitions for further increases by groups, rather than generally, as had been done by the Lane Commission.

Supplement No. 4.—The mechanical trades were the first to present their claim, and the result was Supplement 4 to General Order No. 27. This order, which was made effective as of January 1, 1918, established for the mechanical trades employes[17] a basic eight-hour day, with time and one-half for overtime, and, in order to equalize rates paid on the various roads for similar service, also established a basic minimum rate of 55 cents per hour for all mechanics except second class electrical workers and freight car mechanics for whom a basic rate of 45 cents per hour was established. To these basic rates and any higher rates in effect on January 1, 1918, prior to the application of General Order No. 27, an increase of 13 cents per hour was added. Basic minimum rates for employes with less than four years' experience were set up on a graduated scale.[18]

Effective September 1, 1918, Addendum No. 1 to Supplement No. 4 established a minimum of 28 cents and a maximum of 40 cents an hour for coach cleaners who were not covered by Supplement No. 4,[19] and Addendum No. 2 established differentials of 2½ to 5 cents an hour over the basic rate for certain work requiring special skill or responsibility.[20] The passenger coach mechanics were raised to the status of other mechanics, i.e., the 68 cents minimum, and steel freight car mechanics were raised to 63 cents per hour. The propriety of paying locomotive boiler inspectors, autogenous welders, boilermakers engaged as flangers and layers out, and blacksmiths working out of heavy furnaces a minimum differential of 2½ cents above the basic rate prevailing at the point employed was also recognized.[21]

Supplement No. 7.—In accordance with the policy of the Board, of hearing complaints in the order in which they were received, hearings were next conducted during July, 1918, on the requests made by the clerical and station forces, which resulted in the issuance by the Director General of Supplement No. 7, to General Order No. 27, on

[16] Emmart, *op. cit.*, pp. 23, 24.
[17] Signalmen and signal maintainers included. Minimum rate of 68 cents per hour established for signalmen and signal maintainers by Supplement No. 28, effective February 1, 1920. General Order No. 27, *op. cit.*, p. 459.
[18] General Order No. 27, *op. cit.*, p. 32.
[19] *Ibid.*, p. 39.
[20] *Ibid.*, p. 41.
[21] For the rates of pay established by Supplement No. 4 to General Order No. 27, and, Addendum thereto see Table I in the Appendix, p. 44.

September 1, 1918.[22] This supplement, effective as of the date of issuance, established for all employes affected certain basic minimum rates: for messengers and chore boys $20 per month; janitors, elevator and switchboard operators, watchmen, etc. $45 per month; clerks, train announcers, gatemen, baggage room men, train and engine crew callers, $62.50 per month; stationary engineers, $85 per month; stationary firemen and oilers, $65 per month. To these and all higher rates in effect on January 1, 1918, prior to the application of General Order No. 27, an increase of $25.00 per month was added. For hourly-rated employes, affected by Supplement No. 7, the following basic minimum rates were established: locomotive boiler-washers, 26 cents; power transfer and turntable operators, 21 cents; shop, roundhouse, station storehouse and warehouse employes, minimum 19 cents, (maximum with increase 43 cents); common labor in the same departments, minimum 16 cents, (maximum with increase, 40 cents). To these rates an increase of 12 cents was added. This supplement also established the basic eight-hour day with overtime at pro rata rates up to and including the tenth hour, and thereafter at the rate of time and one-half.[23]

After the issuance of Supplement No. 7, considerable dissatisfaction developed among the employes due to the fact that their earnings in many instances had been reduced owing to the reduction in hours from nine, ten, eleven and twelve, to eight per day. In order to relieve this situation Interpretation No. 1 to Supplement No. 7 was issued November 23, 1918.[24] This interpretation provided that those clerical and other employes covered by Supplement No. 7 whose hours had been reduced, were to receive the same pay for eight hours, as they would have received had they remained on longer hours. Daily and monthly salaried employes were also granted the increases provided and placed on an eight hour day basis regardless of the number of hours formerly worked.

Supplement No. 8.—As a result of hearings conducted by the Board, in July, 1918, on the complaints of the maintenance of way employes, Supplement No. 8 to General Order No. 27 was issued on September 1, 1918.[25] This supplement, which became effective on the date of issuance, established a basic day of eight hours with overtime at pro rata rates up to and including the tenth hour, and time and one-half thereafter. It also established the following basic minimum monthly rates for monthly-paid foremen, to which an increase of $25 per month was added; building, construction, and maintenance foremen $90; assistants to such foremen, and coal wharf, coalchute, fencegang, pile driver, and ditching foremen and bridge inspectors $80; section

[22] General Order No. 27, *op. cit.*, p. 61.
[23] For the rates of pay established by Supplement No. 7 to General Order No. 27, see Table II in the Appendix, p. 45.
[24] General Order No. 27, *op. cit.*, p. 66.
[25] *Ibid.*, p. 83.

foremen $75. For hourly-paid employes the following basic hourly rates were established: Mechanics and mechanics' helpers (not covered by Supplement No. 4) 40 and 30 cents per hour respectively, to which an increase of 13 cents per hour was added. Track and other laborers 16 cents, to which an increase of 12 cents was added making the minimum hourly rate 28 cents and at the same time established a maximum rate of 40 cents per hour. For employes such as drawbridge tenders, pile driver firemen, pumpers, crossing watchmen, lamp lighters, etc. an increase of $25 per month over the rates in effect on January 1, 1918, prior to the application of General Order No. 27, was established.[26]

Interpretation No. 1 to Supplement No. 8 issued November 23, 1918, provided, as in the case of the clerical employes covered by Supplement No. 7, that those maintenance of way employes whose hours had been reduced were to receive the same pay for eight hours as they would have received had they remained on longer hours.[27]

Supplement No. 13.—In August, 1918, representatives of employes of the agent and telegrapher class presented to the wage board requests for increases in wages. As a result of the hearings, Supplement No. 10 to General Order No. 27 was issued by the Director General on November 16, and Supplement No. 11, on November 23, 1918. Supplement No. 10 dealt with telegraphers and agent telegraphers, and Supplement No. 11 dealt with agents whose regular assignments did not require the handling of train orders. So vigorous were the protests against the terms of these supplements, and the separation of agents and telegraphers by issuing two different supplements, that rehearings were granted in December, 1918, which resulted in the issuance on December 28, 1918, of Supplement No. 13 to General Order No. 27, superseding Supplement Nos. 10 and 11. Effective October 1, 1918, Supplement No. 13 established new rates of pay, with time and one-half for overtime, based on an eight-hour day for telegraphers, telephone operators (except switchboard operators), agents, agent-telegraphers, agent-telephoners, towermen, levermen, tower and train directors, block operators and staffmen.[28] Previously these employes were generally paid on a monthly basis, but this supplement put the employes affected on an hourly basis. By the terms of this supplement, the pay of the employes was increased 13 cents per hour, and, in addition, 2 cents per hour was added in lieu of vacations. The minimum rate established was 48 cents per hour. The hourly rate to which the increases were added was determined by multiplying by 12 the monthly rate in effect on January 1, 1918, prior to the application of General Order No. 27, dividing the product by 306 (number of days in the year less Sundays

[26] For rates of pay established by Supplement No. 8 to General Order No. 27, see Table III in the Appendix, p. 46.
[27] General Order No. 27, *op. cit.*, p. 88.
[28] *Ibid.*, p. 101.

and seven legal holidays), and dividing the quotient thus obtained by 8, the number of hours constituting the basic day established by the order. Somewhat similar formulas were provided for translating to an hourly basis the rates of employes paid on some other basis.

The provisions of Supplement No. 13 did not apply to: (1) Employes whose salaries were less than $30 per month, and whose service required only a portion of their time; (2) Agents whose compensation was on a commission basis; (3) Supervisory agents who did not perform routine office work; and (4) Agents at small non-telegraph stations, except where they were included in agreements. The Federal managers of the railroads were instructed to establish appropriate rates of pay for employes of these excepted classes.

Supplement Nos. 15, 16, 24 and 25.—As a result of hearings in October, 1918, conducted on the requests of the train and engine service organizations for increased wages and punitive rates for overtime, and subsequent conferences between the Director General and the brotherhood chiefs, Supplement Nos. 15 and 16 were issued on April 10, 1919, effective as of January 1, 1919.[29] The increases in pay provided by these supplements were approximately the same as those granted other classes of employes,[30] but the question of punitive payments for overtime was held in abeyance pending further consideration, except in the case of employes in yard service for whom a rate of time and one-half for overtime was established. Subsequent conferences resulted in the issuance on December 5, 1919, of Supplement No. 24 to General Order No. 27, dealing with engineers and firemen, and of Supplement No. 25, dealing with conductors and trainmen.[31] Under these supplements time and one-half for overtime was established as of December 1, 1919, for employes in road freight service, and certain arbitraries and special allowance previously applicable between terminals, which conflicted with the payment of single time, were eliminated.

Other Supplements to General Order No. 27 Dealing with Wages.—A number of other supplements to General Order No. 27, dealing with rates of pay and overtime were issued effective January 1, 1919, covering the minor groups of employes. Supplement No. 14 covered police department employes; Supplement No. 17 covered sleeping and parlor car conductors and porters. Supplement No. 18 covered restaurant and dining car employes; and Supplement No. 19 covered express employes not otherwise provided for in previous orders. In addition, addenda to, as well as interpretations of wage orders were issued, but they were of minor importance and were

[29] *Ibid.*, pp. 121 and 129.
[30] For the rates of pay established by Supplement Nos. 15 and 16 to General Order No. 27, see Tables IV and V in the Appendix, pp. 47-48.
[31] General Order No. 27, *op. cit.*, pp. 335 and 375.

generally intended to adjust inequalities in increases which developed in the application of the principal wage orders.

The foregoing represents substantially the major changes which were made in the railroad wage structure by the Director General up to the early months of 1919.

Meanwhile, living costs had continued to rise, and, as admitted by the Director General, other industries were in most instances paying higher wages than those in effect on the railroads. To meet these conditions, the employes generally again insisted during the latter part of 1919 that a further increase in wages should be granted. The Railroad Administration took the position, however, that no further increases would be granted except where unequal treatment could be shown.

On August 25, 1919, the Director General, by direction of the President, granted the mechanical trades employes an increase of 4 cents an hour, because in the adjustment of the wages of the mechanical trades, they were not given the advantage of their former daily earnings in calculating the basic rate for an eight-hour day, as was done in the case of the other classes of employes. In addition, the wood freight car mechanics were raised to the level of steel freight car mechanics. Thus, a basic hourly rate of 72 cents was established for mechanics, and 67 cents for freight car mechanics. These rates were made effective May 1, 1919.[32]

On December 24, 1919, the President announced that the railroads would be returned to private control on March 1, 1920. On February 13, 1920, no action having been taken to grant an increase, the employe representatives laid their case personally before President Wilson. The President took the position that the short time which remained before the roads were to be returned to the managements precluded any satisfactory action, and assured the employes that he would take "such steps as will reassure them that their claims will be properly and promptly disposed of."[33] Thus, no further changes were made in the railroad wage structure by the Government, and the railroads were returned to their owners on March 1, 1920, following the enactment of the Transportation Act of 1920.

Before discussing changes in the railroad wage structure during the Railroad Labor Board period, some attention should be given to the level of earnings at the close of the Federal control period. The initial analysis of the actual earnings for railroad employes, as has been noted, showed that during the month of December, 1917, 51 per cent of all railroad employes received less than $75.00 a month.

[32] Emmart, *op. cit.*, pp. 60-62, 66, 67. For final adjustments under Federal control see Table I in the Appendix, p. 44.
[33] *Ibid.*, p. 284. Letter dated February 13, 1920, addressed jointly to the Chief Executives of the fifteen railroad labor organizations.

Substantiating the findings made by the Lane Commission, the Railroad Labor Board in one of its first surveys disclosed that the average daily earnings of all railroad employes during the month of December, 1917, were only $2.87 and the average monthly earnings were $77.93.[34]

The increases granted by the Director General raised the average daily compensation to $4.24 per day for the month of January, 1920, and the average monthly compensation to $115.82, representing a general increase of 48.6 per cent. Nevertheless, as pointed out by Director General Hines, the increase in railroad earnings, and as substantiated by other studies, failed to keep pace with the increase in the wage rates of other industries.[35]

The largest percentage increase in wages during the Railroad Administration period went to the stationary engineers, who were the lowest paid employes. In 1917 these employes were receiving $55.59 per month. In January, 1920, they were receiving $115.00 a month, representing an increase of 106.8 per cent.[36] This was in keeping with the policy recommended by the Lane Commission, of granting larger increases to the lower paid employes, which was adopted by the Railroad Administration.

Telegraphers, telephoners and station agents received an increase of 71.5 per cent from $67.57 per month in 1917 to $115.87 in January, 1920.[37]

Maintenance of way workers received a 53.1 per cent increase, from $54.92 per month in 1917 to $84.08 in January, 1920.[38]

Marine department employes, who with a monthly wage of $127.65 were considered among the higher paid of all railroad employes in 1917, received the smallest percentage increase—24.9 per cent.[39]

It is significant that the Director General, when acting on the recommendations of the Board of Railroad Wages and Working Conditions, followed almost exclusively the recommendations of the railroad management members as to the amount of increase in issuing the various wage orders.[40] The wage rates established during Federal control of the railways, therefore, cannot be criticised as excessive and in fact were far from adequate. Even operating officials concurred in the increases granted; President Willard of the Baltimore & Ohio, for example, expressed the opinion that the

[34] United States Railroad Labor Board, Wage Series *Report No. 1* (August, 1920), Table at p. 6.
[35] Report to the President by Walker D. Hines, Director General of Railroads, for the Fourteen Months Ended March 1, 1920 (Washington: Government Printing Office, 1921) pp. 18, 19.
[36] United States Railroad Labor Board, Wage Series, *Report No. 1*, Table at p. 6.
[37] *Ibid.*
[38] *Ibid.*
[39] *Ibid.*
[40] Statement of Hon. William G. McAdoo before Senate Committee on Interstate Commerce, 67th Congress, 2nd sess., *Hearings on Senate Resolution 23*, p. 1798.

increases in wages for labor as a whole were not too large.[41] When it is remembered that costs of production increased enormously in every line of industry during this period, it may be seriously questioned if private owners would not have found it necessary to increase wages as much as did the Government. According to Professor William James Cunningham, who served on the staff of the Director General and is an authority on the Federal operation of the railroads, it was doubtful ". . . whether the security-holders would have been in any better position on March 1, 1920, if private operation had continued throughout the war."[42]

RAILROAD LABOR BOARD DECISIONS, 1920-1922

The Transportation Act of 1920, which became law on February 28, 1920, provided for the creation of the Railroad Labor Board consisting of nine members, three representing the railroad managements, three representing the employes, and three representing the public. (Title III, Sec. 307) In addition it provided for the creation of by-partisan committees, or committees, to confer on pending matters. (Sec. 301)

The employes on the basis of President Wilson's representation, continued the prosecution of their claim for a general increase in wages, which the Railroad Administration during the last several months of its existence had refused to consider.

In accordance with the provisions of the Transportation Act, a committee composed of employe and railroad representatives was formed and an effort was made to come to some agreement on pending wage matters. Conferences were begun on March 10 and continued until April 1, 1920 but it developed that no settlement could be reached, so immediately after the Railroad Labor Board was organized on April 15, 1920, the matter was presented to it for determination. The controversy was received on April 16. The employes' requests were presented to the Board during the period from April 20 to May 17. The railroads' statement opposing the increase was concluded on May 26, and the Board, after six weeks of study rendered its decision on July 20, 1920.[43]

[41] "I do not recall hearing any railroad president criticize the administration because of increasing the wages of railroad employes as a class. I am sure all railroad managers recognized previous to Federal control that the wages paid railway employes, particularly in the latter part of 1917, because of the rapidly increasing cost of living, were lower than they fairly ought to have been even after such increases as were made during the year. I know I felt that way and so expressed myself. The fact that the Labor Board granted still further increases after the termination of Federal control would indicate that in the opinion of that board wages as a whole were not then too high." Statement of Mr. Daniel Willard, President, Baltimore & Ohio, *Ibid.*, p. 2044.

[42] W. J. Cunningham, "Railroads under Government Operation," *Quarterly Journal of Economics*, XXXVI (November, 1921), p. 204.

[43] Decision No. 2, *Decisions of the United States Railroad Labor Board* (1920), Vol. 1, p. 13.

Decision No. 2.—The full increases sought by the employes were not granted. As a matter of fact the increases granted amounted only to about 60 per cent of the amount asked. Finding, however, that the scale of wages paid railroad employes was substantially below that paid for similar work in outside industry, and recognizing the public necessity for the efficient operation of an essential industry, the Board granted increases ranging from 12.5 per cent for supervisory forces to 26.2 per cent for stationary engineers and firemen. The increases averaged about 22 per cent for all railroad employes. Decision No. 2 granted average increases in actual monthly wages, from $19.45 for maintenance of way employes to $39.45 for train service employes. The average monthly increase for all employes was $25.46. This brought the average monthly rate in effect just prior to the effective date of the decision ($115.82) up to $141.56.[44] Based on data compiled by the Interstate Commerce Commission, the average hourly earnings of all employes excluding executives, officials and staff assistants during the year ended June 30, 1921 were 70.4 cents.[45] The estimated increase in total compensation was $600,000,000.[46] The increases granted were retroactive to May 1, 1920.

The increases granted to the individual groups of employes by Decision No. 2 were briefly as follows:[47]

Clerical and Station Employes: office boys, messengers, etc., 5 cents per hour; common laborers, 8½ cents; freight handlers, 12 cents; janitors, elevator operators, watchmen, etc., 10 cents; supervisory clerks, storekeepers and foremen, station employes and clerks with one or more years' experience, 13 cents; clerks with less than one year's experience, 6½ cents.

Maintenance of Way Employes: mechanics' helpers, track laborers, drawbridge tenders, pumper engineers, watchmen, etc., 8½ cents; laborers employed in and around shops, etc., 10 cents; foremen and mechanics, 15 cents per hour.

Mechanical Trades Employes: car cleaners, 5 cents per hour; mechanics, helpers and apprentices, 13 cents per hour.

Telegraphers, Telephoners and Agents: agents at small non-telegraph stations, 5 cents per hour; all other employes, 10 cents per hour.

Engineers and Firemen: passenger, 8 mills per mile or 80 cents per day; freight, 1.04 cents per mile or $1.04 per day; yard, 18 cents per hour.

[44] Railroad Labor Board Wage Series, *Report No. 3*, (October, 1921) Table at p. 13.

[45] Basic data secured from Interstate Commerce Commission.

[46] Decision No. 2, *op. cit.*, p. 19.

[47] *Ibid.*, pp. 22-27. For the increases authorized by Decision No. 2 see Table VI in the Appendix, pp. 49-52. See also Table X, p. 62, Table XIV, p. 74, Table XV, p. 75, and Table XVI, pp. 76-77.

Conductors and Trainmen: passenger, 6.7 mills per mile or $1.00 per day; freight, 1.04 cents per mile or $1.04 per day; in yard service, foremen, $1.63 per day, helpers, $1.48, and switch tenders, $1.04 per day.

Stationary Engine (steam) and Boiler-Room Employes: water tenders and coal passers, 10 cents per hour; stationary engineers, firemen and oilers, 13 cents per hour.

Signal Department Employes: helpers, 10 cents per hour, foremen and maintainers, 13 cents per hour.

An increase was also granted to the marine service employes with the establishment of new monthly rates.

Express employes and employes of the short line railroads were not covered by Decision No. 2. However, on August 10 the Railroad Labor Board in Decision No. 3, granted an increase to the employes of the American Express Company of 16 cents an hour, and which was to be retroactive to May 1. The estimated cost of this increase was $30,000,000.[48] The Board, upon separate consideration, refused to apply Decision No. 2 to the short line roads.

Decision No. 4 granted an increase of $25 a month to lighter captains operating railroad barges in the New York Harbor,[49] and decision No. 5 granted an increase to the employes of the Bangor and Aroostook Railroad.[50]

Thus, as the result of a most searching review of the railroad wage structure, a series of wage awards were made which by 1920 established for the first time in the history of the industry a wage structure which was fairly well balanced with regard to the relation of the rates fixed for the various classes of employes, and consequently it forms the only basis on which subsequent wage adjustments can be accurately compared.

In July, 1920, the Interstate Commerce Commission authorized increases in railroad freight and passenger rates ranging from 25 per cent to 40 per cent to affect the additional expenses brought about by the wage increases, and higher prices.[51]

About this time, however, signs of a general reaction from the inflationary period became evident, and railroad management immediately turned its attention to means of reducing expenses. A substantial reduction in employment was immediately effected, and a number of railroads reduced wages straightway, some without even conferring with their employes, as was provided by the Transportation Act. Three cases were cited by the Labor Board for violating Decision No. 2, and were ordered to comply with that decision.[52]

[48] Decision No. 3, *Ibid.*, p. 29.
[49] Decision No. 4, *Ibid.*, p. 33.
[50] Decision No. 5, *Ibid.*, p. 35.
[51] 1920 Rate Increases (58, I. C. C. 220), in Wolf, *op. cit.*, p. 138.
[52] Alabama, Birmingham & Atlantic RR., Missouri and North Arkansas RR., and the Erie Railroad.

Decision No. 147—In the meantime, a general movement was inaugurated by the carriers for a reduction in basic wage rates, especially of unskilled labor. The objective in view was to eliminate the effect of the increase granted by Decision No. 2. A general hearing was held by the Railroad Labor Board from April 18, 1921, through May 16, 1921. On June 1, the Board handed down Decision No. 147, effective July 1, 1921, which ordered reductions in the existing wages based on Decision No. 2 of 12.2 per cent.[53] Maintenance of way employes' wages were reduced 17.5 per cent, which reduction practically eliminated the entire increase granted by Decision No. 2. It reduced their average monthly rate from $103.53, under Decision No. 2 to $85.43, which was slightly higher than the average monthly rate in effect at the end of Federal control. ($84.08)[54]

The average monthly rate of all employes was reduced by Decision No. 147 from $141.56 (existing under Decision No. 2) to $124.27. The reduction cut the total compensation of railway employes about $378,000,000.[55] The decision as originally handed down applied to 72 independent railroads. Subsequent to June 1 other roads not parties to the proceedings which resulted in Decision No. 147, appealed to the Board, and additional awards were made in the form of addenda to Decision No. 147, which extended the decrease to practically all railroad employes in the country.[56]

The reductions put into effect by Decision No. 147 for the various groups of employes were briefly as follows:[57]

Clerical and Station Employes: office boys, messengers, etc., 5 cents per hour; common laborers, 8½ cents; freight handlers, 6 cents; janitors, elevator operators, watchmen, etc., and station employes, 10 cents; supervisory clerks, storekeepers, foremen, and clerks with two or more years' experience, 6 cents; clerks with less than two years' experience, 13 cents per hour, and less than one year, 6½ cents per hour.

Maintenance of Way Employes: mechanics' helpers, 7½ cents per hour; track laborers, drawbridge tenders, pumper engineers, watchmen, etc., 8½ cents; laborers employed in and around shops and roundhouses, foremen and mechanics, 10 cents per hour.

Mechanical Trades Employes: For car cleaners the rate of wages

[53] Decision No. 147, *op. cit.*, (1921) Vol. II, p. 133.
[54] United States Railroad Labor Board, Wage Series *Report No. 3*, (October, 1921), Table at p. 13.
[55] *Ibid.*
[56] Addenda No. 1, handed down June 25, effective July 1, 1921; Addenda No. 2, handed down July 1, effective July 1, 1921; Addenda No. 3, handed down October 11, effective October 16, 1921; Addenda No. 4, handed down February 16, effective February 16, 1922.
[57] For the wage reductions authorized by Decision No. 147 and its addenda see Table VII in the Appendix, pp. 53-56. See also Table X, p. 62, Table XIV, p. 74, Table XV, p. 75, and Table XVII, pp. 78, 79.

was fixed by a differential of 2 cents per hour over regular track laborers at points employed; mechanics, helpers and apprentices, 8 cents per hour.

Telegraphers, Telephoners, and Agents: agents at small non-telegraph stations, 5 cents per hour; all other employes, 6 cents per hour.

Engineers and Firemen: passenger, 4.8 mills per mile, or 48 cents per day; freight, 6.4 mills per mile, or 64 cents per day; yard, 8 cents per hour, or 64 cents per day.

Conductors and Trainmen: passenger, 4 mills per mile, or 60 cents per day; freight 6.4 mills per mile, or 64 cents per day; yard, 8 cents per hour or 64 cents per day.

Stationary Engineers (steam) and Boiler-Room Employes: water tenders and coal passers, 6 cents per hour; stationary engineers, firemen and oilers, 8 cents per hour.

Signal Department Employes: helpers, 6 cents per hour; foremen and maintainers, 8 cents per hour.

The monthly rates of marine service employes were also reduced.

Neither the railroads nor the employes were satisfied with the decision. The carriers wanted the entire increase granted by Decision No. 2 wiped out, and the employes felt that no decrease had been warranted. Regional conferences were had between the railway labor executives and the management, and the employes requested that the basic wage rates be returned to the level in effect prior to Decision No. 147. The requests were refused, and a ballot was taken by the employes. Although the employes voted overwhelmingly to reject the Board's decision, the officers of the organizations did not authorize a suspension of work. The railroads, however, disregarded these developments and set themselves about to secure a further reduction in wages. On August 14, a suspension of work was authorized by the train and engine service organizations, the Switchmen's Union, and the Telegraphers, for October 30, 1921. When, however, the Board intervened an agreement was reached and the suspension of work cancelled.

The railroads, as has been noted, immediately began a movement for a further reduction in wage rates, following the 12 per cent reduction of July 1, 1921. On October 14, 1921, the employes were notified that the roads proposed a general reduction. The employes in turn proposed increases which would have restored the wage level to the point where it was prior to Decision No. 147.

Decision Nos. 1028, 1036 and 1074.—The matter was taken to the Railroad Labor Board. Hearings were held from March 7, until April 17, 1922. On May 28, Decision No. 1028 was handed down.[58] This

[58] Decision No. 1028, *op. cit.*, (1922) Vol. III, p. 383.

decision reduced the wages of maintenance of way employes. Decision No. 1036, issued on June 6, reduced the wages of the Mechanical Trades employes,[59] and Decision No. 1074, issued June 10, reduced the wages of clerical and station forces, stationary engine and boiler-room employes, signal-department employes, and other employes.[60] All of these decisions were made effective July 1, 1922.

Decision No. 1028 applying to maintenance of way employes put into effect a general reduction of 5 cents an hour. The wages, however, of track foremen, mechanics, and mechanics' helpers were reduced 3 cents, 4 cents and 1 cent per hour respectively. The Board admitted in its decision that the training and skill required, and the degree of responsibility to the public, distinguished the lower-paid railroad employes from common laborers in outside industries.

Decision No. 1036 reduced the wages of car cleaners 5 cents an hour and, with the exception of freight car mechanics, reduced the wages of mechanics and their helpers and apprentices 7 cents an hour. The wages of freight car mechanics were reduced 9 cents an hour.

Decision No. 1074 reduced the wages of stationary engine and boiler-room employes 2 cents an hour, clerical and station forces 3 and 4 cents an hour, and signal department employes 5 and 6 cents an hour. The rates of train dispatchers, dining car and restaurant employes and floating equipment employes were not reduced, nor were those of any of the train and engine service employes.[61]

In making the reduction in basic rates the Board pointed out that railroad reserves had declined seriously during 1921 and that the rail transportation facilities were badly in need of expansion. Denying, however, that the reduction in basic wage rates was intended to shift the burden of the cost of railway rehabilitation, improved service, and reduced rates, to the employes the Board concluded, "it is only patriotic common sense and justice that every citizen, including the railway employee, should cooperate in a cordial spirit, should bear and forbear, until the carriers are back on their feet." When that point is reached, it continued, "it will then be possible for the Railroad Labor Board to give increased consideration to all the intricate details incident to the scientific adjustment of the **living** and the **saving** wage, with enlarged freedom from the complications of the 'relevant circmstances' of the abnormal period which is now approaching its end."[62]

The reductions in wages brought about by the three decisions more than wiped out the increase in wages granted by Decision

[59] Decision No. 1036, *Ibid.*, p. 423.
[60] Decision No. 1074, *Ibid.*, p. 486.
[61] For the wage reductions authorized by Decision Nos. 1028, 1036 and 1074, see Table VIII in the Appendix, pp. 57-58.
[62] Decision No. 1074, *op. cit.*, p. 494.

No. 2 to the employes affected. The average hourly earnings of all railroad employes excluding officials declined to 59.8 cents.[63] It was estimated by the Board that the reduction in pay roll was about 5 per cent resulting in a saving to the railroads of approximately $135,000,000 annually.[64]

While the subject of wages was under consideration by the Labor Board, the Interstate Commerce Commission, on May 16, 1922, issued an order reducing freight rates approximately 10 per cent from the level existing after the increases in August, 1920.[65]

The wage reductions effected by the Labor Board, together with other factors, resulted in a suspension of work by the Mechanical Trades in 1922. The unsatisfactory functioning of the Board, the flouting of its decisions by railway managements, its policies in connection with the suspension of work by the Mechanical Trades, and other factors had practically destroyed all respect for the Board by the end of 1922. From that time until the existence of the Board was terminated by the Railway Labor Act in 1926, it was practically ignored both by the railroad employes and the carriers, insofar as any major adjustment of wages was concerned.

Subsequent to Decisions Nos. 1028, 1036 and 1074, no further changes in the wage structure, either in the form of decreases or increases, of a substantial nature were ordered by the Labor Board. Some further adjustments were made with regard primarily to individual properties, following those decisions, but as a general proposition they had little effect upon the wage structure. As far as wages were concerned the Railroad Labor Board ended its career with the reductions of 1922.[66]

CHANGES IN RAILROAD WAGE STRUCTURE, 1923-1931

When it became generally evident to railroad employes that the Railroad Labor Board could no longer be relied upon as a medium for the adjustment of railroad wages, the employes turned to direct negotiations. During the period from 1923 until 1931, railroad wage rates were fixed by negotiation, mediation and arbitration, the two latter methods being brought into use with the enacment of the Railway Labor Act in 1926.

Generally speaking, the train and engine service organizations secured increases from 1923 until 1928 through regional negotiations and arbitrations. The other organizations sought increases through negotiation, mediation and arbitration on individual prop-

[63] Interstate Commerce Commission, *Statistics of Railways in the United States*, 1923, p. xxi.
[64] Emmart, *op. cit.*, p. 269.
[65] Emmart, *op. cit.*, p. 266.
[66] For summary of increases and decreases authorized by Decisions of the United States Railroad Labor Board see Table IX in the Appendix, pp. 59-61.

erties. The increases received by the Mechanical Trades on individual properties were generally applied. This was not true, however, of the increases received by other groups.

The train and engine service employes, who had not been affected by the 1922 wage decrease, during that year entered into direct negotiations with the managements concerning wages and working rules. On September 15, 1922, an agreement was entered into between the New York Central Railroad and the Order of Railway Conductors and the Brotherhood of Railroad Trainmen whereby the then existing rates of pay were to continue in effect until September 30, 1923, and thereafter, subject to thirty days notice by either party.[67] All questions as to wages and working conditions then before the Labor Board were to be withdrawn.

The train and engine service organizations signed a similar agreement with the Pennsylvania Railroad System and the Lehigh Valley. On October 3, the conductors, yardmen and trainmen, signed such an agreement with most of the important carriers in the West through the Conference Committee of Managers for the Western Region.[68] The same organizations on October 5 signed a similar agreement with the Southeastern Train Service Conference Committee.[69] By the end of the year this settlement was adopted on practically all railroads.

When the 1922 agreements were about to expire in the Fall of 1923, the train and engine service employes made plans for requesting an increase in wages which would restore the rates in effect under Decision No. 2.[70] The Conductors and Trainmen took steps to secure an increase which would raise the wage rates slightly higher than they were under Decision No. 2.[71]

Before noting in greater detail the major changes in the railroad wage structure during the period 1923-1931, some light may be thrown upon the general level of railroad wages as of the year 1923 by considering the findings of a special inquiry made by the Labor Board during that year into the earnings of train and engine service employes.

The investigation disclosed that in 1923, 16 per cent of that group (the so-called highest paid group of railroad workers) including locomotive engineers and conductors, earned less than $600 a year, and that approximately 25 per cent received less than $1200 a year. The Board found that about 30 per cent of the switchtender, hostler and hostler helper group made less than $600 a year; and

[67] See *Railway Conductors' Magazine*, XXXIX (October 19, 1922), p. 546 for memorandum of agreement.
[68] *Ibid.*, p. 592.
[69] *Ibid.*, p. 593.
[70] *Brotherhood of Locomotive Firemen & Enginemen Magazine*, LXXV (November, 1923), p. 195.
[71] *Ibid.*

41 per cent received under $1200 a year. Even those low earnings were reduced by periods of unemployment.[72]

It is little wonder then that these and the other classes of employes took steps to secure higher wages from 1923 to 1929.

Train and Engine Service Employes.—Rates were established by agreement on the New York Central Railroad early in 1924, which increased the basic daily rates of passenger engineers and firemen 24 cents, freight engineers and firemen 36 cents, yard engineers and firemen 32 cents, and hostlers and hostler helpers 32 cents. The increase granted to trainmen and conductors ranged from 30 to 36 cents per day. The average percentage increase for all of these classes of employes equaled 5 per cent.[73] This increase was applied generally on all railroads in the eastern and southeastern territory, and as the result of similar negotiations in the western territory it was applied on all railroads by the end of 1924.[74]

During June 1926, the train service employes of the eastern railroads, through their organizations, i.e. the Order of Railway Conductors and the Brotherhood of Railroad Trainmen, filed a request and entered into negotiations for wage increases ranging from one dollar ($1.00) per day for brakemen to one dollar and five cents ($1.05), one dollar and eighteen cents ($1.18), one dollar and thirty cents ($1.30), and one dollar and thirty-four cents ($1.34) for freight and passenger conductors and other employes.

Both negotiations and the efforts of the United States Board of Mediation failed to bring about a settlement, so the dispute was referred to a Board of Arbitration, which granted increases equaling 7½ per cent over rates in effect on November 30, 1926.[75] These increases, which were made effective as of December 1, 1926, increased the wage rates of employes affected from 35 to 50 cents per basic day over the rates established by negotiation during the year 1924.

Early in January 1927, the conductors and trainmen began negotiations with representatives of the southeastern railroads, and through the mediatory efforts of the Board of Mediation, an agreement was reached on February 7, 1927, providing for an increase in wages of 7½ per cent, the same as was granted to employes in the eastern territory, effective February 1, 1927.[76]

Following the settlement in the southeastern territory, the conductors and trainmen met with representatives of the western railroads late in February, 1927. Failure to agree resulted in the appointment of a Board of Arbitration, which on June 25, 1927, granted an increase in wages of 7½ per cent to yardmen, but denied any increase to employes in road service.[77] As a result of further negotiation, the carriers agreed to grant the roadmen the same increase, provided they would agree to a revision of certain rules. This they refused to do. A strike vote was taken, and an Emergency Board appointed by the President in accordance with Section 10 of the Railway Labor Act. In its report to the President the Board recommended three bases of settlement. These were considered by the employes, and late in November, they agreed to accept a 6½ per cent increase in wages without a change in rules, effective May 1, 1928.[78]

Early in 1926 the firemen, hostlers and helpers on the eastern roads requested wage increases over their 1924 rates ranging from one dollar ($1.00) to one dollar and twenty-five cents ($1.25) per day. Agreement was reached early in February, 1927, through the efforts of the Board of Mediation.[79] The increases agreed upon became effective February 1, 1927, and ranged from 34 to 43 cents per day for passenger firemen, 38 to 49 cents per day for freight firemen and helpers, and 40 to 50 cents per day for firemen in yard service, while outside hostlers received an increase of 44 cents, inside hostlers 40 cents and hostler helpers 35 cents per day. The average increase was 7½ per cent, the same as previously granted to the conductors and trainmen in the eastern territory.[80]

The firemen next conferred with representatives of the railroads in the southeastern territory in March, 1927, but failed to reach an agreement. Arbitration was agreed to, however, and by the award handed down on June 16, 1927, the employes involved received an increase of 35 to 40 cents per day, which was made retroactive to May 1, 1927.[81] This award was made on a daily basis, and therefore averaged only 7 per cent as compared to the flat 7½ per cent increase granted in the eastern territory.

Early in July 1927, the firemen opened negotiations with the representatives of the western railroads. Arbitration was agreed upon, as the result of mediation, and on December 17, 1927, an award was made, effective as of August 1, 1927, according to the terms of the arbitration agreement, granting an increase of 35 cents per day to all employes involved except firemen in road passenger

[72] U. S. Railroad Labor Board Wage Series, *Report No. 5*, (Apr. 1926), pp. 23 and 26. See also, Federal Coordinator of Transportation, *Annual Earnings of Railroad Employes, 1924-1933* (Wash., D. C., May, 1935), p. 23.
[73] *Brotherhood of Locomotive Firemen & Enginemen Magazine*, Vol. LXXVI (Mar. 1924), p. 279.
[74] *Ibid.*, LXXVIII (June 1925), p. 507. For new rates established see Tables XIV, p. 74, XV p. 75 and Table XVIII, p. 80-81 in Appendix.
[75] *Annual Report of the United States Board of Mediation for fiscal year ended June 30, 1927* (Wash: Government Printing Office, 1927), p. 36. For new rates established see Table XIV, p. 74 in Appendix.
[76] *Railway Age*, Vol. 82 (February 12, 1927), p. 473.

[77] *Annual Report of the United States Board of Mediation, 1927*, p. 45.
[78] *Ibid.*, 1929, p. 28. For new rates established see Table XV, p. 75 in Appendix.
[79] *Railway Age*, Vol. 82 (Feb. 12, 1927), pp. 472, 473.
[80] For new rates established see Table XIX, pp. 82-83 in Appendix.
[81] *Annual Report of U. S. Board of Mediation, 1927*, p. 46. For new rates established see Table XIX, pp. 82-83 in Appendix.

service who received 30 cents per day.[82] The carriers protested, and appealed to the courts, but the award was sustained.[83]

Subsequently the locomotive engineers inaugurated a movement for an increase in wages. Through negotiation and mediation on the eastern roads, they were successful in securing, effective August 1, 1927, the same percentage increase of 7½ per cent previously awarded the other engine and train service employes.[84] This award increased the basic daily wage rates of passenger engineers in amounts ranging from 46 to 54 cents, freight engineers from 51 to 66 cents and yard engineers in amounts ranging from 50 cents to $1.38.

In the southeastern territory, a Board of Arbitration on February 4, 1928 granted the locomotive engineers an increase of 6½ per cent, which was made effective September 1, 1927, as provided in the arbitration agreement.[85]

Negotiations with the representatives of the western railroads culminated in an agreement to arbitrate, but before the neutral arbitrators could be selected, negotiations were resumed, and an agreement was reached providing for an increase in wages of 6½ per cent effective May 1, 1928.[86] This completed the wage movement of the train and engine service employes.

Mechanical Trades Employes.—Minor adjustments were made in the Mechanical Trades' rates in 1923-24, and 1926, which increased their rates 2 cents an hour or 16 cents per day, and 3 cents an hour or 24 cents a day in each case respectively. Time and one-half for all work performed on Sundays and holidays was granted on many roads during this period, and where this was not done, an additional increase of 1 cent per hour was added. These two increases totaling 6 cents per hour or 48 cents per day (or its equivalent of 5 cents an hour or 40 cents per day with the overtime rule) represent the extent of the wage rate progress which the Mechanical Trades were able to achieve up until the New York Central arbitration of 1928-29.

Proceedings in the latter case were begun on November 22, 1928, and after hearings lasting almost two months, an award was handed down by the Board of Arbitration, on January 18, 1929, granting the Mechanical Trades an increase of 5 cents an hour or 40 cents per day, while coach cleaners received 2 cents an hour or 16 cents per day, effective February 1, 1929.[87]

As a result of the above award, similar increases were granted

[82] *Ibid.*, 1928, p. 50. For new rates established see Table XIX, pp. 82-83 in Appendix.
[83] *Railway Age*, Vol. 84 (June 2, 1928), p. 1303, also (June 9, 1928), p. 1349.
[84] *Ibid.*, Vol. 83 (Aug. 6, 1927) p. 272. For new rates established see Table XIX, pp. 82-83 in Appendix.
[85] *Annual Report of U. S. Board of Mediation*, 1928, p. 52. For new rates established see Table XIX, pp. 82-83 in Appendix.
[86] *Railway Age*, Vol. 84 (June 23, 1928), p. 1460. For new rates established see Table XIX, pp. 82-83 in Appendix.
[87] *Annual Report of U. S. Board of Mediation*, 1929, pp. 22-23.

to these employes, either by agreement or voluntarily by the management, on practically all other roads except the Southern Railway with whom it became necessary to arbitrate again. The award handed down on June 18, 1929 provided for similar increases on this road except that an additional increase of 1 cent an hour was granted to freight carmen and the helpers of all crafts, making the increase for these employes 6 cents an hour or 48 cents per day. The increase was made effective March 1, 1929.[88]

Clerical and Station Employes.—The wage increases received by employes of the Clerical Group, i.e. those within the jurisdiction of the Brotherhood of Railway and Steamship Clerks, during the period 1922-1931, resulted from negotiation, mediation and arbitration on individual properties, with the exception of two small increases which were granted by the Railroad Labor Board to a portion of the employes in this group and applied on a considerable number of railroads.

An increase of 2 cents per hour was granted by the Labor Board on February 21, 1923, to the freight handlers, and common laborers in and around stations, storehouses and warehouses, on a substantial number of roads by Decision No. 1621, which became effective on March 1, 1923. An increase for the other classes of employes in this group who were in the great majority was denied. It was the intent of the Board to give consideration only to the lowest paid employes.[89]

On October 19, 1923, the United States Railroad Labor Board rendered a decision, affecting the clerical and station forces on a number of railroads, granting an increase of 1 to 2 cents an hour, effective October 16, 1923.[90] The Longshoremen were also covered by this decision. Later, this decision was applied to a number of additional railroads by Decision No. 2776, rendered by the Railroad Labor Board on January 16, 1925.[91]

Meanwhile, on a few railroads not covered by the foregoing decisions of the Railroad Labor Board, slight increases were negotiated, while on others no increase was granted.

Thus, from 1923 to 1925 an increase of from 1 to 2 cents an hour was applied quite generally to the clerical and station forces on all but a few railroads in the United States.

During the years 1926, 1927 and 1928 the increases received came about through negotiation, mediation or arbitration, the latter two under the Railway Labor Act, and averaged slightly higher in amount, but in very few cases exceeded 4 cents an hour. The prin-

[88] *Ibid.*, p. 27. For a summary of the development of the wage structure of the Mechanical Trades see Table X in the Appendix, p. 62.
[89] Decision No. 1621, *op. cit.*, Vol. IV, p. 116.
[90] Decision No. 1986, *Ibid.*, p. 681.
[91] Decision No. 2776, *Ibid.*, Vol. VI, p. 4.

cipal exception was the Southern Pacific Railroad (Pacific Lines) where, as the result of arbitration, a general increase of 5 cents an hour was granted to all but chief clerks and supervisory foremen, who received 3 cents an hour, and train and engine crew callers, and the office and office building attendant group (Sec. 5) who received 2 cents an hour.[92] An additional increase of 2 cents per hour was granted (1) to adjust the baggage and mail handlers' rates up to the rate for freight handlers, and (2) to reestablish the differential of 5 cents an hour which existed between the freight platform differential groups and freight handlers prior to the issuance of Supplement No. 7 to General Order No. 27. These increases became effective on January 1, 1927, and were also applied by agreement to the Northwestern Pacific and the Western Pacific Railroads, effective the same date. An increase of 4 to 5 cents an hour was granted effective March 4, 1927, as the result of arbitration on the Boston and Maine,[93] while on the Texas and Pacific 2¼ to 5 cents per hour was secured through mediation, effective March 15, 1929. These were the exception rather than the rule, however.

During the Spring of 1929, a general movement for a 15 per cent increase in wages was initiated by the Brotherhood of Railway and Steamship Clerks, but was abandoned later in the year because of the depression.

A list of the wage increases granted clerical employes from 1923 (Decision 1986) to 1930 is included in Table XI in the Appendix (pp. 63-65).

Railroad Telegraphers.—From 1923 to 1926 the railroad telegraphers were involved in a series of eight decisions handed down by the Railroad Labor Board affecting small groups of railroads (about thirty in all), as the result of which they received increases in pay ranging from 2 to 4 cents an hour with a few exceptions.[94] During this period increases similar to those granted by the Railroad Labor Board were also established on a few additional railroads through negotiation. These increases were granted by the Board on the basis of two principal conclusions, "First, that no general increase in rates of pay of this class of employes on all carriers should be made at this time; and, secondly, that certain of the inequalities alleged by the employes to exist do in fact prevail."[95] In other words, the increases were granted primarily to adjust inequalities as between comparable railroads and as between com-

[92] *Annual Report of the Board of Mediation* (1927), p. 41.
[93] *Ibid.*, p. 39.
[94] Chicago Great Western, 5 cents per hour (Dec. 2025), Terminal Railroad Association of St. Louis, 5 cents per hour (Dec. 3434), Delaware & Hudson R. R., 1 cent per hour (Dec. 2557) in addition to 3 cents per hour received through negotiation, Missouri-Kansas-Texas Lines, 1 cent, (Dec. 2557), Denver & Rio Grande Western, 1 cent (Dec. 2686), and Savannah Union Station, 6 cents (Dec. 3767).
[95] Decision 2025, *op. cit.*, Vol. IV, p. 741.

parable positions on the same railroad, while the request of the employes for a general increase in wages was denied. Moreover, no increase was granted to the agents at small non-telegraphic stations.

Following the enactment of the Railway Labor Act in 1926 a movement was inaugurated by the telegraphers on practically all railroads in the United States for a general increase in wages. Through negotiation, mediation and occasionally through arbitration, increases were secured ranging from 1½ to 4 cents per hour on substantially all railroads by 1930. On a few railroads slightly larger increases were secured.[96]

In addition to the foregoing, an adjustment was made on a few eastern railroads to compensate for the shortening of the work-week. On the New York Central Railroad, an arbitration board, by an award handed down on April 28, 1928, granted an increase of 3.3 cents per hour, and reduced the work-week from seven to six days, effective May 16, 1928.[97] This decision embraced the subsidiaries of the New York Central Railroad, and was also applied by agreement to the Pittsburgh & Lake Erie Railroad and the Cincinnati Union Terminal. Although this adjustment increased the hourly rate, the amount granted did not compensate for the loss in weekly pay occasioned by reducing the number of days from seven to six per week.

An adjustment somewhat similar to that applied on the New York Central Lines was secured on a number of other railroads. As the result of an arbitration on the Grand Central Terminal 66 relief days were granted annually without a reduction in pay. The award was made effective March 15, 1928.[98] On the Washington Terminal an Arbitration Board granted an increase of 2 cents per hour and 26 relief days annually with pay, by an award handed down on October 1, 1927, effective the same date.[99] Through negotiation the same number of relief days with pay was secured on the Boston Terminal and on the Pennsylvania Railroad and the Reading Railroad, 24 relief days annually were granted, 12 of which were with pay.

It should be pointed out, however, that the granting of relief days has been confined almost entirely to these few eastern carriers.

A list of the increases received by the telegraphers on the individual railroads during the period 1923-1930 is included in Table XII in the Appendix (pp. 66-69).

[96] Chicago & Illinois Midland, 5 cents per hour; Chicago & Western Indiana, 4½ cents; Cincinnati Union Terminal, 5 cents; Green Bay & Western, 5 cents; Savannah Union Station, 6 cents; and Utah Railway, 6 cents.
[97] *Annual Report of the Board of Mediation* (1928), p. 47.
[98] *Ibid.*, p. 45.
[99] *Ibid.*, p. 43.

Railroad Signalmen.—The railroad signalmen did not receive any increase in wages from the Railroad Labor Board after the reduction put into effect by Decision No. 1074, on July 1, 1922, although an adjustment was made by Decision No. 1538, effective February 1, 1923, whereby a minimum rate of 72 cents an hour was established for signal maintainers on a large number of railroads.[100] The intent of the Board was to bring the rates of these employes who were below, up to this level, in order to eliminate inequalities, but the request of the employes for an increase in wages was denied.

Through negotiation, the railroad signalmen received increases of about 3 cents an hour on nearly all roads in the eastern territory in 1923 and 1924. Other increases were received in the eastern territory in 1927 and again in 1929, making a total increase in the eastern territory between 1922 and 1930 of 10 and 11 cents an hour. In the southeastern territory the increases received were somewhat less, totaling 8 cents an hour during the same period. In the western territory no increase was received from 1922 to 1927. During the latter year an increase of 3 cents an hour was made effective generally, and early in 1929, an additional increase of 3 cents an hour was received. The total increase in the western territory between 1922 and 1930 averaged 6 cents an hour.

A list of the increases in wage rates secured by the signalmen on various railroads from 1922 to 1930 is included in Table XIII in the Appendix (pp. 70-73).

Maintenance of Way Employes.—Following the issuance of Decision No. 1028 by the Railroad Labor Board, effective July 1, 1922, no nation-wide decision or agreement was promulgated changing the wages of all maintenance of way employes. The Board, however, did render one decision, national in scope, effective October 16, 1922, granting an increase of 2 cents an hour to some of the lower paid maintenance of way classes.[101]

Since 1922, the wages of maintenance of way employes have been dealt with primarily through negotiation on the individual railroads. After 1926, wage adjustments were made on a few railroads through arbitration under the Railway Labor Act. For example, on the Louisville & Nashville Railroad, an arbitration board awarded an increase of 1 to 3 cents an hour to the maintenance of way employes, effective June 1, 1927.[102] On the Chicago & Northwestern Railroad, some classes of maintenance of way employes received an increase of from ½ cent to 1½ cents effective August 16, 1927, by the award of an arbitration board.[103] In a number of other in-

[100] Decision No. 1538, *op. cit.*, Vol. IV, p. 2[illegible].
[101] Decision No. 1267, *Ibid.*, Vol. III, p. 76[illegible].
[102] *Annual Report of the U. S. Board of Mediation*, 1927, p. 42.
[103] *Ibid.*, 1928, p. 39.

stances, adjustments were made through mediation. In any event, the increases granted to the maintenance of way employes during this period were by no means substantial, and in fact very nominal.

The wage changes of maintenance of way employes are extremely difficult to record, because they have been made at different times and in different amounts, even for the same kind of work on the same railroad. However, two studies are available, which indicate, in some measure, the status of wage rates of maintenance of way employes.

In April, 1926, the Railroad Labor Board published a study on average wage rates of railroad employes for selected years. The following tabulation, extracted from that report shows the average basic rates of the various classes of maintenance of way employes from May 1, 1920 to December 1, 1925.[104]

MAINTENANCE OF WAY AND UNSKILLED LABOR

Occupation		Average Daily (d), Weekly (w) or Monthly (m) Rates 5-1-20	7-1-21	12-1-23	12-1-25
SECTION 1—Bridge, building, painter, construction, mason and concrete, water-supply, and plumber foremen (except water-supply and plumber foremen coming under the provisions of Section 1 of Article IV, Decision No. 147)	(d)	$6.464	$5.664	$5.737	$5.625
	(m)	184.60	164.20	168.00	164.71
SECTION 2—Assistant Bridge, building, painter, construction, mason and concrete, water-supply, and plumber foremen, and coal wharf, coal chute, and fence-gang foremen, pile-driver, ditching and hoisting engineers and bridge inspectors (except assistant water supply and plumber foremen coming under the provisions of Section 1 of Article IV, Decision No. 147)	(d)	$6.328	$5.528	$5.332	$5.281
	(m)	168.60	148.20	148.00	146.58
SECTION 3—Section, track and maintenance foremen, and assistant section, track and maintenance foremen.	(d)	$5.052	$4.252	$4.464	$4.397
	(m)	135.60	115.20	121.00	119.19
SECTION 4—Mechanics in the maintenance of way and bridge and building departments (except those that come within the scope of agreements with the Federated Shop Crafts).	(d)	$5.704	$4.904	$4.832	$4.861
SECTION 5—Mechanics' helpers in the maintenance of way and bridge and building departments (except those that come within the scope of agreements with the Federated Shop Crafts).	(d)	$4.456	$3.856	$3.84	$3.859

[104] Railroad Labor Board Wage Series, *Report No. 5* (April, 1926), p. 13.

		Average Daily (d), Weekly (w) or Monthly (m) Rates			
		5-1-20	7-1-21	12-1-23	12-1-25
SECTION 6—Track Laborers and all common laborers in the maintenance of way department and in and around shops and roundhouses.	(d)	$3.624	$2.944	$2.824	$2.843
SECTION 7—Drawbridge Tenders and assistants, pile-driver, ditching, and hoisting firemen, pumper engineers and pumpers, crossing watchmen or flagmen, and lamp lighters and tenders.	(d)	$3.401	$2.721	$2.720	$2.722
	(w)	25.75	21.67	26.55	26.57
	(m)	95.34	78.00	77.00	77.07

It will be observed that the wage rates of these employes in 1925 were considerably below what they were in 1920. The average daily wage rates of track foremen declined from $5.052 to $4.397, or 11.3 per cent; the wage rates of mechanics dropped from $5.704 to $4.861 or 14.8 per cent. Track laborers received $3.624 per day in 1920, and only $2.843 in 1925, which is a reduction of 21.6 per cent.

After 1925, some slight increases were granted on individual railroads, as has already been indicated, but that the rates of maintenance of way employes were still very low in 1928 and 1929, when the so-called "peaks" in business were being attained, is indicated in a representative study of maintenance of way employes made by the Children's Bureau, of the United States Department of Labor in 1928. This survey disclosed that 34 per cent of the total number of trackmen interviewed (500) received less than $750 a year, and 79 per cent received less than $1,000 a year.[105]

Thus, from 1923 to 1929, a period of unprecedented prosperity for the railroads, the adjustments which were made in the wages of all employes were very nominal, so that the wage rates of most employes were still below what they were under Decision No. 2, rendered by the Railroad Labor Board in 1920. The average hourly earnings of all railroad employes excluding officials in 1929 were 65.1 cents, as compared with 70.4 cents for the year ended June 30, 1921.[106]

TEN PER CENT WAGE DEDUCTION, 1932-1935

No changes of any importance, either in the form of increases or decreases were made in the railroad wage structure between the Fall of 1929 and January 1932. During 1930 and 1931 a few increases were granted on individual properties and some decreases were effected, but these changes were negligible in number as well as in effect.

The next fundamental change in the railroad wage structure resulted from the 10 per cent deduction of 1932. On January 31, 1932

[105] Helen Russell Wright, *Welfare of Children of Maintenance of Way Employes*, Children's Bureau, U. S. Department of Labor, Washington, D. C., 1932.
[106] Interstate Commerce Commission, *Statistics of Railways in the United States, 1929*, p. xxxvi.

the chief executives of the 21 standard railway labor organizations in conference with the "Willard Committee", representing practically all of the important railroads of the United States, agreed to a 10 per cent deduction from the pay check of each railroad employe represented, for a period of one year commencing February 1, 1932. This agreement was the outcome of the first national wage conference ever held in the country between representatives of all of the 21 standard railway labor organizations and management officials speaking for practically the entire operated mileage.

Basic rates were not affected by the agreement, which was extended on December 21, 1932 for a period of nine months, to October 31, 1933, and subsequently for a further period of eight months to June 30, 1934.

On April 26, 1934, another agreement was signed between the Railroad Conference Committee of Managers and the Committee of Executives of the 21 standard organizations, providing for the complete restoration of the 10 per cent deduction over a period of nine months; 2½ per cent to be restored on July 1, 1934; another 2½ per cent on January 1, 1935; and the remaining 5 per cent on April 1, 1935. Thus on April 1, 1935 the basic rates in effect as of January, 1932, the same rates which were in effect in 1929, again became fully operative.

During this period a number of studies were made by the Federal Coordinator of Transportation and other governmental agencies into the wages and earnings of railroad workers.

The low level of the actual earnings of railroad employes during 1932, was disclosed in a report made by the Department of Labor on the actual earnings and standard of living of 1,000 railroad workers.[107] The report concluded:

> The earnings in 1932 of the 980 men studied were startlingly low. Thirty-eight per cent had made less than $1,000, and two-thirds less than $1,500. One hundred and two men earned as little as $500, and only 18 per cent as much as $1,750.[108]

The report pointed out that only 60 out of the 980 workers were able to find outside employment of any kind to supplement the railroad wages which generally were less than $100 a month.[109]

The Federal Coordinator of Transportation in two investigations into the actual earnings of railroad employes, which were far more comprehensive than the earlier surveys, made practically the same findings. A report on **Annual Earnings of Railroad Employes, 1924-1933**, showed that the average earnings of railroad employes

[107] United States Department of Labor, *Earnings and Standard of Living of 1,000 Railway Employes During the Depression*, prepared by Carter Goodrich (Washington, D. C., Government Printing Office, 1934).
[108] *Ibid.*, p. 12.
[109] *Ibid.*, p. 14.

declined more than 24 per cent between 1929 and 1933.[110] The report states:

> Shop employees and others engaged in maintenance of equipment and stores had their earnings reduced more sharply by the depression than any other occupational group. On the average, the annual earnings of employees in this group declined by nearly one-third from 1929 to 1933. Employees in train, engine and yard service received 20 to 24 per cent less in 1933 than in 1929. Those engaged in transportation service other than train, engine and yard received nearly 20 per cent less in 1933 than in 1929, and executives and assistants and employees in the clerical group, 13 per cent less.

The actual earnings records of the railroads studied indicated that all the employes of Class I railroads, excluding executives, and staff assistants received an average annual wage of $1,225 for 1933, or about $100 a month.[111]

Another investigation into the actual earnings of railroad employes conducted by the Federal Coordinator of Transportation disclosed that as of November, 1933, more than 155,000 railroad workers—14 per cent of all railroad employes—were actually receiving 35 cents an hour or less for their labor.[112]

This investigation showed that even after the 10 per cent deduction of 1932 had been restored in 1935, more than 117,000 employes —about 10 per cent of all railroad workers—were still receiving 35 cents an hour or less.[113]

Referring to these facts the Coordinator concluded:

> It is true that the railroad industry is faced with extremely difficult financial problems. At the same time it should not pay wages which are less than the minimum standards required of other industries. For it to continue to do so will certainly not be in the public interest, and will in the end adversely affect the railroads concerned themselves. Underpaid and exploited workers are no asset to the industry which employs them, nor to the communities in which they live. They are poor producers, poor consumers, and poor contributors to the well-being of such communities.[114]

WAGE ADJUSTMENTS SINCE 1935

With the improvement in business conditions, and the granting of substantial wage increases to the employes in numerous other industries, a national movement for an increase in wages was begun early in 1937 by the organizations representing the railroad workers. Not only were wages considerably higher in other industries, but the productive efficiency of the railroad workers had greatly increased making an increase in wages necessary.

Formal notice for an increase in wages of 20 cents an hour, a guarantee of full-time compensation for all regular assigned forces

[110] Federal Coordinator of Transportation, *Annual Earnings of Railroad Employes, 1924-1933* (Washington, D. C., May, 1935), p. 10.
[111] *Ibid.*, p. 6.
[112] Federal Coordinator of Transportation, *The Extent of Low Wages and Long Hours in the Railroad Industry* (Washington, D. C., November, 1936), p. xv.
[113] *Ibid.*
[114] *Annual Earnings of Railroad Employes*, p. 25.

and two-thirds of full-time compensation for all stand-by forces was served on the railroad managements on March 4, 1937 by the organizations representing all railroad employes except those in train and engine service.[115] As the result of extended negotiations and the mediatory efforts of the National Mediation Board, an agreement was reached on August 4, 1937 providing for an increase in wages of 5 cents an hour effective August 1, 1937. On the question of guarantees of compensation, it was agreed that share-the-work practices, however established, would be terminated on the request of the General Chairmen, although such requests would not be made before September 1, 1937. This was intended to bring about regular employment and full time compensation.

Meanwhile, the organizations representing the train and engine service employes served notice on the railroads on March 22, 1937 for an increase in wages of 20 per cent to become effective May 1, 1937. As the result of negotiation and mediation, an agreement was reached on October 3, 1937, providing for an increase in wages of 44 cents a day effective October 1, 1937.

Thus, voluntary agreements were entered into during the latter part of 1937 which increased the wage rates of substantially all railroad employes approximately 5 cents an hour.

Average hourly earnings of all railroad workers excluding officials, based on data compiled by the Interstate Commerce Commission, were 69.2 cents in 1937 and in 1938, 72.9 cents[116] or only 2.5 cents higher than they were under Decision No. 2, rendered by the Railroad Labor Board in 1920.

With the enactment of the Fair Labor Standards Act of 1938, a statutory minimum wage rate of 25 cents an hour became effective on October 24, 1938, and by operation of the law this was increased to 30 cents an hour a year later.[117]

On August 15, 1940, the Railroad Industry Committee, which was appointed in accordance with the Act, recommended minimum wage rates of 36 cents an hour for the trunk line railroads and 33 cents an hour for the short lines. After holding public hearings on these recommendations, the Wage and Hour Administrator found that they were made in accordance with the law and the evidence taken at the hearings conducted by the Industry Committee, and accordingly issued an order placing the recommendations into effect on March 1, 1941.

[115] The organizations representing the train dispatchers and pullman car conductors did not participate in the wage movement. The pullman conductors' agreement had not as yet expired, while the train dispatchers were seeking a six hour day without a reduction in compensation.
[116] Interstate Commerce Commission, *Statistics of Railways in the United States*, 1937, p. S-39, and 1938, p. S-56.
[117] S.2475, 75th Cong., 3rd sess.

Meanwhile, on May 12, 1938, the railroads served notice on the organizations with whom they had agreements of their intention to reduce rates of pay 15 per cent on July 1, 1938. After preliminary negotiations it was agreed that the matter should be handled in national conferences between the Carriers' Joint Conference Committee, and the chief executives of the standard railway labor organizations representing substantially all of the railroads and employes, respectively, in the United States.[118] Negotiations failed to produce a settlement, and the carriers invoked the services of the National Mediation Board, as provided by the Railway Labor Act. The mediatory efforts of the Board also failed to bring about a settlement of the dispute, with the result that the carriers advised their respective employes that the notices would be put into effect on October 1, 1938. Following a ballot among the employes, a suspension of work was ordered to take place on September 30th, which threatened substantially to interrupt interstate commerce, so in accordance with Section 10 of the Railway Labor Act, the President of the United States on September 27th appointed an Emergency Board composed of Walter P. Stacey, Chairman, Harry A. Millis and James M. Landis to investigate and report respecting the dispute.

Extensive hearings were conducted by the Emergency Board, in which the representatives of the railroads and the organizations participated, and on October 29, 1938, the Board submitted its report to the President in which it concluded that "no horizontal reduction upon a national scale of the wages of railway labor should be pressed by the carriers at this time." With reference to railroad wages, which the Board declared to be the sole issue in the proceeding, the following comment was made in the report:

> Examination of the data above detailed leads us consequently to the conclusion that the level of wages of railway labor is not high when compared with wage levels in other industries. Nor do wage trends show that railway wages have advanced proportionately greater than wages in other industries. Instead they seem to show a slight lag, though, on the other hand, they show greater resistance to decline than wages in other industries. Furthermore, no justification arises for a wage reduction from the current wage situation in other industries. There, no general movement to reduce wages has made its appearance. These considerations lead us to the conclusion that the carriers' proposal can derive no sustenance from the contention that railway wages as a whole are too high.[119]

[118] Eighteen organizations were represented on the committee representing the employes; separate negotiations on a national basis were also conducted with the Brotherhood of Railroad Trainmen.

[119] Report of the Emergency Board to the President, Appointed September 27, 1938, under section 10 of the Railway Labor Act, in re Atchison, Topeka & Santa Fe Railway and other Class I Railroads, Common Carriers, engaged in interstate commerce, and certain of their employees represented by Committee of Eighteen Cooperating Labor Organizations and the Brotherhood of Railroad Trainmen, Washington, D. C., October 29, 1938, p. 54.

On November 4, 1938, the railroads advised the President that the notices for a 15 per cent wage reduction would be withdrawn.

In 1940, the average hourly earnings of all railroad workers excluding officials, based on data compiled by the Interstate Commerce Commission, were 73.3 cents, practically the same as they were in 1938.[120]

[120] Interstate Commerce Commission, *Wage Statistics*, Statement No. M-300, Annual Summary for 1940.

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APPENDIX

TABLE I.

RATES OF PAY ESTABLISHED FOR MECHANICAL TRADES EMPLOYES BY SUPPLEMENT No. 4 TO GENERAL ORDER No. 27, AND OTHER ADJUSTMENTS AUTHORIZED BY THE DIRECTOR GENERAL

Employes	Wage structure established by Supplement No. 4 dated July 25, 1918	Wage structure as modified by Amendment Addenda and Interpretations to Supplement No. 4[1]	Wage structure as established by final adjustments under Federal Control[2]
	Cents	*Cents*	*Cents*
JOURNEYMEN MECHANICS (Except Carmen):			
Machinists	68	68	72
Boilermakers	68	68	72
Blacksmiths	68	68	72
Sheet metal workers	68	68	72
Electricians	68[3]	68[3]	72
Electricians, linemen	58[4]	58[4]	68
Electricians, groundmen	58[4]	58[4]	62
Electricians, hoist and elevator operators	58[4]	58[4]	55
JOURNEYMEN MECHANICS, CARMEN:			
Cabinet makers, coach and locomotive carpenters, upholsterers, planing millmen, millwrights, patternmakers, passenger-train steel car body builders and repairers, airbrake, rackmen, coach and locomotive painters employed to perform varnishing, surfacing, lettering or decorating; silver and nickel platers and buffers	58	68	72
Freight train steel car body builders and repairers	58	63	67
All other carmen	58	58	67
HELPERS, ALL CRAFTS	45	45	49
REGULAR APPRENTICES:			
1st six months	25	25	29
2nd six months	27½	27½	31½
3rd six months	30	30	34
4th six months	32½	32½	36½
5th six months	35	35	39
6th six months	37½	37½	41½
7th six months	42½	42½	46½
Last six months	50	50	54
HELPER APPRENTICES:			
1st six months	45	45	49
2nd six months	47	47	51
3rd six months	49	49	53
4th six months	51	51	55
5th six months	53	53	57
Last six months	55	55	59
COACH CLEANERS	....	28 to 40	45

[1] Differentials equalling 2½ cents per hour were also established for such operations performed by the Journeymen Mechanics as flanging, laying out and locomotive boiler and machinery inspecting and for hammersmiths working out of heavy furnaces, frame fire blacksmiths and autogenous welders.

[2] A differential of 5 cents per hour above the minimum rate was established for autogenous welders, all crafts, and also for mechanics required to swear to federal locomotive inspection reports. A differential of 10 cents above the minimum rate per hour was established for hammersmiths and heavy fire heaters and 5 cents per hour for heavy fire blacksmiths, hammersmiths, hammer operators, and helpers working with hammersmiths.

[3] Electricians, 1st class.

[4] Electricians, 2nd class.

TABLE II.

RATES OF PAY ESTABLISHED FOR CLERICAL FORCES AND FOR CERTAIN EMPLOYES IN STATIONS, STORAGE OR TERMINAL WAREHOUSES, DOCKS, STOREHOUSES, SHOPS AND YARDS, BY SUPPLEMENT No. 7 TO GENERAL ORDER No. 27.

Employes	Rates of Pay: Minimum Hourly	Rates of Pay: Monthly
	Cents	*Dollars*
(a) Employes devoting majority of time to clerical work of any description, including train announcers, gatemen checkers, baggage and parcel room employes, train and engine callers, operators of office and station equipment devices	..	$ 87.50
(b) Office boys, messengers, chore boys, and other employes under 18 years of age filling similar positions, and station attendants	..	45.00
(c) For all other employes not otherwise classified such as janitors, elevator and telephone switchboard operators, office, station and warehouse watchmen	..	70.00
(d) Stationary engineers (steam)	..	110.00
(e) Stationary firemen and power house oilers	..	90.00
(f) Locomotive boilerwashers[1]	38	.....
(g) Transfer and turntable operators[2]	33	.....
(h) Laborers employed in and around shops, roundhouses, stations, storehouses and warehouses, such as engine watchmen and wipers, firebuilders, ashpit men, boiler washer helpers, flueborers, truckers, stowers, shippers, coal passers, coal chute men, etc.[3]	31	.....
(i) Common labor not otherwise provided for[4]	28	.....
(j) For all monthly, weekly or daily rated employes in the departments dealt with in Supplement No. 7 and not otherwise provided for, increase the rates in effect as of January 1, 1918, prior to the application of General Order No. 27 on the basis of	..	25.00

[1] Maximum 50 cents per hour.

[2] Maximum 45 cents per hour.

[3] Maximum 43 cents per hour.

[4] Maximum 40 cents per hour.

TABLE III.

RATES OF PAY ESTABLISHED FOR MAINTENANCE OF WAY EMPLOYES BY SUPPLEMENT No. 8 TO GENERAL ORDER No. 27.

Employes	Minimum Rates: Minimum Hourly	Minimum Rates: Monthly
	Cents	*Dollars*
(a) Foremen: building, bridge, painter, signal and construction, mason and concrete, water supply maintainer and plumber	..	$115
(b) Assistant foremen: building, bridge, painter, signal and construction, mason and concrete, water supply maintainer and plumbing; coal wharf, coal chute and fence gang foremen; pile driver, ditching and hoisting engineers and bridge inspectors	..	105
(c) Track foremen	..	100
(d) Assistant track foremen	5 cents above rates of laborers being supervised.	
(e) All mechanics in the maintenance of way and bridge and building departments not covered by Supplement No. 4	53	...
(f) All helpers for preceding mechanics	43	...
(g) Track laborers[1]	28	...
(h) Drawbridge tenders, and assistants, pile drivers, ditching and hoisting firemen, pumper engineers and pumpers, crossing watchmen or flagmen and lamplighters and tenders	add $25.00 to rate in effect as of Jan. 1, 1918.	
(i) For all monthly, weekly or daily rated employes in the maintenance of way department not otherwise provided for	Increase rates on basis of $25.00 per month.	

[1] Maximum 40 cents per hour.

TABLE IV.

RATES OF PAY ESTABLISHED FOR LOCOMOTIVE ENGINEERS, FIREMEN, HOSTLERS AND HELPERS, BY SUPPLEMENT No. 15 TO GENERAL ORDER No. 27.

PASSENGER SERVICE

Weight on Drivers	All Engineers		Firemen: Coal		Firemen: Oil		Helpers Electric	
	Per Mile	Per Day	Per Mile	Per Day	Per Mile	Per Day	Per Mile	Per Day
	Cents	*Dollars*	*Cents*	*Dollars*	*Cents*	*Dollars*	*Cents*	*Dollars*
Less than 80,000 lbs.	5.60	5.60	4.00	4.00	4.00	4.00	4.00	4.00
80,000 to 100,000 lbs.	5.60	5.60	4.08	4.08	4.00	4.00	4.00	4.00
100,000 to 140,000 lbs.	5.68	5.68	4.16	4.16	4.00	4.00	4.00	4.00
140,000 to 170,000 lbs.	5.76	5.76	4.32	4.32	4.16	4.16	4.00	4.00
170,000 to 200,000 lbs.	5.84	5.84	4.40	4.40	4.24	4.24	4.00	4.00
200,000 to 250,000 lbs.	5.92	5.92	4.48	4.48	4.32	4.32	4.16	4.16
250,000 to 300,000 lbs.	6.00	6.00	4.48	4.48	4.32	4.32	4.16	4.16
300,000 to 350,000 lbs.	6.08	6.08	4.56	4.56	4.40	4.40	4.16	4.16
350,000 to 400,000 lbs.	6.16	6.16	4.64	4.64	4.48	4.48	4.16	4.16
400,000 to 450,000 lbs.	6.24	6.24	4.72	4.72	4.56	4.56	4.32	4.32
450,000 to 500,000 lbs.	6.32	6.32	4.80	4.80	4.64	4.64	4.32	4.32
500,000 lbs. and over	6.40	6.40	4.88	4.88	4.72	4.72	4.32	4.32
Mallets regardless of weight	6.60	6.60	5.20	5.20	5.00	5.00	.....	.....

FREIGHT SERVICE

Weight on Drivers	All Engineers		Firemen: Coal		Firemen: Oil		Helpers Electric	
	Per Mile	Per Day	Per Mile	Per Day	Per Mile	Per Day	Per Mile	Per Day
	Cents	*Dollars*	*Cents*	*Dollars*	*Cents*	*Dollars*	*Cents*	*Dollars*
Less than 80,000 lbs.	6.08	6.08	4.24	4.24	4.24	4.24	4.24	4.24
80,000 to 100,000 lbs.	6.16	6.16	4.32	4.32	4.24	4.24	4.24	4.24
100,000 to 140,000 lbs.	6.24	6.24	4.48	4.48	4.32	4.32	4.24	4.24
140,000 to 170,000 lbs.	6.48	6.48	4.64	4.64	4.48	4.48	4.24	4.24
170,000 to 200,000 lbs.	6.64	6.64	4.80	4.80	4.64	4.64	4.24	4.24
200,000 to 250,000 lbs.	6.80	6.80	4.96	4.96	4.80*	4.80*	4.40	4.40
250,000 to 300,000 lbs.	6.94	6.94	5.12	5.12	5.12	5.12	4.40	4.40
300,000 to 350,000 lbs.	7.08	7.08	5.28	5.28	5.28	5.28	4.40	4.40
350,000 lbs. and over	7.28	7.28	5.44	5.44	5.44	5.44	4.40	4.40
Mallets less than 275,000 lbs.	7.78	7.78	5.44	5.44	5.44	5.44	.....	.....
Mallets 275,000 lbs. and over	8.00	8.00	5.75	5.75	5.75	5.75	.....	.....

* Oil differential not to apply on engines weighing over 215,000 pounds on drivers.

TABLE IV. (Continued)

YARD SERVICE

Weight on Drivers	Engineers (per day)	Firemen Steam (per day)	Helpers Electric (per day)
Less than 140,000 lbs.	$5.60	$4.16	$4.16
140,000 to 200,000 lbs.	5.76	4.28	4.16
200,000 to 300,000 lbs.	5.92	4.40	4.16
300,000 lbs. and over	6.08	4.56	4.32
Mallets under 275,000 lbs.	6.68	5.28	....
Mallets 275,000 lbs. and over	6.92	5.52	....

HOSTLERS AND HOSTLER HELPERS

Inside hostlers	$4.16 per day
Outside hostlers	4.80 per day
Helpers	3.60 per day

TABLE V.

RATES OF PAY FOR CONDUCTORS, TRAINMEN AND SWITCHMEN ESTABLISHED BY SUPPLEMENT No. 16 TO GENERAL ORDER No. 27.

Employes	Per Mile	Per Day	Per Month
	Cents	*Dollars*	*Dollars*
All Passenger Service Except Suburban:			
Conductors	4.00	6.00	180.00
Assistant conductors or ticket collectors	3.20	4.80	144.00
Baggagemen operating dynamo	3.00	4.50	135.00
Baggagemen handling express*	3.00	4.50	135.00
Baggagemen	2.77	4.16	124.80
Flagmen and Brakemen	2.66	4.00	120.00
Suburban Passenger Service:			
Conductors	3.00	4.50	135.00
Ticket collectors	2.77	4.16	124.80
Guards performing duties of brakemen or flagmen	2.45	3.68	110.40
Through Freight Service:			
Conductors	5.40	5.40	.....
Flagmen and brakemen	4.08	4.08	.....
Way Freight Service:			
Conductors	5.92	5.92	.....
Flagmen and brakemen	4.48	4.48	.....
Yard Service:			
Foremen	....	5.33	.....
Helpers	....	5.00	.....
Switch tenders	....	4.00	.....

* Rates specified for "Baggagemen handling express" apply to baggagemen in the employ of railroads who shall be paid exclusively by the railroads.

TABLE VI.

WAGE INCREASES AUTHORIZED BY DECISION No. 2 OF THE UNITED STATES RAILROAD LABOR BOARD, EFFECTIVE MAY 1, 1920.

	Increase per hour *Cents*
CLERICAL AND STATION EMPLOYES	
SEC. 1. Storekeepers, assistant storekeepers, chief clerks, foremen, sub-foremen, and other clerical supervisory forces	13
SEC. 2. Clerks with an experience of one or more years in railroad clerical work, or clerical work of a similar nature in other industries, or where their cumulative experience in such clerical work is not less than one year	13
SEC. 3. Clerks whose experience as above defined is less than one year and until an experience of one year in such work entitles them to the increase provided for in Section 2	6½
SEC. 4. Train and engine crew callers, assistant station masters, train announcers, gatemen, and baggage and parcel room employes (other than clerks)	13
SEC. 5. Janitors, elevator and telephone switchboard operators, office, station and warehouse watchmen, and employes engaged in assorting waybills and tickets, operating appliances or machines for perforating, addressing envelopes, numbering claims and other papers, gathering and distributing mail, adjusting dictaphone cylinders, and other similar work	10
SEC. 6. Office boys, messengers, chore boys, and other employes under 18 years of age, filling similar positions, and station attendants	5
SEC. 7. Station, platform, warehouse, transfer, dock, pier, storeroom, stock room, and team track freight handlers or truckers, and others similarly employed	12
SEC. 8. The following differentials shall be created or maintained, as the case may be, between truckers and classes named below: (a) Sealers, scalers, and fruit and perishable inspectors, 1 cent per hour above truckers' rates as established under Section 7. (b) Stowers or stevedores, callers or loaders, locators and coopers, 2 cents per hour above truckers' rates as established under Section 7. The above shall not operate to decrease any existing higher differentials.	
SEC. 9. All common laborers in and around stations, storehouses, and warehouses, not otherwise provided for	8½
MAINTENANCE OF WAY EMPLOYES	
SEC. 1. Building, bridge, painter, construction, mason and concrete, water supply, and plumber foremen, except such water supply and plumber foremen as were paid under the provisions of Supplement No. 4 to General Order No. 27	15
SEC. 2. Assistant building, bridge, painter, construction, mason and concrete, water supply, and plumber foremen, and for coal wharf, coal chute, and fence gang foremen, pile driver, ditching and hoisting engineers and bridge inspectors, except such assistant water supply and plumber foremen as were paid under the provisions of Supplement No. 4 to General Order No. 27	15
SEC. 3. Section, track, and maintenance foremen, and assistant section, track and maintenance foremen	15
SEC. 4. Mechanics in the maintenance of way and bridge and building departments, except those that come under the provisions of the national agreement with the Federated Shop Trades	15
SEC. 5. Mechanics' helpers in the maintenance of way and bridge and building departments (except those that come under the provisions of the national agreement with the Federated Shop Trades)	8½

TABLE VI. (Continued)

	Increase per hour *Cents*
SEC. 6. Track laborers and all common laborers in the maintenance of way department and in and around shops and roundhouses, not otherwise provided for herein	8½
SEC. 7. Drawbridge tenders and assistants, pile driver, ditching and hoisting firemen, pumper engineers and pumpers, crossing watchmen or flagmen, and lamp lighters and tenders	8½
SEC. 8. Laborers employed in and around shops and roundhouses, such as engine watchmen and wipers, fire builders, ash-pit men, flue borers, coal passers (except those coming under the provisions of Article VIII, Section 3, this decision), coal-chute men, etc.	10
SHOP EMPLOYES	
SEC. 1. Supervisory forces	13
SEC. 2. Machinists, boilermakers, blacksmiths, sheet metal workers, electrical workers, carmen, molders, cupola tenders, and coremakers, including those with less than four years' experience, all crafts	13
SEC. 3. Regular and helper apprentices and helpers, all classes	13
SEC. 4. Car Cleaners	5
TELEGRAPHERS, TELEPHONERS, AND AGENTS	
SEC. 1. Telegraphers, telephone operators, (except switchboard operators), agents, (except agents at small non-telegraph stations as referred to in Supplement No. 13 to General Order No 27, Article IV, section (c)), agent telegraphers, agent telephoners, towermen, levermen, tower and train directors, block operators, and staffmen	10
SEC. 2. Agents at small nontelegraph stations as referred to in Supplement No. 13 to General Order No. 27, Article IV, section (c)	5
STATIONARY ENGINE (STEAM) AND BOILER-ROOM EMPLOYES	
SEC. 1. Stationary engineers (steam)	13
SEC. 2. Stationary firemen and engine-room oilers	13
SEC. 3. Boiler-room water tenders and coal passers	10

	Increase Per Hour *Cents*	Increase Per Day
SIGNAL DEPARTMENT EMPLOYES		
SEC. 1. Signal foremen, assistant signal foremen, and signal inspectors	13	..
SEC. 2. Leading maintainers, gang foremen, and leading signalmen	13	..
SEC. 3. Signalmen, assistant signalmen, signal maintainers, and assistant signal maintainers	13	..
SEC. 4. Helpers	10	..
ENGINE SERVICE EMPLOYES	Per Mile *Cents*	
SEC. 1. PASSENGER SERVICE		
Engineers and motormen	.8	$0.80
Firemen (coal or oil)	.8	.80
Helpers (electric)	.8	.80
SEC. 2. FREIGHT SERVICE		
Engineers (steam, electric, or other power)	1.04	$1.04
Firemen (coal or oil)	1.04	1.04
Helpers (electric)	1.04	1.04

TABLE VI. (Continued)

	Increase Per Hour *Cents*	Increase Per Day
SEC. 3. YARD SERVICE		
Engineers	18	..
Firemen (coal or oil)	18	..
Helpers (electric)	18	..
SEC. 4. YARD SERVICE		
NOTE: Superseding rates established by or under the authority of the U. S. Railroad Administration, and in lieu thereof, for each of the hereinafter named classes, the following increased rates are established.		
Outside hostlers	..	$6.24
Inside hostlers	..	5.60
Helpers	..	5.04

	Per Mile *Cents*	Increase Per Day	Per Month
TRAIN SERVICE EMPLOYES			
SEC. 1. PASSENGER SERVICE			
Conductors	.67	$1.00	$30.00
Assistant Conductors or ticket collectors	.67	1.00	30.00
Baggagemen handling both express and dynamo	.67	1.00	30.00
Baggagemen operating dynamo	.67	1.00	30.00
Baggagemen handling express	.67	1.00	30.00
Baggagemen	.67	1.00	30.00
Flagmen and brakemen	.67	1.00	30.00
SEC. 2. SUBURBAN SERVICE (exclusive)			
Conductors	.67	1.00	30.00
Ticket Collectors	.67	1.00	30.00
Guards performing duties of brakemen or flagmen	.67	1.00	30.00
SEC. 3. FREIGHT SERVICE			
Conductors (through)	1.04	1.04	..
Flagmen and Brakemen (through)	1.04	1.04	..
Conductors (local or way freight)	1.04	1.04	..
Flagmen and brakemen (local or way freight)	1.04	1.04	..
SEC. 4. YARD SERVICE			
NOTE: Superseding rates established by or under the authority of the U. S. Railroad Administration, and in lieu thereof, for each of the hereinafter-named classes, the following increased rates are established:			
Foremen	..	$6.96	..
Helpers	..	6.48	..
Switchtenders	..	5.04	..

MASTERS, MATES AND PILOTS

Superseding rates established by or under the authority of the United States Railroad Administration, and in lieu thereof, for each of the hereinafter-named classes, the following increased rates are established, provided that these increases shall be applied only to railroad-operated car floats, lighters, and ferries, and railroad operated tugboats propelling railroad-operated car floats, lighters, and ferries.

	Per Month
SEC. 1. NEW YORK HARBOR	
Ferryboats:	
Masters, pilots or captains	$220.00
Mates or first officers	150.00
Tugboats and steam lighters:	
Masters, pilots or captains	220.00
Pilots (South Amboy, Perth Amboy, and Port Reading coal-towing lines)	200.00
Mates	150.00
SEC. 2. PHILADELPHIA, CAMDEN, AND WILMINGTON DISTRICT	
Ferryboats:	
Masters or pilots (regular)	190.30*
Extra pilots (promoted)	150.22*
Tugboats:	
Masters or captains	150.96*
Mates	111.00*

* Based on 8 hours per day.

TABLE VI. (Continued)

SEC. 3. NEW ORLEANS, ANCHORAGE, BATON ROUGE, VICKSBURG, DELTA POINT, AVONDALE, ALGIERS, HARAHAN, AND GOULDSBORO DISTRICT

	Per Month
Southern Pacific "Carrier":	
One master pilot	$230.00
Two master pilots	220.00
Southern Pacific "Mastodon":	
One master	230.00
Two masters	220.00
Southern Pacific "El Vivo" and "El Listo":	
Pilots	155.00
Southern Pacific "Restless":	
Masters	180.00
Louisiana-Mississippi "Albatross" and "Pelican":	
Captains	230.00
Pilots	220.00
Gulf Coast Lines "B. F. Yoakum":	
One master	230.00
Two masters	220.00
Texas & Pacific "L. S. Thorne" and "Gouldsboro":	
Master	230.00
Pilots	220.00
Mates	140.00

SEC. 4. NEWPORT NEWS, HAMPTON ROADS, AND NORFOLK DISTRICT

New York, Philadelphia & Norfolk Railroad bay freight service, tugs "Cape Charles," "Parksley," "Delmar," "Pocomoke," "Salisbury," "Crisfield," "Portsmouth," and "Norfolk":	
Captains	250.00
New York, Philadelphia & Norfolk Railroad barges 2, 4, 5, 8, 9, 10, 14, 16, 17, 18:	
Captains	210.00
New York, Philadelphia & Norfolk Railroad tug "Philadelphia":	
Captains	191.75
Chesapeake & Ohio Railroad tugs "Greer," "Alice," "Hinton," "Wanderer," and "Helen":	
Mates	160.00
Norfolk Southern Railroad tug:	
Master (day)	160.00
Captain (night)	150.00
Cheapeake & Ohio Railroad steamer "Virginia":	
Master and pilot	215.00
First mate	160.00
Second mate	160.00
Southern Railroad ferry steamer and tug:	
Captain (day)	190.00
Captain (night)	180.00
Mate	160.00
Mate	145.00
Atlantic Coast Lines Railroad tugs "Norfolk" and "Pinners Point":	
Captain (day)	190.00
Captain (night)	180.00
Atlantic Coast Lines Railroad passenger barge:	
Masters	122.32

SEC. 5. PORT OF BALTIMORE

Baltimore & Ohio Railroad tug "Liverpool":	
Masters	201.00
Mates	147.00

TABLE VII.

WAGE DECREASES AUTHORIZED BY DECISION No. 147 OF THE UNITED STATES RAILROAD LABOR BOARD, EFFECTIVE JULY 1, 1921.

CLERICAL AND STATION EMPLOYES	Decrease per Hour *Cents*
SEC. 1. Storekeepers, assistant storekeepers, chief clerks, foremen, subforemen, and other clerical supervisory forces	6
SEC. 2. (a) Clerks with an experience of two or more years in railroad clerical work, or clerical work of a similar nature in other industries, or where their cumulative experience in such clerical work is not less than two years	6
(b) Clerks with an experience of one year and less than two years in railroad clerical work, or clerical work of a similar nature in other industries, or where their cumulative experience in such clerical work is not less than one year	13
SEC. 3. (a) Clerks whose experience as above defined is less than one year	6½
(b) Clerks without previous experience hereafter entering the service will be paid a monthly salary at the rate of $67.50 per month for the first six months, and $77.50 per month for the second six months.	
SEC. 4. Train and engine crew callers, assistant station masters, train announcers, gatemen, and baggage and parcel room employes other than clerks	10
SEC. 5. Janitors, elevator and telephone-switchboard operators, office, station and warehouse watchmen, and employes engaged in assorting waybills and tickets, operating appliances or machines for perforating, addressing envelopes, numbering claims and other papers, gathering and distributing mail, adjusting dictaphone cylinders, and other similar work	10
SEC. 6. Office boys, messengers, chore boys and other employes under 18 years of age, filling similar positions, and station attendants	5
SEC. 7. Station, platform, warehouse, transfer, dock, pier, storeroom, stockroom and team track freight handlers or truckers and others similarly employed	6
SEC. 8. The following differentials shall be maintained between truckers and the classes named below:	
(a) Sealers, scalers, and fruit and perishable inspectors, 1 cent per hour above truckers' rates as established under section 7.	
(b) Stowers or stevedores, callers or loaders, locators and coopers, 2 cents per hour above truckers' rates as established under section 7. The above shall not operate to decrease any existing higher differentials.	
SEC. 9. All common laborers in and around stations, storehouses and warehouses, not otherwise provided for	8½
NOTE: For clerks without previous experience hereafter entering the service of a carrier, rates of wages specified in Section 3 (b), this article, are hereby established.	

MAINTENANCE OF WAY EMPLOYES	
SEC. 1. Bridge, building, painter, construction, mason and concrete, water supply, and plumber foremen (except water supply and plumber foremen coming under the provisions of Sec. 1 of Art. IV, this decision	10
SEC. 2. Assistant bridge, building, painter, construction, mason and concrete, water supply, and plumber foremen, and for coal wharf, coal chute, and fence gang foremen, pile-driver, ditching, and hoisting engineers and bridge inspectors (except assistant water supply and plumber foremen coming under the provisions of Sec. 1 of Art. IV, this decision	10

TABLE VII. (Continued)

	Decrease per Hour *Cents*
SEC. 3. Section, track and maintenance foremen, and assistant section, track and maintenance foremen	10
SEC. 4. Mechanics in the maintenance of way and bridge and building departments (except those that come under the provisions of the national agreement with the Federated Shop Trades)	10
SEC. 5. Mechanics' helpers in the maintenance of way and bridge and building departments (except those that come under the provisions of the national agreement with the Federated Shop Trades)	7½
SEC. 6. Track laborers, and all common laborers in the maintenance of way department and in and around shops and roundhouses, not otherwise provided for herein	8½
SEC. 7. Drawbridge tenders and assistants, pile-driver, ditching and hoisting firemen, pumper engineers and pumpers, crossing watchmen or flagmen, and lamp lighters and tenders	8½
SEC. 8. Laborers employed in and around shops and roundhouses, such as engine watchmen and wipers, fire builders, ashpit men, flue borers, coal passers (except those coming under the provisions of Sec. 3 of Art. VIII, this decision), coal chute men, etc.	10
SHOP EMPLOYES	
SEC. 1. Supervisory forces	8
SEC. 2. Machinists, boilermakers, blacksmiths, sheet-metal workers, electrical workers, carmen, molders, cupola tenders, coremakers, including those with less than four years' experience, all crafts	8
SEC. 3. Regular and helper apprentices and helpers, all classes	8
SEC. 4. Car cleaners shall be paid a rate of 2 cents per hour above the rate established in Sec. 6 of Art. III, this decision, for regular track laborers at points where car cleaners are employed.	
NOTE: For car cleaners, rates of wages fixed by a differential shown in Section 4, this article, are hereby established.	
TELEGRAPHERS, TELEPHONERS, AND AGENTS	
SEC. 1. Telegraphers, telephone operators (except switchboard operators), agents (except agents at small nontelegraph stations as referred to in Supplement No. 13 to General Order No. 27, Article IV, section (c)), agent telegraphers, agent telephoners, towermen, lever men, tower and train directors, block operators, and staffmen	6
SEC. 2. Agents at small nontelegraph stations as referred to in Supplement No. 13 to General Order No. 27, Article IV, section (c)	5
STATIONARY ENGINE (STEAM) AND BOILER-ROOM EMPLOYES	
SEC. 1. Stationary engineers (steam)	8
SEC. 2. Stationary firemen and engine room oilers	8
SEC. 3. Boiler room water tenders and coal passers	6
SIGNAL DEPARTMENT EMPLOYES	
SEC. 1. Signal foremen, assistant signal foremen, and signal inspectors	8
SEC. 2. Leading maintainers, gang foremen, and leading signalmen	8
SEC. 3. Signalmen, assistant signalmen, signal maintainers, and assistant signal maintainers	8
SEC. 4. Helpers	6

TABLE VII. (Continued)

ENGINE SERVICE EMPLOYES

	Per Mile *Cents*	Decrease Per Hour *Cents*	Per Day
SEC. 1. PASSENGER SERVICE			
Engineers and motormen	.48	..	$0.48
Firemen (coal or oil)	.48	..	.48
Helpers (electric)	.48	..	.48
SEC. 2. FREIGHT SERVICE			
Engineers (steam, electric or other power)	.64	..	.64
Firemen (coal or oil)	.64	..	.64
Helpers (electric)	.64	..	.64
SEC. 3. YARD SERVICE			
Engineers	...	8	...
Firemen (coal or oil)	...	8	...
Helpers (electric)	...	8	...
SEC. 4. HOSTLER SERVICE			
Outside hostlers	...	..	$0.64
Inside hostlers	...	..	.64
Helpers	...	..	.64

TRAIN SERVICE EMPLOYES

	Per Mile *Cents*	Decrease Per Day	Per Month
SEC. 1. PASSENGER SERVICE			
Conductors	.4	$0.60	$18.00
Assistant conductors or ticket collectors	.4	.60	18.00
Baggagemen handling both express and dynamo	.4	.60	18.00
Baggagemen operating dynamo	.4	.60	18.00
Baggagemen handling express	.4	.60	18.00
Baggagemen	.4	.60	18.00
Flagmen and brakemen	.4	.60	18.00
SEC. 2. SUBURBAN SERVICE (exclusive)			
Conductors	.4	.60	18.00
Ticket collectors	.4	.60	18.00
Guards performing duties of brakemen or flagmen	.4	.60	18.00
SEC. 3. FREIGHT SERVICE			
Conductors (through)	.64	.64	.....
Flagmen and brakemen (through)	.64	.64	.....
Conductors (local or way freight)	.64	.64	.....
Flagmen and brakemen (local or way freight)	.64	.64	.....
SEC. 4. YARD SERVICE			
Foremen	...	.64	.....
Helpers	...	.64	.....
Switchtenders	...	.64	.....

FLOATING EQUIPMENT EMPLOYES

For the specific classes of employes listed herein and named or referred to in connection with a carrier affected by this decision, the following schedules of decreased rates of pay are established:

	Per Month
SEC. 1. FERRIES	
Captains	$200
Engineers	190
Firemen and Oilers (licensed)	140
Firemen and Oilers (unlicensed)	140
Deck hands	125
Porters	100

TABLE VII. (Continued)

Sec. 2. Tugs and Steam Lighters

	Per Month
Captains	$200
Mates and first deck hands (licensed)	130
First deck hands (unlicensed)	130
Second deck hands	125
Floatmen and float watchmen	125
Engineers	190
Firemen and Oilers (licensed)	140
Firemen and Oilers (unlicensed)	140
Bridgemen	125

Sec. 3. Lighters and Barges

Captains, steam hoist, single drum	135
Engineers, steam hoist, single drum	145
Captains, steam hoist, double drum	140
Engineers, steam hoist, double drum	150
Captains, derricks, under 30-ton hoist	140
Engineers, derricks, under 30-ton hoist	150
Captains, derricks, 30-ton hoist and over	150
Engineers, derricks, 30-ton hoist and over	160
Mates, derricks	100
Captains, hand winch lighters and covered barges	130

Sec. 4. Lighters and Barges

Captains, hand hoist barges, covered lighters	120
Captains, steam hoist, single drum	125
Captains, steam hoist, double drum	130
Engineers, steam hoist, single drum	135
Engineers, steam hoist, double drum	140

TABLE VIII.

WAGE DECREASES AUTHORIZED BY DECISIONS 1028, 1036 AND 1074 OF THE UNITED STATES RAILROAD LABOR BOARD, EFFECTIVE JULY 1, 1922.

	Decrease per Hour *Cents*
Decision No. 1028	
MAINTENANCE OF WAY EMPLOYES	
Sec. 1. Bridge, building, painter, construction, mason and concrete, water-supply, and plumber foremen (except water-supply and plumber foremen coming under the provisions of Section 1 of Article IV, Decision No. 147)	5
Sec. 2. Assistant bridge, building, painter, construction, mason and concrete, water-supply, and plumber foremen, and for coal-wharf, coal-chute, and fence-gang foremen, pile-driver, ditching and hoisting engineers, and bridge inspectors (except assistant water-supply and plumber foremen coming under the provisions of Section 1 of Article IV, Decision No. 147)	5
Sec. 3. Section, track, and maintenance foremen, and assistant section, track and maintenance foremen	3
Sec. 4. Mechanics in the maintenance of way and bridge and building departments (except those that come within the scope of agreements with the Federated Shop Crafts)	4
Sec. 5. Mechanics' helpers in the maintenance of way and bridge and building departments (except those that come within the scope of agreements with the Federated Shop Crafts)	1
Sec. 6. Track laborers, and all common laborers in the maintenance of way department and in and around shops and roundhouses not otherwise provided for herein	5
Sec. 7. Drawbridge tenders and assistants, pile-driver, ditching and hoisting firemen, pumper engineers and pumpers, crossing watchmen or flagmen, and lamp lighters, and tenders	5
Sec. 8. Laborers employed in and around shops and roundhouses, such as engine watchmen and wipers, fire builders, ash-pit men, flue borers, coal passers, (except those coming under the provisions of Section 3 of Article VIII, Decision No. 147), coal chute men, etc.	5
Sec. 9. For miscellaneous classes of foremen and other employes named in connection with a carrier affected by this decision but not specifically listed under any section in the classified schedules of decreases, deduct an amount equal to the decreases specified for the respective classes to which the miscellaneous classes herein referred to are analogous.	
Decision No. 1036	
SHOPCRAFT EMPLOYES	
Sec. 1. Supervisory forces whether paid by the month or by the hour	no decr.
Sec. 2. (a) Machinists, boiler makers, blacksmiths, sheet-metal workers, electrical workers, carmen (except freight carmen), molders, cupola tenders and coremakers, including those with less than four years' experience, all crafts	7
(b) Freight carmen	9
Sec. 3. Regular and helper apprentices and helpers all classes	7
Sec. 4. Car cleaners	5
Decision No. 1074	
CLERICAL AND STATION EMPLOYES	
Sec. 1. Storekeepers, assistant storekeepers, chief clerks, foremen, subforemen and other clerical supervisory forces	3
Sec. 2. (a) Clerks with an experience of two (2) or more years in railroad clerical work, or clerical work of similar nature in other industries, or where their cumulative experience in such clerical work is not less than two (2) years	3
(b) Clerks with an experience of one (1) year and less than two (2) years in railroad clerical work or clerical work of a similar nature in other industries, or where their cumulative experience in such clerical work is not less than one (1) year	4

TABLE VIII. (Continued)

	Decrease Per Hour *Cents*
SEC. 3. (a) Clerks whose experience as above defined is less than one (1) year	4
(b) Clerks without previous experience hereafter entering the service will be paid a monthly salary at the rate of $60 per month for the first six months, and $70 per month for the second six months.	
SEC. 4. Train and engine crew callers, assistant station masters, train announcers, gatemen, and baggage and parcel room employes (other than clerks)	3
SEC. 5. Janitors, elevator operators, office, station and warehouse watchmen, and employes engaged in assorting waybills and tickets, operating appliances or machines for perforating, addressing envelopes, numbering claims and other papers, gathering and distributing mail, adjusting dictaphone cylinders, and other similar work	4
SEC. 6. Office boys, messengers, chore boys, and other employes under 18 years of age filling similar positions, and station attendants	4
SEC. 7. Station, platform, warehouse, transfer, dock, pier, store-room, stock-room, and teamtrack freight handlers or truckers, and others similarly employed	4
SEC. 8. The following differentials shall be maintained between truckers and the classes named below:	
(a) Sealers, scalers, and fruit and perishable inspectors, 1 cent per hour above truckers' rates as established under Section 7.	
(b) Stowers or stevedores, callers or loaders, locators and coopers, 2 cents per hour above truckers' rates as established under Section 7.	
The above shall not operate to decrease any existing higher differentials.	
SEC. 9. All common laborers in and around stations, storehouses and warehouses not otherwise provided for	4
SEC. 10. Telephone switchboard operators will be paid at the rate of not less than $85 per month, with no reduction in higher existing rates.	
STATIONARY ENGINE (STEAM) AND BOILER-ROOM EMPLOYES	
SEC. 1. Stationary engineers (steam)	2
SEC. 2. Stationary firemen and engine-room oilers	2
SEC. 3. Boiler-room water tenders and coal passers	2
SIGNAL DEPARTMENT	
SEC. 1. Signal foremen, assistant signal foremen, signal inspectors	no decr.
SEC. 2. Leading maintainers, gang foremen, and leading signalmen	5
SEC. 3. Signalmen, assistant signalmen, signal maintainers, and assistant signal maintainers	5
SEC. 4. Helpers	6
FLOATING EQUIPMENT EMPLOYES	
Such disputes as are before the Board under this article are remanded to the parties for further conference and attempt to make an agreement.	
TRAIN DISPATCHERS	
SEC. 1. Train dispatchers	no decr.
DINING-CAR AND RESTAURANT EMPLOYES	
SEC. 1. Dining-car stewards	no decr
SEC. 2. Culinary workers on ferry boats in San Francisco harbor	no decr.
MISCELLANEOUS EMPLOYES	
SEC. 1. For miscellaneous classes of foremen and other employes, not specifically listed under any section of the various groups, who are properly before the Labor Board and named in Article II in connection with a carrier affected by this decision, deduct an amount equal to the decreases specified for the respective classes to which the miscellaneous classes herein referred to are analogous.	

TABLE IX.

SUMMARY OF INCREASES AND DECREASES AUTHORIZED BY DECISIONS OF THE UNITED STATES RAILROAD LABOR BOARD

CLERICAL AND STATION FORCES

	Decision No. 2 May 1, 1920 *Increase* Per Hour	Decision No. 147 July 1, 1921 *Decrease* Per Hour	Decision No. 1074 July 1, 1922 *Decrease* Per Hour	Decision No. 1621 Mar. 1, 1923 *Increase* Per Hour	Decision No. 1986 Oct. 16, 1923 *Increase* Per Hour
Section 1	$0.13	$0.06	$0.03	.....	$0.02
Section 2 (a)	.13	.06	.03	.....	.02
Section 2 (b)	.13	.13	.04	.....	.02
Section 3 (a)	.06½	.06½	.04	.....	.01
Section 3 (b)	.06½	[1]	[2]	.....	[6]
Section 4	.13	.10	.03	.....	.02
Section 5	.10	.10	.04	.....	.01
Section 6	.05	.05	.04	.....	.....
Section 7	.12	.06	.04	$0.02	.01
Section 8 (a)	[3]	[3]	[3]	[3]	[3]
Section 8 (b)	[4]	[4]	[4]	[4]	[4]
Section 9	.08½	.08½	.04	.02	.02
Section 10	.....	.....	[5]	.....	.....
Section 11	.....	.....	.....	.....	[7]

[1] Establishing minimum rates of $67.50 and $77.50 per month.
[2] Establishing minimum rates of $60.00 and $70.00 per month.
[3] Maintaining differential of 1 cent per hour over truckers' rates. (Section 7)
[4] Maintaining differential of 2 cents per hour over truckers' rates. (Section 7)
[5] Establishing minimum of $85.00 per month for telephone switchboard operators.
[6] Establishing minimum rates of $2.35 and $2.75 per day.
[7] An equal amount to the increases or decreases specified for respective classes to which the miscellaneous classes herein referred to are analogous.

NOTE—Decision No. 2776 was issued effective January 16, 1925, authorizing same schedule of increase as that contained in Decision No. 1986 on carriers other than those covered by Decision No. 1986.

MAINTENANCE OF WAY EMPLOYES

	Decision No. 2 May 1, 1920 *Increase* Per Hour	Decision No. 147 July 1, 1921 *Decrease* Per Hour	Decision No. 1028 July 1, 1922 *Decrease* Per Hour	Decision No. 1267 Oct. 16, 1922 *Increase* Per Hour
Section 1	$0.15	$0.10	$0.05	.....
Section 2	.15	.10	.05	.....
Section 3	.15	.10	.03	$0.02
Section 4	.15	.10	.04	.....
Section 5	.08½	.07½	.01	.....
Section 6	.08½	.08½	.05	.02
Section 7	.08½	.08½	.05	.02
Section 8	.10	.10	.05	.02
Section 9	.....	.....	[1]	[1]

[1] An equal amount to the increases or decreases specified for respective classes to which the miscellaneous classes herein referred to are analogous.

Decision No. 2049, effective June 1, 1923, granted varying increases to this class of employees from 1 to 2 cents per hour on 7 carriers.

TABLE IX. (Continued)

MECHANICAL TRADES EMPLOYES

	Decision No. 2 May 1, 1920 *Increase* Per Hour	Decision No. 147 July 1, 1921 *Decrease* Per Hour	Decision No. 1036 July 1, 1922 *Decrease* Per Hour
Section 1	$0.13	$0.08	.....
Section 2 (a)	.13	.08	$0.07
Section 2 (b)	.13	.08	.09
Section 3	.13	.08	.07
Section 4	.05	[1]	.05

[1] To be paid a rate of 2 cents per hour in excess of regular track laborers at point where car cleaners are employed.

STATIONARY ENGINE (STEAM) AND BOILER ROOM EMPLOYES

	Decision No. 2 May 1, 1920 *Increase* Per Hour	Decision No. 147 July 1, 1921 *Decrease* Per Hour	Decision No. 1074 July 1, 1922 *Decrease* Per Hour
Section 1	$0.13	$0.08	$0.02
Section 2	.13	.08	.02
Section 3	.10	.06	.02

TELEGRAPHERS, TELEPHONERS AND AGENTS

	Decision No. 2 May 1, 1920 *Increase* Per Hour	Decision No. 147 July 1, 1921 *Decrease* Per Hour	Decision No. 1448 Jan. 1, 1923	Decision Nos. 2025, 2115, 2557, 2686, 3266 *Increase* Per Hour
Section 1	$0.10	$0.06	[1]	[2]
Section 2	.05	.05	.....	.....

[1] Decreasing amount of increase resulting from application of interpretation 8, to supplement 13 to General Order No. 27 (United States Railroad Administration.)

[2] Decision No. 2025, effective November 16, 1923, granted increases to employees coming under Section 1 from 2 to 5 cents per hour on twelve carriers.

Decision No. 2115, effective January 16, 1924, granted increases to employees coming under Section 1 of 2 and 2½ cents per hour on four carriers.

Decision No. 2557, effective July 16, 1924, granted increases to employees coming under Section 1 from 1 to 4 cents per hour on six carriers.

Decision No. 2686, effective November 16, 1924, granted increases to employees coming under Section 1 of 1 to 3 cents per hour on three carriers.

Decision No. 3266, effective April 1, 1925, granted increases of 2 cents per hour to employees coming under section 1 on three carriers.

TABLE IX. (Continued)

SIGNAL DEPARTMENT EMPLOYES

	Decision No. 2 May 1, 1920 *Increase* Per Hour	Decision No. 147 July 1, 1921 *Decrease* Per Hour	Decision No. 1074 July 1, 1922 *Decrease* Per Hour	Decision No. 1538 Feb. 1, 1923
Section 1	$0.13	$0.08	.....	.....
Section 2	.13	.08	$0.05	.....
Section 3	.13	.08	.05	[1]
Section 4	.10	.06	.06	.....

[1] Establishing minimum of 72 cents per hour.

ENGINE SERVICE EMPLOYES

	Decision No. 2 May 1, 1920 *Increase* Per Day	Decision No. 147 July 1, 1921 *Decrease* Per Day
Section 1	$0.80	$0.48
Section 2	1.04	.64
Section 3	1.44	.64
Section 4	[1]	.64

[1] Superseding rates established by or under authority of the United States Railroad Administration, and in lieu thereof for each of the hereinafter-named classes, the following increased rates are established: outside hostler, $6.24 per day; inside hostler, $5.60 per day; helpers $5.04 per day.

TRAIN SERVICE EMPLOYES

	Decision No. 2 May 1, 1920 *Increase* Per Day	Decision No. 147 July 1, 1921 *Decrease* Per Day
Section 1	$1.00	$0.60
Section 2	1.00	.60
Section 3	1.04	.64
Section 4	[1]	.64

[1] Superseding rates established by or under the authority of the United States Railroad Administration, and in lieu thereof, for each of the hereinafter-named classes, the following increased rates are established: Foremen, $6.96 per day; helpers, $6.48 per day; switchtenders, $5.04 per day.

TABLE X.

DEVELOPMENT OF THE RAILROAD WAGE STRUCTURE OF THE MECHANICAL TRADES 1920 - 1937

BASIC HOURLY RATES IN EFFECT

Classification	Decision No. 2 May 1, 1920	Decision No. 147 July 1, 1921	Decision No. 1036 July 1, 1922	Negotiated Rates 1923–1924	Negotiated Rates 1926	Arbitration Awards 1929	10% Deduction Agreement Feb. 1, 1932[1]	Full Restoration of Deduction April 1, 1935[2]	Negotiated Rates Aug. 1, 1937[2]
Machinists	.85	.77	.70	.72	.75	.80	.72	.80	.85
Boilermakers	.85	.77	.70	.72	.75	.80	.72	.80	.85
Blacksmiths	.85	.77	.70	.72	.75	.80	.72	.80	.85
Sheet Metal Workers	.85	.77	.70	.72	.75	.80	.72	.80	.85
Electrical Workers	.85	.77	.70	.72	.75	.80	.72	.80	.85
Linemen	.81	.73	.66	.68	.71	.76	.684	.76	.81
Groundmen and electric crane oper. less than 40 tons	.75	.67	.60	.62	.65	.70	.63	.70	.75
Coal pier elev. and hoist operator	.68	.60	.53	.55	.58	.63	.567	.63	.68
Passenger car repairmen	.85	.77	.70	.72	.75	.80	.72	.80	.85
All other carmen	.80	.72	.63	.65	.68	.73	.657	.73	.78
Regular Apprentices:									
1st six months	.42	.34	.27	.29	.32	.37	.333	.37	.42
2nd six months	.44½	.36½	.29½	.31½	.34½	.39½	.3555	.39½	.44½
3rd six months	.47	.39	.32	.34	.37	.42	.378	.42	.47
4th six months	.49½	.41½	.34½	.36½	.39½	.44½	.4005	.44½	.49½
5th six months	.52	.44	.37	.39	.42	.47	.423	.47	.52
6th six months	.54½	.46½	.39½	.41½	.44½	.49½	.4455	.49½	.54½
7th six months	.59½	.51½	.44½	.46½	.49½	.54½	.4905	.54½	.59½
Last six months	.67	.59	.52	.54	.57	.62	.558	.62	.67
Helper Apprentices:									
1st six months	.62	.54	.47	.49	.52	.57	.513	.57	.62
2nd six months	.64	.56	.49	.51	.54	.59	.531	.59	.64
3rd six months	.66	.58	.51	.53	.56	.61	.549	.61	.66
4th six months	.68	.60	.53	.55	.58	.63	.567	.63	.68
5th six months	.70	.62	.55	.57	.60	.65	.585	.65	.70
Last six months	.72	.64	.57	.59	.62	.67	.603	.67	.72
Helpers, all crafts	.62	.54	.47	.49	.52	.57	.513	.57	.62

[1] The deductions were made from the individual employes' paychecks and basic rates remained unchanged, but the effect of this procedure was to reduce the basic rates 10 per cent. The basic rates are shown with 10 per cent deducted.
[2] The deduction was restored as follows: 2½% on July 1, 1934; 2½% on Jan. 1, 1935; and the remaining 5% on April 1, 1935.
[3] National Mediation Agreement dated Aug. 5, 1937, providing for increase of 5 cents per hour, effective Aug. 1, 1937. The rates shown are those now generally in effect.

TABLE XI.

WAGE INCREASES GRANTED TO RAILWAY CLERKS ON U. S. RAILROADS FROM OCTOBER 16, 1923 (DECISION No. 1986) TO 1930.

(From agreements, and arbitration awards, on file at International Headquarters of Brotherhood of Railway Clerks, Cincinnati, Ohio.)

Railroad	Date Effective	Method	Approximate Amount
		1924	
L. & N.	Feb. 1	Neg.	1¢ per hour
Wabash	May 1	Neg.	$125,000 lump adjustment
		1925	
St. Paul Union Depot	June 1	Neg.	5¢ per hour
St.L.-S.F.	Oct. 1	Neg.	1¢ per hour
B. & O.	Nov. 1	Neg.	$300,000 lump adjustment (a fraction more than 1¢ per hour)
		1926	
Boston Term.	May 25	Neg.	6% increase
A. C. L.	July 16	Neg.	3¢ increase for those with 2 or more years experience; 2¢—1 to 2 years 1¢—less than 1 yr.
L. & N.	Aug. 1	Neg.	3¢ hr. for Div. 8, 9 2¢ per Div. 10, 11, 12
Mo. Pac.	Aug. 1	Neg.	15¢ per day
Nor. Sou.	Aug. 25	Neg.	3¢ per hour
C. & W. I.	Oct. 1	Med.	3¢ per hour
D. L. & W.	Dec. 1	Vol.	3¢ per hour
S. A. L.	Dec. 1	Neg.	3½¢ per hour
G. M. & N.	Dec. 7	Neg.	4¢ per hour
		1927	
Norw. Pac.	Jan. 1	Neg.	S. P. Arb. award applied
S. P. (Pac. Lines)	Jan. 1	Arb.	From 2¢ to 7¢ per hour 2¢ to 7¢ per hour main group of clerks 5¢
Am. Ry. Ex. Co.	Jan. 1	Arb.	2½¢ per hour
S. E. Exp. Co.	Jan. 1	Neg.	2½¢ per hour
Hocking Valley	Jan. 16	Neg.	2¢ per hour
C. & A.	Feb. 16	Neg.	16¢ per day
B. & A.	Feb. 25	Neg.	2¢ per hour; later the 6% N.Y.C. Arb. applied
T. P. Tmls. (N.O., La.)	Mar. 1	Neg.	15¢ per day
B. & M.	Mar. 1	Arb.	5¢ per hour
C.C.C. & St.L.	Mar. 16	Neg.	6% increase. (Case had progressed to mediation but agreement reached to accept N.Y.C. Arb. award)
M.C.	Mar. 16	Neg.	6% increase N.Y.C. Arb. award applied
N.Y.C.	Mar. 16	Arb.	6% increase
Ohio Central	Mar. 16	Neg.	6% increase N.Y.C. Arb. award applied.
West. Pac.	Jan. 1	Neg.	S. P. Arb. award applied from 2¢ to 7¢ per hour
T. R. R. A.	April 1	Neg.	.036¢ per hour
N. Y. N. H. & H.	April 15	Neg.	3½¢ per hour

TABLE XI. (Continued)

Railroad	Date Effective	Method	Approximate Amount
B. & O.	May 1	Neg.	5% increase (a fraction less than 3¢ per hour)
B. R. & P.	May 1	Neg.	Increases ranging from 2¢ to 3½¢ per hour
P. M.	May 16	Neg.	3¢ per hour
Ann Arbor	June 1	Neg.	.01¾¢ per hour.
St. L. & S. W.	June 1	Neg.	3¢ per hour
Me. Cent.	June 21	Med.	.0368¢ per hour
Southern	July 16	Arb.	2½¢ per hour
St. Paul Un. Depot	Aug. 1	Neg.	4¢ per hour
Great Northern	Aug. 1	Arb.	4¢ per hour
King St. Station	Aug. 1	Neg.	4¢ per hour
Wabash	Aug. 16	Arb.	3½¢ per hour
I. C.	Sept. 1	Arb.	5% increase
L. & N.	Oct. 1	Neg.	2¢ per hour—Gen.
M. & O.	Oct. 1	Med.	2½¢ per hour
C. & N. W.	Nov. 1	Arb.	7% increase to all clerks except Class 12
N. P. Term.	Dec. 1	Med.	4½¢ per hour
C. & S.	Dec. 1	Med.	2½¢ per hour
C. B. & Q.	Dec. 16	Neg.	3¢ per hour
		1928	
Soo Line	Jan. 1	Med.	2½¢ per hour
O. U. Ry. & Depot Co.	Feb. 1	Med.	2¢ per hour Baggage men. $7.00 per mo. Clerks with two years' experience, foremen and assistant foremen. $3.00 per mo. office boys, messengers, janitors, etc.
C. I. & L.	Feb. 1	Med.	3¢ per hour
D. S. S. & A. M. R. RR.	Mar. 1	Med.	2¢ per hour
C. & E. I.	Mar. 16	Med.	2¢ per hour
N. P.	Feb. 1	Neg.	1¢ to 3¢ per hour
C. M. & St. P.	Mar. 16	Med.	3¢ per hour
C. & W. I.	May 1	Neg.	3¢ per hour
M. & St. L.	June 1	Neg.	2¢ per hour
U. P.	June 1	Neg.	1¢ to 2¢ per hour
C. St. P. M. & O.	June 1	Neg.	3¢ per hour for clerks, 2¢ per hour for other classes
C. R. I. & G.	June 1	Med.	$7.00 per mo. for clerks and other supervisory forces. $7.00 per mo. clerks. 2½¢ per hour station employes.
G. M. & N.	July 1	Neg.	2¢ per hour
St. L. S. F.	Aug. 2	Arb.	Clerks 3¾¢ per hour; freight handlers, stores dept. truckers and laborers, baggage and parcel room employes, station helpers, 2¾¢ per hour; switchboard operators, janitors, messenger boys, etc., 1¢ per hour.
C. R. I. & P.	Aug. 17	Med.	Clerks 3½¢ per hour; freight handlers 2¢ per hour; gatemen, train announcers, baggage and mail handlers, switchboard operators, 2½¢ per hour; janitors, elevator operators, watchmen, callers, 2¢ per hour
M. P.	Nov. 1	Med.	1¢ to 3¢ per hour
Des Moines Union Ry.	Oct. 1	Neg.	2¢ to 3¢ per hour

TABLE XI. (Continued)

Railroad	Date Effective	Method	Approximate Amount
		1929	
K. C. T.	Jan. 16	Arb.	25¢ per day.
T. P. M. P. Term, New Orleans	Mar. 15	Neg.	2¢ per hour
T. & P.	Mar. 15	Med.	2¼¢, 3¢, 5¢ per hour
K. C. S.	April 1	Vol.	Clerks over $4.00 per day, 3¢ per hour
L. & A.	April 1	Neg.	3¢ per hour
Un. Term. of Dallas	April 1	Med.	2¢ per hour
S. E. Express	May 1	Med.	Equalization on positions at 21 stations. Majority of increases ranging from $1 to $10 per mo. and some as high as $48 per mo.
Ry. Exp. Agcy. New York District	Jan. 1	Neg.	4¢ per hour for platform service, 3¢ per hour for office employes
C. & A.	July 1	Neg.	3¢ per hour clerks and baggagemen, storekeepers, loading foremen; 1½¢ per hour other station employes; 1¢ per hour laborers
Gulf Coast Lines	July 1	Neg.	3¢ per hour.
Wabash	Sept. 1	Neg.	$100,000
N. K. P.	Nov. 1	Arb.	6%
		1930	
L. & N.	Jan. 1	Neg.	2¢ per hour, clerks and station attendants.
St. Joseph Un. Depot	Feb. 1	Neg.	3¢ per hour
Atlanta Joint Terminal	Aug. 15	Med.	2½¢ per hour clerks, apprentice clerks, messengers, crew callers and switchboard operators

TABLE XII.

WAGE INCREASES GRANTED TO RAILROAD TELEGRAPHERS ON U. S. RAILROADS
1923-1930

Railroad	Effective Dates	Amount of Increase	Method
Atlanta & West Point	3- 1-30	2¢	Negotiation
A. T. & Santa Fe; Gulf, Colo. & S.F.; Panhandle & S.F.; Sunset Ry. Co.	11-16-24	3¢[1]	U.S.R.R.L.B. Dec. 2686
	1- 1-28	1¢	Negotiation
Alabama & Vicksburg; V.S. & P.	5- 1-26	2¢[1]	U.S.R.R.L.B. Dec. 4175
Atlanta Terminal	5-16-26	3¢	Negotiation
Ann Arbor	6- 1-28	2¢	Mediation
Alton	2-16-29	1¾¢	Mediation
Buffalo, Rochester & Pittsburgh	7-16-24	3¢[1]	U.S.R.R.L.B. Dec. 2557
Boston & Maine	3-18-27	2½¢	Negotiation
Bessemer & Lake Erie	12- 1-27	1.68¢	Negotiation
Boston Terminal	4-14-28	26 relief days[4]	Negotiation
Baltimore & Ohio	5-16-28	3¼ ¢	Arbitration
Boston & Albany	8-20-28	2¢	Mediation
Chicago & Western Indiana	11-16-23	3¢[1]	U.S.R.R.L.B. Dec. 2025
	1- 1-28	4½¢	Mediation
Chicago Great Western	11-16-23	5¢[1]	U.S.R.R.L.B. Dec. 2025
	1- 1-28	3¢	Mediation
Chicago, Indpls. & Louisville	11-16-23	2¢[1]	U.S.R.R.L.B. Dec. 2025
	1-15-27	2½¢	Negotiation
	7- 1-29	3¢	Negotiation
Chicago, Milw. & St. Paul	11-16-23	2¢[1]	U.S.R.R.L.B. Dec. 2025
	12- 1-27	3.4¢	Negotiation
Chicago, Rock Island & Pacific; C. R. I. & Gulf	11-16-23	2¢[1]	U.S.R.R.L.B. Dec. 2025
	1- 1-28	3¢	Mediation
Colorado & Southern	11-16-23	4¢[1]	U.S.R.R.L.B. Dec. 2025
	2- 1-28	2¼¢	Mediation
Charleston & Western Carolina	1-16-24	2½¢[1]	U.S.R.R.L.B. Dec. 2115
	4- 5-27	2.12¢	Negotiation
C. C. C. & St. L.	1-16-24	3½¢	Negotiation
	5- 1-26	1½¢	Negotiation
	5-16-28	3.3¢[3]	Arbitration
Cinti. Indpls. & Western	11-16-24	3¢[1]	U.S.R.R.L.B. Dec. 2686
Central of Georgia	4- 1-26	4¢	Negotiation
Central R. R. of New Jersey	11- 1-26	3.25¢	Negotiation
	12- 1-28	3¢	Negotiation
Central Vermont	11- 1-26	3.75¢	Negotiation
Chesapeake & Ohio	8- 1-27	2½¢	Negotiation
C. B. & Q.	9- 1-27	2½¢	Mediation
Chicago & Illinois Midland	4- 1-28	5¢	Negotiation
Cincinnati Union Terminal	5-16-28	5¢	Negotiation
(formerly Central Union Depot of Cincinnati)	5-16-28	3.3¢[3]	Arbitration

TABLE XII. (Continued)

Railroad	Effective Dates	Amount of Increase	Method
Cincinnati Northern	5-16-28	3.3¢[3]	Arbitration
Chicago & Northwestern	6- 1-28	1½¢	Negotiation
Chicago, St. P. M. & Omaha	6- 1-28	1½¢	Negotiation
Chicago & Eastern Illinois	8-29-28	1¢	Mediation
Delaware and Hudson	3- 1-24	3¢	Negotiation
	7-16-24	1¢[1]	U.S.R.R.L.B. Dec. 2557
Denver & Rio Grande Western	11-16-24	1¢[1]	U.S.R.R.L.B. Dec. 2686
	1- 1-28	3¢	Mediation
Delaware, Lackawanna & Western	1- 1-27	3¢	Negotiation
Duluth, South Shore & Atlantic	9- 1-27	2½¢	Negotiation
Duluth, Winnipeg & Pacific	10-16-27	4¢	Negotiation
Davenport, Rock Island & N.W.	3-16-28	3¢	Negotiation
Denver Union Terminal	11-30-28	2 & 2½¢[3]	Mediation
Duluth, Missabe & Northern	4- 1-29	2.85¢	Negotiation
Erie	8- 1-25	2.75¢	Negotiation
	4- 1-29	3½¢	Negotiation
Elgin, Joliet & Eastern	7- 1-27	2½¢	Negotiation
Evansville, Indpls. & Terre Haute	5-16-28	3.3¢[3]	Arbitration
Florida East Coast	7-16-24	2¢[1]	U.S.R.R.L.B. Dec. 2557
	1- 1-26	4¢	Negotiation
	4- 1-27	1¾¢	Negotiation
Ft. Worth & Denver City	2- 1-27	2¢	Negotiation
Green Bay & Western	2-16-29	5¢	Negotiation
Gulf Coast Lines (Now part of Mo. Pac. Lines in Texas)	11-16-23	3¢[1]	U.S.R.R.L.B. Dec. 2025
Great Northern	4- 1-25	2¢[1]	U.S.R.R.L.B. Dec. 3266
	8- 1-27	3¢	Negotiation
Georgia	3- 1-26	2¢	Negotiation
	11- 1-29	2¢	Negotiation
Gulf, Mobile & Northern	2- 1-28	2½¢	Negotiation
Grand Central Terminal	3-15-28	26 relief days[4]	Arbitration
Georgia, Southern & Florida	12-16-28	2.2¢	Negotiation
Houston, Belt & Terminal Co.	11-16-23	3¢[1]	U.S.R.R.L.B. Dec. 2025
	11- 1-27	6¢	Negotiation
H. & T. C.	7-16-27	3¢	Negotiation
H. E. & W. T.	7-16-27	3¢	Negotiation
Hocking Valley	11- 1-27	2¢	Negotiation
International Great Northern	9- 1-26	2¢	Negotiation
Illinois Central; G. & S. I.; Y. & M. V.	3-16-28	2½¢	Mediation
Indianapolis Union	5-16-28	1¢	Negotiation
Kansas City Southern	11-16-23	2¢[1]	U.S.R.R.L.B Dec. 2025
	9- 1-27	2.27¢	Negotiation
Kentucky & Indiana Term.	9-15-27	3¢	Negotiation
K. C. Mexico & Orient	4-16-28	1.09¢	Negotiation
Louisville & Jeffersonville Bdg. & Term.	5-16-28	3.3¢[3]	Arbitration
Long Island	12- 1-26	3¢	Negotiation
Lehigh Valley	11-16-23	3¢[1]	U.S.R.R.L.B. Dec. 2025
	8- 1-26	1½¢	Negotiation
	3- 1-27	1½¢	Negotiation
Lehigh & Hudson	1-15-27	2¢	Negotiation
	11- 1-29	1½¢	Negotiation

TABLE XII. (Continued)

Railroad	Effective Dates	Amount of Increase	Method
Los Angeles & Salt Lake	6- 1-27	3¢	Mediation
	3- 1-28	3¢	Negotiation
Louisville & Nashville	10- 1-27	3¢	Negotiation
Louisville, Henderson & St. Louis	10- 1-27	3¢	Negotiation
Michigan Central	1-16-24	3¢	Negotiation
	5- 1-26	1½¢	Negotiation
	5-16-28	3.3¢[2]	Arbitration
Maine Central	2- 1-24	[2]	Negotiation
	2- 4-25	1½¢	Negotiation
	2- 1-29	2¢	Negotiation
M. K. T. Lines	7-16-24	1¢[1]	U.S.R.R.L.B. Dec. 2557
	1- 1-27	2¢	Negotiation
	8- 1-28	1.90¢	Negotiation
Mobile & Ohio	3-1 -29	2¾¢	Mediation
Missouri Pacific	3- 1-26	2¢	Negotiation
	12- 1-27	1½¢	Negotiation
	1- 1-30	2½¢	Negotiation
Missouri Pacific Lines in Texas	1- 1-28	3¢	Negotiation
(see also Gulf Lines)	3- 1-30	2¢	Negotiation
M. St. P. & S. S. M.	5-16-27	3¢	Mediation
Minn. & Int., Big Fork & Int. Falls	6- 1-27	3¢	Negotiation
Minn. & St. L.	8-17-27	3¢	Negotiation
Midland Valley-K. O. & G.	9- 1-28	1¢	Arbitration
N. Y. C. & St. L.	5-16-29	2½¢ to 4½¢[7]	Arbitration
New York Central (East)	1-16-24	5¢	Negotiation
	5- 1-26	1½¢	Negotiation
	5-16-28	3.3¢[2]	Arbitration
New York Central (West)	1-16-24	2½¢	Negotiation
	5- 1-26	1½¢	Negotiation
	5-16-28	3.3¢[2]	Arbitration
New York Central (Ohio Central Lines)	1-16-24	5¢	Negotiation
	5- 1-26	1½¢	Negotiation
	5-16-28	3.3¢[2]	Arbitration
Northwestern Pacific	5- 1-24	3¢	Negotiation
	8-16-27	2¢	Negotiation
New York, Ontario & Western	7-16-24	4¢[1]	U.S.R.R.L.B. Dec. 2557
	12-15-26	2¢	Negotiation
Norfolk & Western	2- 1-26	3¢	Negotiation
Northern Pacific	4-22-26	3¢	Arbitration
Norfolk Southern	12-16-26	4¢	Negotiation
N. C. & St. L.	1- 1-27	1½¢	Negotiation
	12- 1-27	2¢	Negotiation
	1- 1-30	3¢	Negotiation
N. Y. N. H. & H.	3-25-27	2.9¢	Negotiation
Oregon Short Line	7-16-24	2¢[1]	U.S.R.R.L.B. Dec. 2557
	1- 1-28	3¢	Negotiation
Ore., Wash., Ry. & Navig. Co.	2- 1-28	$5,000[6]	Mediation
Pittsburgh & Lake Erie	1-16-24	3¢	Negotiation
	5- 1-26	1½¢	Negotiation
	5-16-28	3.3¢[2]	Negotiation
Pennsylvania	12- 1-27	3¢	Negotiation
Rutland	8- 1-26	2.87¢	Negotiation
	7-14-27	2¾¢	Negotiation
Rio Grande Southern	1-16-28	3¢	Mediation
Richmond, Fredericksburg & Potomac	7- 1-28	2¢ to 3¢	Negotiation

TABLE XII. (Continued)

Railroad	Effective Dates	Amount of Increase	Method
St. Louis-San Francisco	5-16-28	2¢	Mediation
St. Louis Southwestern	5- 1-28	2½¢	Negotiation
Staten Island Rapid Transit Co.	1- 1-28	2¢	Negotiation
Spokane, Portland & Seattle	10- 1-27	3¢	Negotiation
Southern Pacific (Atlantic)	1-16-24	2¢[1]	U.S.R.R.L.B. Dec. 2115
	7-16-27	3¢	Mediation
Southern Pacific (Pacific)	5- 1-27	3¢	Mediation
	7- 1-30	1¢	Negotiation
Savannah Union Station	7- 1-25	6¢[1]	U.S.R.R.L.B. Dec. 3767
	6- 1-27	6¢	Negotiation
Southern (C. N. O. & T. P., M. O. & N.E., A.G.S.)	2-16-26	3¼¢	Negotiation
Texas & Pacific	1-16-24	2¢[1]	U.S.R.R.L.B. Dec. 2115
	4- 1-28	2½¢	Mediation
Texas & New Orleans	6-16-27	2½¢	Negotiation
Term. R. R. Ass'n of St. Louis	6- 1-24	5¢[1]	U.S.R.R.L.B. Dec. 2434
Tennessee Central	4-16-27	3.03¢	Negotiation
	9-15-28	2¾¢	Negotiation
Union Pacific, St. Joseph & Gr. Island	4- 1-25	2¢[1]	U.S.R.R.L.B. Dec. 3266
	1- 1-28	3¢	Negotiation
Utah	1- 1-28	6¢	Negotiation
Virginian	9- 1-26	2¢	Negotiation
Washington Terminal Co.	11-16-23	3¢[1]	U.S.R.R.L.B. Dec. 2025
	10- 1-27	2¢[3]	Negotiation
	3- 1-30	1¢ to 2½¢	Mediation
Western Pacific	11-16-23	2¢[1]	U.S.R.R.L.B. Dec. 2025
	11- 1-28	2¢	Mediation
Wabash	10-10-27	3¢	Mediation
Winston-Salem Southbound	3- 1-28	2.81¢	Negotiation
Wheeling & Lake Erie	12- 1-28	3¢	Negotiation

[1] Increases granted by Labor Board apply only to employees included in Section 1, Article 3, Decision 2.

[2] Maine Central—Express Commission converted into wages.

[3] Received relief days in addition to wage increases.

[4] Received relief days with no reduction in compensation.

[5] 2¢ granted to 1st and 2nd tricks; 2½¢ to third tricks.

[6] Flat sum granted: Distributed by joint action of committee and management.

[7] 2½¢ on Nickel Plate District; 4½¢ on L. E. & W., and Clover Leaf District.

TABLE XIII.

WAGE INCREASES GRANTED TO RAILROAD SIGNALMEN ON U. S. RAILROADS 1922-1930

Railroad	Effective Date	Method	Amount per hour
Alton	2-16-27	Negotiation	3¢
	2- 1-29	Mediation	2¢-4¢
Atchison, Topeka & Santa Fe	2- 1-27	Negotiation	3¢
	2- 1-29	Negotiation	3¢
Baltimore & Ohio	7- 1-23	Negotiation	3¢
	9- 1-27	Negotiation	3¢
	5- 1-29	Negotiation	4¢
Baltimore & Ohio Chgo. Term.	7- 1-23	Negotiation	3¢
	12- 1-27	Negotiation	3¢
	5-16-29	Negotiation	4¢
Belt Railway of Chicago	5- 1-27	Negotiation	3¢
	3- 1-29	Negotiation	3¢
Boston & Albany	7- 1-23	Negotiation	3¢ (helpers 4¢)
	11-26-26	Negotiation	3¢
	4- 1-29	Negotiation	4¢ (Class A 4.2¢)
Boston & Maine	12- 3-26	Negotiation	3¢ (helpers 2¢)
	10- 1-29	Mediation	4½¢
Boston Terminal Company	10-13-28	Mediation	3¢-5¢
	10-14-29	Negotiation	4¢
Central of Georgia	4- 1-26	Negotiation	2¢-3¢
	12- 1-29	Mediation	5¢
Central R.R. of New Jersey	3-15-26	Negotiation	3¢
	8- 1-27	Negotiation	3¢
	4- 1-29	Negotiation	4¢
Chesapeake & Ohio	7- 1-23	Negotiation	3¢
	4- 1-26	Negotiation	2¢
	4-16-29	Negotiation	3¢
Chicago & Eastern Illinois[1]			
Chicago & North Western	1- 1-27	Negotiation	3¢
	2-16-29	Negotiation	3¢
Chicago & Western Indiana	4- 1-27	Negotiation	3¢
	2-16-29	Negotiation	3¢
Chicago, Burlington & Quincy	12- 1-27	Mediation	2¢-3¢
	2- 1-29	Negotiation	3¢ (helpers and assistants 4¢)
Chicago Great Western	1- 1-28	Negotiation	3¢ (helpers and assistants 2¢)
	3- 1-29	Negotiation	3¢
Chgo. Ind. & Louisville (Monon)	4- 1-27	Negotiation	2¢
	2- 1-29	Mediation	4¢
Chgo., Mil., St. Paul & Pac.	12- 1-27	Mediation	3¢
	3- 1-29	Negotiation	3¢
Chgo., Rock Island & Pacific	5- 1-27	Negotiation	3¢
	3- 1-29	Negotiation	3¢
Cincinnati Union Terminal[2]			
Cleveland, Cincinnati, Chgo. & St. Louis (Big Four)	7- 1-23	Negotiation	3¢ (helpers 4¢)
	11- 1-26	Negotiation	3¢
	4- 1-29	Negotiation	5¢
Dayton Union Terminal[3]			
Delaware, Lackawanna & West.	7-16-23	Negotiation	3¢
	1- 1-27	Negotiation	3¢
	4-16-29	Negotiation	4¢

[1] Brotherhood established on this property November 27, 1934.
[2] Brotherhood established on this property August 18, 1933.
[3] Brotherhood established on this property April 10, 1932.

TABLE XIII. (Continued)

Railroad	Effective Date	Method	Amount per hour
Denver & Rio Grande Western	1- 1-30	Negotiation	3¢
Denver Union Terminal	Same as Union Pacific		
Elgin, Joliet & Eastern	7- 1-29	Negotiation	5¢-7¢
Erie Railroad	6- 1-26	Negotiation	3¢
	11- 1-27	Negotiation	3¢
	5-16-29	Negotiation	4¢ (helpers 2¢-4¢)
Florida East Coast[1]			
Grand Central Terminal[2]	7- 1-27	Negotiation	2¢-4¢ (A. B. & U. Towers)
	4- 1-29	Negotiation	5¢ (7¢ leading signalmen & maint.)
Grand Trunk Western	4- 1-25	Negotiation	3¢
	9- 1-27	Negotiation	3¢
	7- 1-29	Negotiation	4¢ (5¢ signalmen & maintainers, also 4 year appren.)
Great Northern Railroad[3]			
Houston Belt & Terminal	11- 1-30	Negotiation	8¢ leading signalmen 6¢ signalmen 3¢ helpers
Illinois Central System	3- 1-28	Mediation	3¢
	3- 1-29	Negotiation	3¢
Indianapolis Union[4]			
Jacksonville Terminal	8-16-25	Negotiation	5¢
	2-16-26	Negotiation	3¢
	5- 1-29	Negotiation	5¢
Kansas City Terminal	5- 1-26	U.S.R.L.B.	3¢
	3- 1-29	Negotiation	3¢
Lehigh Valley	4- 1-26	Negotiation	3¢
	7- 1-27	Negotiation	3¢
	4-16-29	Negotiation	4¢
Louisville & Nashville	3- 1-26	Negotiation	2¢
	11- 1-27	Arb. awd.	3¢-4¢
	11- 1-29	Negotiation	2¢
Maine Central	3-15-27	Negotiation	2¢-3¢
	4- 1-29	Negotiation	1¢-2¢
Michigan Central	2-15-24	Negotiation	3¢ (helpers 4¢)
	10- 1-26	Negotiation	3¢
	4- 1-29	Negotiation	7¢ leading signalmen and leading maint. 5¢ signalmen, maint. and assts. 4¢ helpers.
Mpls. St. Paul & Sault Ste. Marie (Soo Line)	11- 1-23	Negotiation	3¢
	6- 1-27	Negotiation	3¢
	4- 1-29	Negotiation	3¢
Missouri, Kansas & Texas	1- 1-26	Negotiation	1¢
	4- 1-29	Negotiation	3½¢-5¢
Missouri Pacific	3- 1-27	Negotiation	3¢ (helpers 1¢, assistants 2¢)
	3- 1-29	Negotiation	3¢
Monongahela	Increases not available		
Nashville, Chattanooga & St. L.	5- 1-26	Negotiation	2¢
	3- 1-28	Arbitration	4¢ leading men and mechanics 3¢ assts. and helpers
	11- 1-29	Negotiation	2¢

[1] Brotherhood re-established on this property February 1935.
[2] Rates New York Central, Lines East, applied until July 1, 1927.
[3] Brotherhood re-established on this property November 1934.
[4] Brotherhood established on this property May 1, 1935.

TABLE XIII. (Continued)

Railroad	Effective Date	Method	Amount per hour
New York Central	7- 1-23	Negotiation	3¢ (helpers 4¢)
Buffalo and East	10- 1-26	Negotiation	3¢
	4- 1-29	Negotiation	7¢ leading men 5¢ mechanics, maintainers & assts. 4¢ helpers
New York Central	7- 1-23	Negotiation	3¢ (helpers 4¢)
Lines West of Buffalo	10- 1-26	Negotiation	3¢
	4- 1-29	Negotiation	4¢ helpers 5¢ assts., signalmen, and maintainers 7¢ leading men and maintainers 10¢-13¢ leading maint. Chicago
New York, Chicago & St. Louis	7- 1-23	Negotiation	3¢
	9- 1-28	Mediation	3¢
	11- 1-29	Mediation	3¢-4¢
N. Y., New Haven & Hartford	5- 1-26	Negotiation	3¢ (assts. 2¢, helpers 2¢)
	12-16-27	Mediation	3¢
	8- 1-29	Mediation	4¢
Norfolk & Western	6- 1-23	Negotiation	3¢
	2- 1-26	Negotiation	2¢
	2- 1-29	Negotiation	3¢
Northern Pacific	5-16-27	Negotiation	3¢
	3- 1-29	Negotiation	3¢
Pennsylvania System	4-15-23	Negotiation	3¢ (assistants 2¢)
	3-16-27	Negotiation	3¢ (assistants and helpers 4¢)
	2- 1-29	Negotiation	4¢
Pere Marquette	5- 1-27	Mediation	3¢
	6- 1-29	Negotiation	4¢
Pittsburgh & Lake Erie	7- 1-23	Negotiation	3¢ (helpers 4¢)
	10- 1-26	Negotiation	3¢
	4- 1-29	Negotiation	5¢
Reading	5- 1-23	Negotiation	4¢
	12- 1-26	Negotiation	2¢
	2- 1-29	Negotiation	4¢ (helpers 1¢,2¢,3¢)
Richmond, Fredericksburg & Potomac	7- 1-23	Negotiation	3¢
	6- 1-26	Negotiation	2¢
	9- 1-29	Negotiation	3¢
St. Louis-San Francisco	- -26	Negotiation	1¢ (helpers ½¢)
	2- 1-28	Negotiation	2¢ (helpers ½¢)
	4- 1-29	Negotiation	3¢
Seaboard Air Line	12- 1-27	Negotiation	3¢
	1- 1-30	Negotiation	5¢ (helpers 4¢)
Southern Pacific (Pacific Lines)	1- 1-27	Arbitration	3¢-4½¢
	3- 1-29	Negotiation	1½¢-3¢
Southern Pacific (Atlantic Lines)	4-16-29	Negotiation	3¢ leadmen, signalmen and maint. 1¢-3¢ assistants 2¢ helpers
Southern System	11- 1-24	Negotiation	1¢
	4-16-26	Negotiation	2¢
	3- 1-29	Negotiation	5¢
Staten Island Rapid Transit	7- 1-23	Negotiation	3¢
	10- 1-27	Negotiation	3¢
	5- 1-29	Negotiation	4¢

TABLE XIII. (Continued)

Railroad	Effective Date	Method	Amount per hour
Terminal R.R. Association of St. Louis	3-15-26	Negotiation	3¢ (helpers and assistants 1¢)
	4- 1-29	Mediation	3¢
Texas & Pacific	10- 1-27	Negotiation	2¢ (helpers and assistants 1¢)
	4- 1-29	Mediation	3¢-4¢
Union Pacific System	2- 1-27	Negotiation	Various amounts
	3-16-29	Negotiation	Various amounts
Wabash	10-16-26	Negotiation	1½¢
	2- 1-29	Negotiation	3¢
	6- 1-29	Negotiation	1½¢
Washington Terminal	2- 1-29	Negotiation	Inc. not available
Western Pacific	1- 1-27	Mediation	3¢-4½¢
	5- 1-29	Negotiation	1½¢-3¢

TABLE XIV.

BASIC DAILY WAGE RATES OF CONDUCTORS, TRAINMEN AND SWITCHMEN
1920 - 1937
Eastern Association Territory

Class of Employee	May 1, 1920[1]	July 1, 1921[2]	Jan. 16, 1924[3]	Dec. 1, 1926[4]	Oct. 1, 1937[5]
PASSENGER					
Conductors	$7.00	$6.40	$6.70	$7.20	$7.64
Ticket Collectors	5.80	5.20	5.50	5.91	6.35
Baggagemen	5.16	4.56	4.86	5.22	5.66
Brakemen	5.00	4.40	4.70	5.05	5.49
THROUGH FREIGHT					
Conductors	6.44	5.80	6.16	6.62	7.06
Brakemen	5.12	4.48	4.84	5.20	5.64
LOCAL OR WAY FREIGHT					
Conductors	6.96	6.32	6.68	7.18	7.62
Brakemen	5.52	4.88	5.24	5.63	6.07
YARD SERVICE					
Foremen—Days	6.96	6.32	6.64	7.14	7.58
Helpers—Days	6.48	5.84	6.16	6.62	7.06
Foremen—Nights	6.96	6.32	6.64	7.14	7.58
Helpers—Nights	6.48	5.84	6.16	6.62	7.06
Switchtenders	5.04	4.40	4.72	5.07	5.51
Car Retarder Operators	(5)	(5)	7.44	7.94	8.38

[1] U. S. Railroad Labor Board Decision No. 2.
[2] U. S. Railroad Labor Board Decision No. 147.
[3] New York Central Settlement followed by similar settlements on other lines.
[4] Eastern Arbitration Award.
[5] Rate first established on the Indiana Harbor Belt Railroad.
[6] National Mediation Agreement dated October 3, 1937, effective October 1, 1937.

TABLE XV.

BASIC DAILY WAGE RATES OF CONDUCTORS, TRAINMEN AND SWITCHMEN
1920 - 1937
Western Association Territory

Class of Employee	May 1, 1920[1]	July 1, 1921[2]	Apr. 8, 1924[3]	1927-1928[4]	Oct. 1, 1937[5]
PASSENGER					
Conductors	$7.00	$6.40	$6.70	$7.14	$7.58
Baggagemen	5.16	4.56	4.86	5.18	5.62
Brakemen	5.00	4.40	4.70	5.01	5.45
THROUGH FREIGHT					
Conductors	6.44	5.80	6.16	6.56	7.00
Brakemen	5.12	4.48	4.84	5.15	5.59
LOCAL OR WAY FREIGHT					
Conductors	6.96	6.32	6.68	7.11	7.55
Brakemen	5.52	4.88	5.24	5.58	6.02
YARD SERVICE					
Conductors—Days	6.96	6.32	6.64	7.14	7.58
Conductors—Nights	6.96	6.32	6.64	7.14	7.58
Brakemen—Days	6.48	5.84	6.16	6.62	7.06
Brakemen—Nights	6.48	5.84	6.16	6.62	7.06
Switchtenders	5.04	4.40	4.72	5.07	5.51

[1] U. S. Railroad Labor Board Decision No. 2.
[2] U. S. Railroad Labor Board Decision No. 147.
[3] Western Association Conference Settlement.
[4] Emergency Board Report for road work, May 1, 1928, Arbitration Award for yard work, May 1, 1927.
[5] National Mediation Agreement dated October 3, 1937, effective October 1, 1937.

TABLE XVI.

BASIC DAILY WAGE RATES FOR LOCOMOTIVE ENGINEERS, FIREMEN, HELPERS, HOSTLERS AND HOSTLER HELPERS

Decision No. 2, U. S. Railroad Labor Board, effective May 1, 1920

PASSENGER SERVICE

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$6.40	$4.80	$4.80	$6.40	$4.80	$4.80	$4.80	$6.40	$4.80	$4.80
80,000 to 100,000 lbs.	6.40	4.88	4.80	6.40	4.88	4.80	4.80	6.40	4.88	4.80
100,000 to 140,000 lbs.	6.48	4.96	4.80	6.48	4.96	4.80	4.80	6.48	4.96	4.80
140,000 to 170,000 lbs.	6.56	5.12	4.80	6.56	5.12	4.96	4.80	6.56	5.12	4.80
170,000 to 200,000 lbs.	6.64	5.20	4.80	6.64	5.20	5.04	4.80	6.64	5.20	4.80
200,000 to 250,000 lbs.	6.72	5.28	4.96	6.72	5.28	5.12	4.96	6.72	5.28	4.96
250,000 to 300,000 lbs.	6.80	5.28	4.96	6.80	5.28	5.12	4.96	6.80	5.28	4.96
300,000 to 350,000 lbs.	6.88	5.36	4.96	6.88	5.36	5.20	4.96	6.88	5.36	4.96
350,000 to 400,000 lbs.	6.96	5.44	4.96	6.96	5.44	5.28	4.96	6.96	5.44	4.96
400,000 to 450,000 lbs.	7.04	5.52	5.12	7.04	5.52	5.36	5.12	7.04	5.52	5.12
450,000 to 500,000 lbs.	7.12	5.60	5.12	7.12	5.60	5.44	5.12	7.12	5.60	5.12
500,000 lbs. and over	7.20	5.68	5.12	7.20	5.68	5.52	5.12	7.20	5.68	5.12
Mallets, regardless of weight	7.40	6.00	....	7.40	6.00	5.80	....	7.40	6.00	....
*Minimum earnings, short turn-around passenger service	6.80	5.05	5.05	6.80	5.05	5.05	5.05	6.80	5.05	5.05

* From mileage, overtime, or other rules applicable for each day service is performed.

TABLE XVI. (Continued)

FREIGHT SERVICE

Through and Irregular Freight, Pusher, Helper, Mine Run or Roustabout, Belt Line or Transfer, Wreck, Work, Construction, Snowplow, Circus Trains, Trains Established for the Exclusive Purpose of Handling Milk and All Other Unclassified Service.*

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$7.12	$5.28	$5.28	$7.12	$5.28	$5.28	$5.28	$7.12	$5.28	$5.28
80,000 to 100,000 lbs.	7.20	5.36	5.28	7.20	5.36	5.28	5.28	7.20	5.36	5.28
100,000 to 140,000 lbs.	7.28	5.52	5.28	7.28	5.52	5.36	5.28	7.28	5.52	5.28
140,000 to 170,000 lbs.	7.52	5.68	5.28	7.52	5.68	5.52	5.28	7.52	5.68	5.28
170,000 to 200,000 lbs.	7.68	5.84	5.28	7.68	5.84	5.68	5.28	7.68	5.84	5.28
200,000 to 250,000 lbs.	7.84	6.00	5.44	7.84	6.01	5.84	5.44	7.84	6.00	5.44
250,000 to 300,000 lbs.	7.98	6.16	5.44	7.98	6.16	6.16	5.44	7.98	6.16	5.44
300,000 to 350,000 lbs.	8.12	6.41	5.44	8.12	6.41	6.41	5.44	8.12	6.32	5.44
350,000 lbs. and over	8.32	6.48	5.44	8.32	6.48	6.48	5.44	8.12	6.48	5.44
Mallets, less than 275,000 lbs.	8.82	6.48	....	8.82	6.48	6.48	....	8.82	6.48	....
Mallets, 275,000 lbs. and over	9.04	6.79	....	9.04	6.79	6.79	....	9.04	6.79	....
YARD SERVICE										
Less than 140,000 lbs.	$7.04	$5.60	$5.60	$7.04	$5.60		$5.60	$7.04	$5.60	$5.60
140,000 to 200,000 lbs.	7.20	5.72	5.60	7.20	5.72		5.60	7.20	5.72	5.60
200,000 to 300,000 lbs.	7.36	5.84	5.60	7.36	5.84		5.60	7.36	5.84	5.60
300,000 lbs. and over	7.52	6.00	5.76	7.52	6.00		5.76	7.52	6.00	5.76
Mallets, less than 275,000 lbs.	8.12	6.72	....	8.12	6.72		....	8.12	6.72	....
Mallets, 275,000 lbs. and over	8.36	6.96	....	8.36	6.96		....	8.36	6.96	....
HOSTLING SERVICE										
Outside Hostlers		$6.24			$6.24				$6.24	
Inside Hostlers		5.60			5.60				5.60	
Hostler Helpers		5.04			5.04				5.04	

* For Local or Way Freight Service, 52c per 100 miles or less for engineers and 40c per 100 miles or less for firemen shall be added to the through freight rates, according to class of engine. Oil Differential not to apply on locomotives weighing over 215,000 lbs. on drivers.

TABLE XVII.

BASIC DAILY WAGE RATES FOR LOCOMOTIVE ENGINEERS, FIREMEN, HELPERS, HOSTLERS AND HOSTLER HELPERS

1921 - 1923

Decision No. 147, U. S. Railroad Labor Board, effective July 1, 1921

PASSENGER SERVICE

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$5.92	$4.32	$4.32	$5.92	$4.32	$4.32	$4.32	$5.92	$4.32	$4.32
80,000 to 100,000 lbs.	5.92	4.40	4.32	5.92	4.40	4.32	4.32	5.92	4.40	4.32
100,000 to 140,000 lbs.	6.00	4.48	4.32	6.00	4.48	4.32	4.32	6.00	4.48	4.32
140,000 to 170,000 lbs.	6.08	4.64	4.32	6.08	4.64	4.48	4.32	6.08	4.64	4.32
170,000 to 200,000 lbs.	6.16	4.72	4.32	6.16	4.72	4.56	4.32	6.16	4.72	4.32
200,000 to 250,000 lbs.	6.24	4.80	4.48	6.24	4.80	4.64	4.48	6.24	4.80	4.48
250,000 to 300,000 lbs.	6.32	4.80	4.48	6.32	4.80	4.64	4.48	6.32	4.80	4.48
300,000 to 350,000 lbs.	6.40	4.88	4.48	6.40	4.88	4.72	4.48	6.40	4.88	4.48
350,000 to 400,000 lbs.	6.48	4.96	4.48	6.48	4.96	4.80	4.48	6.48	4.96	4.48
400,000 to 450,000 lbs.	6.56	5.04	4.64	6.56	5.04	4.88	4.64	6.56	5.04	4.64
450,000 to 500,000 lbs.	6.64	5.12	4.64	6.64	5.12	4.96	4.64	6.64	5.12	4.64
500,000 lbs. and over	6.72	5.20	4.64	6.72	5.20	5.04	4.64	6.72	5.20	4.64
Mallets regardless of weight	6.92	5.52	....	6.92	5.52	5.32	....	6.92	5.52	....
*Minimum earnings, short turn-around passenger service	6.32	4.57	4.57	6.32	4.57	4.57	4.57	6.32	4.57	4.57

* From mileage, overtime, or other rules applicable for each day service is performed.

TABLE XVII. (Continued)

FREIGHT SERVICE

Through and Irregular Freight, Pusher, Helper, Mine Run or Roustabout, Belt Line or Transfer, Wreck, Work, Construction, Snowplow, Circus Trains, Trains Established for the Exclusive Purpose of Handling Milk and All Other Unclassified Service.*

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$6.48	$4.64	$4.64	$6.48	$4.64	$4.64	$4.64	$6.48	$4.64	$4.64
80,000 to 100,000 lbs.	6.56	4.72	4.64	6.56	4.72	4.64	4.64	6.48	4.72	4.64
100,000 to 140,000 lbs.	6.64	4.88	4.64	6.64	4.88	4.72	4.64	6.64	4.88	4.64
140,000 to 170,000 lbs.	6.88	5.04	4.64	6.88	5.04	4.88	4.64	6.88	5.04	4.64
170,000 to 200,000 lbs.	7.04	5.20	4.64	7.04	5.20	5.04	4.64	7.04	5.20	4.64
200,000 to 250,000 lbs.	7.20	5.36	4.80	7.20	5.37	5.20	4.80	7.20	5.36	4.80
250,000 to 300,000 lbs.	7.34	5.52	4.80	7.34	5.52	5.52	4.80	7.34	5.52	4.80
300,000 to 350,000 lbs.	7.48	5.77	4.80	7.48	5.77	5.77	4.80	7.48	5.68	4.80
350,000 lbs. and over	7.68	5.84	4.80	7.68	5.84	5.84	4.80	7.68	5.84	4.80
Mallets, less than 275,000 lbs.	8.18	5.84	....	8.18	5.84	5.84	....	8.18	5.84	....
Mallets, 275,000 lbs. and over	8.40	6.15	....	8.40	6.15	6.15	....	8.40	6.15	....
YARD SERVICE										
Less than 140,000 lbs.	$6.40	$4.96	$4.96	$6.40	$4.96		$4.96	$6.40	$4.96	$4.96
140,000 to 200,000 lbs.	6.56	5.08	4.96	6.56	5.08		4.96	6.56	5.08	4.96
200,000 to 300,000 lbs.	6.72	5.20	4.96	6.72	5.20		4.96	6.72	5.20	4.96
300,000 lbs. and over	6.88	5.36	5.12	6.88	5.36		5.12	6.88	5.36	5.12
Mallets, less than 275,000 lbs.	7.48	6.08	....	7.48	6.08		....	7.48	6.08	....
Mallets, 275,000 lbs. and over	7.72	6.32	....	7.72	6.32		....	7.72	6.32	....
HOSTLING SERVICE										
Outside Hostlers		$5.60			$5.60				$5.60	
Inside Hostlers		4.96			4.96				4.96	
Hostler Helpers		4.40			4.40				4.40	

* For Local or Way Freight Service, 52c per 100 miles or less for engineers and 40c per 100 miles or less for firemen shall be added to the through freight rates, according to class of engine. Oil Differential not to apply on locomotives weighing over 215,000 lbs. on drivers.

TABLE XVIII.

BASIC DAILY WAGE RATES FOR LOCOMOTIVE ENGINEERS, FIREMEN, HELPERS, HOSTLERS AND HOSTLER HELPERS

1924 - 1926

New York Central Settlement effective on Eastern and Southeastern Railroads, January 16, 1924
Southern Pacific Settlement effective on Western Railroads, September 1, 1924

PASSENGER SERVICE

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$6.16	$4.56	$4.56	$6.16	$4.56	$4.56	$4.56	$6.16	$4.56	$4.56
80,000 to 100,000 lbs.	6.16	4.64	4.56	6.16	4.64	4.56	4.56	6.16	4.64	4.56
100,000 to 140,000 lbs.	6.24	4.72	4.56	6.24	4.72	4.56	4.56	6.24	4.72	4.56
140,000 to 170,000 lbs.	6.32	4.88	4.56	6.32	4.88	4.72	4.56	6.32	4.88	4.56
170,000 to 200,000 lbs.	6.40	4.96	4.56	6.40	4.96	4.80	4.56	6.40	4.96	4.56
200,000 to 250,000 lbs.	6.48	5.04	4.72	6.48	5.04	4.88	4.72	6.48	5.04	4.72
250,000 to 300,000 lbs.	6.56	5.04	4.72	6.56	5.04	4.88	4.72	6.56	5.04	4.72
300,000 to 350,000 lbs.	6.64	5.12	4.72	6.64	5.12	4.96	4.72	6.64	5.12	4.72
350,000 to 400,000 lbs.	6.72	5.20	4.72	6.72	5.20	5.04	4.72	6.72	5.20	4.72
400,000 to 450,000 lbs.	6.80	5.28	4.88	6.80	5.28	5.12	4.88	6.80	5.28	4.88
450,000 to 500,000 lbs.	6.88	5.36	4.88	6.88	5.36	5.20	4.88	6.88	5.36	4.88
500,000 lbs. and over	6.96	5.44	4.88	6.96	5.44	5.28	4.88	6.96	5.44	4.88
Mallets regardless of weight	7.16	5.76	....	7.16	5.76	5.56	....	7.16	5.76	....
*Minimum earnings	7.00	5.25	5.25	7.00	5.25	5.25	5.25	7.00	5.25	5.25

* From mileage, overtime, or other rules applicable for each day service is performed.

TABLE XVIII. (Continued)

FREIGHT SERVICE

Through and Irregular Freight, Pusher, Helper, Mine Run or Roustabout, Belt Line or Transfer, Wreck, Work, Construction, Snowplow, Circus Trains, Trains Established for the Exclusive Purpose of Handling Milk and All Other Unclassified Service.*

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$6.84	$5.00	$5.00	$6.84	$5.00	$5.00	$5.00	$6.84	$5.00	$5.00
80,000 to 100,000 lbs.	6.92	5.08	5.00	6.92	5.08	5.00	5.00	6.92	5.08	5.00
100,000 to 140,000 lbs.	7.00	5.24	5.00	7.00	5.24	5.08	5.00	7.00	5.24	5.00
140,000 to 170,000 lbs.	7.24	5.40	5.00	7.24	5.40	5.24	5.00	7.24	5.40	5.00
170,000 to 200,000 lbs.	7.40	5.56	5.00	7.40	5.56	5.40	5.00	7.40	5.56	5.00
200,000 to 250,000 lbs.	7.56	5.72	5.16	7.56	5.73	5.56	5.16	7.56	5.72	5.16
250,000 to 300,000 lbs.	7.70	5.88	5.16	7.70	5.88	5.88	5.16	7.70	5.88	5.16
300,000 to 350,000 lbs.	7.84	6.13	5.16	7.84	6.13	6.13	5.16	7.84	6.04	5.16
350,000 lbs. and over	8.04	6.20	5.16	8.04	6.20	6.20	5.16	8.04	6.20	5.16
Mallets, less than 275,000 lbs.	8.54	6.20	....	8.54	6.20	6.20	....	8.54	6.20	....
Mallets, 275,000 lbs. and over	8.76	6.51	....	8.76	6.51	6.51	....	8.76	6.51	....
YARD SERVICE										
Less than 140,000 lbs.	$6.72	$5.28	$5.28	$6.72	$5.28		$5.28	$6.72	$5.28	$5.28
140,000 to 200,000 lbs.	6.88	5.40	5.28	6.88	5.40		5.28	6.88	5.40	5.28
200,000 to 300,000 lbs.	7.04	5.52	5.28	7.04	5.52		5.28	7.04	5.52	5.28
300,000 lbs. and over	7.20	5.68	5.44	7.20	5.68		5.44	7.20	5.68	5.44
Mallets, less than 275,000 lbs.	7.80	6.40	....	7.80	6.40		....	7.80	6.40	....
Mallets, 275,000 lbs. and over	8.04	6.64	....	8.04	6.64		....	8.04	6.64	....
HOSTLING SERVICE										
Outside Hostlers		$5.92			$5.92				$5.92	
Inside Hostlers		5.28			5.28				5.28	
Hostler Helpers		4.72			4.72				4.72	

* For Local or Way Freight Service, 52c per 100 miles or less for engineers and 40c per 100 miles or less for firemen shall be added to the through freight rates, according to class of engine. Oil Differential not to apply on locomotives weighing over 215,000 lbs. on drivers.

TABLE XIX.

BASIC DAILY WAGE RATES FOR LOCOMOTIVE ENGINEERS, FIREMEN, HELPERS, HOSTLERS AND HOSTLER HELPERS

Effective Dates

ENGINEERS:
East—Aug. 1, 1927
West—May 1, 1928
Southeast—Sept. 1, 1927

FIREMEN:
East—Feb. 1, 1927
West—Aug. 1, 1927
Southeast—May 1, 1927

PASSENGER SERVICE

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$6.62	$4.90	$4.90	$6.56	$4.86	$4.86	$4.86	$6.56	$4.91	$4.91
80,000 to 100,000 lbs.	6.62	4.99	4.90	6.56	4.94	4.86	4.86	6.56	4.99	4.91
100,000 to 140,000 lbs.	6.71	5.07	4.90	6.65	5.02	4.86	4.86	6.65	5.07	4.91
140,000 to 170,000 lbs.	6.79	5.25	4.90	6.73	5.18	5.02	4.86	6.73	5.23	4.91
170,000 to 200,000 lbs.	6.88	5.33	4.90	6.82	5.26	5.10	4.86	6.82	5.31	4.91
200,000 to 250,000 lbs.	6.97	5.42	5.07	6.90	5.34	5.18	5.02	6.90	5.39	5.07
250,000 to 300,000 lbs.	7.05	5.42	5.07	6.99	5.34	5.18	5.02	6.99	5.39	5.07
300,000 to 350,000 lbs.	7.14	5.50	5.07	7.07	5.42	5.26	5.02	7.07	5.47	5.07
350,000 to 400,000 lbs.	7.22	5.59	5.07	7.16	5.50	5.34	5.02	7.16	5.55	5.07
400,000 to 450,000 lbs.	7.31	5.68	5.25	7.24	5.58	5.42	5.18	7.24	5.63	5.23
450,000 to 500,000 lbs.	7.40	5.76	5.25	7.33	5.66	5.50	5.18	7.33	5.71	5.23
500,000 lbs. and over	7.48	5.85	5.25	7.41	5.74	5.58	5.18	7.41	5.79	5.23
Mallets, regardless of weight	7.70	6.19	....	7.63	6.06	5.86	....	7.63	6.11	....
Minimum earnings from mileage, overtime, or other rules applicable for each day service is performed	7.53	5.64	5.64	7.46	5.55	5.55	5.55	7.46	5.60	5.60

TABLE XIX. (Continued)

FREIGHT SERVICE

Through and Irregular Freight, Pusher, Helper, Mine Run or Roustabout, Belt Line or Transfer, Wreck, Work, Construction, Snowplow, Circus Trains, Trains Established for the Exclusive Purpose of Handling Milk and All Other Unclassified Service.*

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$7.35	$5.38	$5.38	$7.28	$5.35	$5.35	$5.35	$7.28	$5.40	$5.40
80,000 to 100,000 lbs.	7.44	5.46	5.38	7.37	5.43	5.35	5.35	7.37	5.48	5.40
100,000 to 140,000 lbs.	7.53	5.63	5.38	7.46	5.59	5.43	5.35	7.46	5.64	5.40
140,000 to 170,000 lbs.	7.78	5.81	5.38	7.71	5.75	5.59	5.35	7.71	5.80	5.40
170,000 to 200,000 lbs.	7.96	5.98	5.38	7.88	5.91	5.75	5.35	7.88	5.96	5.40
200,000 to 250,000 lbs.	8.13	6.15	5.55	8.05	6.08	5.91	5.51	8.05	6.12	5.56
250,000 to 300,000 lbs.	8.28	6.32	5.55	8.20	6.23	6.23	5.51	8.20	6.28	5.56
300,000 to 350,000 lbs.	8.43	6.59	5.55	8.35	6.48	6.48	5.51	8.35	6.53	5.56
350,000 lbs. and over	8.64	6.67	5.55	8.56	6.55	6.55	5.51	8.56	6.60	5.56
Mallets, less than 275,000 lbs.	9.18	6.67	....	9.10	6.55	6.55	....	9.10	6.60	....
Mallets, 275,000 lbs. and over	9.42	7.00	....	9.33	6.86	6.86	....	9.33	6.91	....
YARD SERVICE										
Less than 140,000 lbs.	$7.22	$5.68	$5.68	$7.16	$5.63		$5.63	7.16	$5.63	$5.63
140,000 to 200,000 lbs.	7.40	5.81	5.68	7.33	5.75		5.63	7.33	5.75	5.63
200,000 to 300,000 lbs.	7.57	5.93	5.68	7.50	5.87		5.63	7.50	5.87	5.63
300,000 lbs. and over	7.74	6.11	5.85	7.67	6.03		5.79	7.67	6.03	5.79
Mallets, less than 275,000 lbs.	8.39	6.88	....	8.31	6.75		....	8.31	6.75	....
Mallets, 275,000 lbs. and over	8.64	7.14	....	8.56	6.99		....	8.56	6.99	....
HOSTLING SERVICE										
Outside Hostlers	$6.36			$6.27				$6.27		
Inside Hostlers	5.68			5.63				5.63		
Hostler Helpers	5.07			5.07				5.07		

* For Local or Way Freight Service, 52c per 100 miles or less for engineers and 40c per 100 miles or less for firemen shall be added to the through freight rates, according to class of engine. Oil Differential not to apply on locomotives weighing over 215,000 lbs. on drivers.

TABLE XX.

BASIC DAILY WAGE RATES FOR LOCOMOTIVE ENGINEERS, FIREMEN, HELPERS, HOSTLERS AND HOSTLER HELPERS

Effective October 1, 1937

PASSENGER SERVICE

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$7.06	$5.34	$5.34	$7.00	$5.30	$5.30	$5.30	$7.00	$5.35	$5.35
80,000 to 100,000 lbs.	7.06	5.43	5.34	7.00	5.38	5.30	5.30	7.00	5.43	5.35
100,000 to 140,000 lbs.	7.15	5.51	5.34	7.09	5.46	5.30	5.30	7.09	5.51	5.35
140,000 to 170,000 lbs.	7.23	5.69	5.34	7.17	5.62	5.46	5.30	7.17	5.67	5.35
170,000 to 200,000 lbs.	7.32	5.77	5.34	7.26	5.70	5.54	5.30	7.26	5.75	5.35
200,000 to 250,000 lbs.	7.41	5.86	5.51	7.34	5.78	5.62	5.46	7.34	5.83	5.51
250,000 to 300,000 lbs.	7.49	5.86	5.51	7.43	5.78	5.62	5.46	7.43	5.83	5.51
300,000 to 350,000 lbs.	7.58	5.94	5.51	7.51	5.86	5.70	5.46	7.51	5.91	5.51
350,000 to 400,000 lbs.	7.66	6.03	5.51	7.60	5.94	5.78	5.46	7.60	5.99	5.51
400,000 to 450,000 lbs.	7.75	6.12	5.69	7.68	6.02	5.86	5.62	7.68	6.07	5.67
450,000 to 500,000 lbs.	7.84	6.20	5.69	7.77	6.10	5.94	5.62	7.77	6.15	5.67
500,000 lbs. and over	7.92	6.29	5.69	7.85	6.18	6.02	5.62	7.85	6.23	5.67
Mallets, regardless of weight	8.14	6.63	....	8.07	6.50	6.30	....	8.07	6.55	....
Minimum earnings from mileage, overtime, or other rules applicable for each day service is performed	7.97	6.08	6.08	7.90	5.99	5.99	5.99	7.90	6.04	6.04

TABLE XX. (Continued)

FREIGHT SERVICE

Through and Irregular Freight, Pusher, Helper, Mine Run or Roustabout, Belt Line or Transfer, Wreck, Work, Construction, Snowplow, Circus Trains, Trains Established for the Exclusive Purpose of Handling Milk and All Other Unclassified Service.

Classification of Locomotives (Weight on Drivers)	Eastern Railroads			Western Railroads				Southeastern Railroads		
					Fireman					
	Engineer	Fireman	Electric Helper	Engineer	Coal	Oil	Electric Helper	Engineer	Fireman	Electric Helper
Less than 80,000 lbs.	$7.79	$5.82	$5.82	$7.72	$5.79	$5.79	$5.79	$7.72	$5.84	$5.84
80,000 to 100,000 lbs.	7.88	5.90	5.82	7.81	5.87	5.79	5.79	7.81	5.92	5.84
100,000 to 140,000 lbs.	7.97	6.07	5.82	7.90	6.03	5.87	5.79	7.90	6.08	5.84
140,000 to 170,000 lbs.	8.22	6.25	5.82	8.15	6.19	6.03	5.79	8.15	6.24	5.84
170,000 to 200,000 lbs.	8.40	6.42	5.82	8.32	6.35	6.19	5.79	8.32	6.40	5.84
200,000 to 250,000 lbs.	8.57	6.59	5.99	8.49	6.52	6.35*	5.95	8.49	6.56	6.00
250,000 to 300,000 lbs.	8.72	6.76	5.99	8.64	6.67	6.67	5.95	8.64	6.72	6.00
300,000 to 350,000 lbs.	8.87	7.03	5.99	8.79	6.92	6.92	5.95	8.79	6.97	6.00
350,000 lbs. and over	9.08	7.11	5.99	9.00	6.99	6.99	5.95	9.00	7.04	6.00
Mallets, less than 275,000 lbs.	9.62	7.11	....	9.54	6.99	6.99	....	9.54	7.04	....
Mallets, 275,000 lbs. and over	9.86	7.44	....	9.77	7.30	7.30	....	9.77	7.35	....

* Oil Differential Not to Apply on Locomotives weighing over 215,000 lbs. on Drivers.

For Local or Way Freight Service, 52 cents per 100 miles or less for engineers and 40 cents per 100 miles or less for firemen shall be added to the through freight rates, according to class of engine.

YARD SERVICE

Less than 140,000 lbs.	$7.66	$6.12	$6.12	$7.60	$6.07	$6.07	$7.60	$6.07	$6.07
140,000 to 200,000 lbs.	7.84	6.25	6.12	7.77	6.19	6.07	7.77	6.19	6.07
200,000 to 300,000 lbs.	8.01	6.37	6.12	7.94	6.31	6.07	7.94	6.31	6.07
300,000 lbs. and over	8.18	6.55	6.29	8.11	6.47	6.23	8.11	6.47	6.23
Mallets, less than 275,000 lbs.	8.83	7.32	....	8.75	7.19	....	8.75	7.19	....
Mallets, 275,000 lbs. and over	9.08	7.58	....	9.00	7.43	....	9.00	7.43	....

HOSTLING SERVICE

Outside Hostlers	$6.80	$6.71	$6.71
Inside Hostlers	6.12	6.07	6.07
Hostler Helpers	5.51	5.51	5.51

PSF: Railroads [1943]

File Railroads

THE WHITE HOUSE
WASHINGTON

On the several occasions I have seen the representatives of the Brotherhoods and the Carriers, I have emphasized that in wartime under the Law as passed by the Congress, any change in the existing wage schedule must be in accordance with the Stabilization Law. Any proposal not in accordance with that Law can not be considered.

I stated Sunday that there had to be prompt action because I could not wait for a decision of this matter some day next week. to draw the documents taking over the railroads and determine the machinery requires time. As Commander in Chief the responsibility is mine to see that it is done in time.

I had hoped you would reach an agreement along the lines I have suggested ~~Sunday~~ which could be approved by the Stabilization Director. On Sunday I urged an agreement by Tuesday. This is Thursday noon and action must be taken.

As you are unable to agree I ask whether you will agree that I as President of the United States and Commander in Chief of the Army and Navy shall determine the differences between you. Anything that I do will be in accord with the stabilization program and for that reason I have asked Judge Vinson here so that it can be submitted to him.

The war can not wait and I can not wait. I want to know whether you, Mr. ——, object to my deciding this controversy immediately and whether you will abide by my decision.

THE WHITE HOUSE

WASHINGTON

Hon. John J. Pelley

Mr. J. Aronson

Mr. J. B. Parrish

Mr. H. A. Enochs

Mr. D. P. Loomis

Mr. A. F. Whitney

Mr. H. W. Fraser

Mr. Thomas C. Cashen

Mr. Alvanley Johnston

Mr. David B. Robertson

After a conference with representatives of the Carriers and the Grotherhoods, and after hearing from the parties to the controversies the statement of the issues upon which they have been unable to reach a decision, it was agreed by all parties that the issues should be determined by me in accordance with the law of the land and that they would abide by my decision.

1. By action of the Stacy Emergency Board, there was awarded to the employees an increase of four cents per hour, which was not disapproved by the Stabilization Director and is now being paid the employees.

2. The employees ask for an additional increase in wages based upon claims not presented to or considered by the Stacy Board or the Stabilization Director.

3. They asked for the payment of time and half for time worked in excess of forty hours per week. The Fair Labor Standards Act contains a provision excluding employees of railroads from the provisions of the Act.

Last May I announced that I believed railroad employees should be paid time and half for time worked in excess of forty hours per week practically as all other employees are paid. This can be accomplished either by Congress repealing the provision or by agreement of the employers and employees. I think it should be done by agreement.

It has been represented that as to a large proportion of the employees involved, there would be administrative difficulties, making compliance impracticable. It was also represented that payment of time and half to some and not regularly to all would create discriminations.

It also has been represented that by reason of the character of their work, these employees necessarily incur expenses away from home.

Because of these representations, I determine that four cents per hour shall be paid as the equivalent of or in lieu of time and half and away from home expenses.

4. Among the issues presented to me was the claim for vacation pay.

I determine that all employees shall be paid a vacation of one week with pay at the basic hourly rate of employment.

6. I further determine that the increases in pay above recited shall be paid until proclamation by the President or Declaration by the Congress of the cessation of hostilities; and that the agreement now arrived at in time of war shall be without prejudice to rights of either party at the expiration of the date above referred to seek a change in the agreement which is now made.

I am advised by the Economic Stabilization Director that the foregoing determinations are in conformity with the national stabilization program.

PSF; Railroad folder

Dec 21/43

2400 SIXTEENTH STREET
WASHINGTON, D.C.

File

My dear Mr President

The enclosed speaks for itself and it seems to me it meets the strike situation you are up against —

Respectfully —
Frederic A Delano

PSF: Railroads

MEMORANDUM ON THE APPLICATION OF SECTION 10, RAILWAY LABOR ACT TO PRESENT THREATENED LABOR EMERGENCY IN RAILROAD TRANSPORTATION

All of the emergency boards which have functioned thus far in the prevailing railroad labor disputes have been established under Executive Orders. No resort has yet been had to the provisions of section 10 of the Railway Labor Act. This section of the act may conceivably now be invoked, if desired, to forestall strikes for a minimum period of 60 days.

Following the attack on Pearl Harbor and the no-strike pledge by labor unions generally, the railroad brotherhoods felt the need for a special procedure whereby boards could be established to investigate railroad labor disputes without the necessity of taking strike votes or making strike threats. Following their representations to Federal authorities, Executive Order 9172 was issued on May 22, 1942. This Order recognizes that "The national interest demands that for the effective prosecution of the war there should be no strike votes taken or dates fixed for the beginning of strikes." The Order accordingly provides an alternative procedure for the establishment of special emergency boards when disputes are not settled under the negotiation, mediation and arbitration features of the Railway Labor Act. Such special boards are designated from a panel of members and are required to investigate the dispute and report thereon to the President. The order did not set aside any of the provisions of the Railway Labor Act.

In the operating (train and engine service) labor dispute such a special emergency board was designated and made its report on September 25, 1943, recommending an increase of 4 cents per hour. In the non-operating employees' dispute a similar special board was set up and rendered its report on May 29, 1943, recommending an increase of 8 cents per hour. On June 30, 1943, the Director of Economic Stabilization ruled that this latter recommendation

conflicted with the Stabilization Program. This action resulted in the appointment of another type of special board to reconsider the claims of the non-operating employees for wage adjustments and to make recommendations for settling the dispute in conformity with the ruling of the Director of Economic Stabilization. This latter board was created by the President under the First War Powers Act and as Commander in Chief of the Army and Navy.

In the functioning of all of the boards thus far in respect to these disputes, no threat of a strike or the setting of a strike date was involved. While Executive Order 9172 makes possible the establishment of special "emergency" boards so as to avoid the necessity of strike threats or the setting of strike dates, Section 10 of the Railway Labor Act was specifically designed for situations such as we have now where strikes are threatened. Section 10 of the act provides that when a dispute threatens "substantially to interrupt interstate commerce to a degree such as to deprive any section of the country of essential transportation service, the Mediation Board shall notify the President, who may thereupon, in his discretion, create a board to investigate and report respecting such dispute." The report of this board, under the law, is due in thirty days after the date of the President's proclamation declaring the existence of the transportation emergency. But what is really important is that Section 10 specifically stipulates that "After the creation of such board and for thirty days after such board has made its report to the President, no change, except by agreement, shall be made by the parties to the controversy in the conditions out of which the dispute arose." It is also important to note that ever since 1926, when the provisions of Section 10 were first included in the Railway Labor Act, this particular clause has been accepted by both railroad labor and management

to mean not only that the railroads are restrained from changing wages or working conditions, but also the employees are restrained from leaving the service - i. e. striking. In view of the fact that Section 10 has not yet been utilized in the prevailing railroad labor disputes, attention is called to the fact that resort to this provision of the law might now provide at least an additional 60 days for further investigation of the disputes and "cooling off" purposes.

For information in considering this matter further, attached herto are copies of Executive Order 9172 and the Railway Labor Act.

Attachments - 2

Memo by R A Orlano 12/21/43

Prepared by Otto Beyer on the Staff of Joseph Eastman Director of Defence Transn

Mr Beyer was formerly Chairman of the Natl Mediation Board

EXECUTIVE ORDER 9172

ESTABLISHING A PANEL FOR THE CREATION OF EMERGENCY BOARDS FOR THE ADJUSTMENT OF RAILWAY LABOR DISPUTES

WHEREAS, Section 5 of the Railway Labor Act, as amended (Ch. 8, title 45, U. S. C.) provides that for a period of thirty days after mediatory efforts of the National Mediation Board have failed to settle a dispute "no change shall be made in the rates of pay, rules, or working conditions or established practices in effect prior to the time the dispute arose"; and

WHEREAS, duly designated and authorized representatives of employees may, during this thirty day period, take a strike vote and fix a date for the strike to become effective; and

WHEREAS, Section 10 of the said Railway Labor Act requires the National Mediation Board to notify the President if an unadjusted dispute threatens, in its judgment, substantially to interrupt interstate commerce to a degree such as to deprive any section of the country of essential transportation service, and provides that upon receipt of such notification the President may, in his discretion, create a board to invesitgate and report respecting such dispute; and

WHEREAS, the national interest demands that for the effective prosecution of the war there shall be no strike votes taken, or dates fixed for the beginning of strikes, or strikes, lock-outs, embargoes put into effect, which would affect the transportation industry covered by the Railway Labor Act.

NOW, THEREFORE, by virtue of the authority vested in me by the Constitution and the Statutes of the United States, and in order to adjust the policies and procedures under the said Act to the requirements of the war emergency, it is hereby ordered as follows:

1. There is hereby created, for the duration of the war and six months thereafter, a National Railway Labor Panel of nine members, hereinafter referred to as the Panel, to be appointed by the President, and to be qualified as to membership thereon in the same manner as provided in Section 10 of the Railway Labor Act for membership on emergency boards. The President shall designate a chairman from the members of the Panel and shall fill vacancies thereon as they may occur. The Chairman of the Panel shall receive such compensation, together with necessary travelling expenses, as the President may prescribe. The members of the Panel shall receive necessary travel expenses and subsistence expenses or per diem allowances in lieu thereof on such days as they are actually engaged in performance of duties pursuant to this Order.

2. Whenever a dispute between a carrier or carriers and its or their employees concerning changes in rates of pay, rules, or working conditions, or whenever any other dispute not referable to the National Railroad Adjustment Board, is not adjusted or settled under the provisions of Sections 5, 6, 7, 8, and 9 of the Railway Labor Act, the duly designated and authorized representatives of employees involved in such dispute may, prior to notice by the National Mediation Board to the President of a threatened interruption to commerce, notify the Chairman of the Panel of the failure

of the parties to adjust the dispute and of their desire to avoid the taking of a strike vote and the setting of a strike date. If, in the judgment of the Chairman of the Panel, the dispute is such that if unadjusted, even in the absence of a strike vote, it may interfere with the prosecution of the war, he may thereupon select three members of the Panel to serve as an emergency board to investigate such dispute and to report thereon to the President. Subject to the provisions of Section 10, such board shall have exclusive and final jurisdiction of the dispute and shall make every reasonable effort to settle such dispute.

3. The National Mediation Board shall furnish the Panel stenographic, investigative, and such other facilities as may be necessary; and within the limits of the funds provided, and upon the certification of the Chairman of the Panel, shall make such other disbursements as are necessary to effectuate this Order.

FRANKLIN D. ROOSEVELT

THE WHITE HOUSE,

May 22, 1942.

Statement by the President PSF: Railroads 7-28-43.

After a conference with representatives of the Carriers and the Brotherhoods, and after hearing from the parties to the controversies the statement of the issues upon which they have been unable to reach a decision, it was agreed by the carriers and the Brotherhood of Locomotive Engineers and the Brotherhood of Railroad Trainmen that the issues should be determined by me in accordance with the law and that they would abide by my decision.

1. By action of the Stacy Emergency Board, there was awarded to the employees an increase of four cents per hour, which was not disapproved by the Stabilization Director and is now being paid the employees.

2. The employees ask for an additional increase in wages based upon claims not presented to or considered by the Stacy Board or the Stabilization Director.

3. They ask for the payment of time and half for time worked in excess of forty hours per week. The Fair Labor Standards Act contains a provision excluding employees of railroads from the provisions of the Act.

Last May I announced that I believed railroad employees should be paid time and half for time worked in excess of forty hours per week as practically all other employees are paid. This can be accomplished either by Congress repealing the exemption provision or by agreement of the employers and employees. I think it should be done by agreement.

It has also been represented that as to a large proportion of the operating employees the exigencies of the railroad service and questions in respect of existing rules and practices create practical and administrative difficulties in the application of a strict overtime requirement. It was also represented that payment of time and half to some and not regularly to all would create discrim-

inations.

It also has been represented that by reason of the character of their work, these employees necessarily incur travel expenses when away from home.

After consideration of these representations, I determine that five cents per hour effective immediately shall be paid as the equivalent of or in lieu of claims for time and half pay for time over 40 hours and for expenses while away from home.

4. Among the issues presented to me was the claim for vacation pay.

I determine that employees shall be entitled to a vacation of one week a year with pay at the basic hourly rate of employment.

5. I further determine that the increases in pay above recited shall be paid until proclamation by the President or Declaration by the Congress of the cessation of hostilities; and that the agreement now arrived at in time of war shall be without prejudice to rights of either party at the expiration of the date above ~~referred~~ stated to seek a change in the agreement which is now made.

I am advised by the Economic Stabilization Director that the foregoing determinations are in conformity with the national stabilization program.

Franklin D. Roosevelt

IMMEDIATE RELEASE DECEMBER 27, 1943

STATEMENT BY THE PRESIDENT

After a conference with representatives of the Carriers and the Brotherhoods, and after hearing from the parties to the controversies the statement of the issues upon which they have been unable to reach a decision, it was agreed by the carriers and the Brotherhood of Locomotive Engineers and the Brotherhood of Railroad Trainmen that the issues should be determined by me in accordance with the law and that they would abide by my decision.

1. By action of the Stacy Emergency Board, there was awarded to the employees an increase of four cents per hour, which was not disapproved by the Stabilization Director and is now being paid the employees.

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It has also been represented that as to a large proportion of the operating employees the exigencies of the railroad service and questions in respect of existing rules and practices create practical and administrative difficulties in the application of a strict overtime requirement. It was also represented that payment of time and half to some and not regularly to all would create discriminations.

It also has been represented that by reason of the character of their work, these employees necessarily incur heavier expenses when away from home.

After consideration of these representations, I determine that five cents per hour effective immediately shall be paid as the equivalent of or in lieu of claims for time and half pay for time over 40 hours and for expenses while away from home.

4. Among the issues presented to me was the claim for vacation pay.

I determine that employees shall be entitled to a vacation of one week a year with pay at the basic hourly rate of employment.

5. I further determine that the increases in pay above recited shall be paid until proclamation by the President or Declaration by the Congress of the cessation of hostilities; and that the agreement now arrived at in time of war shall be without prejudice to rights of either party at the expiration of the date above stated to seek a change in the agreement which is now made.

I am advised by the Economic Stabilization Director that the foregoing determinations are in conformity with the national stabilization program.

FRANKLIN D. ROOSEVELT

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