

Civil-Service Retirement Program, 1959

by JOHN P. JONES*

Amendments in recent years to the Civil Service Retirement Act have broadened and liberalized the retirement system that it established. In the following article the current provisions are described and actuarial analyses of certain benefits, as well as overall actuarial cost estimates, are presented.

MORE than 2 million civilian employees of the Federal Government and their dependents are protected by the civil-service retirement program against income loss resulting from the death of the breadwinner or from his retirement because of age or disability. Congress established the program in 1920, when it passed the first Civil Service Retirement Act, and has voted various amendments to the act since that year. The most recent major amendments (Public Law No. 854) were approved July 31, 1956.

The 1956 law liberalized the annuity formula applying to future retirees; provided for the first time a minimum disability annuity, extended survivor benefits to widows of any age, with or without children, and to disabled widowers; and lowered the reduction in annuities for early retirement and for provision of survivor benefits on an optional basis. To help meet the increased cost resulting from these changes, the employee contribution was increased to 6½ percent of pay.

This article discusses in detail the major provisions of the present system, which are also outlined in the accompanying chart. Provisions applying only to certain special groups, such as legislative employees and Members of Congress, are discussed less fully. Omitted entirely are certain provisions mainly administrative in nature and special provisions applying to Alaska Railroad and Canal Zone employees. Changes introduced by the 1956 amendments (and by relatively minor amendments since 1956) are emphasized. Certain actuarial analyses are given with respect to benefits that are actuarial "bargains" from the employee viewpoint, and overall actuarial cost estimates,

as presented in the latest report of the Board of Actuaries, are discussed.

Retirement

Compulsory retirement for age.—Provisions concerning compulsory retirement were unchanged by the 1956 amendments. The employee must retire at age 70 or as soon thereafter as he meets the 15-year-service requirement. Even though retirement is compulsory under the given conditions, immediate or later reemployment is possible under the requirements for reemployment of annuitants, which were somewhat eased by the 1956 amendments, so that a reemployed annuitant needs only to be "qualified for his position."

Voluntary retirement for age.—Voluntary retirement on full annuity is permitted at age 60 or over with 30 or more years of service, or at age 62 or over with 5 or more years of service. In addition, an employee with 30 or more years of service may elect to retire between the ages of 55 and 60, but the basic annuity is reduced by ½ of 1 percent for each full month the employee is under age 60 at the time of retirement. Before the 1956 amendments, the reduction was ¼ of 1 percent a month. Since the reduction on an "actuarial equivalent" basis would be about ½ of 1 percent a month, the system provides an actuarial "bargain" for early retirements.

Involuntary separation.—If an employee is involuntarily separated from service, for reasons other than misconduct or delinquency, he is eligible for an immediate annuity, provided he has had 25 years of service or, alternatively, under the 1956 amendments, has attained age 50 and has had 20 years of service. If the employee is under age 60, the basic annuity is reduced as described in the chart in the section "Computation of Benefit Amounts."

Disability.—Disability retirement is permitted (after at least 5 years of service) upon a finding of disability by the Civil Service Commission. By virtue of the disability minimum provision in the 1956 amendments, the employee with as little as 5 years of creditable service may receive an annuity of 40 percent of the "average salary." This is the equivalent of a nondisability annuity based on (1) about 21 years and 11 months of service with an "average salary" of more than \$5,000, or (2) service totaling from 20 years up to 21 years and 11 months with an "average salary" of \$2,500–\$5,000. The older short-service employee may receive less than 40 percent, since the alternative minimum is that annuity to which the disabled employee would have been entitled if he had continued working to age 60. This minimum is computed by means of the regular annuity formula, using the employee's actual "average salary" and his "total service," which for him includes assumed service to age 60. The disability minimum has no effect on disability retirements at ages 60 and over.

Elective survivor benefits are offered to married disability retirees only. The disability minimum provision cannot increase any survivor benefit. For this reason, the disability annuitant designates as a basis for the elective survivor annuity an amount not more than the basic annuity computed without benefit of the minimum. The surviving wife or husband receives an annuity equal to half the designated amount.

To prove continuance of eligibility, a disability annuitant may be required to take an annual physical examination, unless his disability is permanent in character. No examination is required after he reaches age 60. Restoration of earning capacity is presumed if, in each of 2 successive calendar years, his wages and self-employment income are at least 80 percent of the current salary of the position from which he retired. If he recovers or is restored to earning capacity and is not reemployed in a position covered by the civil-service

* Division of the Actuary, Office of the Commissioner.

system, a disability annuitant is considered to be involuntarily separated as of the date his annuity is terminated. He may then become entitled to an annuity based on currently applicable provisions for involuntary separation, based on service to the date of his original disability retirement.

Deferred retirement. — Any employee separated after 5 or more years of service has his choice of two alternatives. On application (or if he dies) at any time between separation and attainment of age 62, his accumulated contributions may be refunded. At age 62, if he is alive and has not previously applied for a refund, he is entitled to a full annuity computed on the basis of total service up to the date of separation. At this time, also, he may elect to receive, instead of the full annuity, a reduced annuity with survivor option — an election privilege for deferred annuitants that was introduced by the 1956 amendments. Before he attains age 62, the separated employee has no survivor protection except the lump-sum refund. After age 62, death benefits for surviving children under age 18 are payable in addition to the optional survivor benefits.

The deferred annuity is an actuarial "bargain" for the average separated employee, compared with the refund alternative, since the annuity may be considered to be worth the employee's own contributions plus the Government contributions in his behalf, which more than double the value of his contributions. Generally the deferred annuity has a value from three to four times the lump-sum refund available.

Lump-Sum Withdrawal and Death Benefits

The employee separated with more than 1 but less than 5 years of service receives a refund of contributions with 3-percent compound interest to the date of separation. (No alternative is offered.) For employees separated with 5 or more years of service, refunds do not include interest for any period after December 31, 1956; compound interest (during periods of employment only) is credited at 4 percent to December 31, 1947, and at 3 percent from January 1, 1948, to the end of 1956.

If an employee dies after 1 year but before completing 5 years of service, the family or estate receives a refund of contributions, with 3-percent compound interest to the date of separation. When an employee dies after 5 or more years of service but leaves no survivor (widow, child, or disabled dependent widower) entitled to an annuity, a refund is payable, with interest to December 31, 1956, computed in the same way as when contributions are withdrawn. Employees separating with less than 1 year of service receive refunds without interest.

Survivor Benefits

Deaths in active service.—Death of an employee after 5 or more years of service may entitle certain survivors to annuity rights. Annuities are payable to surviving widows, to children, and to those widowers who are incapable of self-support because of a disability and who received more than half their support from the deceased employee. The amounts of the benefits and the conditions under which they are paid are shown in the chart. Children's annuities, which are originally computed on the basis of the number of eligible children and the existence of a surviving parent, are recomputed if these factors change. Remarriage of the surviving parent has no effect, however, on children's benefits. Restoration of earning capacity of a disabled widower (with termination of his annuity rights) is defined in terms of his becoming capable of self-support.

These survivor benefits, payable when the employee dies while in service, represent considerable liberalization from the provisions in the old law. The amendments approximately doubled children's benefits and established benefits for disabled dependent widowers for the first time. Widows are automatically given the benefit of the new annuity formula; they gain also from the repeal of the provision deferring payments to age 50 unless there are minor children.

Deaths after retirement.—The retiring employee may elect to receive a reduced annuity during his or her lifetime and to designate a beneficiary to receive a survivor annuity. A married employee annuitant designates any part of the basic annuity that he

chooses as a base for figuring the amount of the survivor annuity. The surviving wife or husband will receive, until death or remarriage, an annuity equal to half the amount so designated. The reduction is 2½ percent of the full amount designated, up to \$2,400, plus 10 percent of any amount in excess of \$2,400. Once the option is elected (at retirement), the annuity reduction is for life, with no recomputation if the prospective survivor predeceases the employee annuitant. Because of the limitation preventing any increase in survivor benefits in connection with the disability minimum provision, a married disability annuitant electing the survivor option may not designate an amount more than his or her basic "earned" annuity, computed without application of the disability minimum.

Unmarried annuitants may also elect survivor options but under less liberal conditions than those for married annuitants. No election is available for unmarried disability annuitants. The annuitant must be in good health (determined by the Civil Service Commission); the designated beneficiary must have an insurable interest in the life of the employee. There is no option as to amount. The full basic annuity is reduced by 10 percent, plus 5 percent for each full 5 years the designated beneficiary is younger than the annuitant, with a maximum reduction of 40 percent. When the employee annuitant dies, the beneficiary receives a life annuity equal to half the reduced amount.

The retiring employee need not make an election to provide for payment of children's benefits upon his death after retirement; the eligibility conditions and amounts paid are the same as for death before retirement. Generally, eligible children of annuitants retired for any reason are covered; however, a separated employee eligible only for a deferred annuity is not considered as "retired" until annuity payments begin when he reaches age 62. If he dies before payments begin, the only benefit is a refund of contributions.

Survivor benefits payable when an employee dies after retirement were generally liberalized by the 1956 amendments, although there was one exception. Automatic annuities for widows under age 50 with minor chil-

dren are no longer provided. Deferred retirants have elective survivor options for the first time. Previously, the annuity reduction for married annuitants electing the survivor option was 5 percent of the first \$1,500, plus 10 percent of the excess over \$1,500, plus $\frac{3}{4}$ of 1 percent for each year the named husband or wife was under age 60 (with a maximum reduction of 25 percent). Under the amendments the reduction is $2\frac{1}{2}$ percent of the first \$2,400, plus 10 percent of the excess, and there is no age reduction. The reduction scale for elections by unmarried annuitants was unchanged, except for a rewording of the law that makes the reduc-

Principal provisions of the Civil Service Retirement Act, 1959

A. Types of benefits

- (1) Age and service retirement benefit:
 - (a) Compulsory at age 70 with 15 years' service—full annuity terminating at death;
 - (b) Voluntary:
 - (i) at age 62 with 5 years' service—full annuity terminating at death;
 - (ii) at age 60 with 30 years' service—full annuity terminating at death;
 - (iii) at age 55 with 30 years' service—reduced annuity if under age 60, terminating at death;
 - (c) Involuntary (not for cause), at any age with 25 years' service or at age 50 or over with 20 years' service—reduced annuity if under age 60, terminating at death.
- (2) Disability retirement benefit, at any age with 5 years' service, with finding of disability by Civil Service Commission—full annuity (special minimum), terminating at death or with recovery or restoration of earning capacity before age 60.
- (3) Deferred retirement benefit, 5 or more years' service, refund not elected—full annuity at age 62 terminating at death.
- (4) Lump-sum withdrawal, (a) less than 5 years' service—refund of accumulated contributions; (b) 5 years' service, not eligible for immediate annuity—choice of refund or deferred retirement benefit.
- (5) Lump-sum benefit (death before retirement), no specified period of service, no survivor with annuity rights—refund of accumulated contributions.
- (6) Special lump-sum benefit (guaranteeing return of employee contributions), payable if annuitant dies and no survivor has annuity rights or survivor annuities have terminated—refund of accumulated contributions less all annuity payments.
- (7) Survivor child benefit (death before or after retirement):
 - (a) With surviving parent and 5 years' service—benefit (terminating at death, marriage, or attainment of age 18 unless disabled) is the smallest of
 - (i) 40% of employee's "average salary," divided by number of children,
 - (ii) \$1,800 divided by number of children,
 - (iii) \$600;
 - (b) With no surviving parent and 5 years' service—benefit (terminating at death, marriage or attainment of age 18 unless disabled) is the smallest of
 - (i) 50% of employee's "average salary," divided by number of children,
 - (ii) \$2,160 divided by number of children,
 - (iii) \$720.
- (8) Survivor spouse benefit (death before retirement), 5 years' service, payable to widow or disabled dependent widower—one-half regular service annuity, terminating at death or remarriage of widow or death, remarriage or restoration of earning capacity of widower.
- (9) Elective survivor benefits (death after retirement):
 - (a) For married annuitant, payable to designated spouse—one-half of amount designated by employee, terminating at death or remarriage of spouse;
 - (b) For unmarried annuitant (election not available for disability retirement), payable to designated person—one-half of annuity, reduced for the election, terminating at death of beneficiary.

B. Computation of benefit amounts

- (1) "Average salary":
Highest average annual basic salary during any 5 consecutive years.
- (2) Total service:
Number of years plus full months expressed as fraction of year.
- (3) Basic annuity:
The sum of:
 - (a) $1\frac{1}{2}\%$ of "average salary," or 1% of "average salary" plus \$25, whichever is greater, times first 5 years of service;
 - (b) $1\frac{3}{4}\%$ of "average salary," or 1% of "average salary" plus \$25, whichever is greater, times second 5 or less years of service;
 - (c) 2% of "average salary," or 1% of "average salary" plus \$25, whichever is greater, times service in excess of 10 years.
- (4) Maximum annuity:
80% of "average salary."
- (5) Minimum annuity (disability retirement only):
The lesser of (a) 40% of "average salary," and (b) basic annuity computed using total actual service plus assumed additional service to age 60.
- (6) Reduction for retirement under age 60:
No reduction for disability or deferred retirement. Otherwise, total annuity reduced by $\frac{1}{12}$ of 1% for each full month that the retiring employee is under age 60, except that if under age 55, reduction is 5% plus $\frac{1}{6}$ of 1% for each full month that the employee is under age 55.
- (7) Reduction for unpaid deposits:
Retiring employee fails to make full deposit due for non-contributory service; reduction in annuity (on an annual basis) is 10 percent of unpaid amount.
- (8) Optional reduction for survivor benefits:
 - (a) Married annuitant elects reduction for benefit of one-half full designated amount of annuity to wife or husband; reduction is $2\frac{1}{2}\%$ of the first \$2,400 of designated amount plus 10% of designated amount in excess of \$2,400.
 - (b) Unmarried annuitant elects reduction for benefit of one-half reduced annuity to designated beneficiary; reduction is 10% of annuity plus 5% for each full 5 years the designated beneficiary is younger than the annuitant (total reduction not to exceed 40%). Option not available for those retiring for disability.

C. Financing

- (1) Employee contributions:
 $6\frac{1}{2}\%$ of basic salary.
- (2) Agency contributions:
 $6\frac{1}{2}\%$ of basic salary.
- (3) Congressional appropriations:
Civil Service Commission submits annual estimates of additional appropriations required.
- (4) Retirement fund investments:
Principally invested in specially authorized U.S. issues; current average interest rate, $2\frac{1}{2}\%$.

tion for beneficiaries who are 25–29 years younger than the annuitant equal to 35 percent instead of 40 percent.

Contribution Guarantee

The civil-service employee's contributions are certain to be repaid in full—in benefits or by refund if he has 5 or more years' service and in the form of a refund otherwise. If all annuity rights (including survivor annuity rights) are exhausted before the total payments equal the accumulated employee contributions, the difference is payable to the family or estate. Employee contributions earn interest during periods of employment only, but no interest is earned after December 31, 1956; for separation with more than 1 but less than 5 years' service, however, contributions, plus interest to the date of separation, are refunded.

Annuity Formula

As shown in the accompanying chart, the basic annuity depends on the employee's length of service and his "high-5-average salary." In computing total service, any one period of service is expressed in years, months, and days; in the total, odd days less than 30 are dropped. The total is then expressed as years plus a fraction representing full months. The annuity formula is weighted in favor of the long-service employee, with each year of service over 10 worth one and one-third times as much as any 1 of the first 5 years (when the "average salary" is more than \$5,000).

The formula is also weighted in favor of the lower-salaried employee. Only one "average salary" is used throughout the three steps in the basic computation, but for each step the higher benefit alternative is chosen. In step (a), 1 percent of salary plus \$25 gives a larger benefit than 1½ percent of salary if the salary is less than \$5,000; in step (b), 1 percent of salary plus \$25 gives a larger benefit than 1¾ percent of salary if the salary is less than \$3,333; and in step (c), 1 percent of salary plus \$25 gives a larger benefit than 2 percent of salary if the salary is less than \$2,500. Therefore, if the "average salary" is less than \$2,500, the alternative of 1 percent plus \$25 is

used in all steps; if it is \$2,500–\$3,333, this alternative is used in steps (a) and (b) only; if it is \$3,334–\$5,000, it is used in step (a) only; and if it is more than \$5,000, this alternative is not used at all. For most career employees—with at least 10 years of service and an "average salary" of at least \$5,000—the formula may be expressed as 2 percent of the average salary times years of service and less 3¾ percent.

The maximum annuity of 80 percent of average salary is equivalent to maximum creditable service of about 41 years and 11 months if the average salary is \$5,000 or more. For smaller average salaries the maximum creditable service varies, but only slightly, according to amount; for an average salary of \$2,500, for example, it is 40 years. The reduction for retirement at ages under 60 (for voluntary or involuntary retirement only) is applied before any reduction for unpaid deposits or optional survivor benefits. Monthly payments are computed as one-twelfth of annual amounts, rounded to the nearest dollar.

Before the 1956 amendments the annuity formula was equivalent to step (a) only, applied to all years of service—in other words, 1½ percent of average salary, or 1 percent of salary plus \$25, times years of service, with a maximum of 80 percent of average salary. For future retirants, the new formula provides increases of as much as 27 percent in certain exceptional cases and 25 percent for a fairly typical case of 30 years' service with an average salary of \$5,000. The increases for low-salaried employees are, however, slight, and there is no increase if the average salary is less than \$2,500.

Some low-salaried employees actually are receiving less under the new formula, since if they had retired under the old law they would have been eligible for the special increases provided by 1955 and 1958 legislation.

Financing

The sources of income for the civil-service retirement fund (as shown on the chart) are employee contributions, agency or departmental contributions, congressional appropriations, and interest on investments. The balance in the fund as of June 30, 1958,

was approximately \$8.3 billion. The 1956 amendments raised employee contributions from 6 percent to 6½ percent of base salaries and introduced a provision requiring matching contributions from the agency salary appropriation.

Before the amendments, the fund was principally invested in United States special issues earning 3-percent interest. (The rate was set at the discretion of the Secretary of the Treasury.) The amendments introduced a provision—identical with that applicable in the old-age, survivors, and disability insurance program—requiring that the interest rate on special issues be set according to the current average coupon rate on all outstanding United States public marketable interest-bearing obligations for which the date of first call or maturity is 5 years or more after the date of issue. The immediate result was a decline of about ½ of 1 percent in the earning rate of the fund. The present average earning rate is about 2½ percent; current investments are at the rate of 2½ percent.

The total cost of the present system is approximately 21.25 percent of payroll on a level-premium actuarial basis.¹ Employee and agency contributions amount to 13 percent, leaving 8.25 percent to be provided by direct congressional appropriations. Generally, the appropriations have been less than the amount required according to level-premium computations, and for the fiscal years 1957–58 and 1958–59 there were no direct congressional appropriations. Since level-premium financing is not being fully followed in practice, it is likely that increased appropriations will be required in future years, according to actuarial estimates.

Military Service

Military service is creditable without employee contributions. Military pay is not part of the "basic salary" and thus may not be used in computing the highest 5-year average salary—a provision introduced by the 1956 amendments. Active service in the Army, Navy, Air Force, or Coast

¹ *Special Report of the Board of Actuaries on the Valuation of the Civil Service Retirement System as of June 30, 1958.*

Guard is creditable for employee or survivor benefits with certain exceptions.

1. Service performed after the date of separation on which title to the civil-service annuity is based is not creditable. An employee leaving his position for military service during a national emergency is not, however, considered separated until after 5 years of such service.

2. Service for which the employee is awarded military retired pay is not creditable unless it has been awarded for service-connected disability or unless the employee elects to forfeit military retired pay in order to receive such credit.

3. Service after December 31, 1956 (the beginning date of contributory coverage under old-age, survivors, and disability insurance for military personnel), is not creditable if the employee or his widow or child is eligible for benefits, based on such service, under the Social Security Act. The employee or survivor may not elect to forfeit the social security credit in order to receive civil-service credit.

4. Service between September 15, 1940, and January 1, 1957 (when military personnel were credited with earnings of \$160 a month under old-age, survivors, and disability insurance) is not creditable toward a survivor annuity if the survivor is eligible under the Social Security Act for monthly benefits based on such service, unless the survivor elects to forfeit the social security credit. For the employee, the duplicate credit can, however, exist in such instances.

General Service Requirements

For any annuity entitlement, the employee must have had at least 5 years of creditable civilian service. Once this requirement has been met, all creditable military service counts in the computation of benefits (except as noted earlier) and in the determination of length of service for annuity eligibility (including the 15-year service requirement for compulsory retirement at age 70).

In addition, the employee separated other than by death or by disability retirement must have completed at least 1 year of creditable civilian service within the 2-year period preceding the date of separation in order

to become entitled to an annuity based on that separation date. Thus a person returning to covered employment after a separation of 2 or more years must work at least 1 additional year before the later service can be credited toward his regular annuity. If he were to retire before serving the time required, the earlier period of service would be creditable for annuity purposes (under provisions in effect at the time of the earlier separation) and contributions made during the later period would be refunded.

All leave of absence for military service or leave while receiving benefits under the Federal Employees' Compensation Act is considered as creditable service. Other leaves of absence without pay can be credited as service for no more than 6 months in any 1 calendar year.

Reemployment of Annuitants

When the "special qualifications" restriction was eliminated by the 1956 amendments, it became possible for an annuitant to be reemployed in any position for which he is qualified. In general, annuitants continue to receive their annuity checks during reemployment, but their salary is reduced by the full amount of the annuity. The reemployed annuitant receives credit toward a "supplemental" annuity, provided the period of reemployment includes at least 1 year of full-time service.

The supplemental annuity is computed on the basis of reemployment service only, but the earlier period of employment is used to determine the appropriate section of the annuity formula for the computation. If the former period of employment was 10 years or more, for example, the reemployment service would be credited in the 2-percent range of the annuity formula. The "average salary" used is the average annual salary (before reduction for annuity payments) for the full period of reemployment, whatever its length.

The reemployed annuitant is not allowed to make the usual 6½-percent contributions during his period of reemployment. To receive full service credit, however, he must deposit the amount such contributions would have totaled, with interest at 3 percent, upon final separation.

Otherwise, his supplemental annuity (on an annual basis) will be reduced by 10 percent of the unpaid amount. Supplemental annuities are subject to the same reductions as those imposed for voluntary or involuntary retirement if the final separation is before attainment of age 60. Election of survivor options is not allowed.

The special supplemental annuity computation is not used if the reemployed annuitant's original separation was for involuntary retirement or if he is a former disability annuitant whose annuity was terminated by recovery or restoration of earning capacity before age 60. In these special cases, the annuitant is rehired and treated like all other employees. No annuity checks are paid, and from his full salary the regular 6½-percent deductions are taken. Upon final separation, there is a complete recomputation of the annuity, using all creditable service and with a re-determination of the "average salary."

Purchase of Service Credit

To receive full service credit, employees may deposit amounts owed to the fund because of either earlier refunds or creditable service for which retirement deductions were not made. Compound interest must be paid, at 4 percent to December 31, 1947, and at 3 percent thereafter; no interest is required for any period of separation that began before October 1956. In the case of service for which retirement deductions were not made, the deposit consists of the regular deductions (percentages of base pay in effect at the time of service), plus interest. Interest is computed from the midpoint of the period of non-contributory service, or the date of refund, to the date of deposit or the beginning date of the annuity, whichever is earlier.

No credit is allowed for a period of service covered by a refund until the full repayment, plus the interest, is made. Service for which retirement deductions were not made is creditable without deposit, but the annuity (on an annual basis) is reduced by 10 percent of any unpaid deposit. Since in most instances the reduction is larger than that determined on a strictly actuarial basis, it is usually to the employee's advantage to make the deposit.

The survivor of an employee may make the deposit under Public Law 85-772, approved August 27, 1958, effective for employee deaths after February 1958. The deposit must be made before the survivor annuity begins.

Voluntary Contributions

In addition to the mandatory 6½-percent deductions from salary, voluntary contributions may be made by the employee. Deposits must be in multiples of \$25, and the total may not exceed 10 percent of all salary to date. These contributions earn compound interest at 3 percent.

Upon an employee's separation for immediate annuity, each \$100 in the accrued account will purchase an annual annuity of \$7 plus 20 cents for each full year the employee is over age 55 at the time he retires. If, for example, he retires at age 70, the increase in the regular annuity would be \$10. Generally, this formula results in an actuarial "bargain" for the employee. One elective survivor option is available, with reduced annuity; the survivor (any person designated in writing by the employee annuitant) receives half the reduced annuity. The reduction is 10 percent, plus 5 percent for each full 5 years the designated person is younger than the retiring employee, but the total reduction may not exceed 40 percent.

The accrued voluntary contribution account will be paid in a lump sum if the employee applies at any time before annuity payments begin. The account must be repaid in a lump sum if the employee is separated from service before he becomes eligible for an immediate or deferred annuity. The separated employee who is entitled to a deferred annuity may leave the account, on which interest earnings continue, until he reaches age 62. At that age his basic additional annuity payments can begin, computed at \$8.40 a year for every \$100 in his accrued account.

Special Employees

Certain provisions of the Civil Service Retirement Act apply only to special groups of employees. Any employee whose duties primarily consist of investigation, apprehension, or detention of suspected criminals may retire at age 50 or over if he has had

20 or more years of such special service. The annuity equals 2 percent of the average salary times the total number of years of service, with a maximum of 80 percent of the average salary.

Another special formula is used for congressional employees, who are covered on an individual elective basis. The annuity is equal to 2½ percent of the average salary for each year of congressional employment or military service, up to 15 years. To this amount is added, for any service over 15 years or for any service as a general employee, 1½ percent of average salary for each of the first 5 years of such service, 1¾ percent for each of the second 5 years, and 2 percent for each year of service in excess of 10. The maximum annuity is 80 percent of average salary.

The Vice President of the United States and Members of both Houses of Congress may contribute to the fund at the special rate of 7½ percent of salary if they elect to be covered. Conditions for retirement are about the same as those for general employees, with an additional provision for voluntary retirement at age 60 or over after 10 or more years of service as a Member of Congress. There is no compulsory retirement. The annuity formula is 2½ percent of the average salary for each year of service in Congress. Certain military service also may be included. Any additional service as a congressional employee or general employee may be credited; the formula used is the same as the one used for congressional employees.

Former Employees

The effective date of the 1956 amendments to the Civil Service Retirement Act was October 1, 1956. As a general rule, employees separated on or after that date receive benefits according to the current provisions, applied to all past service, and benefits for employees separated before that date and for their survivors continue to be based on provisions of the act as it was before October 1, 1956. The old act—applying to annuitants whose separation began after March 1948 and before October 1956 and to their survivors—differs from the amended law chiefly in its provisions for (1) the basic annuity

formula (1½ percent of the average salary or 1 percent of the average salary plus \$25, whichever is greater, times years of service); (2) automatic payment of survivor benefits for widows (under age 50 with minor children) of employees who retired with immediate annuities after 15 or more years of service or who retired for disability; and (3) payment of less liberal benefits for the minor children of these deceased annuitants.

Public Law 85-465 (effective August 1, 1958) provided special benefit increases, however, for retired employees and their survivors who were not covered by the 1956 amendments. Annual amounts were raised a flat 10 percent, with a maximum increase of \$500 for employee annuities and of \$250 for survivor annuities. Public Law No. 369 of 1955 had provided increases applicable only for separations before October 1, 1956 (the effective date of the 1956 amendments). As a result of the 1955 and 1958 laws, the typical retired employee whose separation began immediately before October 1, 1956, now receives an annuity only about 7 percent² less than he would have if the separation had occurred on or after that date, even though the full increase provided by the formula in the 1956 amendments is approximately 25 percent.

Although retirements later than September 1956 are generally covered by the 1956 amendments and the old provisions continue to apply to previous retirements, there are three rather complicated exceptions to this rule. First, if an employee's separation was for compulsory retirement at age 70 and his accrued annual leave at the time of separation would have "carried" him in service until after July 30, 1956, he was allowed (by election before January 1, 1959) a recomputation of annuity under the new formula. (Employees whose compulsory retirement would normally have occurred between July 31 and September 30, 1956, were allowed to remain in service for the short time necessary to qualify for annuities based on the new formula.)

Second, if an employee retiring on

² Computation based on 30 years' service, with an average salary of \$5,000.

Table 1.—Reduction in annuity when married annuitant elects a survivor benefit as percent of reduction on reasonable actuarial basis¹

Age of spouse when employee retires	Employee retiring at age —			
	50	60	70	80
Male employee				
55.....	19	12	8	5
60.....	26	16	11	7
65.....	38	24	15	9
70.....	59	36	22	13
Female employee				
55.....	44	26	16	10
60.....	63	37	22	13
65.....	95	55	32	18
70.....	152	88	49	27

¹ Based on the Annuity Table for 1949, at 3-percent interest. Termination of annuities through remarriage is ignored. See text for adjustments for designated amounts of more than \$2,400 a year.

or after October 1, 1956, has not worked in a covered civil-service position for at least 1 year during the 2-year period preceding the date of separation, he receives a refund only for the latest period of service (unless the separation is based on death or disability retirement), but he remains eligible for benefits based on any previous separation. If there has been a separation before October 1, 1956, the old provisions (plus increases) apply.

Third, if the final separation of a reemployed annuitant occurs on or after October 1, 1956, any "supplemental" annuity (covering the entire current period of service as a reemployed annuitant if it includes 1 year or more of full-time service) will be computed according to the new formula, and his former annuity (whether based on the old or new formula) continues in force. Reemployed annuitants, however, who originally retired under the "involuntary separation" provisions and reemployed disability annuitants who recovered or were restored to earning capacity before attainment of age 60 are not eligible for supplemental annuities. Instead, upon final separation, there is a complete recomputation of the annuity, with the new formula applying to all service; if the former annuitant has not worked in a covered civil-service position for at least 1 of the 2 years preceding the date of final separation, a refund of

contributions only is paid for the period of reemployment (unless the final separation is based on death or disability retirement). The provisions existing as of the date of former separation are then applicable in computing the benefit.

The 1956 amendments set a 5-year limit on ordinary (peacetime) military furloughs. In connection with this provision, existing furloughs were considered to be ended December 31, 1956, if they had continued for more than 5 years.

Actuarial Analysis of Benefit Options

The married civil-service employee who is retiring may provide an annuity for his surviving spouse by electing to take a small reduction in his basic annuity. If he designates as a basis for figuring the survivor annuity an amount that is not more than \$2,400, the reduction is only 2½ percent of the amount designated; the survivor receives an annual annuity of half this sum. A reduction in the basic annuity of \$5 a month, for example, provides a survivor annuity of \$100 a month. In nearly all instances, the annuity reduction provided by law is considerably less than the amount that would be required for full purchase of the survivor

Table 2.—Reduction in annuity when unmarried annuitant elects survivor benefits as percent of reduction on reasonable actuarial basis¹

Age of female beneficiary when employee retires	Employee retiring at age—			
	55	60	65	70
Male employee				
10.....	148	114	87	65
20.....	167	129	95	70
30.....	160	147	108	79
40.....	128	118	106	94
50.....	101	97	89	79
60.....	114	73	75	69
70.....	251	169	97	58
80.....	722	446	263	151
Female employee				
10.....	201	151	112	82
20.....	231	170	124	89
30.....	230	203	144	102
40.....	195	170	146	123
50.....	166	149	127	106
60.....	208	122	115	98
70.....	523	291	161	89
80.....	1,686	928	490	254

¹ Based on the Annuity Table for 1949, at 3-percent interest.

Table 3.—Cost of cash-refund annuities purchased through voluntary contributions, compared with cost on reasonable actuarial basis¹

Age at retirement	Cost of cash-refund annuity of \$1 a month		
	Under law	On reasonable actuarial basis	Cost under law as percent of actuarial cost
Men			
55.....	\$171.43	\$207.35	83
60.....	150.00	187.21	80
65.....	133.33	166.54	80
70.....	120.00	145.14	83
Women			
55.....	\$171.43	\$224.91	76
60.....	150.00	203.72	74
65.....	133.33	181.33	74
70.....	120.00	158.41	76

¹ Based on the Annuity Table for 1949, at 3-percent interest.

benefit (according to actuarial computations, involving mortality assumptions that vary with age and sex).

Table 1 gives, expressed as percentages, the ratios of the 2½-percent reduction to the corresponding reduction that would be required to purchase the survivor benefit, according to the Annuity Table for 1949, at 3-percent interest, for illustrative cases. Examination of the table shows the employee annuitant paying as little as 5 percent of the actuarial value of the survivor benefit (for a male employee aged 70 with wife aged 55) and, at the other extreme, as much as 152 percent of such value (for a female employee aged 55 with husband aged 70). The fact that the latter ratio is the only one in the table that is more than 100 percent indicates that most retiring married employees who elect survivor annuities do so at "bargain" rates. In fact, for the typical case of a male annuitant with a wife the same age or younger the ratio never exceeds 20 percent. The actuarial advantage is greater for male than for female employees, since women generally live longer than men.

The percentages shown in table 1 are too low if the amount designated by the retiring married employee is more than \$2,400, since a 10-percent

Table 4.—Cost of cash-refund annuities purchased through past-service deposits, compared with cost on reasonable actuarial basis ¹

Age at retirement	Cost of cash-refund annuity of \$1 a month		
	Under law	On reasonable actuarial basis	Cost under law as percent of actuarial cost
Men			
55.....	\$120.00	\$207.35	58
60.....	120.00	187.31	64
65.....	120.00	166.54	72
70.....	120.00	145.14	83
Women			
55.....	\$120.00	\$224.91	53
60.....	120.00	203.72	59
65.....	120.00	181.33	66
70.....	120.00	158.41	76

¹ Based on the Annuity Table for 1940, at 3-percent interest.

reduction factor applies to the amount in excess of \$2,400. The correct percentages may be found by simple ratios. If the designated amount is \$3,600, for example, the reduction is determined by law to be 2½ percent of \$2,400, plus 10 percent of the remaining \$1,200, or \$180, which is 5 percent of \$3,600 or twice the 2½ percent used in table 1. The percentages shown in the table should thus be doubled for this "designated amount." Similar computations may be made for other amounts.

The actuarial "bargain" given to married annuitants electing survivor benefit options are in contrast to the "overcharges," in many cases, to those making the elections under the less liberal formula for unmarried annuitants. For this group the reduction is 10 percent, plus 5 percent for each full 5 years the designated beneficiary is younger than the annuitant, with a maximum reduction of 40 percent.

Table 2 shows, for unmarried-annuitant elections, comparison percentages similar to those in table 1. An extreme case is that of the female employee who retires at age 55 and elects the benefit for her 80-year-old mother; she pays almost seventeen times the actuarial value of the benefit. (The reduction by law is 10 percent, but the reduction according to actuarial computations would be only

slightly more than ½ of 1 percent.) There are, however, actuarial "bargains" for a number of other age combinations. All percentages in the table would be increased if male rather than female beneficiaries of given ages were being considered. Many of the percentages would be reduced if the beneficiary were slightly older or the annuitant slightly younger than the exact age shown. For example, the tabular value of 106 percent for a male employee aged 65 with a female beneficiary aged 40 is based on an annuity reduction of 35 percent according to law (for an age difference of at least 25 years but less than 30 years). If the actual difference in age is slightly less than 25 years the annuity reduction is only 30 percent, and the corresponding actuarial comparison value for this age combination is reduced to 85 percent.

For both married and unmarried annuitants electing survivor options, the arbitrary formulas in the law

produce some significant cost inequities between one individual and another. Selection by annuitants of "bargain" benefits results, moreover, in extra cost to the system. Both of these objections could be met by basing optional annuity reductions on actuarial factors that vary with age and sex—a practice followed by many retirement systems. Arbitrary factors are, however, easier and somewhat cheaper to handle administratively.

Table 3 shows ratios, similar to those in tables 1 and 2, for purchase of annuities from voluntary contribution accounts. The arbitrary formula (each \$100 in the account purchasing an annual annuity of \$7, plus 20 cents for each full year the retiree is over age 55) produces annuity benefits at "bargain" rates as low as 74 percent of actuarial value for women and 80 percent for men. Lower female mortality accounts for the variation by sex.

Similar ratios are given in table 4 for deposits to purchase creditable

Table 5.—Illustrative monthly annuities for retired employees

Highest 5-year average annual salary	Minimum annuity for disability retirement ¹	Years of creditable service								
		5	10	15	20	25	30	35	40	45
\$1,500.....	\$50	\$17	\$33	\$50	\$67	\$83	\$100	\$100	\$100	\$100
2,000.....	67	19	38	56	75	94	113	131	133	133
2,500.....	83	21	42	63	83	104	125	146	167	167
3,000.....	100	23	46	71	96	121	146	171	196	200
3,500.....	117	25	51	80	109	138	167	196	226	233
4,000.....	133	27	56	90	123	156	190	223	256	267
5,000.....	167	31	68	109	151	193	234	276	318	333
6,000.....	200	38	81	131	181	231	281	331	381	400
7,000.....	233	44	95	153	211	270	328	386	445	467
8,000.....	267	50	108	175	242	308	375	442	508	533
9,000.....	300	56	122	197	272	347	422	497	572	600
10,000.....	333	63	135	219	302	385	469	552	635	667

¹ Minimum applies unless it is greater than the regular annuity to which the employee would be entitled by remaining in service until he reaches age 60; the latter amount is then the minimum.

Table 6.—Illustrative monthly annuities for widows or disabled dependent widowers of deceased employees ¹

Highest 5-year average annual salary	Years of creditable service								
	5	10	15	20	25	30	35	40	45
\$1,500.....	\$8	\$17	\$25	\$33	\$42	\$50	\$50	\$50	\$50
2,000.....	9	19	28	38	47	56	66	67	67
2,500.....	10	21	31	42	52	63	73	83	83
3,000.....	11	23	35	48	60	73	85	98	100
3,500.....	13	25	40	54	69	84	98	113	117
4,000.....	14	28	45	61	78	95	111	128	133
5,000.....	16	34	55	76	96	117	138	159	167
6,000.....	19	41	66	91	116	141	166	191	200
7,000.....	22	47	77	106	135	164	193	222	233
8,000.....	25	54	88	121	154	188	221	254	267
9,000.....	28	61	98	136	173	211	248	286	300
10,000.....	31	68	109	151	193	234	276	318	333

¹ Illustrations also apply to widows and widowers of deceased annuitants who designate the full amount of the annuity as a base for an elective survivor benefit.

service for which employee retirement deductions were not taken. These deposits may be considered as providing annual annuities of \$10 for each \$100 deposited, since failure to make the deposit results in an annuity reduction of 10 percent of the unpaid amount. It is generally to the

Table 7.—Illustrative monthly annuities for children of deceased employees or annuitants when spouse also survives

Highest 5-year average annual salary	1 child	2 children	3 or more children ¹
\$1,500.....	\$50	\$50	\$51
2,000.....	50	66	66
2,500.....	50	84	84
3,000.....	50	100	99
3,500.....	50	100	117
4,000.....	60	100	132
4,500 or more.....	50	100	150

¹ Since each child's monthly benefit is rounded to the nearest dollar, total monthly benefits for more than 3 children may differ slightly from the amounts shown.

employee's advantage to make the deposit; the advantage is greater for retirement at earlier ages and is slightly greater for women than for men.

Illustrative Benefits

Tables 5-8 show monthly benefits under the present act for retiring employees and survivors, based on various salary and service combinations. Table 5 gives both regular and disability monthly amounts for retiring employees, and the minimum annuity for disability. To illustrate the application of the disability minimum, assume that an employee is disabled after 15 years of service, with an average salary of \$5,000. His regular annuity would be \$109 a month, which is less than the \$167 disability minimum shown for this salary.

Therefore the annuitant receives \$167 a month, unless this amount is more than the regular annuity to which he would have been entitled at age 60. If, for example, the employee is aged 55, he would have had 20 years of service at age 60; the table shows \$151 a month for 20 years of service and an average salary of \$5,000. This amount is less than the previously determined minimum, and the smaller amount is actually paid.

Monthly amounts for surviving widows or disabled dependent widowers of deceased employees (and for widows and widowers of deceased annuitants designating the full annuity as a base) are shown in table 6. Widow's and widower's benefits are obviously insufficient for basic needs if the employee or annuitant had only a short period of service. There is no survivor annuity protection whatever for employees with less than 5 years' service.

Tables 7 and 8 show monthly amounts paid to minor children of deceased employees or annuitants. Although the employee must have 5 years of civilian service for any survivor annuity rights, the benefit amounts for children are not dependent on total service once this requirement has been met. Family protection for the deceased short-service employee is substantially increased if there are minor children. Only \$14 a month, for example, is payable to the widow of a deceased employee with 5 years of service and an average salary of \$4,000 if there is no child, but with one child the total family benefit is \$64 a month (\$14 for the widow plus \$50 for the child).

Summary and Conclusions

An idea of the extent to which civil-service retirement and survivor

Table 8.—Illustrative monthly annuities for full orphan children of deceased employees or annuitants

Highest 5-year average annual salary	1 child	2 children	3 or more children ¹
\$1,500.....	\$60	\$62	\$63
2,000.....	60	84	84
2,500.....	60	104	105
3,000.....	60	120	126
3,500.....	60	120	147
4,000.....	60	120	168
4,500 or more.....	60	120	180

¹ Since each child's monthly benefit is rounded to the nearest dollar, total monthly benefits for more than 3 children may differ slightly from the amounts shown.

benefits have been broadened and liberalized during the past 4 decades may be obtained by comparing the present system with certain features of the original act of May 22, 1920. The 1920 act provided, for the general employee, a single retirement age of 70. No earlier retirement was permitted except for disability, although in 1922 a retroactive provision was introduced allowing discontinued service retirement at age 55 with 15 years of service. No survivor annuity benefits were payable, either by election or by automatic operation of the law. For service of 30 years or more, the basic annuity was 60 percent of the final 10-year average salary, with a minimum benefit of \$360 per year and a maximum of \$720.

Today the funds in hand, together with the Government's full financial backing of the civil-service retirement system, assure the Federal employee that his earned benefits will be paid. However, better accounting and greater recognition of Government liability for future benefits, by means of full appropriations based on level-premium financing, have been recommended by the system's Board of Actuaries.