## CURRENT POPULATION REPORTS

## Population Estimates

PROJEGTIONS OF THE POPULATION OF THE UNITED STATES, BY AGE AND SEX: 1964 TO 1985

With Extensions to 2010
Jacob S. Siegel, Meyer Zitter, and Donald S. Akers

POPULATION OF THE UNITED STATES: 1963 AND 1985


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CONTENTS
Masmaneams
rtroduction
$\qquad$Comparison of earlier projections with cur-Page
earlier projections with cur-1
rent estimates.2
indicated population size and changes.

$\qquad$ ..... 4.
Total population ..... 4
Ase-sex structure. ..... 4
Children of preschool age. ..... 5
Population of elementary and high school
age.6
Population 18 to 24 years of age. ..... 6
population in the main working ages. .....
Elderly population. ..... 7
overall shifts in age composition ..... 7
Numbers reaching selected "key" ages.. ..... 8
Sex composition. .
Resident population. ..... 1110
scription of method and assumptions. ..... 11
General method ..... 11


Page
Description of method and assumptions-Con. Projections of births: Cohort-fertility method. ..... 12
Series A. ..... 15
Series B. ..... 16
series C and D ..... 16
Other fertility assumptions. ..... 17
Projections of deaths ..... 24
mgration ..... 27
Use of electronic computers ..... 28
Limitations ..... 29
Extension of the projections to 2010. ..... 29
Avallability of unpublished data. ..... 30
Related reportis. ..... 30
Some alternative methods of projecting births. ..... 32
Period age-specific birth rate method ..... 32
Cohort-fertility method: Age and marital status. ..... 33
Marriage-parity-progression method ..... 35

## FIGURES



## DETAILED TAELES

Table ..... Page
1.--Annual estimetes and projections of the population and of population change by components, for theUnjted States: 1950 to 198539
2.--Estimates and projections of the population of the united States, by age and sex: 1960 to 1985.. ..... 41
3.-Estimates and projections of the population of the United States in selected age groups, by sex:1960 to 1985
$\qquad$4.--Annual estimates and Series $B$ projections of the population of the United states, by age and sex:1960 to 19855.-Annual estimates and Series B projections of the population of the United States, in selected agegroups, by sex: 1960 to 198550
6.--Estimates and projections of the male and female population of the United States under 35 yearsold, by single years of age: 1963 to 198551
.--Estimated and projected number of persons reaching selected ages anmuelly: 1960 to 1985. ..... 54
8.--Projections of the population of the United States, by age and sex: 1985 to 2010 ..... 55
APPENDIXES
Appendix
A.--Tables relating to fertility and mortality assumptions of basic projection series and extensions
to 2010 ..... 59
B.--Tables presenting projections based on alternative assumptions of mortality and net immgration...C.--Tables presenting projections assuming continuation of the recent level of fertility (Series Y)...D.-- Tables relating to population projections of the Scripps Foundation for Research in Population
Problems77

# PROJECTIONS OF THE POPULATION OF THE UNITED STATES, BY AGE AND SEX: 1964 TO 1985 

## With Extensions to 2010


#### Abstract

1 report presents more detailed figures than the advance report Current Population Reports, Series p-25, No. 279. The projections in this report supersede those previously published in Series p-25, Nos. 25 l ,


 241, and 187)
## INTRODUCTION

This report presents four principal sexies of jections of the population of the United states noluding Armed Forces abroad, by age and sex, for 4064 to 1985, using current estimates for July 1, 1003, as their benchmark. These projections are supplemented by extensions to the year 2010 derved by a similar method. The figures indicate The approximate future level and age-sex composiIon of our population under various assumptions st to future fertility. It should be emphasized, however, that long-range projections are not foreJabts and that, depending on developments durIng the time span covered, the population at a bven date in the future may differ from any of he figures presented here. In particular, the umber of young children may differ substantially rom the figures given here.

The four series of assumptions concerning tertility used here are only a few of the numerous possible serjes of assumptions which might have deen employed in preparing these projections. These assumptions were not chosen to demarcate precisely a range within which fertility is almost certain to fall, but they were chosen as reason. able possibilities which would very probably encompass actual events. The fertility assumptions chosen are lower as a set than those used in the Bureau's previous set of projections, but there is considerable overlap with the levels of the earIIer assumptions. Reasonable alternative assumpfrons concerning the future levels of mortality and net immigration from abroad would also affect the future size of the total population but to a considerably lesser degree than the probable variations in future fertility. For the older age groups, however, the level of mortality is an important determinant of future population size.

Since by far the most important area of unertainty in projections of future United States population is that relating to fertility, the tables in this report distinguish projections of the populetion already born by July 1,1963 , from projections of the population to be born during
the projection period. The projections are besed on the assumption that there will be no disastrous war, widespread epidemic, or similar catastrophe. It is further assumed that there will be no major economic depression; in fact, the projections are designed to be consistent with high economic ac. tivity. Only very general impressions are now available, however, as to just how the components of population change respond to changes in economic conditions, and the evidence suggests that a high level of economic activity is consistent with a fairly wide range of fertility levels.

The present set of projections sterts with current estimates of the population by age and sex for July I, 1963. All the series employ assumptions which are tied in with the level of agespecific fertility recorded up to January 1,1962, and the level of age-specific mortality in 1960; and the estimater population by age and sex on July 1, 1963, incorporates current data on births and deaths up to that date. As compared with the projections previously published in 1958 (Series P-25, No. 187) or 1961-62 (Series P-25, No. 241 and No. 251), ${ }^{2}$ this revision involves not only a shift in the benchmark date from July 1,1957 , or July 1, 1960, to July 1, 1963, respectively, but also changes in projected levels of fertility and mortality. Because of these changes, none of the series shown here agrees with any of the earlier series.

The four principal series of population projections given here differ among themselves only in the projections of persons born after July $l$, 1963. All four series include the same set of projections of the number of persons born before

1 U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 187, "Illustrative Projections of the Population of the United States, by Age and Sex: 1960 to 1980, "Nov. 10, 1958; Series P-25, No. 241, "Interim Revised Projections of the Population of the United States by Age and Sex: 1965 and 1970, "Jan. 17, 1962; and Series P-25, No. 251, "Interim Revised projections of the population of the United States, by age and sex: 1975 and 1980," July 6, 1962.

July 1,1963 . Since the possible range of variation in mortality and net immigration is small compared to the possible range of future fertility, as shown below, it was not considered necessary to make alternative allowance for these components.

The four series of revised projections of the total population and the projections of total population published earlier in Series P.-25, No. 187 and No. 251, are presented in table A. Because

Table A.--COMPARISON BETWEEN REVISED AND PREVIOUS PROJECTIONS OF TOTAL POPULATTON: 2965 TO 1985
(In millions. Figures relate to July 1 and include Armed Forces abroad)

| Series | 1960 | 1965 | 1970 | 1975 | 1980 | 2985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| REVISED PROJEOTTONS ${ }^{\text {² }}$ |  |  |  |  |  |  |
| Series A. | 180.7 | 195.1 | 211.4 | 230.4 | 252.1 | 275.6 |
| Series B. | 180.7 | 194.7 | 209.0 | 225.9 | 245.3 | 266.3 |
| Sertes 0. | 180.7 | 194.1 | 206.1 | 220.2 | 236.5 | 254.0 |
| Series D.............. | 180.7 | 194.1 | 205.9 | 21.8 .9 | 233.1 | 248.0 |
| PREVIOUS PROJECTIONS ${ }^{2}$ |  |  |  |  |  |  |
| Series P-25, No. 251: |  |  |  |  |  |  |
| Series In............ | 180.7 180.7 | 196.2 194.5 | 214.2 208.9 | 235.3 226.0 | 259.6 245.7 |  |
| Series P-25, No. 187: ${ }^{3}$ |  |  |  |  |  |  |
| Series I. ............ | 181.9 | 199.9 | 220.5 | 245.1 | 273.9 | 305.7 |
| Series II. | 180.9 | 196.6 | 214.8 | 236.4 | 261.3 | 288.3 |
| Series IIJ.......... | 180.5 | 194. 5 | 209.2 | 226.6 | 246.6 | 267.4 |
| Series IV. . . . . . . . . . | 180.2 | 192.4 | 203.7 | 216.8 | 232.0 | 247.7 |

1 In all series of projections "slightly declining" mortality and an annual net immigration of 300,000 are ascumed,

2 In all series of projections "medium" mortality and an annual net inmigration of 300,000 are assumed.
${ }_{5}$ Frojections published in Current Fopulation Reports, Series P-25, No. 187, have been adjusted to include Alaska and Hawaii and extended to 1985.

Table D.--ANNUAL PROJECTIONS OF TOTAL POPULATTON INCLUDING ARMED FORCES ABRCAD: 1963 TO: 1975
(In thousands)

| Year (July 1) | ${\underset{A}{\text { Series }}}^{2}$ | $\underset{\mathrm{B}}{\mathrm{Sem}^{2}}$ | $\begin{gathered} \text { Sertes } \\ 0 \end{gathered}$ | $\underset{D}{\text { Series }}$ |
| :---: | :---: | :---: | :---: | :---: |
| $1963{ }^{1}$. | 189,278 | 189,278 | 189,278 | 189,278 |
| 1.964. | 192,166 | 191,967 | 191,734 | 1.91,731 |
| 1965. | 195,129 | 194,671 | 194,2.36 | 194,127 |
| 1966. | 198,286 | 197,413 | 196,510 | 196,489 |
| 1967. | 201,343 | 200,21.2 | 198,863 | 198,81.9 |
| 1968 | 204,602 | 203,050 | 201,207 | 201,126 |
| 1969. | 207,963 | 205,964 | 203,609 | 203,469 |
| 1970. | 212,430 | 208,996 | 206,110 | 205,886 |
| 1971. | 215,006 | 212,145 | 208,714 | 208,364 |
| 1972. | 218,691 | 215,409 | 211,418 | 210,900 |
| 1973 | 222,486 | 218,786 | 214,223 | 213,495 |
| 2974 | 226,395 | 222,273 | 217,129 | 216,147 |
| 1975. | 230,415 | 225,870 | 220,133 | 218,855 |

${ }^{1}$ Base for projections. A revised eatimate for tuly l, 1963, prepared after these projections had been completed, is 189,375,000; the comparable eatimate for Jamuary 1, 1964, is 190,809,000.
of the interest usually shown in annual projec. tions, especially for the years immediately ahead, projections of total population for each year have been prepared. The figures for 1964 to 1975 are shown in table B, and figures for the whole projection period, 1964 to 1985, along with data on certain components of change (i.e., net change, births, and deaths), are shown in table 1.

Comparison of earlier projections with current estimates.--The estimated population of the United States in July 1, 1963, fell between the figures for this date implied by the Series II and III projections shown in the last previous Census Bureau report on population projections (Series P-25, No. 251) and between the Series II and III figures implied by the projections published in 1958 (Sexies P-25, No. 187). A comparison of the differences between the estimated current population and the projections implied for July 1, 1963, is presented in table C. The current estimate was somewhat closer to the Series III figure in Series P-25, No. 187, at that date than to the Series II figure. The difference of 315,000, or 0.17 percent, between the current estimate and the Series III projection for July 1, 1963, resulted from an underestimate of 643,000 for births between 1957 and 1963, an underestimate of 420,000 for deaths in this period, an underestimate of 50,000 for net immigration, and an upward revision of the estimate for July 1, 1957, by 49,000. Differences between the current estimate and the other projec. tions (Series I, II, and IV) were 3,131,000 (or 1.66 percent), 873,000 (or 0.46 percent), and 1,510,000 (or 0.80 percent). In the case of Series P-25, No. 251, the series II and Series III projections deviated from the current estimate by 533,000 (or 0.28 percent) and 309,000 (or 0.16 percent), respectively.

By age, the differences between the current estimates and the projections implied for 1963 by the previous report (series P-25, No. 251) are also minor, except for the age group under 5 years (table D). For this group, the Series II projection exceeded the current estimate by 3.2 percent and the series III projection fell below the current estimate by 1.7 percent. Differences at the older ages amounted to 1 percent or less. By 1980, however, because of differences in the fertility and mortality assumptions, the difierences between the revised and previous projections exceed 1 percent in most age groups. For ages 65 years and over, the revised projection falls below the previous projection for 1980 by about 6 percent, principaliy as a result of the higher mortality rates used in the revision. In general, the projections above age 45 in 1980 were revised downward.

TGDLe C.--COMPARISON OF ESTIMATED AND PROJECTED POPTLATION FOR JULY 1,1963 , AND OF POPULATION CHANGE, bY COMPONENTS, FOR JULY 1, 1957, TO JUNE 30, 2963
(Numbers in thousands. Total population including Armed Foroes abroad. Minus gign (a) indicates thet the projections are below the current estimate)

${ }^{2}$ Excludes Alaska and Hawaii.
${ }^{2}$ Error of closure, or amount by which the estimate for April 1, 1960, had to be adjusted to bring it into agreement with the ${ }_{3}$ sus count.
${ }_{4}^{3}$ A revised estimate, prepared after the new population projections had been completed, is $188,530,000$.
Includes Alaska and Hawaii.
${ }^{5}$ Base of projections. A revised estimate, prepared after the new popilation projections had been completed, is $189,375,000$.

Table D.--COMPARISON OR ESTIMATES AND REVISED PROJECTIONS WITH TNTERIM PROJECIONS PREVIOUSLY FUBLISHED, BY AGE: 1963, 1975, AND 1985
(Numbers in thousands. Figures relate to Juily 3 and include Armed Forces abroad. Minus sign ( - ) indicates that the previous projections are below the estimates or revised projections)

| Age | 1963 |  |  |  | 1970 |  |  |  | 1980 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Estimates ${ }^{1}$ | Previous projections | Difference |  | Projections |  | Difference |  | Projections |  | Difference |  |
|  |  |  | Numm ber | Per. cent | Revised | Previous | Numm ber | Percent | Revised | Previous | $\begin{aligned} & \text { Num- } \\ & \text { ber } \end{aligned}$ | percent |
| , All ages ${ }^{2}$. | 3189,278 | 189,811 | +533 | +0.3 | 211,430 | 21.4,222 | +2,792 | $+1.3$ | 252,056 | 259,584 | +7,528 | +3.0 |
| 1 hiser 5 years ${ }^{2}$. | 20,722 | 21,387 | +665 | +3.2 | 23,991 | 25,135 | +1,244 | +4.8 | 30,557 | 32,505 | +1.,948 | +6. 4 |
| 15 to 14 years ${ }^{2}$...... | 38,012 | 37,970 | -42 | -0.1 | 41,746 | 42,615 | +869 | +2.1 | 51,386 | 53,985 | +2,599 | $+5.1$ |
| W5 to 24 years ${ }^{2}$.... | 28,136 | 28,081 | -55 | -0.2 | 36,044 | 36,004 | -40 | -0.1 | 41,993 | 42,819 | +826 | $+2.0$ |
| 35 to 344 years. | 22,356 | 22,526 | +170 | +0.8 | 25,220 | 25,048 | $-172$ | -0.7 | 36,517 | 36,389 | -128 | -0.4 |
| 55 to 44 years..... | 24,603 | 24,356 | -247 | $-1.0$ | 22,997 | 23,118 | +121 | +0.5 | 25,267 | 25,227 | -40 | -0.2 |
| S5 to 54 years...... | 21,489 | 21,466 | $-23$ | -0.1 | 23,360 | 23,541 | +181. | +0.8 | 22,194 | 22,570 | +376 | $+1.7$ |
| 65 to 64 years...... | 16,394 | 26,451 | +57 | +0. 3 | 18,501 | 18,724 | $+223$ | +1.2 | 21,056 | 21,631 | +575 | $+2.7$ |
| 75 years and 74 years..... | 11,336 | 21,331 | -5 | (4) | 12,131 | 12,296 | +165 | +1.4 | 21,489 | 15,096 | +60\%? | +4.2 |
| , years and over... | 6,231 | 6,243 | +12 | +0.2 | 7,439 | 7,739 | +300 | +4.0 | 8,598 | 9,362 | +764 | +8.9 |
| 65 years and over... | 17,567 | 17,574 | +7 | (4) | 19,571 | 20,035 | +464 | +2.4 | 23,087 | 24,458 | +1,371 | +5.9 |

$2{ }^{2}$ From Current Population Reports, Series P-25, No. 276.
Series for present purpose, Series II projections in Current population Reports, Series P-25, No. 251, are compared with the
paticular pections of this report. In general, the individual series of projections in the present report do not correspond to
The most curren projections in Series P-25, No. 251, however.
4 Les most current estimate of the total population for July 1,1963 , is $289,375,000$.
Less than 0.05 percent.

The differences, both in absolute and in percentage terms, between the Series II and III projections for July 1,1963 , and the corresponding current estimates may be viewed as negligible from a practical point of view. Even the differences for Series $I$ and IV are also relatively small. It may be asked, then, why is a major revision of the previous projections necessary or desirable at this time? For short-run projections, such as those up to 1965 and 1970, the fact that some of the series of projections are not in line with the actual current astimates creates certain difficulties in the use of the previous short-run projections in combination with the most recent current estimates. The use of the existing projections without any adjustment gives an unreasonable picture of short-run population changes. In ef. fect, then, it is desirable to revise a set of population projections periodicaliy, perhaps every year, merely because of the passage of time since the base date of the projections; necessarily some of the projected series will diverge progressively from the current estimate.

Moreover, in the present, case, the trends of fertility and mortality in the years since the last projections were prepared strongly suggested the need for a reexamination of the long-term, as well as the short..term, assumptions made earlier. In particular, it seemed desirable to employ a more refined procedure of projecting fertility thar was employed previously and to take advantage of some of the recent research on fertility in the hope of (1) developing projections which would vary little from the actual future population, (2) reducing the range of the alternative series without reducing the likelihood of their bracketing the true figure, (3) avolding the selection of unreasonable assumptions, or assumptions which imply unreasonable levels or changes in the components of fertility, and (4) converting the initial basic assumptions more satisfactorily into the actual fertility rates to be used in the computations. Accordingiy, the age-specific birth rate method of projecting fertility, formerly used, was replaced by the so-called: cohort method in preparing the principal series of population projections given here. For comparison, a supplementary series of projections of population based on the use of agespecific birth rates has been developed and is presented in an appendix.

## TNDICATED POPULATTON STZE AND CHANGES

Total population.--Primerily because of the uncertainty as to the future course of fertility, the size of the cohorts representing survivors of future births may differ widely from any of the projections for these groups, as indicated earlier.

For the cohorts already alive on July 1,1963 , only the changes resulting from mortality and net immigration have to be allowed for. For a substantial portion of the population, therefore, future size can be projected over the next few decades with considerable confidence. Since projections of the total population for dates in the near future are affected only very little by the uncertainty in the projection of fertility, they will tend to differ Ilttle from the actual future population; but the range of reasonable possibili. ties widens as one looks ahead farther into the future and, hence, with the increasing length of the projection period, the projections may dif. fer more and more widely from the actual future population.

The revised projections of total population shown in table A indicate a population from 205.9 million (Series D) to 211. 4 million in 1970 (Series A) and from 248.0 million (Series D) to 275.6 milition (Series A) in 1985. The new set of pro. jections is generally lower than those published earlier (Series P-25, No. 187 and No. 251) although there is considerable overlap. The new Series A projection for 1985 ( 275.6 million) falls between the former series II and series III projections (288.3 and 267.4 million) although the Series D ( 248.0 million) projection is approximately equal to the former Series IV projection (247.7) million. In effect, the variation in the projections of total population in 1985 has been reduced by more than hale, from 58.0 million to 27.7 miliion in absolute numbers and from 21.0 percent to 10.6 percent in relative terms. ${ }^{2}$ Even the variation from Series II to series IV in 1985 exceeded 40 million, or 15 percent. For evaluating the effect of the change of method on the range of the projections, however, it would be fairer to equate the length of the projection period by compardag the new range in 1985 with the old range in 1980. On this basis, the renge in the earlier projections of 42.0 miliion, or 16.6 percent, was reduced by more than one-third in the new projections.

Age-sex structure.---Projected changes in the age-sex structure of the population are depicted in the population "pyramid" on the cover. The composition of our 1963 and 1985 population is compared. For the portion of the population dependent upon future births, Series $A$ and $D$ projections are shown for illustrative purposes. The paragraphs below touch upon some of the indicated changes for the various age groups, particularly

[^0]Sertain important functional segments (e.g., popu|retion of school age, population in the main work(ng ages, and the elderly population). In interrreting this material, it is important to bear in Find the fact previously mentioned that measures [y age-sex structure involving the younger age Ifroups (which represent the survivors of births miring the projection period) are subject to freater uncertainty than measures involving only (siryivors of cohorts already born.

Children of preschool age.--The number of chil. Iren under 5 years of age (roughly preschool age
children) is expected to show a moderate to marked net gain by 1985, but there may be a loss during the early part of the period. According to series $D$, for example, this group will decline from $20,722,000$ in 1963 to 19,444,000 in 1970, or by 6 percent (tables $E$ and $F$ ). Thereaiter, principaily because of the larger numbers of women who will reach the chilabearing ages, the number of children under 5 is expected to increase steadily. Even according to series D, there would be 17 percent more children under 5 in 1985 than in 1963, or $24,235,000$. Series A shows a net gain in this period of nearly 60 percent to $33,048,000$.

Table E. w PROJEOTED DISTRIBUTION OF THE POPULATION, BY BROAD AGE GROUPS: 1963 TO 1985
(Mumbers in thousands. Serles A and D projections are shown for illustrative purposes, Figures above the heavy Ine depend, In whole or part, on projections of births; all percentages are affected by the projections of births)

| Age | 1963 | 1.970 |  | 1975 |  | 1980 |  | 1985 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Series A | Series D | Series A | Series D | Sertes A | Series D | Series A | Series D |
| Total, all ages. | 189,278 | 211,430 | 205,886 | 230,415 | 218,855 | 252,056 | 233,140 | 275,622 | 247, 953 |
| inäer 5 years..... <br> to 13 years,.... | 20,722 34,515 | $\begin{aligned} & 23,991 \\ & 37,748 \\ & \hline \end{aligned}$ | $\begin{aligned} & 19,444 \\ & 36,751 \end{aligned}$ | $\begin{aligned} & 27,312 \\ & 41,057 \end{aligned}$ | $\begin{aligned} & 21,276 \\ & 35.533 \end{aligned}$ | 30,557 46,826 | 23,164 | 33,048 | 24,235 |
| If to 17 years. | 13,480 | 15,675 | 15,675 | 16,680 | 16,680 | -17,440 | 36,984 <br> 15,759 | 52,719 20,040 | 40,447 15,948 |
| It to 24 years. | 18,153 | 24,368 | 24,368 | 27,178 | 27,178 | 29,113 | 29,113 | 30,733 | 15,948 28,241 |
| ${ }^{2} 5$ to 34 years. | 22,356 | 25,220 | 25,220 | 31,139 | 31,139 | 36,517 | 36,517 | 40,004 | $\frac{28,241}{40,004}$ |
| 35 to 44 years. | 24,603 | 22,997 | 22,997 | 22,458 | 22,458 | 25,267 | 25,267 | 31,089 | 40,004 |
| 4 to 54 years. | 21,489 | 23,360 | 23,360 | 23,57/4 | 23,574 | 22,194 | 22,194 | 21,718 |  |
| $5{ }^{5}$ to 64 years. | 16, 394 | 18,501 | 18,501 | 19,846 | 19,846 | 21,056 | 21,056 | 21,266 | 21,718 21,266 |
| 6 to 74 years. | 11,336 | 12,131 | 12,1.31 | 13,227 | 13,227 | 14,489 | 14,489 | 15,600 | 21,266 15,600 |
| 75 years and over | 6,231 | 7,439 | 7,439 | 7,944 | 7,944 | 8,597 | 8,597 | 9,406 | 19,406 |
| Percent. | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Mraer 5 years. | 10.9 | 11.3 | 9.4 | 11.9 | 9.7 | 12.1 | 9.9 | 22.0 |  |
| 3 to 13 years.. | 18.2 | 17.9 | 17.9 | 17.8 | 16.2 | 18.6 | 15.9 | 19.1 | 16.3 |
| 18 to 17 years. | 7.1 | 7.4 | 7.6 | 7.2 | 7.6 | 6.9 | 6.8 | 7.3 | 6.4 |
| 18 to 24 to years. | 9.6 | 11.5 | 11.8 | 11.8 | 12.4 | 11.6 | 12.5 | 11.2 | 11.4 |
| 35 to 344 years. | 11.8 | 11.9 | 12.2 | 13.5 | 14.2 | 1.4 .5 | 15.7 | 14.5 | 16.1 |
| 45 to 54 years. | 13.0 | 10.9 | 11.2 | 9.7 | 10.3 | 10.0 | 10.8 | 11.3 | 12.5 |
| 55 to 64 years. | 13.4 8.7 | 8.8 | 11.3 9.0 | 10.2 8.6 | 10.8 | 8.8 | 9.5 | 7.9 | 8.8 |
| 65 to 74 years. | 6.0 | 5.7 | 5.9 | 5.7 | 9.1 | 8.4 | 9.0 | 7.7 | 8.6 |
| 75 years and over. | 3.3 | 3.5 | 3.6 | 3.4 | 3.6 | 3.4 | 6.2 3.7 | 5.7 3.4 | 6.3 3.8 |

Table F.--PERCENT OF CHANGE IN PROJECCTONS OF POPULATTON, BY AGE: 1963 TO 1985
(Series A and D projections are shown for illustrative purposes. Figures above the heavy lines depend on projections of births)


Population of elementary and high school age. --The number of children 5 to 13 years of age (roughly elementary school age children) will continue to grow at least to 1968 as the larger number of chilaren born between 1958 and 1963 enters this group and replaces those born between 1949 and 1954. In 1963, the group numbered $34 \frac{1}{2}$ million. By 1968 the group will increase by nearly $2 \frac{1}{2}$ milIion. Growth in this group during the years after 1968 is dependent primarily on the unpredictable number of babies to be born in future years. Growth during the 1968-75 period may be rapid or slow, or there may even be a decline; whereas between 1975 and 1985, the pace of growth should be relatively rapid. According to Series A, ele.. mentary school age children will increase by about 4.1 million between 1968 and 1975 and by an additional 11.7 million by 1985. Series $D$, on the other hand, shows steady losses between 1968 and 1976 and a sharp rise thereafter to 1985. According to these sexies, there may be 40 to 53 million elementary school age children in 1985, represent. ing overall increases of 17 to 53 percent over 1963.

The number of persons 14 to 27 years of age (roughly high school age children) will reach 15.7 million in 1970 and 16.7 million in 1975 . Thereafter, growth in this group will be dependent primarily on the future number of births. Series D shows a decline to 15.9 million high school age persons in 1985 and Series A a further rise to 20.0 miliion. These figures imply increases of 18 and 49 percent, respectively, over the $13 \frac{2}{2}$ million persons of high school age in 1963.

Population 18 to 24 years of age.-.The age range 18 to 24 years generally defines the ages at which adult roles and responsibilities are assumed. This group includes the college age group and provides the bulk of new recruits into the labor force and into military service. It is also the age range within which most families are formed, since most women marry and have their first child during this period of their life. A very marked increase in this age group is expected in the next several years. By 1870 the group will be composed entirely of persons born in the years since the end of World War II (1945-52) whereas the present group is composed of persons born in the late Depression years and the War years. There will be about 24.4 million persons in this group in 1970 as compared with 18.2 million in 1963. An overall increase of one-third during this period, with growth averaging close to 0.9 million annually, is implied. Growth in this group will be considerably slower in the seventies and early eighties. There will be about 27.2 million persons 18 to 24 in 1975 and, according to Series D and A, 28.2 and 30.7 million, respectively, in 1985.

The college age group (18 to 21 years) win number about 14.3 million in 1970 and 16.0 milli ion in 1975. As compared with the 11.2 million in this group in 1963, there will be an increase of about 44 percent between 1963 and 1975. After 1975 the college age group will grow much less rapidy and may even show a decline between 1980 and 1985.

Data on annual changes in the population of school and college age are of considerable use in the planning of educational development programs. Table $G$ shows projections of the number of persons in selected age groups ( 5 to 13 years, 14 to 17 years, and 18 to $2 I$ years), roughiy representing the elementary, high school, and college ages, respectively, for each year to 1985. For 111ustrative purposes Series A and Difgures are given for years which depend on projections of births.

Table G. - ANNUAL ESTIMATES AND PROJECITONS OF SCHOOL-AGE POPULATION, EY AGE: 1960 TO 1985
(Numbers in thousands. Figures below heavy lines represent, in whole or part, survivors of births projected for years after 1963 or changes involving survivors of births. Series A and D projections are shown for illustrative purposes)

| Year (July 1) | 5 to 13 years | $\begin{aligned} & 14 \text { to } 17 \\ & \text { years } \end{aligned}$ | $28 \text { to } 21$ <br> years |
| :---: | :---: | :---: | :---: |
| Estimates: |  |  |  |
| 1960. | 32,985 | 11,211 | 9,546 |
| 1961. | 33,276 | 12,010 | 10,246 |
| 1962. | 33,888 | 22,751 | 10,745 |
| 1963.. | 34,515 | 13,480 | 11,129 |
| Projections: |  |  |  |
| All aeries: | . |  |  |
| 1964. | 35,175 | 14,201 | 11,282 |
| 1965. | 35,734 | 14,055 | 12,073 |
| 1966. | 36,352 | 14,226 | 12,810 |
| 1967..................... | 36,732 | 14,536 | 13,535 |
| 1968. | 36,942 | 14,942 | 14,253 |
| Series A: |  |  |  |
| 1969... | 37,304 | 15,345 | 14,108 |
| 1970. | 37,748 | 15,675 | 14,278 |
| 197. | 38,205 | 15,971 | 14,587 |
| 1972..................... | 38,773 | 16,210 | 14,992 |
| 1973....... . . . . . . . . . . | 39,456 | 26,365 | 15,393 |
| 1974. | 40,267 | 16,499 | 15,722 |
| 1975...................... | 4,1,057 | 16,680 | 26,017 |
| 1976.................... | 42,078 | 26,747 | 26,255 |
| 1977. | 43,330 | 16,704 | 16,410 |
| 1978. | 44,468 | 16,910 | 16,543 |
| 1979. | 45,639 | 17,066 | 16,723 |
| 1980..................... | 46,826 | 27,440 | 16,790 |
| 1981. | 48,021 | 18,035 | 16,747 |
| 1982. | 49,218 | 18,510 | 16,952 |
| 1983. | 50,408 | 19,010 | 17,109 |
| 1984. | 51,576 | 19,521 | 17,483 |
| 2985. | 52,729 | 20,040 | 18,074 |
| Serias D; |  |  |  |
| 1969...................... | 36,872 | 1.5,345 | $14,108$ |
| 1970.................... | 36,751 | 15,675 | 14,278. |
| 1971................... | 36,517 | 15,971 | 14,587 14,992 |
| 1972. | 36,262 | 16,210 | 14,992 |
| 1973.................... | 35,996 | 16,365 | 15,393 |
| 1974...................... | 35,792 | 16,499 | 22,722 |
| 1975.... . . . . . . . . . . . . . . | 35,533 | 16,680 | 16,017 |
| 1976. | 35,461 35,566 | 16,747 16,704 | 16,410 |
| 1978......................... | 35,935 | 16,480 | 16,543 |
| 1979. | 36,417 | 26,074 | 16,723 |
| 1980....................... | 36,984 | 15,759 | 16,790 |
| 1981...................... | 37,633 | 15,534 | 16,747 |
| 1982..................... | 38,355 | 15,493 | 16,524 |
| 1983..................... | 39,086 | 15,544 | 16,119 |
| 1984..................... | 39,782 | 15,699 | 15,809 |
| 1985...................... | 40,447 | 15,948 | 15,582 |



Population in the main working ages.--The population in the main working ages ( 25 to 64 years) will grow from 84.8 mililion in 1963 to cbout 90.1 million in $1970,97.0 \mathrm{million}$ in 1975 , and 114.1 million in 1985. The change projected for 1963 to 1985 is 29.2 miliion, or 34 percent.

For the next dozen years the younger portion of this group, that is, the population 25 to 44 years old, will grow at a moderate pace. It will number 53.6 million in 1975 as compared with 47.0 million in 1963, indicating an increase of 6.6 million, or 14 percent. After 1975, however, the group will grow quite rapidly; it will number 61.8 mililon in 1980 and 71.1 million in 1985. In the whole period 1963 to 1985, the group 25 to 44 years of age will increase by over 50 percent.

The older persons of working age--45 to 64 years.--will grow only moderately after 1963, reaching 43.4 million in 1875 . This figure implies a gain of about 5.5 million , or 15 percent, over the 37.9 million of 1963 . The group will number slightly less in 1985 than in 1975.

Elderly population.--The number of persons 65 years and over has risen rapidly in the past feveral decades. In 1940 there were an estimated 9.0 miliion persons 65 and over, and in 1963 there vere about 17.6 million; these figures reflect an Taverage annuel increase of 367,000 persons of this Gge group, and a near doubling of the aged population in 23 years. Continued substantial increases In the population 65 years and over are indicated by the projections, but the rate of growth is exDected to diminish. The projections show 25.0 mllion aged persons in 1985, implying an increase $0{ }^{7} .4$ million, or 42 percent, in the 22-year period after 1963 and an average gain of roughly 838,000 persons annually. An 11.4 percent gain during the remainder of this decade will bring the population 65 and over to 19.6 million in 1970; the corresponding average annual gain is 286,000 . It will not be until after 1985 that the declines
in the number of births during the $1920^{\prime} \mathrm{s}$ and 1930's will affect the size of this age group.

The growth rate for the older portion of this range ( 75 years and over) will be much larger than for the younger portion ( 65 to 74 years) between 1965 and 1985. The 65-to-74-year group will in. crease by about 38 percent, and the 75 -and-over group, by about 51 percent during this period.

Although the future size of the aged population is dependent to some extent upon the future course of death rates, the expected increase in the elderly population is due mainly to past increases in the number of births. Past trends in fertility will continue for a number of year's to have a greater effect upon prospective changes in the number of aged persons than past and prospective trends in mortality and immigration, and the efiects of future trends in fertility will not be felt until well into the next century. Even if mortality rates were to remain at 1960 levels, the expected increase in the aged population between 1963 and 1985 would amount to about 6.6 million, or 38 percent (as compared with the increase of 7.4 million under the assumption of slightly declining mortality used in the four principal series of population projections previously discussed). A negligible part of the projected increase is accounted for by future net immigration.

Overell shifts in age composition.--The projected changes in the numbers of persons in various age groups will bring about changes in the relative proportions of the total population in these groups. Because of the uncertainty regarding the course of future fertility, it is not clear whether the proportions of preschool-age children (under 5 years) and school-age (5 to 17 years) children will rise or fall by 1985 from their present 20.9 percent and 25.4 percent (table E). However, the proportions of youths 18 to 24 and of younger persons in the main working ages ( 25 to 44 years) are expected to rise substantially. During the same period, the proportion of older persons of working age ( 45 to 64 years) is expected to fall sharply, The proportion of aged persons may rise or fall from lts present level depending on future changes in fertility. At present, about 9.3 percent of the population is 65 or over; according to the A series, the proportion would fall to 9.1 percent and under the $D$ series the proportion would rise to 20.1 percent.

The median age reflects these expected changes in age composition. The median age is expected to continue falling from its present level of 28.5 years to at least the year 1970; then its course will depend on the level of future fertility (table $H$ and figure I). Under Series $D$ the median age would rise again to 28.6 years in 1985 , but
under Series A the median age would continue to fall, reaching 25.3 years in that year.

According to the varlous series of population projections, the median ages of males and females are expected to follow parallel trends in future years, so that the present gap between the average age of males and females would hardly change between 1963 and 1985. Although there has been a steady widening of the gap between the median ages of the sexes over the last quarter century as a result largely of the increasing advantage of women over men in life expectancy and the consequently higher proportion of women among older persons, this trend will not continue according to the population projections. In 1963 the median age of males was 27.4 and the median age of females

Table H.--ESTIMATED AND PROSECTED MEDIAN AGE OF THE POPTLATTON, BY SHX: 1940 TO 1985
(Series A and D projections are shown for f1luetrative purposes)

| Year | Both sexes | Male | Female |
| :---: | :---: | :---: | :---: |
| - Estumates: |  |  |  |
| 1940. | 29.1 | 29.1 | 29.1 |
| 1945. | 30.0 | 29.8 | 30.2 |
| 1950. | 30.2 | 29.8 | 30.5 |
| 1955. | 30.2 | 29.6 | 30.8 |
| 1960. | 29.4 | 28.5 | 30.3 |
| 1963. | 28.5 | 27.4 | 29.7 |
| Projections: |  |  |  |
| Serles A: |  |  |  |
| 1965.. | 27.8 | 26.6 | 29.0 |
| 1970. | 26.4 | 25.2 | 27.6 |
| 1975. | 25.9 | 24.8 | 27.0 |
| 2980. | 25.5 | 24.5 | 26.7 |
| 1985. | 25.3 | 24.2 | 26.4 |
| Series D: |  |  |  |
| 1965. | 28.1 | 26.8 | 29.3 |
| 1970. | 27.4 | 26.2 | 28.6 |
| 1975. | 27.5 | 26.5 | 28.6 |
| 1950. | 28.0 | 26.9 | 29.1 |
| 1985. | 28.6 | 27.6 | 29.7 |

Figure 1..-estimated and projected median ace OF THE PDPULATION: 1940 TO 1985

was 29.7 years, with a gap of 2.3 years; in 1940 the figures agreed at 29.1 years: According to Serles $A$, with its assumption of relatively high fertility, the medians are expected to fall to 24.2 years for men and to 26.4 years for women in 1985, maintaining a difference of 2.2 years. In Series $D$, which has an assumption of relatively Jow fertility, the medians drop slightily to 1970 , then rise again to approximately the same level as at present. Future changes in the relative level of male and femele death rates will have an important impact on the difference between the medi.. an ages of the sexes.

Numbers reaching selected "key" ages.--Considerable interest has been shown by users of population projections in the prospective numbers of persons reaching certain "key" ages. These ages mark the usual entrances into or exits from various important statuses in the life cycle. Accordingly, anmual projections of the number of persons reaching ages $6,14,18,21,45$, and 65 are presented in table J. More detailed data are show in table 7 , and some of this material is show graphically in figure 2. Ordinarily, the number

Table J.--ESTIMATED AND PROJECTED ANNAL NUMEER OF PERSONS REACHING SEIECTED AGES: 1950 TO 1985
(In thousands. Figures below the heavy 1 ines depend on projections of births. Series A and D projections are show for illustrative purposes)

| Year or period (July 1 to June 30) | Age 6 | ${ }_{14}^{\text {Age }}$ | Age 18 | Age | 4 Age | Age 65 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Estimates: |  |  |  |  |  |  |
| 1950-1955 ${ }^{1}$ | 3,246 | 2,264 | 2,135 | 2,154 | 2,039 | 1,162 |
| 1955-1960 ${ }^{2}$. | 3,678 | 2,711 | 2,389 | 2,179 | 2,228 | 1,287 |
| 1960-1961. | 3,959 | 3,717 | 2,934 | 2,286 | 2,268 | 1, 339 |
| 2961-1962. | 3,981 | 3,496 | 2,767 | 2,410 | 2,281 | 1,334 |
| 1962-1963. | 4,087 | 3,496 | 2,778 | 2,623 | 2,306 | 1,341 |
| Projections: All serles: |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| $\bigcirc$ 1963-1964. | 4,103 | 3,473 | 2,761 | 2,952 | 2,350 2,399 | 1, 1,394 |
| 1964-1965. | 4,116 | 3,573 3,667 | 3,728 3,505 | 2,783 2,794 | 2,399 2,443 | 1,394 1,424 |
| 1965-1966. | 4,116 4,269 | 3,667 3,806 | 3,505 3,505 | 2,794 | 2,443 2,481 | 1,424 1,453 |
| 1967-1968. | 4,170 | 3,879 | 3,482 | 3,740 | 2,498 | 1,479 |
| 1968-1969. | 4,073 | 3,977 | 3,582 | 3,519 | 2,486 | 1,501 |
| Series A: |  |  |  |  |  |  |
| 1969-1970.... | 4,323 | 3,997 4,103 | 3,676 3,814 | 3,519 3,495 | 2,461 2,436 | 1,524 |
| 1970-1971.. | 4,426 <br> 4,545 | 4,103 | 3,814 | 3,495 | 2,446 2,409 | 1,567 |
| 1972-1973. | 4,671 | 4,132 | 3,984 | 3,689 | 2,374 | 1,595 |
| 1973-1974. | 4,799 | 4,131 | 4,005 | 3,827 | 2,331 | 1,629 |
| 1974-1975 | 4,928 | 4,284 | 4,111 | 3,900 | 2,288 | 1,666 |
| 1975-1980 ${ }^{1}$ | 5,328 | 4,322 | 4,177 | 4,085 | 2,188 | 1,758 |
| 1980-1985 ${ }^{1}$ | 5,990 | 4,943 | 4,429 | 4,224 | 2,261 | 1,855 |
| Series D: |  |  |  |  |  |  |
| 1969-1970.. | 3,891 | 3,997 | 3,676 | 3,519 | 2,461 |  |
| 1970-1971. | 3,861 | 4,103 | 3,814 | 3,495 | 2,436 2,409 | 1, 5 ,567 |
| 1971-1972.... | 3,853 | 4,118 | 3,887 | 3,595 | 2,409 2,374 | 1, 1,595 |
| 1972-1973.... | 3,847 | 4,132 | 3,984 | 3,689 3,827 | 2,374 2,312 | 1,629 |
| 1973-1974.... | 3,850 <br> 3,911 | 4,131 <br> 4,284 | 4,005 4,111 | 3,827 3,900 | 2,331 | 1,669 |
| 1975-1980 ${ }^{\text {¹. }}$. ${ }^{\text {a }}$ | 4,177 | 3,986 | 4,277 | 4,085 | 2,188 | 1,758 |
| 1980-1985 | 4,568 | 3,959 | 3,930 | 4,138 | 2,261. | 1,85 |

${ }^{1}$ Annual average for 5 -year period.

Figure 2.--ANNUAL NUMBERS OF PERSONS REACHING SELECTED AGES: 1950-1951 TO 1979-1980


NOTE: PONTS FOR FISCAL YEARS ARE PLOTTED MIDWAY BETWEEN JULY 1 DATES.
of persons reaching a given age annually increases or decreases, as the case may be, rather smoothly. Because of the marked changes in the annuel number of births during the war and postwar years, however, irregular changes appear in the annual numbers reaching selected ages. For example, the number of persons reaching age is is expected to show a sharp increase between fiscal year (July 1 to June 30) 1963-64 and fiscal year 1964-65, reflecting the upsurge in births between 1945-46 and 1946-47. The number would increase from 2,761,000 to $3,728,000$, or by 35 percent. The number reaching 18 will show a small decrease thereafter to 3,482,000 by 1967-68, then will rise steadjly to nearly 4.2 million (annual average) in the 1975-80 period. The changes noted for the number reaching age 18 are reflected in corresponding changes three years later in the number reaching age 21. The number reaching age 65 is expected to increase steadily from 1.4 million in $1963-64$ to 1.9 mil lion annually in 1980-85, a gain of 36 percent in this period.

Sex composition.--The various series of population projections generally indicate a further increase in both the absolute and relative excess of females over males in the population. The number of women ifrst exceeded the number of men about 1945, and the disparity has been growing wider ever since. For every 100 females in the population, there were in 1963, 97.4 males, as compared with 97.8 in 1960 and 99.2 in 1950. Women outnumbered men by 2.5 million in 1963. According to the $B$ series of population projections, the sex ratio will decline to 96.6 in 1975 and then rise slightly to 96.8 in 1985; women would outnumber men by 4.3 million in the latter year. Little variation in the overall sex ratio is introduced by alternative assumptions on future fertility; the A series figure would be 97.1 and the $D$ series ifgure would be 96.3 in 1985 . The small variation arises from the differences between the series in the proportion of young chil. aren, whose sex ratios are high, rather than from variations from one series to another in the sex ratios by age.

Whether the female population will actually continue to grow more rapidly than the male population, as is implied for all series to 1975 , depends largely on the relative changes in the future death rates of the sexes. Death rates for males have generally exceeded death rates for Pemales throughout the age range since the Death Registration Area was established in 1900, and the disparity has been widening. (The reduction in the volume of immigration and the dying off of the older generation of immigrants, in which men pre-- Cominated, have also played a part in the deciine of the proportion of males.) If the trend of the
past were to be followed, it would be assumed that death rates for males would improve less rapidly than death rates for fenales in future years, as was done in the projections of mortality prepared by the Social Security Administration from 1953 to 2000, which were used as a basis for the mortal. ity projections in this report. However, this original assumption was substantially modified by the introduction of data from the abridged United States life table for 1960 prepared by the Nation. al Center for Health Statistics. As a result, for many ages, survival rates for males rise more rapidly between 1960 and 1985 then the corresponding survival rates for females. Projected chenges in death rates in this period are so small, however, that chenges in the relative trends of the death rates have little effect on changes in the sex ratios by age.

Implied trends in the sex ratios vary for the younger ages and the older ages. (Table $K$ and figure 3 indicate the changes in sex ratios by age between 1963 and 1985. Only one series of sex ratios by age is shown; the sex ration are essentially the same for all series of projections because only a single series of mortality rates was assumed.) The projections show sharp declines in the proportion of males at the older ages in future years. At ages 55 to 64 years there were an estimated 92.8 males per 100 females in 1963; by 1985 the ratio 1 s expected to fall to 86.5 males per 100 females. The drop in the ratio is even sharper for the group 65 to 74 years, from 83.3 to 75.5 males per 100 females. At the younger ages, particularly for ages 15 to 44 , the trend in the sex ratio is upward. This "trend" may contain an element of unreality, however, in that current sex ratios may be spuriously depressed as a result of a greater net census undercount amons young adult maies than among young aduIt females.

Table K. --ISTTMATED AND PROJECTED SEX RATTOS, BY AGE: 1950101985
(Maies per 100 females, Only one series of sex ratios is shown for the younger ages because of the very slight vi hati ns from one series to another)

| Age | 1950 | 1963 | 1970 | 1975 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Total, all ages ${ }^{1}$... | 99.2 | 97.4 | 96.7 | 96.6 | 96.8 |
| Under 5 years. | 103.9 | 103.8 | 104. 3 | 104.3 | 104.4 |
| 5 to 14 years. | 103.6 | 103.4 | 103.6 | 204.1 | 104.2 |
| 15 to 24 years........ | 100.1 | 101.7 | 102.3 | 102.3 | 100.3 |
| 25 to 34 years. . . . . . . . | 96.4 | 98.1 | 98.9 | 99.8 | 98.6 |
| 35 to 44 years......... | 97.8 | 95.9 | 96.7 | 97.2 | 94.6 |
| 45 to 54 years......... | 99.6 | 95.9 | 93.5 | 93.3 | 84.5 |
| 55 to 64 years. | 100.2 | 92.8 | 89.9 | 88.0 | 75.5 |
| 65 to 14 years. | 93.1 | 83.3 | 80.2 | 78.9 | 61.1 |
| 75 years and over..... | 32.5 | 72.9 | 67.1 | 63.6 |  |

[^1]It is of interest also to consider the variation of the sex ratio with age at a given date. In all future years, as in 1963, the sex ratio is progressively lower from childhood to older age. The decline by age is relatively rapid in the older ages. This pattern is more pronounced in 1985 than in 1963. For example, an excess of women does not appear until the age group 35 to 39 in 1985 as compared with the group 25 to 29 in 1963 ; yet, as mentioned, the sex ratio among the elderly falls to a much lower level in 1985 than in 1963.

Figure 3.*ESTIMATED AND PROJECTED SEX RATIOS, BY AGE: 1963, 1975, AND 1985


NOTE: ONLY ONE CURVE IS SHOWN FOR EACH YEAR 1975 AND 1905 BECAUSE THE SEX RATIOS DO NOT VARY FROM ONE SERIES TO ANOTHER.

Resident population.- - As has been stated, the projections given in this report relate primarily to the total population of the United States including Armed Forces abroad. They are not comparable, therefore, with the princlpal census counts for the united states, which relate to the resident population of the 50 States and the District of Columbia and exclude Armed Forces abroad. For certain purposes, it is desirable to have projections of the resident population. To prepare such figures, it is necessary to have projections of the number of Armed Forces persomnel expected to be abroad at various future dates. In the absence of such information, it may be useful to make the simple and arbitrary assumption that the number of persons in the Armed Forces abroad will remain at the same level as on July 1, 1963, the base date of the projections $(747,000)$. The projections of resident population for each year, 1964 to 1975 , shown in table $I$ employ this assumption. Corresponding projections by age and sex can be derived on the basis of a similar assumption and the

Table L.--ANUUL PROJHCTIONS Of TOTAL RESIDENI POPLATTON: 1963 T0 1975
(In thousands. Figures exclude Armed Forces abroad)

| Year (July 1) | Series A | Series B | Series C | Series D |
| :---: | :---: | :---: | :---: | :---: |
| $1963{ }^{1}$ | 198,531 | 188,531 | 188,531 | 188,531 |
| 1.964. | 191,419 | 191,220 | 190,987 | 190,984 |
| 1965 | 194, 382 | 193,924 | 193,389 | 193,380 |
| 1965 | 197,439 | 196,656 | 195,763 | 195,742 |
| 1967 | 200,596 | 199,465 | 198,116 | 198,072 <br> 200 |
| 1968 | 203,855 | 202,303 | 200,460 202,862 | $\begin{aligned} & 200,399 \\ & 202,722 \end{aligned}$ |
| 1969 | 207,216 | 205,217 |  |  |
| 1970. | 210,683 | 208,249 | 205,363 | 205,1.39 |
| 1971. | 214,259 | 211,398 | 207,967 | 207,617 210,153 |
| 1972. | 217,944 | 214,662 |  |  |
| 1973. | 221, 739 | 218,039 | $21.3,476$ 236,382 | 212,748 215,400 |
| 1974. | 225,643 | 221,526 225,123 | 216,382 219,386 | 215,400 218,108 |
| 1975 | 229,668 | 225,123 | 21.9,386 | 218,108 |

1 Consistent with the estimate of total population including Armed Forces abroad used as the base for the principal projections in this report ( $189,278,000$ ). A revised estimate of total resldent population for July 1, 3963 , prepared after these projections had been completed, is 188,616,000; the comparable estimate for Jan. 1, 1964, ie 190,092,000,
projections of population incIuding Armed Forces abroad by age and sex shown in this report. Estimates of the number of persons in the Axmed Forces abroad by age and sex on July 1, 1963, are as follows (in thousends):


## DESCRIPTION OF METHOD AND ASSUMPTIONS

General method.--A "component" method was used to develop the population projections presented here. This method involves the preparation of separate projections of each of the components of population change (i.e., births, deaths, and net immigration) on the basis of certain assumptions and the combination of the projections of change with estimates of the current population. Rore specifically, a "cohort-survival" procedure was used to carry forward the male and female population, age by age, to each future year to yield annual population projections by age and sex. In its general outline, this method is the same as the one used by the Census Bureau in deriving its. earlier national projections. The present method differs, however, from that used for the earlier projections principally in the specific method of projecting births, the mechanics by which the projections were obtained, and the detaji of the computations. In the present case, births were
projected by the "cohort" method rather than by the "period" or "calendar-year" age-specific method, most calculations were carried out by electronic computer, and results were obtained for single ages and single calendar years.

The projections were based on current estimates of the population including Armed Forces abroad, by single years of age and sex, for July l, 1963. These estimates were based, in turn, on 1960 Census data from the complete count, tabulated by age and sex. The age detail from the count is for 5 -year age groups for ages under 85 years old, with a terminal group 85 years and over, and for single years of age for ages under 21 years. The population 21 to 84 years of age was distributed by single years, within the 5 -year totals, in proportion to annual births ( 21 to 24 years), by mathematical interpolation (30 and over), or by an average of the results of these methods ( 25 to 29 years). The tabulations for the population 21 years old and over by single years of age were not considered adequate for use in making postcensal estimates and projections because they showed artificial fluctuations due, principally, to errors of knowledge and memory, digit preference in reporting year of birth, and sampling error.

The 1960 Census data have not. otherwise been adjusted for errors in the census enumeration, although it is recognized that there were both errors of underenumeration and misreporting of age in addition to digit preference. However, the evaluation studies of the 1960 Census have not yet been completed and as yet there is no definitive measure of net undercount for the total population, nor for most of the age groups. ${ }^{3}$

The population by single years of age and sex for April 1, 1960, derived in the above manner, was carried forward to July 1, 1963, by the cohort.. survival method, employing birth, death, and immigration statistics for the intervening period. A detailed explanation of the derivation of the current estimates for 1963 is given in Current Population Reports, Series P-25, No. 276. The population in midyear 1963 was carried forward by the use of appropriate lype-table survival rates and allowances for net immigration, by single years of age and sex, on an annual basis, to 1985. The projections of the population cohorts born after midyear 1963 depend, of course, on projections of births for each year. Once computed, the projected births were carried forward on an annual

[^2]basis to 1985, by use of appropriate life-table survival rates and allowances for net trmigration, in the same manner as the population living in 1963 was projected. For the most part, these computations were made on an electronic computer. The specific assumptions on fertility, mortality, and net immigration are described in later sec. tions of this report.

Projections of births: Cohort-fertility math oc..-Of the components of population change in volved in determining the population for future years, the fertility component is the one with the highest degree of uncertainty. Because of the difficulties of trying to estimate annual numbers of births even in the short run, no attempt is made here to "predict" future fertility. Rather, a series of assumptions was made about the course of future fertility and the required computations were carried through to determine the number of births that will occur in later years on the basis of these stated assumptions. Each of the alter. native assumptions is offered as a reasonable possibility over the projection period; and, together, they are believed to provide a reasonable range of future births. No one series is espe. cially likely to depict prectsely the levels of fertility throughout the projection period. The future course of fertility may conform reasonably well to one or another of the vertous series of fertility projections for brief periods of years, or may fati to accord well with any series even though it remains within the boundaries of the range.

In recent reports on national population projections issued by the Bureau of the Census, the assumptions concerning future fertility were stated in terms of calendar-year age-specific birth rates for women in the childbearing ages or calendar-year gross reproduction rates. 1 Under this procedure the past trend of birth rates for each age of woman or of calendar-year gross reproduction rates was analyzed and projected either by

[^3]Styension of the past trend or by assuming certain levels at future dates similar to rates experiHenced earlier. In the last detailed report of this kind, Series P-25, No. 187, four series of tertity projections were selected, based on ross rive assumptions relating to calendar-year soss reproduction rates. This approach is very
simple operationally and readily provides any number of aiternative figures on births for future sears corresponding to various assumptions regarding age-adjusted fertility in these years. However, when interpreted from the point of view of the fertility performance of a specific group of women, this approach does not always yield reasonable levels of implied family size. This method Eiso has the disadvantages that there is no logical basis for projecting the trend of annual fertility and that the levels assumed for various dates in the projection period are extremely arbitrary.

For this report, the approach using calendaryear age-specific birth rates has been discarded in favor of an approach making use of data develped by P.K. Whelpton and Arthur A. Campbell of the Scripps Foundation for Research in Population problems on the fertility history of cohorts of wemen (that is, women born in specific years) as they progress through the childbearing ages. cohort fertility, as these data are usuelly designated, describes the cumulative fertility of spechfic groups of women to each successive age, thus reflecting the fertility of each group of women over the several calendar years covered by the cumulative rate. The cohort of 1912 (that is, women born in 1912), for example, reached its fiftieth birthday in 1962 and has completed its childbearing. Cohort fertility data trace the fertility of these women from the time they reached age 14 in 1926 to age 50 in 1962. Thus, not only do we know the rate at which this group of women had children at each age but also its cumulative rate from the beginning of childbearing up to any given age. Historical statistics of this kind have been computed by the Scripps Foundation through 1961.5

[^4]The difference between cohort fertility and fertility as measured by calendar-year rates can be further fllustrated by the following example. The completed fertility rate for the year 1961 (calendar-year rate) implies that if 1,000 women were subject to the age-specific birth rates of 1961. throughout their childbearing period and they all live to the end of the childbearing period, they would have a total of 3,615 children, or 3.6 children per woman. The last previous cohort of women to have a completed family size this large were the women born in roughly the years 1875-80 (the earliest years for which cohort data are available) and reaching age 45 in 1920-25. These women were having a substantial portion of their children in the closing years of the nineteenth century and the early part of the twentieth century, when large families were in style. In fact, itt is not likely that any of the cohorts of women now of childbearing age, even those in their late twenties or early thirties, who show relatively higher cumulative fertility than many prior cohorts did up to this age, will achieve a completed fertility as high as 3,600 . A direct year-by-year comparison of the levels of completed fertility achieved by past birth cohorts of women with the levels implied for specific calendar years based. on calendar-year age-specticic rates clearly cannot be made, although the general trends can be compared.

Two main advantages of the cohort-fertility approach are (1) that the fertility assumptions can be described in terms of completed fertility of real cohorts of women, so that unreasonable or unlikely assumptions concerning completed family size may be avolded, and (2) that use can be made of (a) information available on the accumulated fertility to date of each cohort--i.e., how many children women at each age already have had by the beginning of the projection period-and (b) information on the expressed expectations of women regarding completed family size that have been obtained in national sample surveys.

Regarding this last point, some account was taken in these computations of information on the expectations regarding completed family size reponted by a national sample of married couples included in the Growth of American Families (GAF) Studies of 1955 and $1960 .{ }^{6}$ These studies were

[^5]carried out jointly by the Scripps Foundation for Research in Population Problems and the Survey Research Center, University of Michigan. The methods and results of the 1955 and 1960 studies were similar.

In spite of the apparentiy superior logic of the cohort-fertility approach to fertility projections as compared with the age-specific birth rate method, the degree of uncertainty concerning the future level of fertility is still large. For one thing, it is still necessary to make assumptions about the level of completed fertility of each cohort. Expressed birth expectations may be unreliable because of changing circumstances, particularly for young women who have recently married and who have not begun childbearing. Making assumptions about the level of completed fertility is particularly hazardous for cohorts which have not yet entered the childbearing ages, for whom expectation data are not available. In only a few years these will be contributing most of the births, and their fertility expectations may be quite different from those for women now of childbearing age. However, even if completed fertility for a cohort can be stated within fairly narrow limits, it is suill necessary to make additional assumptions about the timing or spacing of births over the childbearing period for the cohort; the timing pattern is a major determinant of the annual number of births that will occur during the projection period. Such assumptions, like the assumptions made by the Bureau of the Census in previous studies regarding age-specific fertility rates or gross reproduction rates for future calendar years, may vary widely from the actual events as they develop.

The general approach to the derivation of the fertility projections involved developing assumptions of completed fertility for each annual cohort of women, developing further assunptions as to how the total fertility of each annual cohort was distributed year by year over the childbearing span, consistent with cumulative fertility to
their husbands; many results, however, derive from the sample of 2,684 wives 18 to 39 years of age with husbands present. The reports in 1955 on the number of ch1ldren expected in the period 1955-60 appeared to be rather accurate predictions in the aggregate, as judged by the reports in 1960 of the numbers of children actually born during 1955-60. See also R. Freedman, D. Goldberg, and D. Slestnger, "Current Fertility Expectations of Married Couples in the United States," Population Index, Vol. 29, Io. 4, October 1963; and A. A. Campbell, P. K. Whelpton, and R. F. Tomasson, "the Reliability of Birth Expectations of U.S. Wives," in Proceedings of the International Union for the Scientific Study of Population, New York, 1961, Paper No. 70.
date and with the previously assumed levels of completed fertility, and calculating the implied cumulative fertility rate for each cohort to each age of childbearing. The procedure made use of the data compiled by the Scripps Foundation on the level of cumulative fertility to January 1962, by age of women, for women now in the childbearing ages (cohorts born 1912 to 1947), and traced the future fertility of each cohort to the end of the childbearing period on the basis of the predetermined assumptions regarding its completed fertil. ity. The set of age-specific birth rates used to carry the cumulative fertility of each cohort in the childbearing ages in 1962 to 1 ts completed level, or to distribute the completed fertility of new cohorts entering the childbearing ages aiter 1962 over the childbearing period, is based on the pattern (or relative distribution) of age-specific birth rates in the period 1959-61, as described below.

The application of the cohort-fertility method in preparing the projections presented in this report is restricted to use of detail on the age or birthdate of the women. Other factors important in fertility changes, such as the marital status of the woman, the birth order of the child, the parity of the woman (i.e., number of previous children born to the women), birth interval (i.e., numbers of months since birth of previous child), age at marriage, or duration of marriage, are not taken into account directly. It is quite possible, however, that important changes in age at marriage or in the distribution of women by parity are implicit in one or more of the series of fertility projections. Cohorts expected to have a completed fertility of only 2,400 children per 1,000 women should have a substantially different median age at marriage and a substantially different ultimate parity distribution from cohorts expected to have a completed fertility of 3,500 children per 1,000 women. Some projections of fertility employing other factors important in fertility changes than those used here are described later.

The principal considerations employed in selecting the levels of completed fertility for the four basic series of fertility projections presented here-designated Series A, B, C, and D-are described in this and the next several paragraphs. Cumulative fertility to 1962 and the assumed levels of completed fertility for five-year birth cohorts of women are given in table M . In general, the levels of completed fertility for birth cohorts of women were arrived at by internal analysis of the historical series of cumulative fertility rates, although the initial assumptions derived in this fashion were compared with the results of the 1960 GAF study on expectations of women
rgarding completed family size. In selecting the trminal levels of completed fertility--that is, ne completed fertility of those cohorts which deve yet to reach childbearing age--it was assumed fhe the terminal level of fertility would not sceed, but might well fall below, the expected Fyel of completed fertility for that cohort which a the bulk of its fertility during the past dec, namely, women 30 to 34 years of age in 1962 .

1. M. --ESTIMATED AND ASSUMED COMPLETED FERTILITY RATES, FOR 5-yEAR birth cohorts of women: blrth years, 1902-1907 to 2957-1962
Werage number of children ever borm by end of childbearing period per 1,000 women. Rates below the heavy line are projections)

| sirth period of women ${ }^{2}$ | Age on July 1 , (years) | Cumulative fertility rate to 1962 | Completed fertility rate |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\underset{A}{\text { Series }}$ | $\begin{gathered} \text { Series } \\ \text { B } \end{gathered}$ | $\underset{C}{\text { Series }}$ | $\left.\right\|_{D} ^{\text {Series }}$ |
| 4902-1907. | 55 to 59 | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 |
| 1907-192. | 50 to 54. | 2,273 | 2,273 | 2,273 | 2,273 | 2,273 |
| 1912-1917 | 45 to 49. | 2,364 | 2,364 | 2,364. | 2,364 | 2,364 |
| 1117-1922. | 40 to 44. | 2,638 | 2,700 | 2,700 | 2,700 | 2,700 |
| 1922-1927. | 35 to 39. | 2,751 | 3,000 | 2,970 | 2,949 | 2,949 |
| $1987-1932$. | 30 to 34. | 2,667 | 3,350 | 3,234 | 3,192 | 3,192 |
| 993-1937. | 25 to 29. | 2,206 | 3,520 | 3,380 | 3,284 | 3,284 |
| 1937-1942. | 20 to 24. | 1,1.02 | 3,520 | 3,358 | 3,284 | 3,184 |
| 1942-1947. | 15 to 19. | 185 | 3,520 | 3,309 | 2,885 | 2,867 |
| 1924-1952. | 10 to 14. |  | 3,367 | 3,121 | 2,786 | 2,570 |
| 1952-1957. | 5 to 9. |  | 3,350 | 3,100 | 2,775 | 2,450 |
| 1957-1962. | Under |  | 3,350 | 3,100 | 2,775 | 2,450 |
| 2962 or later. | ${ }^{2}$ ) |  | 3,350 | 3,100 | 2,775 | 2,450 |

${ }^{3}$ Period extends from July 1 of initial year to June 30 of terminal year.
${ }^{2}$ Bom after July 1, 1962.

Tt is recognized that the irmediately succeeding cohorts (women aged 15 to 29 in 1962) might have somewhat higher fertility, but the evidence on expectations from the GAF Study would indicate that such higher fertility is unlikely to persist. Initial results were also examined to assure terminal levels for the intermediate fertility series projected here, Series $B$ and $C$, which would brack. et the results of the 1960 GAF study on the "most Iikely" expectation of women regarding completed tamily size. Some specific considerations in deriving each series are as follows:

Series A.--The first series, Series A, continues the high fertility of cohorts experiencing, during their major childbearing ages, the high rates from the post-World..War-II years to the present. The terminal level of fertility for this series has been placed at 3,350 chtldren per 1,000 women. This figure also represents a reasonable upper limit for the women aged 30 to 34 years of age in 1962 (birth cohorts of 1927 to 1932), who have completed the bulk of their childbearing. These cohorts are the first to reflect the fertiltity of the immediate post-war period, since they
reached age 17 between 1945 and 1949. Farlier, less fertile cohorts had some 20 percent of their children after ages 30 to 34 . Women 30 to 34 years old today would attain a completed fertility of 3,350 if they repeat the experience of earlier cohorts. Another possibility is that these women, having had more children at a younger age, will have fewer at an older age. The nature of the relationship between the past and future birth performance of the same cohort of women has not been established, however. In the absence of such knowledge, it was assumed, for the present series, that the group 30 to 34 in 1962 had completed about 80 percent of its ultimate fertility and would, therefore, complete its fertility with a rate of 3,350 children per 1, 000 women.

Women 35 to 39 years old in 1962 (birth cohorts of 1922 to 1927) had approximately 2,751 children per 1,000 wonen and are estimated to have completed about 92 percent of their fertility. Thus, a completed rate of 3,000 is assumed.

Women at ages 25 to 29 in 1962 (i.e., birth cohorts of 1932 to 1937) had a cumulative fertility rate of 2,206 children per 1,000 women in 1962 . The fertility of these cohorts is already 10 to 15 percent higher than that which cohorts aged 30 to 34 years in 1962 had at the same ages five years earlier. For purposes of the series A projections, some of this differential was maintained. Specifically, it was assumed that the completed fertility level of women 25 to 29 years in 1962 would be about 5 percent higher than for those 30 to 34 in 1962, leading to a total of 3,520 children per 1, 000 women. If we were to assume that the differential between the two cohorts would be maintained, completed fertility of the younger group would be over 3,800 , a level which appears unreasonably high in the light of past experience for any actual cohort born in the last 70 years. This figure is even higher than any hypothetical completed fertility rate for a postwar year based on the experience of a single year.

For women in the childbearing ages under 25 in 1962 (i.e., bjrth cohorts of $1937-42$ and $1942 \ldots$ 47), Series A assumes completed fertility of the same high level as for those 25 to 29--that is, 3,520 children per 1,000 women. This rate is consistent with the fact that these younger cohorts, although still in the younger ages of childbearing, have demonstrated relatively high initial levels. In fact, the cohorts in their early twenties in 1962 have had higher cumulative fertility to date than the group 25 to 29 in 1962 had had when it was five years younger. As mentioned above, however, the results of the GAF Study suggest that this excess may disappear by the time the conort reaches the end of childbearing. For cohorts under 15 years of age in 1962 or born
apter that year, lower levels of completed fertility were assumed, 3,367 for the cohorts 10 to. 14 in 1962 and 3,350 for all later cohorts. As previously noted, this terminal level of completed level agrees with the level assumed for the age cohorts 30 to 34 in 1962.

Series B.-. The assumed levels of completed fertility under series $B$ are scaled dow somewhat from those used under Series A. The series is considered a moderately high series in that it presumes only a modest drop from the levels of fertility in the last decade. The Series $B$ rates were developed by first establishing, as before, the completed level for the 30-to-34-year-ola group. It was assumed that, by 1962, the group had completed about 82 percent of its fertility (compared with 80 percent for Series A), yielding a projected completed fertility of 3,234 children per 1,000 women. The completed fertility for the other cohorts was scaled so that the general pat.tern of change from cohort to cohort paralleled that of Series A. The rate of 3,100 children per 1,000 women assigned to the cohorts yet to reach the beginning of their childbearing period corresponds approximately to the mean of the rates projected for those 30 to 34 years and 35 to 39 years of age in 1962; the majority of these women bore most of their children in the late forties and early fifties. The figure of 3,100 is just above the "most likely" figure on expectations regarding completed famlly size for all women 18 to 39 years of age which can be inferred from the 1960 GAF Study (3,000).

Series C and D.--Inasmuch as Series C and D were developed in close relation to one another, they are discussed here in combination. The terminal levels of these two lower series are based on the assumption that fertility will drop to some level commensurate with the levels observed during the 50 years preceding the recent rise in fertility. Cohorts of women who experienced most of their childbearing during the Depression years-roughly, cohorts born in 1905 to 1915--experienced relatively low levels of fertility, completing fertility near the level of 2,300 children per 1,000 women. Cohorts born in the immediately preceding years were in their maximum childbearing ages during the 1920 's; their completed fertility ranged from a low of 2,343 for the cohort of 19041905 to 2,511 for the cohort of 1900-1901 and approximately 2,800 for the cohort of 1895-1896. As we go back in time, each cohort has had higher completed fertility than the younger, succeeding cohort.

In selecting the terminal level of the lowest series-Series D, itwas deemed desirable to choose the lowest level experienced by earlier cohorts
born during the past several decades, excluding the cohorts affected primarily by the Depression lows; that is to say, the selection would be made from the experience of cohorts who were born after 1890, excluding the cohorts of 1905 to 1915. To assume that fertillty would settle as low as the level. of that of the cohorts which experienced most of their childbearing during the Depression seemed extreme. The rejection of the fertility of the cohorts born in 1905-1915 led to the selection of the completed fertility rate of cohorts born in 1900-1904 as the terminal rate for Series D. Specifically, the completed fertility for all cohorts born after 1952 and completing childbearing about the end of the century or later was set at 2,450 children per 1,000 women.

After the determination of the terminal completed fertility rate for Series $D$, the terminal rate for Series $C$ was set as the mean of the cor. responding rates for Series $B$ and Series D-that is, 2,775 children per 1,000 women. This rate is somewhat below the "most likely" figure implied by the 1960 GAF Study relating to expectations regarding complete family size for all women 18 to 39 years of age $(3,000)$. The terminal level of completed fertility under Series $C$ agrees approximately with the completed fertility rate to be achieved by the cohorts born in 1920-21; this cohort experienced most of its childbearing during the decade of the forties. Since the older cohorts have already started childbearing and, in some instances, have already achieved a relatively high level of cumulative fertility, one could not reasonably expect all or even most of these cohorts to complete fertility at levels as low as 2,775 children per 1,000 women. Cohorts 30 to 34 years of age in 1962, in fact, had already nearly achieved this level; for this group, cumulative fertility of 2,667 in 1962 was inflated to 3,192 to represent completed fertility. The rates for Beries $C$ assume a peak completed Iertility at 3,284 for the cohorts 25 to 29 in 1962 and a moderate decline thereafter to the rate of 2,775 previously assigned for the cohorts under 10 in 1962 or born after that year.

With an assigned temminal completed fertility of 2,450 children per 1,000 women and relatively high cumulative fertility for a number of older cohorts in 1962, Series $D$ would perforce have to assume a sharp decline in fertility. Cohorts 30 to 34, 35 to 39 , and 40 to 44 years in 1962 had already passed the ultimate low of series D by that year; that is, they had more than 2,450 chilaren per 1,000 women in 1962. Since the cohort approach takes into account cumulative fertility to date and this is already rather high, any lower figures than Series $C$ for the completed levels of fertility for most cohorts now in childbearing

Tould imply too drastic a reduction in age-specific fates remaining for these cohorts. For the cohorts aged 20 and over, therefore, the same levels focompleted fertility were set for series D as for Series C. The two series begin to diverge with the cohort aged 18 in 1962 (cohort born in 4944-45) and the divergence increases gradually thereafter until the terminal level of completed fertility in Series D is reached with the cohorts - to 9 in 1962. It should be recognized that, in Gpite of the similarity of fertility rates of the ohorts 19 and over under Sexies C and D, the numbers of births in these series differ from the very beginning of the projection period, albeit only slightly in the first several years, as the youngest cohorts of childbearing age in 1962 and the still younger cohorts move up and contribute. to the total numbers of births.

Other fertility assumptions.--The completed fertility rates in five-year age groups and fiveyear birth cohorts, determined as just described, next had to be subdivided into single years of age and single-year birth cohorts. This step was carried out simply by mathematical interpolation. poble A-l and figure 4 present a historical and mojected series of completed fertility rates for one-year birth cohorts.

In addition to assumptions regarding the completed fertility of cohorts, it was necessary to
distribute the fertility of each cohort over the childbearing span--that is, to make some assump-tions about the timing of births from 1962, or later year when childbearing begins, to the end of the childbearing period. For the present purpose, e single pattern (or percent distribution) of agespecific birth rates of women was used. The pattern selected was that of 1959-61. (Table N presents the distribution of age-specific birth rates in 1959-61 in abbreviated form.)

Specifically, annual age-specific birth rates for each year, for each conort in the childbearing

Table N.--SUMMARY OF AGE-SPECIFTC BIRTH RATES USED IN DLSTRTBUTING "EEMANTAG" AND COMPLETED COHORT FERTIITTY BY AGE AFTER 1962

| Age of woman | $\begin{gathered} \text { Birth } \\ \text { rates, } \\ 1959-19612 \end{gathered}$ | Percent of total |  | Percent <br> remain- <br> ing <br> fer- <br> tility ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: |
|  |  | In age group | Cumu- <br> Lated |  |
| 15 to 19 years ${ }^{3}$. | 91.8 | 12.6 | 12.6 | 100.0 |
| 20 to 24 years. | 254.3 | 34.9 | 47.5 | 87.4 |
| 25 to 29 years. | 197.1 | 27.0 | 74.5 | 52.6 |
| 30 to 34 years. | 113.1 | 15.5 | 90.0 | 25.5 |
| 35 to 39 years. | 57.0 | 7.8 | 97.8 | 10.0 |
| 40 to 44 years. | 15.4 | 2.1 | 99.9 | 2.2 |
| 45 to 49 years ${ }^{4}$. | 0.9 | 0.2 | 100.0 | 0.1 |

[^6]Figure 4.-.COMPLETED FERTILITY RATES, BY BIRTH COHORT OF WOMAN: BIRTH YEARS, 1900-1901 TO 1954-1955


NOTE: POINTS FOR FISCAL YEARS ARE PLOTTED MIDNAY BETWEEN JULY I DATES.
SERIES Y ASSUMES CONTINUATION OF THE LEVEL OF AGE-SPECIFIC BIRTH RATES OF 1960-63.
SEE TEXT FOR EXPLANATION OF SERIESA, B, C, AND D.
ages in 1962, were derived by distributing the assumed "remaining" fertility of each cohort (that is, the difference between cumulative fertility in 1962 and assumed completed fertility) in proportion to the age.specific birth rates of women in 1959-61, taken as a synthetic cohort. : The same synthetic cohort was used to distribute assumed completed fertility of each cohort entering the childbearing ages after 2962. Some graphical smoothing of the resulting age-specific birth rates in Series $B, C$, and $D$ between 1962 and 1967 was found to be desirable to achieve a more satisfactory juncture of the projected rates with the current rates. The cumulative fertility rates up to each age were then obtained by combining cumulative fertility to 1962 with the projected agespecific rates for single years of age in each year for each cohort. (Cumulative fertility rates up to various ages for cohorts born in 1900-1901 and after are presented in table A-1 and are graphically depicted in figure 5.) The annual age-specific birth rates for calendar years, consistent with the adjusted cumulative figures, were then multiplied cumulatively by the projected female population for the year to obtain projections of births in each year.?

A greater range in the fertility projections would possibly have been obtained $1 f$ alternative patterns of age-specific fertility, representing different patterns of spacing births, had been used to distribute the "remaining" fertility of cohorts and the fertility of cohorts entering childbearing. Although only a single pattern of age-specific rates was applied to all cohorts after 1962, it is recognized that variations in spacing patterns could have an important effect on the annual level of fertility and on the cumulative number of births in the projection period. A young average age of mother would tend to increase the annual level of fertility in population projections in two ways. In the long run, it would reduce the length of a generationm-that is, the average age gap between parents and their chil-dren-and, hence, reduce the number of years by which completed fertility is achieved. ${ }^{8}$ Further. more, if the assumption regarding age of mother leads to a lowering of the average age, there will be a temporary increase in fertility because of the overlap of fertility in succeeding cohorts. Conversely, an assumption leading to a rising average age of mothers, Will lead to a temporary drop in births because of the fanning out of fertility between cohorts during the transition. Variations in the timing pattern would be expected to be associated with the level of completed fertility, cohorts with a high total fertility having a low median age of motherhood and cohorts with low total fertility having a high median age of
motherhood. An examination of the trend of median age of motherhood (figure 6), in relation to the trend of completed fertility over the last severai decades, however, does not reveal a consistently close relationship between these variables, al. though the two series roughly mirror one another. Furthemore, some testing with widely different age patterns (patterns of the birth cohorts of 1900-1905 and oi 1932-1937), in combination with cumulative fertility to 1962 and with assigned completed fertility for each cohort, indicated a serious disjuncture, with a precipitous drop in Series B, C, and D around 1962. It appeared im. possible to combine an age pattern with a high median age with the cumulative fertility already achieved, given the levels of completed fertllity previously assigned for the cohorts. The adjust, ment required to smooth the trend of age-specific

[^7]Figure 5...CUMULATIVE FERTILITY RATES UP TO SELECTED AGES, BY BIRTH COHORT OF WOMAN: BIRTH YEARS, 1900-1901 TO 1954-1955




NOTE; POINTS FOR FISCAL YEARS ARE PLOTTED MIDWAY BETWEEN JULY I DATES,

Figure 6.--MEDIAN AGE OF MOTHER, BY BIRTH COHORT DF WOMAN: BIRTH YEARS, 1900-1901 TO 1952-1953


birth rates between the base year and the shortterm future would eliminate much of the difference resulting from the use of alternative patterns of age-specific birth rates for distributing completed fertility over the childbearing span. Variations in median age of mothers in this century have been much affected by war and depression, and use of the age distributions of cohorts with very high and very low median ages may exaggerate the effect of the probable variation in future years. Furthermore, it may be maintained that both types of age patterns should be applied aiternatively to each cohort since both a high and a low median age of motherhood may be associated with high or Low completed fertility.

The difficulties cjed and the incomplete and indeterminate state of our research led to a decision, considered most expedient at this time, to employ merely a single pattern of birth rates based on very recent experience and reflecting a high fertility pattern. The 1959-61 synthetic pattern finally selected resembled closely the fertility pattern with a low median age of childbearing tested earlier. The median age of childbearing in the 1959-61 data is 25.4 years; and sbout 47.5 percent of total fertility had been completed by age 25 . The use of such a recent pattern reduced considerably the problem of achieving a mooth juncture between current age-spectific birth rates and projected rates in the next few years, although it did not eliminate it entirely.

It is quite possible that the pattern selected may be inappropriate for, say, Series D later in the projection period.

The age-specific birth rates in single years of age in each year, derived as previously described, have been consolidated in the form of five-year birth rates for every fifth year, 1965 to 1985. The rates form a smooth and apparently reasonable series from 1968 on (table A-2 and figure 7). The fluctuations of the series in the years prior to 1968 arise from the revision of the rates for these years made by graphical smoothing along cohort lines mentioned earlier.

The implications, in terms of annual fertility levels, of the assumptions regarding completed fertility and the age distribution over the childbearing span of birth rates for cohorts of women, may be summarized in terms of period or calendaryear completed fertility rates. The trends of the four series of completed fertility rates shown in table A-2 and figure 8 appear rather smooth except for the "break" in 1968, already mentioned. Annuel fertility declines from the present fertility level to successively lower annual levels in all four series. Series A mplies a dectine from 3,587 children per 1,000 women in 1965 to 3,396 in 1985. The latter figure corresponds approximately to the completed fertility rate in 1953. Series B falls from 3,350 in 1965 to 3,152 in 1985 , which corresponds to fertility in 1949. Series $C$ and $D$ are nearly equal in 1965, at 3,100 and 3,095 , then

Figure 7. - BIRTH RATES, BY AGE OF WOMAN: 1940 TO 1985




NOTE: RATES FOR AGES 15 TO 19 INCLUDE BIRTHS TO WOMEN UNDER 15. RATES FOR AGES 40 TO 44 INCLUDE BIRTHS TO WOMEN 45 AND OVER.

Figure 8...-COMPLETED FERTILITY RATES, BY CALENDAR YEARS: 1925 TO 1985


HOYE: SERES Y ASsUMES CONTINUATION OF THE LEVEL OF AGE-SPECIFIC BIRTH MATES OF 190-83. SEE TEKT FOM EXPLAMATION OF SERIES A, B, C, AMO D.
fall at different rates by 1985. The Series C figure of 2,815 for 1985 corresponds to the observed rate in about 1945-46 and the Series D figure of 2,516 for 1985 agrees approximately with the rate recorded for 1941-42.

A summary of the final projections of births and of crude birth rates appears in table 0 and figures 9 and 20. The strong influence of the change in the age-sex composition of the population on the crude rate is evident in the fact that all four basic series of birth rates tend to have parallel trends, except during the early part of the projection period (1963 to 1968), when changes in age-spectfic birth rates are more pronounced.

The birth rate rises generally during the period 1968-69 to 1976-77, levels off in the next few years, then falls after 1979-80. Only Series $A$ shows a steady increase up to 1968-69; the other series tend to be about level (Series B) or fall (Series C and D) in this period. The curve for Series $Y$, a special series developed for analytical purposes which assumes constancy of agespecific birth rates at recent levels, reflects directly the effect of changing population composition on the crude rate. On this basis, the underlying tendency for a steady rise to about 1976-77, followed by some stability, and finally decline after 1979-80 is very clear.

Table O.--ESTMATED AND PROTECYHD BIRTHS AND CRUDE BIRTH RATES: 1950 TO 1985

| Period ${ }^{1}$ | Births (millions) |  |  |  |  | Average amual rate per 1,000 population |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Series ${ }^{\text {Y }}$ | Series | $\begin{gathered} \text { Series } \\ B \end{gathered}$ | Series | Series | $\underset{Y}{\text { Series }}$ | $\underset{\AA}{\text { Series }}$ | $\begin{gathered} \text { Series } \\ B \end{gathered}$ | $\begin{gathered} \text { Series } \\ 0 \end{gathered}$ | Series $D$ |
| 1950-19552. | 19.7 | 19.7 | 19.7 | 19.7 | 19.7 | 24.8 | 24.8 | 24.8 | 24.8 | 24.8 |
| 1955-1960 ${ }^{2}$. | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 |
| 2960-1965. | 21.8 | 21.7 | 21.3 | 20.7 | 20.7 | 23.2 | 23.1 | 22.5 | 22.1 | 22.1 |
| 1965-1970. | 24.8 | 24.5 | 22.5 | 20.1 | 19.9 | 24.4 | 24.1 | 22.3 | 20.1 | 19.9 |
| 1970-1975. | 28.8 | 27.9 | 25.7 | 22.8 | 21.7 | 26.0 | 25.3 | 23.7 | 21.4 | 20.5 |
| 1975-1980. | 32.5 | 31.2 | 28.9 | 25.7 | 23.6 | 26.8 | 25.9 | 24.6 | 22.6 | 20.9 |
| 1980-1985. | 35.5 | 33.7 | 31.1 | 27.5 | 24.7 | 26.6 | 25.6 | 24.3 | 22.4 | 20.6 |
| 1960-19632. | 12.8 | 12.8 | 12.8 | 12.8 | 12.8 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 |
| 1963-1965. | 9.0 | 8.9 | 8.5 | 7.9 | 7.9 | 23.3 | 23.3 | 22.1 | 20.7 | 20.7 |

${ }^{2}$ From July 1 of initial year to June 30 of terminal year.
${ }^{2}$ Registered births adjusted for underregistration.

Figure 9, .-ESTIMATES AND PROJECTIONS OF THE NUMBER OF BIRTHS: 1915-1916 TO 1984-1985


NOTE: POINTS FOR FISCAL YEARS ARE PLOTTED MIDWAY EETWEEN JULY I DATES.
SOURCE: DATA FOR 1915 -16 TO $1939-40$ ESTIMATED FROM: NATIONAL OFFICE OF VITAL $5 T A T I S T I C S$, VTAL STATTSTTCS OF THE UNYTED STATES, I96O VOL. I, NATALITY, TABLE I-B; DATA FOR 1940-41 TO $1962-63$, U.S. BUREAU OF THE CENSUS, CURRENT POPULA TION REFORTS,
SERIES PA5, HO. 278 .

Figure 10..-ESTIMATES AND PROJECTIONS OF THE CRUDE BIRTH RATE: 1915-1916 TO 1984-1985


NOTE: POINTS FOR FISCAL YEARS ARE PLOTTED MIDWAY BETWEEN JULY 1 DATES

Projections of deaths.- One series of age-sex specific mortality rates was used for all four principal series of population projections given in this report. The set of rates selected was based on the higher of two sets of mortality projections, designated. "low" and "high," prepared in 1957 by the Division of the Actuary, Social security Administration (SSA). In deriving the original mortality projections, hypothetical low and high age-specific death rates for each sex for the year 2000 were arrived at by respectively applying assumed high and low percentages of reduction of death rates specific in terms of age, sex, and cause between 1953 and 2000 , to the corresponding recorded death rates for 1953 , and converting the results to age-sex-specific rates for all causes combined. For this purpose 10 broad groups of causes were identified. Next, the age-sex specific death rates of the year 2000 were converted to an abridged life table and five-year survival rates were computed. In general, the low mortality projections of the Social Security Administration were intended to reflect a definitely "optimistic" view as to the future course of mortality, whereas the high mortality projections were intended to refiect a relatively "pessimistic" view, particularly with regard to the possibility of reduction indeath rates for the diseases typical of old age. (A detailed description of the method and assumptions employed in developing these mortality projections is given in the report of that office, Illustrative United States Population Projections, by T. N. E. Greville, Actuarial Study No. 46, Mey 1957.)

The high set of SSA mortality projections in 2000 was selected as the set of rates to be used in deriving the principal population projections of this repo:t. An average of the high and low sets ("medium") had been used in preparing the projections of series P-25, No. 187 and No. 251.

Preferring the high series of SSA mortality projections to the low SSA series or other alternative possibility took account of trends in mortality and life expectancy at birth and other ages during the last few decades, particularly during the years since 1955, of studies analyzing the increases in life expectation that would result from the elimination of certain major causes of death, and of expert opinion as to the prospects for significantly reducing death rates from the major causes of death. Although there was a marked increase in life expectation at birth between 1940 and 1962, anounting to 6 years for males and 8 years for females, virtually all of this increase occurred prior to 1955 and Iittie change has been recorded since that year. In the 1955-62 period life expectation increased only
about 0.2 years for males and 0.7 years for fe. males, end life expectation was slightly lower in 1962 than in 1961.

One basis for the choice of the SSA high mortality series was a comparison of the five-year survival rates and the values for expectation of life at birth, by sex, for 1960 and 1962, implied by the SSA high and medium (an average of high and 1ow) mortality series. for $1955-60$ and 1960-65, with the corresponding actual values from the life tables for 1960 and 1962. A comparison was also made between the age-specific death rates for 1962, by sex, implied by the high and medium SSA mortality series for 1960-65, and the actual rates lor this year. For most age groups, the actual age-specific death rates were closer to the high mortality series than to the average of the high and low series; they were often higher. The

Table P.--ACHUAL LIFE EXPECTANCY; 1940-1962, AND PROTECTED VALUES ACCORDING TO ALITERNATIVE ASSJMPTIONS OF MORTALTEY

| Year or period | Both sexes | Male | Female |
| :---: | :---: | :---: | :---: |
| Actual: |  |  |  |
| 1940............................. . | 62.9 | 60.8 | 65.2 |
| 1945............................ | 65.9 | 63.6 | 67.9 |
| 1950............................. | 68.2 | 65.6 | 71.1 |
| 1955.............................. | 69.5 | 66.6 | 72.7 |
| 19601. | 69.7 | 66.6 | 73.1 |
| $1961{ }^{1}$ | 70.2 | 67.0 | 73.6 |
| 1962. | 70.0 | 66.8 | 73.4 |
| Model SSA projections: ${ }^{2}$ |  |  |  |
| High mortality: |  |  |  |
| 1960.1965. | 70.3 | 67.2 | 73.5 |
| 1980-1.985...................... | 71.8 | 68.6 | 75.0 |
| 2000. | 72.2 | 68.9 | 75.4 |
| Medium mortality: |  |  |  |
| 1960-1965.. | 70.8 | 67.7 | 73.9 |
| 1980-1985. | 73.4 | 70.3 | 76.4 |
| 2000. | 74.4 | 72.3 | 77.1 |
| Low mortality: |  |  |  |
| 1960-1965... | 71.3 | 68.2 | 74.5 |
| 1980-1985. | 75.1 | 72.3 | 777.9 |
| 2000. | 76.4 | 74.0 | 78.9 |
| Present projections: ${ }^{3}$ |  |  |  |
| Slightly deolining mortality: ${ }^{4}$ |  |  |  |
| 1964-1965. | 70.1 | 66.8 | 73.4 |
| 1974 1975. | 70.6 | 67.4 | 73.9 |
| 1984-1985. | 71.2 | 68.0 | 74.5 |
| 1999-2000. | 72.1 | 68.9 | 75.4 |
| Rapidiy declining mortality: |  |  |  |
| 1964-1965.................. | 70.5 | 67.3 | 73.7 |
| 1974-1975. | 72.0 | 69.0 | 75.0 |
| 1984-1985. | 73.6 | 70.8 | 76.4 78.7 |
| 1999-2000....................... | 76.2 | 73.8 | 78.7 |

${ }^{1}$ These are the values for life expectancy at birth corresponding to the assumption of constant mortality used in one of the supplementary series of population projections given in this report.
${ }^{2}$ Consistent with projections of mortality shown in: social Security Administration, Inlustrative United states Population Projections, by T. N. E. Grevilile, Actuarial Study, No. 46, May 1957.
$3^{*}$ Derived from survival rates obtained by linear interpolation between current survival rates for 1960 and the survival rates projected by , the Social. Security Administration for 2000.

4 These are the values for lire expectancy at birth corresponding to the mortality rates used in the four bastc series (A, $E, C$, and D) of population projections given in this report.
gurvival rates indicated a similar relationship. The mortality data indicate a life expectation at birth in 1962 of 70.0 years; the high SSA projection for $1960-65$ is 70.3 years and the medium projection is 70.8 years. (The comparison of values for life expectation is shown in table $P$, and the comparison of age-specific death rates for 1962 is shown in teble Q.)

It appears that the momentum of the pace of improvement in death rates in the United States has slowed down considerably, with the sharp reduction of mortality from infectious illnesses and With the now widespread use and application of the revolutionary developments in chemotherapy and surgery of the last few decades. Moreover, the recent mortality trends for chronic diseases and

Table Q. --COMPARISON OF AGE-SPECTHIC DEATH RATES, BY SEX, ACTUAL 1962 AND PROTECTED 1960-1965
(Deaths per 1,000 midyear population)

| Age | Male |  |  |  |  | Female |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Actual rates, $1952^{2}$ | Projected rates, 1960-1965 ${ }^{2}$ |  | Percent excess of actual over projected ${ }^{3}$ |  | Actual rates, $1962^{3}$ | projected rates, $2960-1965^{2}$ |  | Percent excess of actual over projected ${ }^{3}$ |  |
|  |  | $\begin{aligned} & \text { High } \\ & \text { series } \end{aligned}$ | Medium series | $\begin{gathered} \text { High } \\ \text { series } \end{gathered}$ | Medium series |  | $\begin{aligned} & \text { High } \\ & \text { series } \end{aligned}$ | Medium series | $\begin{gathered} \text { High } \\ \text { series } \end{gathered}$ | Medium series |
| vnder 5 years........ | 6.61 | 6.05 | 5.95 | 9.3 | 11.1 | 5.10 | 4.75 | 4.67 | 7.4 | 9.2 |
| 5to 9 years......... | 0.51 | 0.55 | 0.52 | -7.3 | -1.9 | 0.39 | 0.38 | 0.35 | 2.6 | 11.4 |
| 10 to 1.4 years...... | 0.53 | 0.65 | 0.61 | -1.8.5 | -13.1 | 0.31 | 0.37 | 0.35 | -16.2 | -11.4 |
| 15 to 19 years....... | 2.23 | 1.37 | 1.33 | -10.2 | -7.5 | 0.52 | 0.56 | 0.53 | -7.1 | -1.9 |
| 20 to 24 years....... | 1.79 | 1.91 | 1.89 | -6. 3 | -5.3 | 0.71 | 0.74 | 0.70 | -4.1 | 2.4 |
| 25 to 29 years....... | 1.69 | 1.87 | 1.80 | -9.6 | -6.1 | 0.89 | 0.90 | 0.86 | $-1.1$ | 3.5 |
| 30 to 34 years....... | 2.02 | 2.00 | 1.86 | 1.0 | 8.6 | 1.22 | 1.23 | 1.17 | -0.8 | 4.3 |
| 35 to 39 years....... | 2.91 | 2.83 | 2.62 | 2.8 | 11.1 | 1.82 | 1.82 | 1.74 | 1.1 | 5.7 |
| 40 to 44 years....... | 4.54 | 4.51 | 4.20 | 0.7 | 8.1 | 2.75 | 2.76 | 2.64 | -0.4 | 4.2 |
| 45 to 49 years....... | 7.41 | 7.40 | 7.02 | 0.1 | 5.6 | 4.17 | 4.23 | 3.97 | -1.4 | 5.0 |
| 50 to 54 years....... | 12.26 | 11.77 | 11.26 | 4.2 | 8.9 | 6.33 | 6.34 | 5.86 | -0.2 | 8.0 |
| 55 to 59 years....... | 18.32 | 18.00 | 17.23 | 1.8 | 6.3 | 9.11 | 9.37 | 8.59 | -2,8 | 6.1 |
| 60 to 64 years....... | 27.90 | 27.72 | 26.89 | 0.6 | 3.8 | 14.48 | 14.34 | 13.77 | 1.0 | 5.2 |
| 65 to 69 years....... | 42.47 | 40.62 | 39.78 | 4.6 | 6.8 | 22.56 | 22.97 | 22.38 | -1.8 | 0.8 |
| 70 to 74 years....... | 58.29 | 57.20 | 55.85 | 1.9 | 4.4 | 35.45 | 37.10 | 35.28 | -4.4 | 0.5 |
| 75 to 79 years....... | 84.41 | 83.81 | 82.32 | 0.7 | 2.5 | 58.37 | 61.77 | 59.72 | -5.5 | -2.3 |
| 80 to 84 years....... | 127.66 | 125.10 | 123.00 | 2.0 | 3.8 | 100.24 | 102.77 | 100.26 | -2.5 | (4) |

[^8]accidents and violence, the diseases which now account for the bulk of the deaths, have been such as to retard any reduction in the overall death rate. ${ }^{9}$ Although it is true that several other countries and certain States in the United States have achieved lower mortality than the United States as a whole, death rates in these areas have begun to stabilize also.

To achieve a significant increase in life expectancy, it would be necessary to accomplish a major "breakthrough" in the prevention and treatment of the whole range of diseases characteristic of later life, or at least of the cardiovascular diseases ("heart disease" and "stroke"). A study by Woodhall and Jablon employing data for 1949-51 indicated that the complete elimination of all infective and paresitic diseases would add only about one year to life expectation at birth of

[^9]whites (at the initial level of 69 years). ${ }^{10}$ The elimination of cancer would add 2 to $2 \frac{1}{2}$ years. On the other hand, the elimination of the major cardiovascular-renal diseases would add more than 10 years to life expectancy at birth of whites. Life expectancy at age 60 shows a similar pattern of possible increase. The spectacular accomplishments in surgical technique, reported in the press in recent years, relating particularly to use of artificial and transplanted vital organs, have involved too few cases and have had no evident impact on the statistics. The kind of "breakthrough" required for a significant increase in life expectation is not yet in sight.

These findings indicate, therefore, that there has been little improvement in mortality over the last decade and suggest that the gains in longevity in the immediate future may be very slight and that the trend of increasing longevity

[^10]may be approaching a limit. For the purpose of preparing these population projections, one reasonable assessment of the prospects is to project a slight decline in mortality over the next several decades. A comparison of current mortality levels with the projections of the social security Administration for current years suggests that the high SSA levels for 2000 would provide a consistent basis for determining mortality levels for intemediate years on the assumption of slight declines in mortality between 1962 and 1985.

For the present purpose, the grouped data on the life table stationary population $\left({ }_{5} L_{x}\right)$ in the
SSA high mortality table for 2000 were reduced to single years by interpolation and one-year single-year-of-age survival rates were computed. Single-year-of-age survival rates for each year between 1963 and 1985 were then obtained by linear interpolation between the rates computed from the in terpolated abridged liffe table for the year 1960 and the rates established for 2000. In the age renge 5 to 29 , several of the original survival rates in 2000 were slightly below the observed rates in 1960; in these cases, the rates were assumed to remain constant at the 1960 level after 1963. The resulting set of mortality projections is reierred to in this report as "slightly declining" mortality. (The five-year survival rates conslstent with the single-year-of-age survival rates used in the computations are given in table A-3.) The mortality projections selected here contemplate a slight decrease in death rates, and a slight increase in life expectancy, in future years. The expectation of life at birth ( $e_{x}^{0}$ ) would increase from 66.6 in 1960 and 66.8 in 1962 to 68.0 in 1984-85 for males, and from 73.1 in 1960 and 73.4 years in 1962 to 74.5 years in $1984-$ 85 for females. (Table $P$ presents the actual changes in life expectancy at birth between 1940 and 1962 and prospective changes to 2000.)

Another series of mortality projections, based on the low SSA mortallty rates in 2000, is used in one of the supplementary series of population pron jections presented here. This series shows an increase in life expectancy at birth to 70.8 years for males and 76.4 years for females in 1984-85. This series is designated as "rapidly declining* mortality.

In line with the long-term trends, the origi. nal SSA projections assumed a widening excess of male over female death rates after 1953. The substitution of observed rates for 1960, however, made it necessary to modify this general assump. tion; and the male and female death rates and survival rates in a number of age groups actually used show convergence. The projected gain in life expectation at birth between 1960 and 1985 is 1.4 years for both males and females. The impact of the modification of the original assumption of divergence is sllght because of the very modest decrease in death rates assumed.

Use of altemative reasonable assumptions regarding future mortality would result in only moderate variations in the future size and composition of the population. The difference in the projected population levels in 1985 resulting from the use of the assumptions of "slightly declining" mortality and "rapidly declining" mortality is only about 3.0 milli ; and more than half of the difference is in the group 65 years and over. (See table R, and tables B-1 and B-2). An assumption of slightly declining mortality results in about 2.0 million fewer persons in 1985 than would. have resulted if it had been assumed that mortality remained constant at the 1960 levels. Because of the expectation of continuing advances in medical science and allied fields and of the wider use of the most modern medical services, though these may heve only a modest effect on death rates, an assumption of increasing or even constant mor-

Table R.--PROJEGTJONS OT TOTAL POPULATION ACCORDING TO ALTENNATIVE ASSUMPTIONS OF FERTILITY, MORTALITY, AND IMMIGRATION: 1965 TO 1985
(In thousands, Total population Including Armed Fonces abroad. Series with inmigration assume an annual net imaigration of 300,000 )

| Year (July 1 ) | Constant <br> fertility $\qquad$ <br> High mor'telity, with immigration | Series A fertility $\qquad$ <br> Slightyy declining mortality, with immigration | Series B fertility |  |  |  | Series C <br> fertility $\qquad$ <br> Suightiy declining mortality, with immigration | ```Series D fertility - Slightiy declining mortality, with immigration``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Rapidly declining mortality, wibh immigration | $\begin{aligned} & \text { Slightiy } \\ & \text { declining } \\ & \text { mortality, } \\ & \text { with } \\ & \text { immigration } \end{aligned}$ | ```Constant mortallty, with immigration``` | $\begin{aligned} & \text { Sightly } \\ & \text { declining } \\ & \text { mortality, } \\ & \text { no } \\ & \text { immation } \end{aligned}$ |  |  |
| 1963 ${ }^{\text {² }}$ | 189,278 | 189,276 | 189,278 | 189,278 | 189,278 | 189,278 | 189,278 | 189,278 |
| 1965. | 195,137 | 295,129 | 194,753 | 194,671 | 194,564 | 194,057 | 194,1.36 | 294, 127 |
| 1970. | 211,700 | 211,430 | 209,448 | 208,996 | 208,582 | 206,592 | 206,210 | 205,886 |
| 1975. | 231,508 | 230,415 | 226,925 | 225,870 | 225,084 | 221, 384 | 220,133 | 218,855 |
| 1980. | 254,449 | 252,056 | 247,203 | 245,313 | 244,013 | 238,543 | 236,474 | 233,140 |
| 1985. | 279,807 | 275,622 | 269,278 | 266,322 | 264, 337 | 257,212 | 254,016 | 247,953 |

[^11]tality has not been included in the basic projections presented in this report.

A genergl indication of the projected trend in mortality is given in terms of the average annual crude death rates (average ennual deaths per 1,000 of the midperiod population) for future five-year periods shown in table 5 . The substantiel effect of the age composition of the population on the crude death rate is apparent in the trend of the projected death rate. Becouse the series A population is much "younger" in 1985 then the Series D population, Series A eventually shows a resumption of the continuation of the long-tem decline in the crude death rate (from 9.5 in 1960 65 to 8.8 in 1980-85); whereas the Serien $D$ population, with its considerably lower level of fertility and larger proportion of older persons, implies a nearly constant crude death rate during the projection period (9.5 in 1960-65 and in 198085).

TEble S.--ESTIMATED AND PROJECTED ANNUAL AVERAGE CRUDE DEATH RATES: 1950 TO 1985
(Rate per 1,000 population)

| Period ${ }^{2}$ | $\underset{A}{\text { Series }}$ | $\underset{\mathrm{B}}{\text { Series }}$ | ${ }_{\text {Series }}$ | Series <br> D |
| :---: | :---: | :---: | :---: | :---: |
| 1950.1955. | 9.5 | 9.5 | 9.5 | 9.5 |
| 1955-1960. | 9.4 | 9.4 | 9.4 | 9.4 |
| 1960-1965. | 9.5 | 9.5 | 9.5 | 9.5 |
| 1965-1970. | 9.6 | 9.6 | 9.6 | 9.6 |
| 1970-1975. | 9.5 | 9.6 | 9.7 | 9.7 |
| 1975-1980. | 9.2 | 9.3 | 9.6 | 9.6 |
| 1980-1985. | 8.8 | 9.0 | 9.3 | 9.5 |

${ }^{2}$ From July 1 of initial year to June 30 of terminal year.

Projections of net immigration.--Only one series of allowances for future net civilian immigration was used for all four basic series of population projections. Moreover, the same allowance for net civilian immigration by age and sex was used for each year in each series of population projections. The volume of civilian immigration to the United states has fluctuated in the neighborhood of 300,000 in each of the years since 1948, with a low of 242,000 in 1952 and a high of 391,000 in 1961. The volume of immigration to the United states is determined largely by our laws controling this movement; these have tended to keep the numbers arriving at a relatively low level. In view of the relatively minor role of net immigration as a component of change in the population of the United States in recent years and the impossibility of predicting changes in the quota laws, it was decided to make a small, constant, arbitrary allowance for annual net immigration in these projections, Accordingly, it was assumed that there would be a net immigration of 300,000 per year (or 1.5 milli on per quinquennium). (This is the same assumption as was employed in
preparing the previous projections given in sertes P-25, No. 187 and No. 251.) This amount is based on the experience of the period 1950-63, when average annual net immigration amounted to 318,000 ; alternatively, the averages for the periods 194863 or 1955-63 would also approximate $300,000.1^{11}$ Net civilian immigration consists principally of movement of immigrant aliens into the country although some alien emigration and some movement of citizens into and out of the country are also included.

It was further assumed that the future anmual net immigration would be distributed by age and sex as in the period 1957-62. This distribution is shown in table $T$. To simplify the computations, it was assumed that the immigrants would not bear any children during the year in which they enter and that they would all survive to the end of the year of entry. At the same time, the age distribution was adjusted to reflect, the change in age between the date of entry and the end of the entry period. Following the year of arrival, the same birth rates and death rates were applied to the immigrants as to the general population. Any actual difference in the level of fertility or mortality of the general population and the immigrant popilation would have very little effect on the projections of popuiation.

In all, the projections assume a total net immigration of 6.6 million over the 22 -year projection period. During the same period, according to the sertes $B$ projections, this number is

Table T.--ASSTMED DISTRIBUSION OF FUTURE ANNUAL NET IMMIGRATION, BY AGE AND SEX
(Rounded to nearest hundred. Age shown as of the end of year of arrival)

| Age | Both sexes | Male | Female |
| :---: | :---: | :---: | :---: |
| Total, all ages.. | 300,000 | 132,600 | 267,400 |
| Under 5 years. | 28,100 | 14,400 | 13,700 |
| 5 to 9 years. | 20,900 | 10,500 | 10,400 |
| 10 to 1.4 years............ | 18,100 | 9,100 | 9,000 |
| 15 to 19 years. | 30,600 | 11,700 | 18,900 |
| 20 to 24 years............ | 54,900 | 18,900 | 36,000 |
| 25 to 29 years. | 44,700 | 20,400 | 24,300 |
| 30 to 34 years. | 30,300 | 14,400 | 15,900 |
| 35 to 39 years. | 21,500 | 10,600 | 10,900 |
| 40 to 44 years | 13,700 | 6,600 | 7,100 |
| 45 to 49 years. | 12,000 | 5,600 | 6,400 |
| 50 to 54 years. | 9,100 | 4,000 | 5,100 |
| 55 to 59 years. | 6,600 | 2,700 | 3,900 |
| 60 to 64 years. | 4,500 | 1,800 | 2,700 |
| 65 to 69 years. | 2,600 | 1,000 | 1,600 |
| 70 to 74 years............ | 1,400 | 500 | 900 |
| 75 to 79 years............ | 700 | 300 | 400 |
| 80 years and over......... | 300 | 100 | 200 |

[^12]augmented by about 3.0 million babies born to immigrant women after they enter and reduced by about 400,000 deaths (including deaths to babies born after the immigration of the mother). The net total addition to our population over the entire projection period resulting from the assumption of an annual net immigration of 300,000 (or $1.5 \mathrm{mil-}$ lion for each five-year period) is 9.2 million, or 3.5 percent of the series B projected population for 1985. The net cumulative additions to our population (Series B) at five-year intervals resulting from the assumption of a net imaigration of 300,000 per year are shown in table $U$; the corresponding figures for each year may be derived from table B-I and, by age and sex, from table B-2. With Series $D$ fertility, the number of babies born to immigrant women between 1963 and 1985 would be somewhat smaller; but the net total addition to the population resulting from the assumption
of an annual net inmigration of 300,000 wousu constitute about the same percentage of the total population in 1985 as for Series B.

Table $U$ can also be used to measure the net effect of other immigration assumptions on the future size of the United States population. For example, if the volume of net immigration per year were assumed to be twice or one-half that actually assumed in this report, the net additions to our population resulting from net immigration (assuming series B fertility) would be twice or one-half, respectively, the amounts shown in table $U$. Thus, if as a result of a change in our laws governing immigration, net immigration during the next few decades should amount to 600,000 annually, our national population (according to Series B) would be about 18.4 million, or 7.2 percent, larger than under an assumption of no net immigration after 1963.

TRable U.--FUTURE ADDITIONS TO THE POPULATION RESULTING FROM AN ANNUAL NET IMMIGRATION OF 300,000, BY COMPONENTS: 1963701985
(Numbers in thousands. Based on Series B population projections, including allowance for net inmigration. Assumes that inmigrants do not have births or die during the year of arrivai. Base dete is July 1, 1963)

| Year (July 1) | Cumulative additions or losses |  |  |  |  | Additions or losses during preceding period |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Net additions |  | B.trths | Deaths | Migrants | Net additions | Births | Deaths | Migrants |
|  | Number | Percent of total popula tion |  |  |  |  |  |  |  |
| 1965.... | 614 | 0.3 | 17 | 3 | 600 | 6.14 | 17 | 3 | 600 |
| 1970... | 2,404 | 1.2 | 339 | 35 | 2,100 | 1,790 | 322 | 32 | 1,500 |
| 1975. | 4,486 | 2.0 | 991 | 105 | 3,600 | 2,082 | 652 | 70 | 1,500 |
| 1980. | 6,770 | 2.8 | 1,889 | 219 | 5,100 | 2,284 | 898 | 11.4 | 1,500 |
| 1985.. | 9,209 | 3.5 | 2,997 | 387 | 6,600 | 2,439 | 1,107 | 168 | 1,500 |

${ }^{2}$ Base is population on estimate date.

Use of electronic computers.--Most of the computations required for preparing these population projections were carried out by electronic computer. A general computer program for preparing population projections by the component cohortsurvival method, written in USE compiler language for the Univac 1105 computer, was adapted for the present purpose. This program carried forward the current population in single years of age, by sex, to-each future year on the basis of certain pro.grammed instructions and certain input data relating to fertility, mortality, and net immgration.

The principal input data consisted of annual age-specific birth rates, from 1963 to 1985, lifetable survival rates for males and females for the base year 1960 and for the terminal year 2000, and a distribution of net imigration of males and females by age--all in single years of age. The output data consisted of the following types of information: First, population projections in single years of age, in the conventional five-year age groups, and in selected combinations of ages;
and second, the gross reproduction rate, the expectation of life at birth, and the components of population change (total change, births, and deaths). Such information was made available for each year 1963 to 1985, for males, females, and both sexes combined. The computer program called for the interpolation of the survival rates to each projection year, but the interpolated rates were not printed out.

The principal computer program was supplemented by subsidiary programs designed to prepare the age-specific birth rates required, from rates initially expressed in the form of completed fertility rates for birth cohorts of women. These subsidiary programs were prepared in Fortran Ianguage for use on the IBM. 1401 computer. The output data consisted of cumulative fertility rates, for each birth cohort of women, up to each successive age of childbearing; age-specific birth rates; and calendar-year completed fertility rates. All computations were carried out in single years of age for each calendar year, 1963 to 1985, and the output data were given in the same detail.

## LIMITATIONS

The four main series of population projections given here offer the user a fafrly wide cholce of assumptions as to the course of future population changes. It is possible, however, that, for some part of the projection period, future population size will exceed or fall below the range defined. It is even more possible that actual population changes will not follow any particular series very closely. Annual fertility has fluctuated widely in certain past periods, and a 10 -percent rise or fall in annual rates is not unprecedented in the light of the postwer experience.

In view of the many uncertainties in predicting future fertility, the Bureau of the Census does not recommend any one series as the "best" series. Series A, which is the highest of the four basic series shown here, in effect incorporates annual fertility levels which show a modest decline, although they are nearly equal to those observed in the 1960-63 period. The analysis of the fertility data by cohorts strongly suggests a drop in annual fertility from the 1960-63 level in the next several years. It is improbable, therefore, that fertility will remain at recent annual levels throughout the 22-year projection period. Yet, population Series A illustrates a possibility which may occur during most or even all of the projection period. On the other hand, population Series D, the lowest of the four basic series, incorporates annual fertility levels which fall sharply in the first few years and then decline gradually to the 1941-42 level by 1985. Thus, although the lowest fertility series shows a large decline over the projection period, it remains well above the 1930-39 Depression levels throughout the period. This series is by no means regarded as a probable lower limit, therefore, except possibly in the context of a high level of economic activity.

The assignment of mathematical probabilities to the various series of projections, analogous to sampling errors of population estimates based on probability samples, is not possible. If the present range turns out to be realistic, the revised projections should prove somewhat more useful than the previous set because of the narrower range of the figures.

## EXTENSION OF THE PROJECTIONS TO 2010

For many purposes, particularly in connection With planning for future needs for natural resources and for major engineering facilities and installations, projections for a longer period then 25 years are needed. Both public and private
agencies concerned with long-tem planning in the fields of natural resources, water supply and control, urban renewal, social security, etc., have Prequently sought projections of population extending at least 40 and even 50 to 100 years ahead.

Projections to the year 2010 are necessarily subject to the possibility of considerable error, inasmuch as they require the projection of births, deaths, and net immigretion for nearly a hall century ohead. In the year 2010, the population born since 1963 would constitute about three-quarters of the total population, and the projections for this group would have been built up wholly from the assumptions made regarding future changes in fertillty, mortality, and immigration, unlike the projections for the older group, for whom the number of births is known. Furthermore, the types of assumptions implicit in short-term or intermediateterm projections become more arbitrary and hence more hypothetical, as the length of the projection period is extended. Under these circumstances it becomes increasingly more hazardous to assume, as is most convenient and practical, that there will be no revolutionary technological or social changes, apart from world war, which could drastically alter the course of population development. Such changes might include the liberalization of immigration legislation, sweeping modifications in our marriage and divorce laws, a breakthrough in the medical control of the illnesses of "aging," achievement of universal and completely effective family planning, a radicel change in attitudes and fashions with regard to ideal family size, etc. Changes in the structure of our economy, such as change in the basic character of our Federal and State income tax laws or in our local tax laws, and changing patterns of population distribution and density could have a profound effect on the number of children desired by couples.

In view of the pressing need for long-term projections on the part of many agencies, and in spite of the reservations noted, it was decided to extend the basic series of population projections given in this report from 1985 to 2010, employing a similar methodology and similar assumptions. Projections of total population for every fifth year, 1965 to 2010, are presented in table $V$, and projections of the population by age and sex, for every fifth year, 1985 to 2010, are presented in table 8.

The methodology and assumptions for computing these long-term projections were simple extensions of the methodology and assumptions employed to derive the projections to the year 1985. The survival rates used to measure changes due to mortality between 1985 and 2000, like those for the period before 1985, were obtained by Linear interpolation between survival rates for 1960 from the

Table $V$, - PROUEGTIONS OF TOTAL POPULATION: 1963 TO 2010 (In thousands. Total population including Armed Forces abroad)

| Year (July 2 ) | $\underset{A}{\text { Serjea }}$ | Serles <br> B | $\begin{gathered} \text { Series } \\ 0 \end{gathered}$ | Series D |
| :---: | :---: | :---: | :---: | :---: |
| $1963^{2}$. | 189,278 | 189,276 | 189,278 | 189,278 |
| 1965. | 195,129 | 194,671. | 194, 3.36 | 194,127 |
| 1970. | 211,430 | 208,996 | 206, 110 | 205,886 |
| 1975. | 230,415 | 225,870 | 220,333 | 218,855 |
| 1980. | 252,056 | 245,313 | 236,474 | 233,140 |
| 1985 | 275,622 | 266,322 | 254,016 | 2477,953 |
| 1990 | 301,1.66 | 288,219 | 271,426 | 262,234 |
| 1995 | 329,675 | 311,828 | 289,197 | 276,283 |
| 2000. | 361,947 | 338,219 | 308,517 | 290,902 |
| 2005. | 397,997 | 367,521 | 329,693 | 306,242 |
| 2010. | 437,578 | 399,256 | 352,189 | 321,916 |

1 Bese of projections. A revised estimate for July 1,2963 , 1s 189, 375,000,
official life table for that year and the "high" (mortality) projected survival rates for 2000 developed by the Social Security Administration. For the decade 2000 to 2010 , the survival rates for 1999-2000 were maintained unchanged. The projected values for life expectation for 1984-85 and 1999-2000 are shown in table $P$, and the projected five-year survival rates, 1985-90 to 2005-10, are shown in table A-3.

The assumptions regarding net immigration employed for the period before 1985 were continued unchanged to 2010. In other words, net immigration was assumed to amount to 300,000 annually, and the immigrants were assigned the age-sex distribution recorded for the 1957-62 period.

The fertility assumptions are summarized in table $M$ in the form of assumed levels of completed fertility for cohorts (number of live children borm to 1,000 women by the end of childoearing), by year of birth or by age in 1962. Fertility performance between 1985 and 2010 may be described in terms of assumed completed fertility for cohorts 20 to 24 years of age and younger in 1962. For much of this period, the terminal levels of fertility shown in table M, that is, those which relate to cohorts aged 5 to 9 years or younger in 1962, are applicable. They are as Lollows: Series $A, 3,350 ;$ Series $B, 3,100$; Series C, 2,775; and Series D, 2,450. The assigned levels of completed fertility for cohorts were distributed by age of mother over the chlldbearing span, as for the years before 1985, in accordance with the age distribution of birth rates of women in 1959-61. The terminal levels of completed fertility by cohorts correspond to the following figures for period or annual completed fertility in 1985 to 2010: ${ }^{12}$

[^13]

These figures imply an assumption of very little change from year to year in age-specific fertility in the final 25-year period, particularly after 2000. The corresponding figures for earlier years are shown in table A-2.

## AVAILABILITY OF UNPUBLISHED DATA

Because of the use of the electronic computer in developing these projections, it was possible to obtain considerably more detail in the results, with little additional expenditure of resources, than has been possible in the past with computation by use of clerical manpower and desk calculating machines. Specipically, the "printouts" obtained in the process of preparing these projections show figures for single years of age (to 85 and over), by sex, for each year 1963 to 1985. Such detail is available for the four principal series of population projections (Series A, B, C, and D), as well as for Series $Y$ and the series involving alternative levels for mortality and net immigration in combination with Series B fertility. In sum, such detail is available for all series summarized in table R. It is, therefore, possible to obtain conveniently any combination of ages desired without the necessity of mathematically interpolating age groups.

Datafor single calendar years and single ages by sex, for the several series of population projections included in table $R$, are also available for the years between 1985 and 2000. For the period between 2000 and 2010, such detail is available only for series A, B, C, and D.

Certain additional data relating to the components of change in the projections are also available; these were described above under the heading "Use of electronic computers."

These additional unpublished data may be obtained on request to the Bureau of the Census for the cost of compiling the data or of preparing photocopies of the material. Requests for unpublished data, giving a specific description of the figures desired, should be addressed to the Chief, Population Division, Bureau of the Census, Washington, D.C., 20233.

## RELATED REPORTS

As noted above, the current estimates of the population of the United States including Armed Forces abroad, by single years of age and sex, for July 1, 1963, used as bases for making these

Qrojections, were the same as, or consistent with, restimates published in Current Population Reports, series P-25, No. 276. This report presents data in five-year age groups to 85 and over and data for single years of age in the range under 25 years, according to three concepts of population-fotal population including Armed Forces abroad, total resident population, and civilian resident population. The latest national totals for 1963 and earlier years were published in Current PopuIation Reports, Series P-25, No. 278.

The projections given in this report supersede those to 1980 previously published in Current population Reports, Series P-25, No. 187, No. 241, and No. 251. Serjes P-25, No. 187, published in 1958, was the last report prior to the present one involving a major revision of the projections of the Census Bureau. Series P-25, No. 241 and No. 251, which appeared in 1961 and 1962, respectively, contain interim revisions which used essentially the same procedure as Series P-25, No. 187.

The Scripps Foundation for Research in Population Problems has recently developed a new set of national population projections which are to be included in a book now in preparation relating to the 1960 Growth of American Families Study. These projections are for five-year age groups and sex, for every fifth year, 1965 to 1985. They differ from the projections presented here primarily for the age groups born after 1960 (i.e., those for which projections of births had to be made), inasmuch as essentially the same assumptions relating to mortality and net immigration were made for projecting the population now alive. The figures are shown in appendix table D- 6 of this report. A detailed explanation of the underlying projections of fertility is given in a later section of this report.

Projections of the population of States and smaller areas, comparable to the national population projections shown in the present report, are not available at this time. The last Census Bureau report presenting projections of State population, Current. Population Reports, Series P-25, No. 160, was published in August 1957. These projections do not, of course, take account of the 1960 Census results and, therefore, are now out of date. Because of the number of years which have passea Since their preparation and the fact that current astimates are now available for years up to 1963 which reflect important changes in regional population trends, adequate results would not be obtained by a simple mechenical adjustment of the earlier state population projections to tie them in with the new national population projections presented here. It is now planned to publish projections of state population in broad age groups to 1975 or 1980 , consistent with these new national
population projections, during the latter part of this year. These state projections would also be made consistent with current population estimates by States in broad age groups for July 1, 1963.

Projections of the number of households and families in the United States to 1.980 were last published by the Bureau of the Census in Current Population Reports, Series P-20, No. 123. This report also contains projections of households by type and age of head, subfamilies, married couples, marital status by age and sex, and average size of household and of family. The projections of households and families were designed to be consistent with the earlier population projections published in Current Population Reports, Series P...25, No. 251. However, because they depend only on the projections of adult population, which have been modified to only a small extent by the present revision, except in the older ages at the more distant future dates (see table D of the present report), they are also approximately in line with the revised population projections presented in the present report. Adjusted projections of households and families which would take account of the revised projections of population would be slightiy lower than the figures in Series P-20, No. 123. The projections of households and femilies might require more substantial modification, however, when a comprehensive reexamination of the methods and assumptions concerning rates of family and household formation is undertaken. Such a review of the household and family projections is to be carried out later this year.

Projections of the labor force in the United States to 1975 were published by the Bureau of Labor Statistics in Special Labor Force Report, No. 24. ${ }^{13}$ Like the household projections of the Census Bureau, these projections were designed to be consistent with the earlier national population projections (Series P-25, No. 251); nowever, they too, for the same reason, are also approximately in line with the revised population projections given in the present report. Revised projections of labor force which are based on these revised population projections as well as on revised as. sumptions concerning rates of labor force participation by age and sex are now being prepared by the Bureau of Labor Statistics and are to be published later this year.

Projections of the educational attainment of the national population, by age and sex, to 1980 were published by the Bureau of the Census in Current Population Reports, Series P-20, No. 91, and projections of school and college enrollment

[^14]by age and sex to 1980, for the country as a whole, were published in Series P-25, No. 232. These sets of projections were developed before the corresponding 1960 Census data became available and, hence, are not consistent with them or with current data for more recent years. Revised projections of educational attainment and of school enroliment, based on the revised population projections, are scheduled for publication within the next year or so. Until new projections of these types are published, the present projections may still serve as useful indications of the general direction and magnitude of future changes in school enrollment and the educational level of our population.

## SOME ALTERNATIVE METHODS OF PROJECTING BIRTHS

As mentioned, the population projections in this report were based on one of many possible methods of projecting births. This component represents at once the most important and the most difficult of the components to project. Possible aIternative methods vary with respect to the variables taken into account, and the procedures and assumptions employed in using these variables. This final section of this report describes three methods of projecting births which differ from the method employed in deriving the basic series of this report. The presentation of this material is intended primarily to illustrate such alternative methods and the types of results secured. The resulting projections of births and population are not offered as formal alternatives to the basic series of projections presented earlier.

The first method described, the period agespecific birth rate method, is the method which was employed until recently by the Census Bureau (Series P-25, No. 251 and No. 187) and involves the projection of a set of period or calendar-year age-specific birth rates, or of the sum of the age-specific rates in the form of the period completed sertility rate or the gross reproduction rate. The only variable involved is age of women. The present illustration applies the specjfic assumption that the average annual age-specific birth rates during 1960-63 would continue unchanged throlghout the projection period. The results are presented in Appendix $C$.

In its latest population projections, the Scripps Foundation for Research in Population Problems employed a variation of the cohort-fertility method which takes specific account of the variables of ege and marital status of women. This method carries curnulative fertility rates for birth cohorts of ever-married women and proportions of women married by each age into the future,
partiy on the basis of the results of the Growth of American Families Studies previously mentioned on the expressed expectations of married women regarding completed family size. Illustrative material on the method and results are shown in Appendix D.

The third method described, the marriage. parity-progression method, was developed by wil. son H. Grabill of the Census Bureau staff and takes direct account of the variables of marriage, parity, and birth interval. In this procedure, marriages, then first births, then second births, etc., are sequentially estimated by a scheme of actuarielly computed probabilities of marrying and then of bearing children of each successively higher order. Illustrative material on the method and results are presented in Appendix E.

Period age-specific birth rate method.--In previous reports on population projections published by the Census Bureau, the principal set of projections was derived by the period age-specific birth rate method of projecting fertility rather than the cohort method used here. The age-specific birth rate method consists essentially of projecting age-specific birth rates (or the period gross reproduction rate, the sum of period female agespecific birth rates) to the estimate dates, usually on the basis of past trends in these rates, and then applying these rates to the projected female population by age. The characteristic feature of the method is that the trend analysis is in terms of rates for a given age group or a combination of rates for all age groups in a given year or period, rather than in terms of cumulative rates of fertility for birth cohorts (women born in same year) or marriage cohorts (women married in same year).

In Current Population Reports, Series P-25, No. 187, four series of projections, and in No. 251, two series of projections, were computed following the age-specific birth rate method. It has been usual to incluce among the series computed on this basis one series which assumed a continuation of the "current" or "recent" fertility level. Series II in the reports cited implied a continuation of the fertility level in 1955-57 or 1958.60. For comparison with the projections computed by the cohort method presented in this report, and to satisfy the special needs of those users who desire a series which is defined in terms of current period rates and which provides continuity with the previously published projections of this kind, one series of projections has been included here which assumes a continuation of recent age-specific fertility. The assumptions relating to mortality and migration are the same as those incorporated in the principal projection series presented here.

Whis series has been designated Series $Y$. For dis purpose, recent fertility was represented by sotimates of the average annual age-specific birth fotes for the period July 1, 1960, to June 30, 1963. These were based on the pattern of agepopecific birth rates for 1959-61, as computed by The Scripps Foundation for Research in population Problems. The age-specific birth rates for 1959-61 find the estimates for $1960-63$ used in preparing ne $Y$ series of population projections are as follows:

| Age of woman | 1959-61. ${ }^{2}$ | 1960-63 ${ }^{2}$ |
| :---: | :---: | :---: |
| 15 to $19^{3}$. | 91.8 | 90.5 |
| 2 to 24. | 254.3 | 250.6 |
| 25 to 29. | 197.1 | 194.2 |
| 30 to 34. | 113.0 | 111.4 |
| 35 to 39. | 57.0 | 56.2 |
| 40 to 44. | 15.4 | 15.1 |
| 45 to $49^{4}$. | 0.9 | 0.9 |

[^15]These figures imply a period or calendar-year completed fertility rate of 3,595 , and a gross reproduction rate of 1,754 , for 1960-63. In accordance with the basic assumption, these rates are ascumed to apply in all future years. The period completed fertility rate for this series of projections is higher in all future years than that corresponding to the A serjes which, as may be recalled, shows a gradual decline over the projection period to 3,396 in 1985 (see table A-2 and figure 8).

It is of interest to consider the implications of the series $Y$ fertility assumption in terms of completed fertility rates for birth cohorts of women and to compare these cohort fertility rates with the corresponding rates inseries $A$ :

| Birth years of women ${ }^{1}$ | $\begin{gathered} \text { Age on } \\ \text { July 1, } 1962 \end{gathered}$ | Series Y | Series A |
| :---: | :---: | :---: | :---: |
| 1917-22. | 40 to $44 .$. | 2,709 | 2,700 |
| 1922-27. | 35 to 39. | 2,974 | 3,000 |
| 1927-32. | 30 to 34. | 3,300 | 3,350 |
| 1932-37. | 25 to 29. | 3,561 | 3,520 |
| 1937-42. | 20 to 24. | 3,573 | 3,520 |
| 2942-47. | 15 to 19. | 3,525 | 3,520 |
| 1947-52. | 10 to 14. | 23,527 | 3,367 |
| 1952 or late | (3) | 23,527 | 3,350 |

[^16]Under the $Y$ series, completed fertility rises to a peak of 3,573 children per 1,000 women for cohorts born in 1937 to 1942 and then falls back only slightly to a temminal level of 3,527. Except lor the larger drop in Series A in completed fertility for cohorts still to enter childbearing, the two series are rather similar. Accordingly, Series Y, in comparison with Series A, may serve to illustrate the effect, in terms of numbers of births and population growth to 1985 , of maintaining the level of completed fertility for the new cohorts entering chilabearing at the level of the cohorts already in childbearing.

The trends of births and of the crude birth rate implied by the $Y$ series are depicted graphically in figures 9 and 10 . The crude rate shows an upward trend to about 1977, then levels off and declines slightly. The changes in this series reflect directly the impact of changes in the projected age-sex composition of the population on the crude birth rate inamuch as the age-specific birth rates are assumed not to change during the projection period in the $Y$ series.

According to the $Y$ series of population projections, the population would number $231.5 \mathrm{mil}-$ lion in 1975 and 279.8 million in 1985 (table $R$ ). This series tends to be lower than Series II of Current Population Reports, Series P-25, No. 251, the previously published series which assumed a continuation of the then current fertility level. This results principally from the fact that the fertility level in the $1960-63$ period, the basis for the more recent projections, is lower than that in the 1955-57 or 1958-60 period, the basis for the earlier projections.

The series $Y$ projections of population for 1985. would number only 4.2 million, or 1.5 percent, greater than the Series A projection for that year. Differences between the two series in earlier years are even smaller; for example, in 1975 the difference is only 1.1 million, Inasmuch as both series of projections are based on the same assumptions relating to mortality and migration, from a practicel point of view, the A series of population projections is roughly consistent with the assumption of a short-mun continuation of the recent period age-specific level.

Series Y projections of total population for each year, 1964 to 1985, are presented in appendix table C-I, and Series Y projections of the population by age and sex for every fifth year, 1965 to 2985, are presented in table C-2.

Cohort fertility method: Age and marital status.--The projections of births and population developed by the Census Bureau may be compared with another set of projections recently prepared by the late Pascal $K$. Whelpton and Arthur $A$.

Campbell of the Scripps Foundation for Research in Population Problems by a similar but somewhat more complex procedure. 14 Like the projections of the Census Bureau described earlier, they are based upon cohort analysis of fertility involving cumulative fertility rates for birth cohorts of women (i.e., groups of women born in specific years) and assumed levels of completed fertility. However, the projections of Whelpton and Campbell utilize assumptions about the proportion of women in each birth cohort who will have married by each later age and about the birth rates for ever-married women cumulated to these ages.

In the projection of the marriage and fertility rates of cohorts that have already begun reproducing, the cumulative experience of each cohort to date is taken into account. The projections of completed fertility made by Whelpton and Campbell also take rather directly into account the expectations regarding size of completed family reported in 1955 and 2960 by the representative nationwide samples of married women included in the Growth of American Families (GAF) Studies in these years, referred to above.

Three series of population projections were developed--high, medium, and low--based on different assumptions regarding the percent of women who will ever marry, the size of completed family, and the distribution of birth rates by age of mother over the childbearing span. The base population used for the projections was the population for July 1,1960 , as estimated by the Census Bureau. The mortality assumptions are essentially the same as those used in the Census Bureau projections, except that the computations were cerried out for 5 -year age groups by 5 -year time periods. Specifically, 5 -year survival rates from the official life table for 1960 and the "high" projections for 2000 prepared by the Social Security Administration were interpolated linearly to each fifth year. As in the Census Bureau projections, net immigration was assumed to be 300,000 per year, distributed by age and sex like the immigrant aliens in the period 1957 to 1962.

The specific steps followed in developing the various series of projections of births are as Pollows:

1. Projections were mede of the proportion of women who hed married by specified ages in groups of birth cohorts (tables D-1 and D-2). The high series assumes a slight increase in the proportion of women marrying by ages 45 to 49 years. The proportion ever-merried would increase from 93.3 percent for women 45 to 49 in 1960 to 97.0 percent for women 45 to 49 in 2000. The medium

[^17]series assumes, first, a rise in the proportion ever-married for women 45 to 49 years of age from 93.3 in 1960 to 96.5 in 1970, then a drop to 94.0 in 2000. The low series assumes, first, a rise in the proportion ever-married to 96.5 percent in 1970, then a drop to 91.0 by 2000 . The three se. ries imply approximately the following changes in median age at marriage: (1) The high series assumes a continuation, but at a decreasing rate, of the reduction in age at marriage which has characterized successive birth cohorts up to those of 1935-39 (aged 22 to 27 in 1962); a small decrease... less than one year--is implied in future years. (2) The medjum series implies a small increase (Less than one year) in the age at marriage; and (3) the low series implies a large increase (about two years).
2. Next, projections were made by the birth rates of ever-married women up to specified ages in groups of cohorts (tables D-1 and D-2). The cumulative marital birth rates for each cohort group were projected to the end of the childbearing ages on the basis of the expectations regarding size of completed families obtained in the GAF Studies. (These were adjusted to allow for an evident tendency for younger women to underestimate their future fertility, which was discovered by comparing the results of the 1955 and 1960 studies.) The medium size of completed family indicated by the married women in the GAF Study of 1960 was edjusted to represent all women and accepted as the medium assumption for completed family size in the Scripps Foundation projections. The final number of births per 1,000 ever-married women eventually reached in the high series is close to the highest level that seems likely to be achieved by the cohorts of 1930-35. The completed Lertility rate used in the low series is near the rates reached by the cohorts of 1905-15, the lowest ever recorded in this country. The high and Low assumptions are intended to cover the range of completed fertility rates thet have been reached or seem likely to be reached by cohorts born so far in this century. ${ }^{15}$

The assumptions on fertility made by Whelpton and Campbell imply a range in the completed fertility rate from 2,780 per 1,000 women to 3,380 per 1,000 women, for women aged 20 to 24 years in 1962, whereas the Census Bureau's figures for this group range from 3,184 to 3,520 . In the scripps Foundation projections, completed

[^18]Fertility tends ultimately toward 2,275 to 3,395 children per 1,000 women. The terminal levels of fertility in the Census Bureau's projections range from 2,450 to 3,350 per 1,000 women; hence, the range is somewhat wider in the Scripps essumptions than in the Census Bureau figures. A summary comparison of the Scripps Foundation assumptions and those of the Census Bureau relating to completed fertility is as follows:

| Scripps Foundation ${ }^{\text {² }}$ |  |  | Bureau of the Census |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Series | $\begin{gathered} \text { OrR for } \\ \text { women } 20-24 \\ \text { in } 1962 \end{gathered}$ | Ulitmate level of $\mathrm{CFR}^{2}$ | Series | CFR for women 20-24 in 1962 | untimate level of. $\mathrm{CHR}^{3}$ |
| High.... | 3,380 | 3,395 | A....... | 3,520 | 3,350 |
| Mediun. . | 3,075 | 2,820 | B,...... | 3,358 | 3,100 |
| Iow.... | 2,780 | 2,275 |  | 3,1.84 | 2,775 |
|  |  |  |  | 3,184 | 2,450 |

${ }^{1}$ Unpublished data provided by the late P. K. Whelpton, Director of the Scripps Foundation.

These levels apply to cohorts born after about 1948.
${ }^{3}$ These levels apply to cohorts born after about 1951.

In the distribution of the completed fertility of each cohort over the span of its childbearing period, it was assumed, in the high series, that the tendency to concentrate childbearing in the early part of married life, which has been underway for a number of years (i.e., on the part of cohorts entering the marriageable ages between about 1935 and 1955), would continue but at a decreasing pace. For cohorts entering the marriageable ages about $1980-85$, 81.0 percent of the cumulative births for ever-married women would have occurred by age 30, as compared with 59.0 percent for the cohorts entering the marriageabie ages in the early thirties. In the medium series, It was assumed that the tendency to concentrate childoearing in the early part of married life would shortiy reach a peak, then slowly reverse. Under this assumption the "ultimate" proportion for births under age 30 is 74.0 percent. In the Low series, it was assumed that the concentration of childbearing would continue to a higher peak, then fall sharply; the "ultimate" proportion would be 67 percent for births under age 30 .
3. The cumulative birth rates for evermarried women in groups of birth cohorts were then converted to rates for women of all marital statuses by multiplying the cumulative birth rate for ever-married women of a given age group (item 2) by the proportion of women who have married by that age (item 1). (See table D-3. The period completed fertility rates and gross reproduction rates corresponding to these cohort fertility rates are given in table D-4.)
4. The rise from one age group to another for the cumulative birth rate of all women in a given group of birth cohorts (item 3) was used to
derive the number of births added per 1,000 women during each 5-year interval. For example, in the medium series, it is estimated that each 1,000 women born between July 1,1940 , and June 30, 1945, and living to ages 20 to 24 years in 1965 will bear 1,070 babies by that dete. By 1970 the projected cumulated birth rate will be 2,153, so that each 1,000 women 20 to 24 years old in 1965 who Iive through the next five years will bear an additional 1,083 babies. This same type of calculation was repeated for each 5 -year birth cohort to obtain the remaining projections of births per 1,000 women in each 5-year birth conort over the 5-year period.
5. The projections of births per 1,000 women in a given initial age group in a 5 -year period (item 4) were then applied to the female population in that age group at the beginning of the interval to obtain the number of births occurring to these women during the period. The total number of births during a specific 5-year period was obtained by summing the projected numbers of births for all cohorts in that period. These projected numbers of births are shown in appendix table D-5.

Population projections by age and sex, for 1965 to 1985, employing, the projections of births show in table D-5 and the other assumptions described above relating to mortality and net immigration, are show in table D-6. Although, in general, the same survival rates and allowances for net immigration were employed in the census Bureau projections and the Scripps Foundation projections, the two series differ in the projections of the segment of the population born before 1960 because of differences in the application of the mortality and migration assumptions.

The approach to fertility projections taken by the Scripps Foundation takes more variables into account than the approach of the Census Bureau. The method requires assumptions not only about the completed fertility of each cohort and the timing of their future births, as in the projections of the Census Bureau, but also about future marriage rates and marital fertility. These additional assumptions; like the more basic ones required by the Census Bureau method, are subject to considable uncertainty and may contribute to an increase or a decrease in the difference between the pro jections and the population. The explicit introduction of the additional variable of marriage may prevent the incorporation of uneasonable implicit assumptions regarding marital composition and marital fertility in the overall rates.

Marriage-parity-progression method.--As part of the general program of experimentation in methods of projecting fertility at the Census Bureau,
alternative projections of births were prepared by Wilson H. Grabill of the Bureau by a method which takes account of the variables of marriage, parity, and birth interval. This method was designated the marriege-parity-progression method. Parity refers to the number of previous children a woman has born, and birth interval refers to the period of time between marriage and the birth of the first child, between the birth of the first child and the birth of the second child, etc. The mar-riage-parity-progression method essentially operates in attrition fashion, using as successive bases the progressively smaller numbers of women who have experienced each successive type of event. Thus, single women are reduced in numbers by mar.riage, childless married women may become 1-parity women, who, in turn, may become 2 -parity women, etc. Only one series of projectjons, which is deemed a high series, was developed by this method.

The steps taken in developing projections of births by the marriage-parity-progression method. are as follows:

1. First marriage rates were computed, primarily on the basis of 1960 Census data on the percent single among women, by single years of age and color. The age-to-age changes in the percent single, expressed as a percent of the figure at the earlier age, were taken to represent the agespecific schedule of first marriage rates filtst marriages at a given age per 1,000 women single at the next younger age). Small adjustments were made to obtain a smoother pattern of marriage rates at some ages. These rates are show in table E-I.
2. These age-specific firstmarriage rates (item 1), in combination with age-specific survival rates from United States life tables for 1959, were used to derive annual projections of first marriages of women of childbearing age, and of women who were still single, by age. The marriage rates were first applied to the single population by age on April 1, 1960, to obtain estimates of the number of women who married in the year after the 1960 Census and the number still single at the end of the year. This process was repeated from year to year. Only a single set of first marriage rates was used in all future years.
3. Next, parity-intervai-specific birth rates were estimated. A parity-interval-specific birth rate represents the probability that a women of parity $\underline{n}$ will have a birth of order $n+1$ during the next year, separate rates being computed for twelve-montm birth intervals. For this purpose, it was necessary, in effect, to develop estimates of women by parity and interval since the birth date of the previous child (interval since marriage for childless or zero-parity women) and of births by order and interval since the pre-
vious event. The numerators of the rates employed in these computations relate to the year 1959, so that the basic parity-interval-specific rates relate essentially to this year also, although the bases of the rates involve birth registration data extending back 20 years or more before 1959. In the calculation of the parity-interval-specific rates, extensive use was made of annual birth registration data by order of birth compiled by the Division of Vital Statistics, National Center for Health Statistics, and of data compiled by the Bureau of the Census from which interval between births was inferred. ${ }^{16}$ Intervals of 12 months were used in the distribution of women in each parity group and parity groups up to the sixth (the terminal group being seven and over) were considered separately.
a. A single set of first birth rates by interval since the marriage of the women (first births per 1,000 women childless at the start of the interval) was computed. These rates were adjusted to be consistent with the percent childless among women 30 to 34 years old ever married as reported in the 1960 census, assuming that the women 30 to 34 years old had been married 144 months on the average. The annual first birth rates by interval since the marriage of the women, by color, are show in table E-2.
b. Two sets of birth rates of second to sixth order were computed. The first set, designated initial values, was assumed to apply only to the year after April 1, 1960. These initial values could not be used unchanged for future years because parity progressions in the year 1959 were temporarily occurring at abnormally high levels, which, if maintained, would eventually result in far higher lifetime "progression" proportions for women than is evident in other data for real cohorts of women. The other set of birth rates, designated terminai values, represent the lower levels to which the initial values were assumed to fall by various future years in order to more nearly match overall parity progressions observed for real cohorts of women. On the assumption that the conditions that encouraged early marriage and childbearing after World War II would continue, the experience of the most recent cohort that had completed a sufficient portion of its

[^19]childbearing to be a useful guide to future expectations was employed. For this purpose, data for women 30 to 34 years in 1960, pro~ jected to age 49 , were used to represent the expected progression to the second and third parities and data for women 35 to 39 were used to represent the expected progression to the fourth, fifth, and sixth parities. It was further assumed that the second birth rates would decline linearly for five years from the levels of the initial values used for the year beginning April 1, 1960, to the levels of the terminal values, and then remain constant from 1965 on. For higher orders, a similar principle, but decline over a longer period, was employed. The rates for second to sixth orders of birth include an implicit allowance for the effect of mortality and for some women attaining too old an age to have children. Initial values for birth rates of second tofifth order, by interval since the birth date of the previous chlld and color, are shown in table E-3. The corresponding terminal values are shown in the same table.
c. A constant ratio was applied to the annual projections of births of sixth order to estimate the number of births of seventh and higher order in the same year.
4. The initial parity-interval-specific birth rates (item 3) were then applied to the female population by parity and birth interval in 1960 to secure projections of births by order and birth interval in the year after the 1960 Census. The results were then used to obtain projections of the female population by parity and birth interval for the end of the first year, which became the basis for the application of the interpolated parity-interval-specific birth rates for the second year after April 1, 1960, and so on sequentially. Births for fiscal years, 1960-61 to 198384, are presented in table E-4, and births for 5-year periods by order are presented in table E-5. This series of births corresponds most closely over this period to the $B$ series of birth projections, shown in table 1 .

All the computations were carried out separately for the white and nonwhite populations. The base date for this experimental calculation of projected births was April 1, 1960, so that the resulting figures for all years after April 1, 1960, are projections. The numbers of single women as enumerated in the 1960 Census were adjusted for net undercounts in the census to allow for the effect of the undercount on the projections of first marriages; the net effect of this adjustment Was to increase first marriages in 1960 by 2.9
percent and by progressively smaller percentages for later years. Allowance was also made for illegitimate births; for this purpose, first births were increased by an average of 5 percent.

In the present application of the marriage-parity-progression method, no direct account was taken of the age distribution or of the year of marriage of the women (except in the projection of first births) in estimating the births of evermarried women. However, the concentration of births within a narrow spacing range provides some indirect control on age. Nor do the projections of births allow for the effect of net immigration after April 1, 1960; this step was omitted for lack of time, although an allowance could be made with a moderate amount of additional work.

In the absence of information on age, it is very difeicult to convert the fertility rates used in the marriage-parity-progression method to completed fertility rates for birth cohorts or to period completed fertility rates. A rough estimate of completed fertility implied by the results of the method, for cohorts that entered childbearing after the base date (1960), is 3,300 chilaren per thousand women.

Because Grabill made no allowance for the possibility that wider use and more efficient methods of family limitation and other factors would tend to reduce parity progressions below those observed for recent real cohorts of highparity women, he viewed the resulting projections of births as a "high" series. Alternative series of projections would then be based on somewhat lower parity-interval-specific birth rates. Over the long run, these alternative assumptions could have a considerable effect on the projected numbers of births.

In spite of the reservation made, the numbers of births projected by the marriage-parity-progression method for the years 1960 to 1.963 are in generally close agreement with the actual figures:

| Year | Projected | Actual | Percent deviation |
| :---: | :---: | :---: | :---: |
| 1960.. | 4,330,000 | 4,307,000 | +0.5 |
| 1961 | 4,318,000 | 4,317,000 |  |
| 1962. | 4,295,000 | 4,213,000 | +1.9 |
| 1963. | 4,281,000 | 4,123,000 | +3.8 |

Finally, it should be noted that the work done so far on the marriage-parity-progression method is exploratory. It may be possible to extend the computations at a later date to incorporate additional data and improvements in method, as well as to evaluate alternative assumptions.

Table 1.--ANNUAL ESTIMATES AND PROJECTIONS OF THE POPUTATTON AND OF POPULATION CHANGE BY COMPONENTS, FOR THE UNTTED STATES: 1950 TO 1985
(Numbers in thousands. Figures include Alaska and Hawail and Armed Forces abroad. For a description of the assumptions underlying the four series show, see text)

| Series and year <br> (July 1 to June 30) | Population at beginning of period | Net change during year ${ }^{2}$ |  | Births |  | Deaths |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Amount | Percent ${ }^{2}$ | Amount | Rate ${ }^{3}$ | Anount | Rate ${ }^{3}$ |
| ESTIMATES |  |  |  |  |  |  |  |
|  |  |  | 1.71 | 3,771 | 24.5 | 1,485 | 9.7 |
| 1950-1951............... | 152,271 | 2,675 | 1.73 | 3,859 | 24.7 | 1,510 | 9.7 |
| 1951-1952. | 154,878 157,553 | 2,675 | 1.67 | 3,951 | 24.9 | 1,530 | 9.6 |
| 1952-1953. | 157,553 | 2,631 | 1.77 | 4,045 | 25.0 | 1, 4887 | 9.2 |
| 1953-1954. | 160,184 | 2,842 2,905 | 1.78 | 4,119 | 25.0 | 1,505 | 9.1 |
| 1954-1955. | 165,931 | 2,972 | 1.79 | 4,167 | 24.9 | 1,570 | 9.4 |
| 1955-1957. | 168,903 | 3,081 | 1.82 | 4, 312 | 25.3 | 1,581 | 9.3 |
| 1957-1958. | 171,984 | 2,898 | 1.68 | 4,313 4 | 24.9 | 1,683 | 9.3 |
| 1958-1959. | 174,882 | 2,948 | 1.69 | 4,279 | 23.9 | 1,698 | 9.5 |
| 1959-1960. | 177,830 | 2,846 3,066 | 1.60 1.70 | 4,364 | 23.9 | 1,679 | 9.2 |
| 1960-1961.. | 180,676 183,742 | 3,066 2,849 | 1.70 1.55 | 4,266 | 23.0 | 1,744 | 9.4 |
| 1961-1962... | 183,742 | 2,849 2,686 | 1.44 | 4,169 | 22.2 | 1,804 | 9.6 |
| -1962-1963.. |  |  |  |  |  |  |  |
| PROJTETIONS |  |  |  |  |  |  |  |
| Series A |  |  |  |  |  |  |  |
|  | 4189,278 | 2,887 | 1.53 | 4,422 | 23.2 | 1,835 | 9.6 |
| 1963-1964. | 192,166 | 2,964 | 1.54 | 4,527 | 23.4 | 1,863 | 9.6 |
| 1965-1966. | 195,129 | 3,056 | 1.57 | 4,648 | 23.6 | 1,892 | 9.6 |
| 2966-1967. | 198,186 | 3,157 | 1.59 | 4,777 | 23.9 | 1,949 | 9.6 |
| 1967-1968. | 201, 343 | 3,259 | 1.62 | 4,908 5,039 | 24.2 24.2 | 1,977 | 9.6 |
| 1968-1969. | 204,602 | 3,362 | 1.64 | 5,172 | 24.2 24.7 | 2,005 | 9.6 |
| 1969-1970. | 207,963 | 3,467 | 1.67 1.69 | 5,308 | 24.9 | 2,033 | 9.5 |
| 1970-1971. | 211, 430 | 3,575 | 1.69 | 5,308 | 25.1 | 2,060 | 9.5 |
| 1971-1972. | 215,006 | 3,685 | 1.71 1.74 | 5,582 | 25.3 |  | 9.5 |
| 1972-1973. | 218,691 | 3,796 | 1.74 | 5,582 | 25.3 | 2,087 | 9.5 |
| 1973-1974. | 222,486 | 3,908 | 1.76 | 5,721 | 25.5 | 2,113 | 9.4 9.4 |
| 1974-1975. | 226,395 | 4,020 | 1.78 | 5,859 | 25.7 | 2,138 | 9.4 |
| 1975-1976. | 230,415 | 4,131 | 1.79 | 5,995 | 25.8 | 2,188 | 9.2 |
| 1976-1977. | 234,546 | 4,238 | 1.81 | 6,126 | 25.9 25.9 | 2,212 | 9.2 |
| 1977-1978. | 238,784 | 4,337 | 1.82 | 6,250 | 25.9 25.9 | 2,212 | 9.1 |
| 1978-1979. | 243,121 | 4, 427 | 1.82 | 6,363 | 25.9 | 2,236 | 9.0 |
| 1979-1980. | 247,548 | 4, 508 | 1.82 | 6,467 | 25.9 | 2,281 | 9.0 |
| 1980-1981. | 252,056 | 4, 582 | 1.82 | 6,563 | 25.8 25.7 | 2,304 | 8.9 |
| 1981-1982. | 256,638 | 4,648 | 1.81 | 6,652 | 25.7 25.6 | 2,328 | 8.8 |
| 1982-1983. | 261,286 | 4,712 | 1.80 | 6,739 6,829 | 25.6 25.4 | 2,328 | 8.8 |
| 1983-1984. | 265,998 | 4,7777 4,847 | 1.80 1.79 | 6,829 6,923 | 25.3 | 2,376 | 8.7 |
| 1984-1985. | 270,775 | 4,847 | 1.79 |  |  | 2, | ... |
| 1985-1986. | 275,622 | ... | ... | ... | . | ... |  |
| Series B |  |  |  |  |  |  |  |
|  |  |  | 1.42 | 4,219 | 22.1 | 1,830 | 9.6 |
| 1963-1964.. | 189,278 191,967 | 2,704 | 1.41 | 4,260 | 22.0 | 1,856 | 9.6 |
| 1964 -1965. | 191,967 | 2,743 | 1.41 | 4,326 | 22.1 | 1,883 | 9.6 |
| 1965-1960. | 194,671 | 2,743 | 1.42 | 4,409 | 22.2 | 1,911 | 9.6 |
| 1966-1967. | 197, 413 | 2,799 2,838 | 1.42 | 4,476 | 22.2 | 1,937 | 9.6 |
| 1967-1968. | 200, 212 | 2,838 | 1.42 | 4,476 | 22.4 | 1,965 | 9.6 |
| 1968-1969. | 203,050 | 2,914 | 1.444 | 4, 4 , 724 | 22.8 | 1,993 | 9.6 |
| 1969-1970. | 205,964 | 3,032 | 1.47 1.51 | 4,724 4,869 | 23.1 | 2,020 | 9.6 |
| 1970-1971. | 208,996 | 3,149 | 1.51 1.54 | 5,012 | 23.4 | 2,048 | 9.6 |
| 1971-1972. | 212,145 | 3,264 3,377 | 1.54 1.57 | 5,012 | 23.7 | 2,074 | 9.6 |
| 1972-1973. | 215,409 | 3,377 | 1.57 | 5,151 |  |  |  |
| 1973-1974. | 218,786 | 3,488 | 1.59 | 5,288 | 24.0 24.2 | 2,100 | 9.5 |
| 1974-1975. | 222,273 | 3,597 | 1.62 | 5,423 | 24.2 24.4 | 2,151 | 9.4 |
| 1975-1976. | 225,870 | 3,703 | 1.64 | 5,554 5,680 | 24.4 24.5 | 2,176 | 9.4 |
| 1976-1977. | 229,573 | 3,805 | 1.66 | 5,680 5,797 | 24.5 24.6 | 2,176 | 9.3 |
| 1977-1978. | 233, 378 | 3,898 | 1.67 | 5,79? |  | 2,199 |  |

1 Includes annual net immigration of 300,000 , not shown separately. 3 Rete per 1,000 population at middle of fiscal year.
A revised estimate of total population for July i, 1963, prepared after these projections had been completed, is 289, 375,000 . See Current Population Reports, Series P-25, No. 278, for other revised dats for 1960-63.

Table 1.--ANNUAL ESTIMATES AND PROJESTIONS OF THE POPULATTON AND OF POPUTIATION CHANGE BY COMPONENTS, FOR THE UNITID STATES: 1950 TO 1985--COn.
(Numbers in thousands. Figures include Alaska and Hawaii and Armed Forces abroad. For a description of the assumptions underlying the four series shom, see text)


[^20]Table 2.--ESTIMATES AND PROJECTIONS OF THE FOPULATION OF THE UNITED STATES, BY AGE AND SEX: 1960 TO 1985
(In thousands. Figures relate to July land include Armed Forces abroad. For an explanation of the assumptions underlying the four series, see text. Figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963. Figures have been rounded to the nearest thousand; hence the sum of parts may differ slightly from the totals shown)

${ }^{1}$ A revised estimate of total population for July 1, 1963, prepared after these projections had been completed, is $189,375,000$.

Table 2.--ESTIMATES AND PROJECTIONS OF THE POPULATION OF THE UNTTED STATES, BY AGE AND SEX: 1960 T0 1985-mon.
(In thousands. Figures relate to July 1 and include Armed Forces abroad. For an explanation of the assumptions underlying the four series, see text. Figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963. Figures have been rounded to the nearest thousand; hence the sum of parts may differ slightly from the totals shown)

| Series, age, and sex | 1960 | 1963 | 1965 | 1970 | 1975 | $\begin{array}{r}1980 \\ \hline\end{array}$ | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MALE |  |  |  |  |  |  |  |
| Series A |  |  |  |  |  |  |  |
| All ages. | 89,328 | 93,369 | 96,148 | 103,998 | 113,290 | 124,003 | 1.35,749 |
| Under 5 years $\qquad$ <br> 5 to 9 years. $\qquad$ <br> 10 to 14 years. $\qquad$ <br> 15 to 19 years. $\qquad$ <br> 20 to 24 years.............. <br> Series B <br> All ages. $\qquad$ | $\begin{array}{r} 10,352 \\ 9,572 \\ 8,595 \\ 6,814 \\ 5,58 \end{array}$ | $\begin{aligned} & 10,554 \\ & 10,171 \\ & 9,153 \\ & 7,872 \\ & 6,315 \end{aligned}$ | $\begin{array}{r} 10,838 \\ \hline 10,774 \\ 9,601 \\ 8,612 \\ 6,843 \end{array}$ | $\begin{array}{r} 12,245 \\ 10,851 \\ \hline 10,394 \\ 9,609 \\ 8,621 \end{array}$ | $\begin{gathered} 13,943 \\ 12,252 \\ 10,870 \\ \hline 10,399 \\ 9,611 \end{gathered}$ | $\begin{aligned} & 15,602 \\ & 13,944 \\ & 12,269 \\ & 10,873 \\ & \hline 10,394 \end{aligned}$ | $\begin{aligned} & 16,877 \\ & 15,597 \\ & 13,956 \\ & 12,266 \\ & 10,365 \end{aligned}$ |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | 89,328 | 93,369 | 95,914 | 102,756 | 110,971 | 120,562 | 131,005 |
| Under 5 years. <br> 5 to 9 years. $\qquad$ <br> 10 to 14 years $\qquad$ <br> 15 to 19 years. <br> 20 to 24 years. $\qquad$ <br> Series 0 <br> All ages. $\qquad$ | $\begin{array}{r} 10,352 \\ 9,572 \\ 8,595 \\ 6,814 \\ 5,558 \end{array}$ | $\begin{array}{r} 10,554 \\ 10,171 \\ 9,153 \\ 7,872 \\ 6,315 \end{array}$ | $\begin{array}{r} 10,604 \\ \hline 10,374 \\ 9,601 \\ 8,612 \\ 6,843 \end{array}$ | $\begin{aligned} & 11,236 \\ & 10,618 \\ & \hline \end{aligned}$ | $\begin{aligned} & 12,861 \\ & 11,248 \\ & 10,638 \end{aligned}$ | $\begin{aligned} & 14,473 \\ & 12,866 \\ & 11,266 \end{aligned}$ | $\begin{aligned} & 15,560 \\ & 14,473 \\ & 12,881 \\ & 11,268 \\ & 10,635 \end{aligned}$ |
|  |  |  |  |  |  |  |  |
|  |  |  |  | $\begin{array}{r} 10,394 \\ 9,609 \\ 8,621 \end{array}$ |  |  |  |
|  |  |  |  |  | $\begin{array}{r} 10,399 \\ 9,611 \end{array}$ |  |  |
|  |  |  |  |  |  |  |  |
|  | 89,328 | 93,369 | 95,641 | 101,283 | 108,043 | 216,052 | 124,727 |
| Under 5 years.. | $\begin{array}{r} 10,352 \\ 9,572 \\ 8,595 \\ 6,814 \\ 5,558 \end{array}$ | $\begin{array}{r} 10,554 \\ 10,171 \\ 9,153 \\ 7,872 \\ 6,31.5 \end{array}$ | $\begin{array}{r} 10,331 \\ 109,374 \\ 8,601 \\ 6,612 \\ \hline \end{array}$ | $\begin{array}{r} 10,034 \\ 10,347 \\ \hline 10,394 \\ 9,609 \\ 8,621 \end{array}$ | $\begin{array}{r} 11,399 \\ 10,092 \\ 10,367 \\ \hline 10,399 \\ 9,661 \end{array}$ | $\begin{aligned} & 12,880 \\ & 11,411 \\ & 10,073 \\ & 10,372 \\ & \hline 10,394 \end{aligned}$ | $\begin{aligned} & 13,775 \\ & 12,886 \\ & 11,430 \\ & 10,080 \\ & 10,367 \end{aligned}$ |
| 5 to 9 years... |  |  |  |  |  |  |  |
| 10 to 14 years. |  |  |  |  |  |  |  |
| 15 to 19 years. |  |  |  |  |  |  |  |
| 20 to 24 years. |  |  |  |  |  |  |  |
| Series D |  |  |  |  |  |  |  |
| All ages. | 89,328 | 93,369 | 95,636 | 101,168 | 107,391 | 114,350 | 121,633 |
| Under 5 years.. | $\begin{array}{r} 10,352 \\ 9,572 \\ 8,595 \\ 6,814 \\ 5,558 \end{array}$ | $\begin{array}{r} 10,554 \\ 10,171 \\ 9,153 \\ 7,872 \\ 6,3.15 \end{array}$ | 10,326 | $\begin{array}{r} 9,924 \\ 10,342 \\ \hline \end{array}$ | $\begin{array}{r} 10,861 \\ 9,942 \\ 10,363 \end{array}$ | $\begin{aligned} & 11,827 \\ & 10,876 \end{aligned}$ |  |
| 5 to 9 years.. |  |  | 10,374 |  |  |  | 12,376 |
| 10 to 14 years. |  |  | $\begin{aligned} & 9,601 \\ & 8,612 \end{aligned}$ | 10,3949,6098,621 |  | $\begin{array}{r} 9,964 \\ 10,368 \\ \hline \end{array}$ | $\begin{array}{r} 10,896 \\ 9,972 \end{array}$ |
| 15 to 19 years.. |  |  |  |  | 10,3999,611 |  |  |
| 20 to 24 years. |  |  | 6,843 |  |  | 10,394 | 20,363 |
| 411 Series-- 25 Years 0ld and Over | $5,558$ | $6,31.5$ |  |  |  |  |  |
| 25 to 29 years.. | 5,422 | 5,449 | 5,619 | 6,884 | 8,647 | 9,627 | 10,404 |
| 30 to 34 years. . | 5,901 | 5,625 | 5,469 | 5,656 | 6,910 | 8,658 | 9,631 |
| 35 to 39 years.. | 6,140 | 6,054 | 5,899 | 5,467 | 5,654 | 6,896 | 8,627 |
| 40 to 44 years. | 5,733 | 5,989 | 6,078 | 5,836 | 5,414 | 5,600 | 6,824 |
| 45 to 49 years. | 5,384 | 5,501 | 5,600 | 5,932 | 5,700 | 5,294 | 5,478 |
| 50 to 54 years | 4,758 | 5,018 | 5,154 | 5,357 | 5,679 | 5,463 | 5,081 |
| 55 to 59 years. . | " $4,1,43$ | 4,307 | 4,430 | 4,794 | 4,990 | 5,296 | 5,102 |
| 60 to 64 years.. | 3,418 | 3,585 | 3,709 | 3,965 | 4,297 | 4,480 | 4,762 |
| 65 to 69 years. | 2,929 | 2,866 | 2,881 | 3,137 | 3,362 | 3,651 | 3,815 |
| 70 to 74 years.. | 2,195 | 2,284 | 2,290 | 2,261 | 2,471 | 2,658 | 2,897 |
| 75 to 79 years.. | 1,372 | 1,486 | 1,542 | 1,607 | 1,596 | 1,753 |  |
| 80 to 844 years..... | 674 | 756 | 806 | 908 | 951 | 952 | 1,054 |
| 35 years and over............ | 367 | 385 | 404 | 472 | 543 | 592 | 618 |

## Table 2.--ESTIMATES AND PROJECTIONS OF THE POPULATION OF THE UNTTED STATES, BY AGE AND SEX:

 1960 TO 1985--COn.In thousands. Figures relate to July 1. and include Armed Forees abroad. For an explanation of the assumptions underlying the four series, see text. Figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963. Figures have been rounded to the nearest thousand; hence the sum of parts may differ slightly from the totals shown)


Table 3.--ESI IMATES AND PROJECTIONS OF THE POPULATION OF THE UNTTED STATES IN SELECTED AGE GROUPS, BY SEX: 1960 T0 1985
(In thousands. Figures relate to July 1 and include Armed Forces abroad. For an explanation of the assumptions underlying the four series, see text. Figures have been rounded to the nearest thousand; hence the sum of parts may differ slightly from the totals shown


Table 3. --ESTIMATES AND PROJECTIONS OF THE POPULATION OF THE UNITED STATES IN SELECTED AGE GROUPS, BY SEX: 1960 TO 1985-wCon.
(In thousands. Figures relate to July 1 and include Armed Forces abroad. For an explanation of the assumptions underlying the four series, see text. Figures have been rounded to the nearest thousand; hence the sum of parts may differ slightly from the totals shown)


Table 3. --ESTIMATES AND PROJECTIONS OF THE POPULATION OF THE UNITED STATES IN SELECTED AGE GROUPS, BY SEX: 1960 то 1985--Con.
(In thousands. Figures relate to July 1 and include Armed Forces abroad. For an explanation of the assumptions underlying the four series, see text. Figures have been rounded to the nearest thousand; hence the sum of parts may differ slightly from the totals shown)


Table 4.--ANUAL ESTIMATES AND SERIES B PROJECTIONS OF THE POPUATION OF THE UNTTED STATES, BY AGE AND SEX: 1960 TO 1985
(Tn thousands. Figures relate to July 1 and include Armed Forces abroad. Base date for projections is July 1, 1963; figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963 according to Series $B$ assumptions. For an explanation of the assumptions underlying the projections, see text)


48

Table 4.--ANNULL ESTIMATES AND SERTES B PROJECTIONS OF THE POPULATION OF TGE UNITED STATES, BY AGE AND SEX: 1960 TO 1985--Con.
(In thousands. Figures relate to July 1 and include Armed Forces abroad. Base date for projections is July 1, 1963; figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963 according to Series $B$ assumptions. For an explanation of the assumptions underlying the projections, see text)

| Age and sex | 1969 | 1970 | 1971 | 1972 | 1.973 | 1974 | 1975 | 1976 | 1977 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BOTH SEXES |  |  |  |  |  |  |  |  |  |
| A.ll ages. | 205,964 | 208,996 | 212,145 | 215,409 | 218,786 | 222,273 | 225,870 | 229,573 | 233,378 |
| Under 5 years. | 21,555 | 22,013 | 22,549 | 23,143 | 23,807 | 24,505 | 25,192 | 25,867 | 26,526 |
| 5 to 9 years. | 20,770 | 20,821 | 20,784 | 20,928 | 21,235 | 21,591. | 22,047 | 22,581 | 23,172 |
| 10 to 14 years. | 20,314 | 20,469 | 20,756 | 20,838 | 20,809 | 20,818 | 20,870 | 20,833 | 20,977 |
| 15 to 19 years. | 18,438 | 18,941 | 19,364 | 19,799 | 20,110 | 20,362 | 20,516 | 20,802 | 20,884 |
| 20 to 24 years. | 16,405 | 17,104 | 17,919 | 17,868 | 18,176 | 18,557 | 19,057 | 19,477 | 19,910 |
| 25 to 29 years. | 13,294 | 13,795 | 14,157 | 15,267 | 15,830 | 16,560 | 17,254 | 18,064 | 18,014 |
| 30 to 34 years. | 11,269 | 11,425 | 11,701 | 12,161 | 12,875 | 13,386 | 1.3,885 | 14,244 | 15,347 |
| 35 to 39 years. | 11,190 | 11,079 | 11,003 | 10,991 | 11, 104 | 111,294 | 11,448 | 11,722 | 12,179 |
| 40 to 44 years. | 12,093 | 11,917 | 11, 735 | 11,541 | 11, 329 | 11,118 | 11,010 | 10,936 | 10,925 |
| 45 to 49 years. | 12,178 | 12,239 | 12,231 | 12,160 | 12,038 | 11,885 | 11,715 | 11,537 | 11,349 |
| 50 to 54 years. | 10,982 | 11,121 | 17,290 | 11,484 | 11,668 | 11,800 | 11,859 | 11,853 | 11,786 |
| 55 to 59 years. | 9,902 | 10,046 | 10,162 | 10,249 | 10,330 | 10,433 | 10,567 | 10,731 | 10,917 |
| 60 to 64 years. | 8,303 | 8,454 | 8,621 | 8,801 | 8,981 | 9,143 | 9,278 | 9,388 | 9,472 |
| 65 to 69 years. | 6,772 | 6,892 | 7,005 | 7,113 | 7,224 | 7,346 | 7,484 | 7,635 | 7,798 |
| 70 to 74 years. | 5,191 | 5,239 | 5,316 | 5,416 | 5,529 | 5,640 | 5,743 | 5,841 | 5,935 |
| 75 to 79 years. | 3,873 | 3,901 | 3,911 | 3,906 | 3,904 | 3,921 | 3,963 | 4,025 | 4,106 |
| 80 to 84 years. | 2,221 | 2,280 | 2,338 | 2,394 | 2,442 | 2,477 | 2,497 | 2,505 | 2,505 |
| 85 and over. | 1,214 | 1,258 | 1,303 | 1,348 | 1,394 | 1,439 | 1,485 | 1,530 | 1,575 |
| MALE |  |  |  |  |  |  |  |  |  |
| All ages. | 101,296 | 102,756 | 104,278 | 105,861 | 107,506 | 109,209 | 110,971 | 112,790 | 114,663 |
| Under 5 years. | 11,001 | 11,236 | 11,510 | 11,813 | 12,153 | 12,509 | 12,861 | 13,205 | 13,542 |
| 5 to 9 years. | 10,584 | 10,618 | 10,600 | 10,675 | 10,832 | 11,014 | 11,248 | 11,520 | 11,822 |
| 10 to 14 years. | 10,318 | 10,394 | 10,546 | 10,596 | 10,588 | 10,604 | 10,638 | 10,620 | 10,695 |
| 15 to 19 years. | 9,355 | 9,609 | 9,823 | 10,040 | 10,198 | 10,324 | 10,399 | 10,551 | 10,600 |
| 20 to 24 years. | 8,263 | 8,621 | 9,038 | 9,015 | 9,168 | 9,358 | 9,611 | 9,822 | 10,037 |
| 25 to 29 years. | 6,626 | 6,884 | 7,066 | 7,628 | 7,919 | 8,292 | 8,647 | 9,060 | 9,037 |
| 30 to 34 years. | 5,580 | 5,656 | 5,794 | 6,029 | 6,391 | 6,655 | 6,910 | 7,091 | 7,648 |
| 35 to 39 years. | 5,518 | 5,467 | 5,435 | 5,431 | 5,486 | 5,578 | 5,654 | 5,791 | 6,024 |
| 40 to 44 years. | 5,916 | 5,836 | 5,752 | 5,663 | 5,564 | 5,464 | 5,414 | 5,383 | 5,379 |
| 45 to 49 years. | 5,905 | 5,932 | 5,929 | 5,899 | 5,846 | 5,777 | 5,700 | 5,619 | 5,533 |
| 50 to 54 years. | 5,300 | 5,357 | 5,429 | 5,514 | 5,594 | 5,653 | 5,679 | 5,678 | 5,650 |
| 55 to 59 years. | 4,737 | 4,794 | 4,838 | 4,869 | 4,897 | 4,936 | 4,990 | 5,059 | 5,139 |
| 60 to 64 years. | 3,905 | 3,965 | 4,033 | 4,107. | 4,180 | 4,245 | 4,297 | 4,338 | 4,366 |
| 65 to 69 years. | 3,087 | 3,137 | 3,182 | 3,222 | 3,263 | 3,309 | 3,362 | 3,421 | 3,485 |
| 70 to 74 years. | 2,244 | 2,261 | 2,292 | 2,336 | 2,384 | 2,431 | 2,471 | 2,508 | 2,542 |
| 75 to 79 years. | 1,608 | 1,607 | 1,600 | 1,588 | 1,579 | 1,581 | 1,596 | 1,620 | 2,653 |
| 80 to 84 years. | 892 | 908 | 923 | 936 | 946 | 951 | 951 | 948 | 942 |
| 85 and over.. | 457 | 472 | 487 | 501 | 516 | 530 | 543 | 555 | 568 |
| FEMATE |  |  |  |  |  |  |  |  |  |
| All ages. | 104,668 | 106,240 | 107,867 | 109,548 | 111,280 | 113,064 | 114,899 | 116,783 | 118,715 |
| Undex 5 years. | 10,554 | 10,778 | 11,040 | 11,330 | 11,654 | 11,996 | 12,332 | 12,661 | $12,984$ |
| 5. to 9 years. | 10,186 | 10,203 | 10,284 | 10,253 | 10,403 | 10,576 | 10,800 | 11,061 | 11,350 10,282 |
| 10 to 14 years.. | 9,996 | 10,075 | 10,210 | 10,243 | 10,221 | 10,215 | 10,232 | 10,213 | $\frac{10,282}{10,284}$ |
| 15 to 19 years.. | 9,083 8,142 | 9,331 8,483 | 9,541 8,881 | 9,759 8,853 | 9,912 9,008 | 10,038 9,198 | 10,117 9,446 | 10,251 9,655 | 10,284 9,873 |
| 25 to 29 years. | 6,668 | 6,9111 | 7,091 | 7,639 | 7,911 | 8,268 | 8,607 | 9,004 | 8,977 |
| 30 to. 34 years. | 5,690 | 5,769 | 5,907 | 6,132 | 6,483 | 6,733 | 6,975 | 7,154 | 7,699 |
| 35 to 39 years. | 5,672 | 5,612 | 5,568 | 5,560 | 5,618 | 5,716 | 5,795 | 5,931 | 6,156 |
| 40 to 44 years. | 6,177 | 6,082 | 5,983 | 5,878 | 5,766 | 5,654 | 5,596 | 5,553 5,918 | 5,545 5,816 |
| 45 to 49 years. | 6,274 | 6,307 | 6,302 | 6,261 | 6,193 | 6,108 | 6,015 | 5,918 | 5,816 |
| 50 to 54 years. | 5,681 | 5,764 | 5,861 | 5,970 | 6,074 | 6,147 | 6,180 | 6,176 | 6,236 |
| 55 to 59 years....... | 5,165 | 5,252 | 5,324 | 5,380 | 5,433 | 5,497 | 5,577 | 5,672 | 5,778 5,305 |
| 60 to 64 years. | 4,398 | 4,489 | 4,588 | 4,695 | 4,801 | 4,898 | 4,981 | 5,050 | 5,1013 |
| 65 to 69 years...... | 3,685 | 3,755 | 3,824 | 3,891 | 3,961 | 4,037 | 4,122 | 4,214 3,333 | 3,393 |
| 70 to 74 years...... | 2,947 | 2,979 | 3,024 | 3,081 | 3,145 | 3,209 | 3,272 | 3,333 2,405 | 2,453 : |
| 5 to 79 years...... | 2,265 1,329 | 2,294 1,372 | 2,311 1,415 | 2,318 1,458 | 2,324 1,496 | 2,340 1,525 | 2,367 | 2,405 1,557 | 2,563 |
| 35 and over.. | 758 | 1786 | . 816 | 847 | -878 | -910 | 1,942 | 1,975 | 1,007 |

Table 4.--ANNUL ESTmates and sertes b prodections of the population of the united states, by age and sex: 1960 T0 1985--Con.
(In thousands. Figures relate to July 1 and include Armed Forces abroad. Base date for projections is July 1, 1963; figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963 according to Series B assumptions. For an explanation of the assumptions underlying the projections, see text)


Table 5.--ANNUAL ESTMMATES AND SERIES B PROJECTIONS OF THE POPULATYON OF THE UNITED STATES, IN SELECTED AGE GROUPS, BY SEX: 1960 TO 1985
In thousands. Figures relate to July 1 and include Armea Forces abroad. Figures below heavy lines represent, in whole or part, survivors of births projected for years after 1963 according to Series B assumptions. For an explanation of the assumptions underlying the projections, see text)


Table 6.--ESTMMATES AND PROJECTTONS OF THE MALE AND FEMALE POPULATTON OF THE UNTTED STATPS UNDER 35 YEARS OLD, BY SINGLE YEAFS OF AGE: 1963 TO 1985
In thousands. Figures relate to July 1 of each year and include Armed Forces abroad. For an explanation of the assumptions underlying the projections, see text. Figures have been rounded to the nearest thousand; hence the sum of parts may differ slightly from the totals shown)


Table 6. - ESTIMATES AND PHOJECTIONS OF THE MALE AND FEMALE POPULATION OF THE UNITED STATES UNDER 35 YEARS OLD, BY SINGLE YEARS OF AGE: 1963 TO 1985--COn.
(In thousands. Figures relate to July l. of each year and include Armed Forces abroad. For an explanation of the assumptions underlying the projections, see text. Flgures have been rounded to the nearest thousand; hence the sum of parts may differ slightly from the totals shown)

| Sexies, year, and age | Male | Femaje | Series, year, and age | Male | Female | Series, year, and age | Male | Female |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1975--Con. <br> Series A-mCon. 5 years. $\qquad$ | 2,581 | 2,477 | $1975-\text {-Con. }$ <br> A11 Series--12 to 34 Years--Con. |  |  | $\begin{gathered} \text { 1980 - Con, } \\ \text { Series } 0 \\ \text { Total, under } 35 . . \end{gathered}$ | 73,417 | 72,453 |
| 6 years. | 2,515 | 2,414 |  | 2,083 | 2,029 |  |  |  |
| 7 years. | 2,450 | 2,352 | 19 years. | 2,031 | 2,979 | Under 1 year. | 2,680 | 2,567 2,520 |
| 8 years. | 2,385 | 2,291 | 20 years | 2,021 | 1,972 | 1. year.. |  | 2,472 |
| 9 years............. | 2,322 | 2,230 | 21 years. | 1,968 | 1,934 | 2 years. | 2,524 | 2,421 |
| 10 years........... | 2,262 | 2,173 | 22 years. | 1,933 | 1,903 | 4 years. | 2,466 | 2,365 |
| 11 years........... | 2,210 | 2,124 | 23 years. | 1, 867 | 1,838 | 5 years. | 2,406 | 2,309 |
|  |  |  | 24 years.......... | 1,820 | 1,799 | 6 years. | 2,345 | 2,250 |
| Series B |  |  | 25 years. | 1,772 | 1,754 | 7 years. | 2,283 | 2,191 |
|  |  |  | 26 years. | 1.782 | 1,772 | 8 years. | 2,220 | 2,131 |
| Total, under 35.. | 70,313 | 68,508 | 27 years. | 1,786 | 1,774 | 9 years. | 2,157 | 2,071 |
| Under 1 year....... | 2,716 | 2,602 | 28 years.......... | 1,895 | 1,887 |  | 2,093 | 2,011 |
| 1 year... | 2,641 | 2,532 | 29 years........... | 1,412 | 1,421 | 11 years........... | 2,031 | 1,951. |
| 2 years............ | 2,571 | 2,466 | 30 years. | 1,422 | 1,430 | 12 years. | 1,989 | 1,912 |
| 3 years. | 2,501 | 2,399 | 31 years. | 1,416 | 1,429 | 13 years | 1,981 | 1,904 |
| 4 years. | 2,431 | 2,332 | 32 years........... | 1,500 | 1,514 | 14 years | 1,979 | 1,904 |
| 5 years............. | 2,359 | 2,264 | 33 years. | 1,339 | 1, 351 | 15 years. | 1,980 | 1,906 |
| 6 years............ | 2,287 | 2,195 | 34 years | 1,233 | 1,250 | 16 years. | 1,994 | 1,921 |
| 7 years............. | 2,236 | 2,147 2,116 |  |  |  |  |  |  |
| 8 years, . . . . . . . . . | 2,203 | 2,116 | 1980 |  |  |  |  |  |
| 9 years............ | 2,162 | 2,047 |  |  |  | Series D |  |  |
| 10 years............ | 2,110 | 2,028 | Series A |  |  | Total, under 35. | 71,715 | 69,821 |
|  |  |  | Total, under 35 | 81,368 | 79,085 | Under 1 year. | 2,434 | 2,331 |
|  |  |  | Under 1 year. | 3,242 | 3,106 | 1 year............. | 368 |  |
| Total, under 3 | 67,386 | 65,698 | 1 year...... | 3,182 | 3,050 | 2 years............. | 2,332 | 2,236 |
| Under 1 year | 2,410 | 2,310 | 2 years........... | 3,123 | 2,994 | 4 years............ | 2,294 | 2,200 |
| 1 year. | 2,343 | 2,246 | 3 years............ | 3,060 | 2,934 | 5 years........... | 2,256 | 2,164 |
| 2 year | 2,279 | 2,185 | 4 years. | 2,994 | 2,872 | 6 years............ | 2,216 | 2,127 |
| 3 years............. | 2,215 | 2,125 | 5 years,........... | 2,926 | 2,807 | 7 years. | 2,176 | 2,088 |
| 4 years............ | 2,152 | 2,065 | 6 years........... | 2,857 | 2,742 | 8 years. | 2,134 | 2,049 |
| 5 years. | 2,088 | 2,004 | 7 years............ | 2,788 | 2,676 | 9 years............ | 2,094 | 2,011 |
| 6 years.............. | 2,026 | 1,945 | 8 years............ | 2,720 | 2,611 |  | 2,050 | 1,969 |
| 7 years............. | 1,985 | 1,906 | 9 years............ | 2,652 | 2,547 | 11 years............ | 2,001 | 1,922 |
| 8 years. | 1,977 | 1,899 | 10 years.......... | 2,584 | 2,482 | 12 years. | 1,970 | 1,894 |
| 9 years............. | 1,976 | 1,898 | 11 years........... | 2,518 | 2,419 | 13 years. | 1,970 | 1,894 |
| 10 years | 1,977 | 1,900 | 12 years........... | 2,453 | 2,358 | 14 years. | 1,973 | 1,898 |
| 11 years. | 1,992 | 1,914 | 13 years. | 2,388 | 2,296 | 15 years........... | 1,977 | 1,903 |
|  |  |  | 14 years............ | 2,324 | 2,235 | 16 years............ | 1,993 | 1,920 |
| Series D |  |  | 15 years........... | 2,264 | 2,179 | - |  |  |
| Total, under | 66,733 | 65,073 | 16 years. | 2,211 |  | 11 Series--17 |  |  |
| Under 1 year........ | 2,259 | 2,164 | Series B |  |  | to 34 Years |  |  |
| 1 year. | 2,213 | 2,122 |  |  |  |  |  | 2,011 |
| 2 years. | 2,171 | 2,082 | Total, under 35. | 77,927 | 75,783 | 18 years. | 2,132 | 2,062 |
| 3 years. | 2,129 | 2,042 | Under 1 year....... | 3,009 | 2,882 |  | 2,182 | 2,114 |
| 4 years. | 2,089 | 2,004 | I year | 2,953 | 2,830 |  |  |  |
| 5 years............. | 2,045 | 1,963 | 2 years............ | 2,898 | 2,778 | 20 years........... | 2,097 | 2,059 |
| 6 years. | 1,996 | 1,916 | 3 years. | 2,838 | 2,721 | 21 years........... | 2,094 | 2,056 |
| 7 years. | 1,966 | 1,888 | 4 years............ | 2,775 | 2,661 | 22 years........... | 2,090 | 2,056 |
| 8 years. | 1,965 | 1,888 1,892 | 5 years............ | 2,709 | 2,599 | 23 years........... | 2,082 | 2,008 |
| 9 years............. | 1,969 1,974 | 1,892 1,897 | 6 years, ............ | 2,642 2,574 | 2,536 2,471 | 24 <br> 25 years........... | 2,031 2,023 | 2,001 |
| 10 years............ | 1,990 | 1,913 | 7 years........... 8 years......... | 2,574 2,505 | 2,471 | 25 years........... | 1,971 | 1,962 1,928 |
|  |  |  | 9 years. | 2,435 | 2,338 | 27 years........... | 1,937 | 1,928 1,860 |
| A11. Series-12 to |  |  | 10 years | 2,363 | 2,270 | 28 years........... | 1,872 | 1,817 |
| 34 Years |  |  | 11 years. | 2,291 | 2,201 | 29 years............ | 1 |  |
| 12. years........... | 2,083 | 2,003 | 12 years. | 2,240 | 2,153 | 30 years........... | 1,777 | 1,785 |
| 13 years. | 2,132 | 2,052 | 13 years........... | 2,207 | 2,122 | 31 years,.......... | 1,786 | 1,784 |
| 14 years. | 2,183 | 2,102 2,036 | 14 years........... | 2,166 | 2,083 | 32 years........... | 1,788 | 1,784 |
| 15 years............ | 2,098 | 2,036 2,040 |  | 2,133 | 2,053 | 33 years........... | 1,895 | 1,899 |
| 16 years. | 2,096 | 2,040 | 16 years. | 2,112 | 2,034 | 34 years........... | 1,414 | 1,42 |

Table 6.--ESTTMATES AND PROJECTIONS OF THE MALE AND FEMALE POPULATION OF THE UNITED STATES UNDER 35 YEARS OLD, BY SINGLE YEARS OF AGE: 1963 TO 1985--COn.
In thousands. Figures relate to July 1 of each year and include Amed Forees abroad. For an explanation of the assumptions underlying the projections, see text. Figures have been rounded to the nearest thousend; hence the sum of parts may differ slightily from the totals shown)


Table 7. - ESTTMATED AND PROJECTED NUMBER OF PERSONS REACHING SELECTED AGES ANNUALLY: 1960 TO 1985
(In thousands. Figures include Armed Forces abroad. Figures in part A represent survivors of births which oceurred prior to July 1, 1963; figures in Part B represent survivors of births projected for years after July 1, 1963. For an explanation of the assumptions underlying the various series of projections, see text)

PART A. - -ALT. SERTES

| $\begin{gathered} \text { Year } \\ (\text { July } 1 \text { to June } 30) \end{gathered}$ | Total |  |  |  |  |  |  | Male |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\stackrel{6}{\text { years }}$ | 14 years | $\begin{aligned} & 18 \\ & \text { years } \end{aligned}$ | $\underset{\text { years }}{21}$ | $\begin{aligned} & 45 \\ & \text { years } \end{aligned}$ | $\begin{aligned} & 62 \\ & \text { years } \end{aligned}$ | 65 years | $\begin{aligned} & 18 \\ & \text { years } \end{aligned}$ | $\begin{aligned} & 65 . \\ & \text { years } \end{aligned}$ |
| Estimates: |  |  |  |  |  |  |  |  |  |
| 1960-1961. | 3,959 | 3,727 | 2,934 | 2,286 | 2,268 | 1,459 | 1,339 | 1,483 | 630 |
| 1961-1962. | 3,981 | 3,496 | 2,767 | 2,4,20 | 2,281 | 1,491 | 1,334 | 1,399 | 625 |
| 1962-1963. | 4,087 | 3,496 | 2,778 | 2,623 | 2,306 | 1,522 | 1,341 | 1,406 | 626 |
| Projections: |  |  |  |  |  |  |  |  |  |
| 1963-1964. | 4,103 | 3,473 | 2,761 | 2,952 | 2,350 | 1,554 | 1,364 | 1,396 | 636 |
| 1964-1965. | 4,116 | 3,573 | 3,728 | 2,783 | 2,399 | 1,582 | 1,394 | 1,890 | 657 |
| 1965-1966. | 4,116 | 3,667 | 3,505 | 2,794 | 2,443 | 1,604 | 1,424 | 1,780 | 665 |
| 1966-1967. | 4,269 | 3,806 | 3,505 | 2,777 | 2,481 | 1,626 | 1,453 | 1,778 | 679 |
| 1967-1968. | 4,170 | 3,879 | 3,482 | 3,740 | 2,498 | 1,649 | 1,479 | 1,768 | 690 |
| 1968-1969. | 4,073 | 3,977 | 3,582 | 3,519 | 2,486 | 1,673 | 1,501 | 1,81.8 | 698 |
| 1969-1970. | ... | 3,997 | 3,676 | 3,519 | 2,461 | 1,703 | 1,522 | 1,866 | 706 |
| 1970-1971. | . ${ }^{\circ}$ | 4,103 | 3,814 | 3,495 | 2,436 | 1,739 | 1,544 | 1,933 | 714 |
| 1971-1972. | ... | 4,218 | 3,887 | 3,595 | 2,409 | 1,778 | 1,567 | 1,969 | 722 |
| 1972-1973. | ... | 4,132 | 3,984 | 3,689 | 2,374 | 1,817 | 1,595 | 2,022 | 733 |
| 1973-1974. | $\cdots$ | 4,131 | 4,005 | 3,827 | 2,331 | 1,855 | 1,629 | 2,031 | 747 |
| 1974-1975. | ... | 4,284 | 4,111 | 3,900 | 2,288 | 1,884 | 1,666 | 2,083 | 762 |
| 1975-1976. | *** | 4,185 | 4,126 | 3,996 | 2,256 | 1,903 | 1,703 | 2,092 | 777 |
| 1976-1977. |  | 4,089 | 4,139 | 4,017 | 2,218 | 1,917 | 1,739 | 2,095 | 792 |
| 1977-1978. | -** | . | 4,139 | 4,122 | 2,165 | 1,929 | 1,767 | 2,098 | 802 |
| 1978-1979.......... | $\ldots$ | $\ldots$ | 4,291 | 4,137 | 2,122 | 1.,940 | 1,785 | 2,183 | 809 |
| 1979-1980. . . . . . . . | ... | ... | 4,193 | 4,151 | 2,181 | 1,963 | 1,798 | 2,132 | 812 |
| 1980-1981. | ... | ... | 4,096 | 4,250 | 2,182 | 2,001 | 1,810 | 2,084 | 816 |
| 1981-1982. | ... | ... | ... | 4,302 | 2,206 | 2,044 | 1,821 | ... | 820 |
| 1982-1983. | ... | ... | ... | 4,204 | 2,276 | 2,083 | 1,843 | ... | 828 |
| 1983-1984. | ... | ... | ... | 4,108 | 2,308 | 2,117 | 1,879 | ... | 843 |
| 1984-1985. | ... | ... | ... | ... | 2,333 | 2,132 | 1,920 |  | 860 |

PART B. - BY SERTES


Table 8.--PROJECTIONS OF THE POPULATION OF THE UNITED STATES, BY AGE AND SEX: 1985 TO 2010
(In thousands. Figures relate to July 1 and include Armed Forces overseas. Figures represent extensions of Series $A$, B, 0 , and D projections given in table 2. Slightly declining mortallty and 300,000 annual net immigration after 1963 are assumed in all series. Figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963. For further explanation of the assumptions underlying the four series, see text. Figures have been rounded to the nearest thousand; hence the sums of parts may differ slightly from the totals shown)


TQbIe 8.--PROTECRIONS OF THE POPULATION OF THE ONITED STATES, BY AGE AND SEX: 1985 TO 2010-.COn.
(In thousands. Figures relate to July 1 and include Armed Forces overseas. Figures represent extensions of Series A, B, 0 , and $D$ projections given in table 2. Slightly declining mortality and 300,000 annal net immigration after 1963 are assumed in all serieg. Figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963. For further explanation of the assumptions underlying the four series, see text. Figures have been rounded to the nearest thousand; hence the sums of parts may differ slightly from the totals shown)

| Series, age, and sex | 1985 | 1990 | 2995 | 2000 | 2005 | 2010 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MALE |  |  |  |  |  |  |
| Series A |  |  |  |  |  |  |
| All ages. | 135,749 | 148,553 | 162,920 | 179,239 | 197,616 | 217,740 |
| Under 5 years. | 26,877 | 18,204 | 20,053 | 22,316 | 24,790 | 27,067 |
| 5 to 9 years. | 15,597 | 16,868 | 18,191 | 20,034 | 22,289 | 24,754 |
| 10 to 14 years. | 13,956 | 15,606 | 16,874 | 18,195 | 20,033 | 22; 283 |
| 15 to 19 years. | 12,266 | 13,946 | 15,589 | 16,852 | 18,167 | 19,998 |
| 20 to 24 years. | 10,865 | 12,247 | 13,914 | 15,545 | 16,798 | 18,103 |
| 25 to 29 years. | 10,404 | 10,872 | 12,241 | 13,894 | 1.5,510 | 16,752 |
| 30 to 34 years. | 9,631 | 10,402 | 10,866 | 12,226 | 13,865 | 25,467 |
| 35 to 39 years. | 8,627 | 9,591 | 10,357 | 10,818 | 12,166 | 13,788 |
| 40 to 444 years. | 6,824 | 8,529 | 9,481 | 10,238 | 10,693 | 12,021 |
| 45 to 49 years. | 5,478 |  | 8,339 | 9,272 | 10,010 | 10,455 |
| Series B |  |  |  |  |  |  |
| All ages. | 131,005 | 141,952 | 153,823 | 167,148 | 182,071 | 198,182 |
| Under 5 years. | 15,560 | 16,324 | 17,522 | 19,273 | 21,269 | 22,958 |
| 5 to 9 years. | 14,473 | 15,557 | 16,319 | 17,514 | 19,259 | 21,247 |
| 10 to 14 years. | 12,881 | 14,484 | 15,566 | 16,327 | 17,519 | 19,260 |
| 15 to 19 years. | 11,268 | 12,876 | 14,472 | 25,550 | 16,308 | 17,495 |
| 20 to 24 years. | 10,635 | 11,257 | 12,852 | 14,436 | 15,505 | 16,258 |
| 25 to 29 years. | 10,404 | 10,643 | 11,259 | 12,841 | 14,411 | 15,477 |
| 30 to 364 years. | 9,631 | 10,402 | 10,640 | 11,252 | 12,821 | 14,378 |
| 35 to 39 years. | 8,627 | 9,591 | 10,357 | 10,594 | 11,202 | 12,755 |
| 40 to 44 years. | 6,824 | 8,529 | 9,481 | 10,238 | 10,473 | 11,071 |
| 45 to 49 years. | 5,478 | 6,674 | 8,339 | 9,272 | 10,010 | 10,239 |
| Series C |  |  |  |  |  |  |
| AI: ${ }^{\text {ages. }}$ | 124,727 | 1.33,389 | 142,288 | 152,014 | 162,779 | 174,168 |
| Under 5 years. | 13,775 | 14,010 | 14,505 | 15,612 | 17,025 | 18,114 |
| 5 to 9 years.. | 12,886 | 13,780 | 14,014 | 14,509 | 15,613 | 17,019 |
| 10 to 14 years. | 11,430 | 12,902 | 23,793 | 14,028 | 14,522 | 15,622 |
| 15 to 19 years. | 10,080 | 11,431 | 12,897 | 13,785 | 14,018 | 14,510 |
| 20 to 24 years. | 10,367 | 10,078 | 11,419 | 12,873 | 13,754 | 13,985 |
| 25 to 29 years. | 10,404 | 10,378 | 10,091 | 11,420 | 12,862 | 13,735 |
| 30 to 34 years. | 9,6.31 | 10,402 | 10,377 | I'1,094 | 11,412 | 12,841 |
| 35 to 39 years. | 8.627 | 9,591 | 10,357 | 10,334 | 10,055 | 11,360 |
| 40 to 44 years. | 6,824 | 8,529 | 9,481 | 10,238 | 10,215 | 9,942 |
| 45 to 49 years. | 5,478 | 6,674 | 8,339 | -9,272 | 10,010 | 9,987 |
| Series D |  |  |  |  |  |  |
| All ages. | 121,633 | 128,698 | 135,700 | 143,030 | 150,807 | 158,703 |
| Under 5 years. | 12,376 | 12,401 | 12,589 | 13,185 | 13,990 | 1.4,556 |
| 5 to 9 years.. | 11,839 | 12,387 | 12,413 | 12,601. | 13,195 | 13,997 |
| 10 to 14 years. | 10,896 | 11,856 | 12,403 | 12,430 | 12,617 | 13,211 |
| 15 to 19 years. | 9,971 | 10,899 | 11,856 | 12,401: | 12,427 | 12,614 12,407 |
| 20 to 24 years. | 10,363 | 1,970 | 10,891 | 11, 8440 | 12,381 | 12,407 32,374 |
| 25 to 29 years. | 10,404 | 10,373 | -9,984 | 10,897 | 11,838 | 12,374 11,826 |
| 30 to 34 years................. | 9,631 | 10,402 9,591 | 10,373 | 9,987 | 10,893 9,949 | 11,826 10,846 |
|  | 8,627 6,824 | 9,591 8,529 | 10,357 9,482 | 10,329 | 9,949 10,211 | 10,846 9,838 |
| 45 to 49 years. | 5,478 | 6,674 | 8,339 | -9,272 | 10,010 | 9,983 |
| All Series.- 50 Years old and Over |  |  |  |  |  |  |
| 50 to 54 years................ | 5,081 | 5,264 | 6,416 | 8,019 | 8,916 |  |
| 55 to 59 yeans. | 5,102 | ...4,753 | 4,932 | 6,018 | 7,523 | 8,361 6,804 |
| 60 to 64 years. | 4,762 | 4,594 | 4,289 3,927 | 4,460 | 5,444 | 6,8073 |
| 65 to 69 years. | 3,815 | 4,063 | 3,927 | 3,676 | 3,828 | 4,673 3,078 |
| 70 to 744 years. | 2,897 | 3,039 | 3,248 | 3,150 | 2,953 | 3,078 |
| 75 to 79 years.. | 1,895 | 2,075 | 2,188 | 2,348 | 2,280 | 2, 1,397 : |
| 80 to 84 years... | 1,054 6.8 | 1,147 679 | 1,263 751 | $\begin{array}{r}1,347 \\ \hline 838\end{array}$ | $\begin{array}{r}1,441 \\ \hline 909\end{array}$ | 1,979 |

Table 8.--PROJECTIONS OF THE POPULATION OF THE UNITED STATES, BY AGE AND SEX; 1985 TO 2010--COn.
in thousands. Figures relate to July 1 and include Armed Forces overseas. Figures represent extensions of Series A, B, 0 , and D projections given in table 2. Slightly declining mortality and 300,000 annual net immigration after 1963 are assumed in all series. Figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963. For further explanation of the assumptions underlying the four series, see text. Figures have been rounded to the nearest thousend; hence the sums of parts may differ slightly from the totals shown)

| Series, age, and sex | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FEMALE |  |  |  |  |  |  |
| Series A |  |  |  |  |  |  |
| All ages.. | 139,874 | 152,612 | 166,755 | 182,709 | 200,381 | 219,838 |
| Inder 5 years. | 16,172 | 17,437 | 19,200 | 21,360 | 23,445 | 25,599 |
| 15 to 9 years.. | 1.4,964 | 16,177 | 17,439 | 19,199 | 21,352 | 23,431 |
| 10 to 14 years. | 13,407 | 14,986 | 16,197 | 17,458 | 19,214 | 21,364 |
| 15 to 19 years. | 11,829 | 13,442 | 15,018 | 16,227 | 17,485 | 19,237 |
| 120 to 24 years. | 10,607 | 11,937 | 13,545 | 15,117 | 16,322 | 17,576 |
| 25 to 29 years. | 10,349 | 10,726 | 12,052 | 13,655 | 15,221 | 16,422 |
| 30 to 34 years. | 9,620 | 10,398 | 10,775 | 12,097 | 13,693 | 15,253 |
| 135 to 39 years. | 8,672 | 9,623 | 10,398 | 10,774 | 12,089 | 13,676 |
| 140 to 44 years. | 6,966 | 8,630 | 9,575 | 10,344 | 10,718 | 12,020 |
| 45 to 49 years. | 5,722 | 6,894 | 8,537 | 9,471 | 10,230 | 10,599 |
| Series B |  |  |  |  |  |  |
| 8. All ages. | 135,3177 | 146,267 | 158,005 | 171,071 | 185,450 | 201,073 |
| Jnder 5 years. | 14,909 | 15,636 | 16,777 | 18,447 | 20,115 | 21,713 |
| 5 to 9 years.. | 13,885 | 14,920. | 15,645 | 16,784 | 18,449 | 20,111 |
| 10 to 14 years. | 12,374 | 13,909 | 14,942 | 15,666 | 16,803 | 18,465 |
| 25 to 19 years. | 10,868 | 12,412 | 13,943 | 14,974 | 15,697 | 16,831 |
| 20 to 24 years. | 10,385 | 10,979 | 12,518 | 14,04, | 15,073 | 1.5,794 |
| 25 to 29 years. | 10,349 | 10,505 | 11,097 | 12,631 | 14,153 | 15,177 |
| 30 to 34 years. | 9,620 | 10,398 | 10,555 | 11,146 | 12,674 | 14,189 |
| 35 to 39 years. | 6,672 | 9,623 | 10,398 | 10,555 | 11,243 | 12,663 |
| 40 to 44 years. | 6,966 | 8,630 | 9,575 | 10,344 | 10,500 | 11,083 |
| 45 to 49 years. | 5,722 | 6,894 | 8,537 | 9,471 | 10,230 | 10,384 |
| Serles 0 |  |  |  |  |  |  |
| All ages. | 129,289 | 138,037 | 146,909 | 156,503 | 166,914 | 178,021 |
| Thider 5 years. | 13,199 | 13,419 | 13,889 | 14,943 | 16,101 | 17,132 |
| 5 to 9 years. | 12,364 | 13,215 | 13,435 | 13,904 | 14,956 | 16,110 |
| 10 to 14 years. | 20,981 | 12,389 | 13,240 | 13,460 | 13,928 | 14,978 |
| 15 to 19 years. | 9,724 | 11,021 | 12,427 | 13,276 | 13,495 | 13,963 |
| 20 to 24 years. | 10,127 | 11,838 | 11,131 | 12,533 | 23,380 | 13,599 |
| 25 to 29 years. | 10,349 | 10,247 | -9,960 | 11,249 | 12,647 | 13,490 |
| 30 to 34 years. | 9,620 | 10,398 | 10,298 | 10,014 | 11,298. | 12,689 |
| 35 to 39 years. | 8,672 | 9,623 | 10,398 | 10,300 | 10,019 | 11,295 |
| 40 to 44 years. 45 to 49 years. | 6,966 | 8,630 | 9,575 | 10,344 | 10,247 | 1,969 |
| 45 to 49 years. | 5,722 | 6,894 | 8,537 | 9,471 | 10,230 | 10,134 |
| Series D |  |  |  |  |  |  |
| All ages. | 126,321 | 133,536 | 140,584 | 147,872 | 155,436 | 163,212 |
| Jnder 5 years. | 11,859 | 11,878 | 12,054 | 12,620 | 13,231 | 13,767 |
| 5 to 9 years. | 11,358 | 11,880 | 11,900 | 12,075 | 12,641 | 13,250 |
| 10 to 14 to years. | 10,467 | 11,386 | 11,906 | 11,927 | 12,102 | 12,667 |
| 15 to 19 years. | 9,619 | 10,509 | 11,425 | 21,945 | 11,965 | 12,140 |
| 25 to 24 years. | 10,122 | 9,734 | 10,621 | 11,535 | 12,053 | 12;073 |
| 30 to 29 years. | 10,349 | $\frac{10,242}{10.398}$ | 9,856 | 10,741 | 11,652 | 12,168 |
| 35 to 39 years. | 9,620 | 10,398 | 10,294 | 9,910 | 10,791 | 11,698 |
| 40 to 44 years. | 8,672 | 9,623 8,630 | $\begin{array}{r}10,398 \\ \hline 9,575\end{array}$ | 10,296 | 9,916 10,243 | 10,867 |
| is to 49 years. | 5,722 | 6,894 | 8,537 | 9,472 | 10,230 | 10,130 |
| All Series--50 Years Old and Over |  |  |  |  |  |  |
| 50 to 54 years.. | 5,437 | 5,619 | 6,769 | 8,379 | 9,294 | 10,037 |
| 60 to 59 years. . . . . . . . . . . . . | 5,715 | 5,274 | 5,455 | 6,573 | 8,134 | 9,020 |
| 65 to 64 years. . . . . . . . . . . . . . . . | 5,688 | 5,441 | 5,030 | 5,211 | 6,280 | 7,767 |
| 70 to 744 years. . . . . . . . . . . . . . . . . . . | 4,879 4,009 | 5,247 4,280 | 5,027 4,613 | 4,657 4,429 | 4,830 4,307 | 5,819 4,263 |
| 75 to 79 years. | 2,884 | 3,223 | 3,454 | 3,734 | 3,587 | 3,328 |
| 85 to 84 years.. | 1,777 | 1,973 | 2,214 | 2,384 | 2,578 | 2,473 |
| years and over.. | 1,178 | 1,304 | 1,457 | 1,641 | 1,801 | 1,955 |

## APPENDIX A

Tables relating to fertility and mortality assumptions of basjc projection series and extensions to 2010
Table PageA-1.--Estimates and projections of cumulative fertility rates, by birth cohortof woman: Birth years, 1900-1901 to 1951-1952....................................A-2.--Estimates and projections of age-specific birth rates and other measures60
of fertility: 1950 to 2010A-3.--Five-year survival rates, 1960, and rates projected according to assump-tion of slightly declining mortality, 1965-1970 to 2005-2010.64

Table A-1.--ESTIMATES AND PROJECTIONS OF CUMLLATIVE FERTILITY RATES, BY BURTH COHORT OF WOMAN: BIRTH YEARS, 1900-1901 TO 1951-1952
(Rates represent cumulative live births per 1,000 women up to age indicated. Rates below the heavy lines are based, in whole or part, on age-specific fertility rates projected for years after 1963)


Table A-1.--ESTIMATES AND PROJECTIONS OF CUMULATTVE FERTILITY RATES, BY BIRTH COHORT OF WOMAN: BTRTH YEARS, 1900-1901 TO 1951-1952-COn.
Rates represent cumulave live births per 1,000 women up to age indicated. Rates below the heavy lines are based, in whole or part, on age-specific fertility rates projected for years after 1963)


Table A-1.--ESTIMATES AND PROJECTIONS OF CUMULATIVE FERTILITY RATES, BY BIRTH COHORT OF WOMAN: BIRTH YEARS, 1900-1901 TO 1951-1952-..COn.
(Rates represent cumulative Iive births per 1,000 women up to age Indicated. Rates below, the heavy Ines are based, in whole or part, on age-specific fertility rates projected for years after 1963)

| Series and birth year of woman | Up to age 20 | Up to age 25 | Up to age 30 | Jp to age 35 | Up to age 40 | Completed fertility |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SERIES D |  |  |  |  | \% |  |
| 1922-1923. | 281 | 1,087 | 1,924 | 2,500 | 2,777 | 2,839 |
| 1923-1924. | 289 | 1,126 | 1,980 | 2,558 | 2,836 | 2,906 |
| 1924-1925. | 280 | 1,166 | 2,048 | 2,622 | 2,893 | 2,962 |
| 1925-1926. | 266 | 1,205 | 2,105 | 2,676 | 2,936 | 3,002 |
| 1926-1927. | 275 | 1,253 | 2,162 | 2,724 | 2,972 | 3,036 |
| 1927-1928. | 320 | 1,322 | 2,256 | 2,822 | 3,068 | 3,125 |
| 1928-1929. | 351 | 1,376 | 2,315 | 2,875 | 3,098 | 3,156 |
| 1929-1930. | 377 | 1,449 | 2,415 | 2,952 | 3,145 | 3,198 |
| 1930-1931. | 384 | 1,480 | 2,445 | 2,964 | 3,167 | 3,225 |
| 1931-1932. | 407 | 1,550 | 2,526 | 3,000 | 3,197 | 3,254 |
| 1932-1933. | 426 | I, 633 | 2,604 | 3,048 | 3,237 | 3,291 |
| 1933-1934. | 438 | 1,675 | 2,618 | 3,053 | 3,249 | 3,305 |
| 1934-1935. | 448 | 1,704 | 2,615 | 3,039 | 3,243 | 3,301 |
| 1935-1936. | 454 | 1,729 | 2,575 | 2,987 | 3,196 | 3,255 |
| 1936-1937. | 464 | 1,730 | 2,568 | 2,992 | 3,207 | 3,268 |
| 1937-1938. | 479 | 1,727 | 2,558 | 2,989 | 3,206 | 3,268 |
| 1938-1939. | 481 | 1,697 | 2,493 | 2,930 | 3,151 | 3,214 |
| 1939-1940. | 487 | 1,673 | 2,456 | 2,899 | 3,122 | 3,186 |
| 1940-1941. | 480 | 1,659 | 2,450 | 2,898 | 3,124 | 3,188 |
| 1941-1942. | 459 | 1,525 | 2,315 | 2,768 | 2,996 | 3,062 |
| 1942-1943. | 412 | 1,434 | 2,226 | 2,680 | 2,910 | 2,975 |
| 1943-1944. | 382 | 1,398 | 2,185 | 2,637 | 2,865 | 2,930 |
| 1944-1945. | 362 | 1,362 | 2,137 | 2,582 | 2,806 | 2,370 |
| 1945-1946. | 346 | 1,329 | 2,090 | 2,527 | 2,748 | 2,810 |
| 1946-1947. | 335 | 1,298 | 2,044 | 2,472 | 2,688 | 2,750 |
| 1947-1948. | 328 | 1,270 | 2,000 | 2,418 | 2,630 | 2,690 |
| 1948-1949. | 319 | 1,241 | 1,955 | 2,364 | 2,571 | 2,630 |
| 1949-1950. | 312 | 1,212 | 1,910 | 2,311 | 2,513 | 2,570 |
| 1950-1951. | 304 | 1,184 | 1,866 | 2,256 | 2,454 | 2,510 |
| 1951-1952 and later. | 291 | 1,152 | 1,820 | 2,202 | 2,395 | 2,450 |

Table A-2.- ESTITMATES AND PROTEOTONS OF AGE-SPECIFIC BIRTH RATES AND OTHER MEASURES OF PERTOD FERTILITY: 1950 to 2010
(For expianation of assumptions underlyjng Series A, B, C, and D, see text. The rates in this table corresponding to cohorts born before 1960 are not fully consistent with the fertility rates for birth cohorts of women given in other tables of this report since they exclude the adjustment for net census undercount of women in the population base included in the cohort rates)

${ }^{3}$ Births per 1,000 midyear population including Armed Forces abroad.
2 Total births, regardless of age of mother, per 1,000 female population aged 15 to 44 years.
Births per 1,000 female population in specific age group.
${ }^{4}$ Includes births to women under 15 years of age.
5 Includes births to women 45 years old and over.

Table A-3.--FIVE-YEAR SURVIVAL RATES, 1960, AND RATES PROJECTED ACCORDING TO ASSUMPTION OF SLIGHTTY DECLINING MORTALITY, 1965-1970 TO 2005-2010
(Projected rates based on projections of population in 5 -year age groups assuming no net immigration. The small fluctuations and decreases in rates arise from variations from one period to another in the relative weighting, within each 5-year age group, of the underlying single-year-of -age survival rates, all of which were assumed to show gradual increases or to be group, for further explanation of the derivation of these rates, see text)


Births...... Under 5..... 5 to $9 . . .$. 10 to $14 \ldots$. 15 to 19.... 20 to $24 \ldots$ 25 to $29 \ldots$. 30 to $34 \ldots$.
35 to $39 \ldots$
40 to $44 .$.
50 to $54 \ldots$.
55 to $59 .$.
60 to $64 \ldots$.
65 to $69 \ldots$
70 to $74 . .$. .
5 to 79....

|  |
| :--- |
|  |
| Births...... |
| Under $5 \ldots \ldots$ |
| 5 to $9 \ldots \ldots$ |
| 10 to $14 \ldots \ldots$ |
| 15 to $19 \ldots$. |
| 20 to $24 \ldots \ldots$ |
| 25 to $29 \ldots \ldots$ |
| 30 to $34 \ldots \ldots$ |
| 35 to $39 \ldots \ldots$ |
| 40 to $44 \ldots \ldots$ |
| 45 to $49 \ldots$. |
| 50 to $54 \ldots \ldots$ |
| 55 to $59 \ldots \ldots$ |
| 60 to $64 \ldots \ldots$ |
| 65 to $69 \ldots$. |
| 70 to $74 \ldots \ldots$ |
| 75 to $79 \ldots \ldots$ |
| 80 and $0 v e r$. |

Based on official life tables for 1960 published in: U.S. Public Health Service, National Center for Health Statistics Vital Statistics of the United States, 1960, Vol. II, Mortality, Part A, table 2-1.

## APPENDIX B

[^21]
## Table

B-1.--Annual estimates and projections of the population and of population change by components, assuming various levels of mortality and net immigration, for the United States: 1963 to 1985..................................
B-2.--Estimates and projections of the population of the United states, by age and sex, assuming various levels of mortality and net immigration: 1960 to 1985

Table B-I.--ANNUL PROJECTTONS OF THE POPULATION AND OF POPULATTON CHANGE BY COMPONENTS, ASSUMTNG VARIOUS LEYELS OF MORTALITY AND NET IMMIGRATION, FOR THE UNITED STATES: 1963 TO 1985
(Numbers in thousands. Figures fnclude Armed Forces abroad. All series assume the see text)

| Serles and year <br> (July 1 to June 30) | ```Population at begiming of year``` | Net change during year |  | Bjrths |  | Deaths |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Amount ${ }^{\prime}$ | Percent ${ }^{1}$ | Anount | Rate ${ }^{2}$ | Amount | Rate ${ }^{2}$ |
| SLIGHILY DECLINTNG MORTALTTY, WITH IMMIGRATTON ${ }^{3}$ |  |  |  |  |  |  |  |
|  |  |  | 1.42 | 4,219 | 22.1 | 1,830 | 9.6 |
| 1963-1964. . . . . . . . . . . . . . . . | 189,278 | 2,688 | 1.42 | 4,260 | 22.0 | 1,856 | 9.6 |
| 1964-1965. . . . . . . . . . . . . . . . | 191,967 | 2,704 | 1.41 | 4,326 | 22.1 | 1,883 | 9.6 |
| 1965-1966.... . . . . . . . . . . . . . | 194,671 | 2,799 | 1.42 | 4,409 | 22.2 | 1,911 | 9.6 |
| $\begin{aligned} & 1966-1967 . \\ & 1967-1968 . \end{aligned}$ | 197,413 | 2,838 | 1.42 | 4,476 | 22.2 | 1,937 | 9.6 |
| 1968-1969.... . . . . . . . . . . . . . |  |  | 1.44 | 4,579 | 22.4 | 1,965 | 9.6 |
|  | 203,050 | 2,914 3,032 | 1.47 | 4,724 | 22.8 | 1,993 | 9.6 |
| 1969-1970. . . . . . . . . | 205,964 | 3,032 | 1.51 | 4,869 | 23.1 | 2,020 | 9.6 |
| 1970-1971. | 208,996 | 3,264 | 1.54 | 5,012 | 23.4 | 2,048 | 9.6 |
| 1972-1973. | 212,145 215,409 | 3,364 | 1.57 | 5,151 | 23.7 | 2,074 | 9.6 |
|  | 215,409 |  | 1.59 | 5,288 | 24.0 | 2,100 | 9.5 |
| 1973-1974. . . . . . . . . . . . . . . . . . | 218,786 | 3,488 | 1.62 | 5,423 | 24.2 | 2,126 | 9.5 |
| 1974-1975. . . . . . . . . . . . . . . . . | 222,273 | 3,703 | 1.64 | 5,554 | 24.4 | 2,151 | 9.4 |
| 1975-1976. | 225,870 229,573 | 3,703 3,805 | 1.64 1.66 | 5,680 | 24.5 | 2,176 | 9.4 |
| 1976-1977. . . . . . . . . . . . . . . . . . . . . | 229,573 233,378 | 3,805 3,898 | 1.67 | 5,797 | 24.6 | 2,199 | 9.3 |
|  | 233, 378 |  |  | 5,904 | 24.7 | 2,222 | 9.3 |
| 1978-1979. | 237,276 | 3,982 4,056 | 1.68 1.68 | 6,001 | 24.7 | 2,245 | 9.2 |
| 1979-1980. | 241, 257 | 4,056 4,118 | 1.68 | 6,086 | 24.6 | 2,267 | 9.2 |
| 1980-1981. | 245,313 249,432 | 4,118 4,169 | 1.67 | 6,158 | 24.5 | 2,290 | 9.1 |
| 1981-1982. | 249,432 253,600 | 4,169 4,209 | 1.67 1.66 | 6,221 | 24.3 | 2,312 | 9.0 |
| 1982-1983. | 253,600 |  | 1.65 | 6,277 | 24.1 | 2,335 | 9.0 |
| 1983-1984.. | 257,809 | 4,241 | 1.63 | 6,330 | 24.0 | 2,358 | 8.9 |
| 1984-1985.. | 262,051 266,322 | 4,271 |  |  | . | 2, | ... |
| RAPIDLY DECLINING MORTALITY, WITH IMMIGRaTION ${ }^{3}$ |  |  |  |  |  |  |  |
| 1963-1964. |  |  | 1.44 | 4,219 | 22.1 | 1,794 | 9.4 |
|  | 189,278 | 2,750 | 1.43 | 4,260 | 22.0 | 1,811 | 9.4 |
| 1964-1965. | 192,003 | 2,798 | 1.44 | 4,326 | 22.1 | 1,828 | 9.3 |
| 1965-1966. | 194,753 197,551 | 2,798 | 1.45 | 4,410 | 22.2 | 1,846 | 9.3 |
| 1966-1967. | 197,551 200,414 | 2,863 | 1.45 | 4,476 | 22.2 | 1,864 | 9.2 |
| 1967-1968. | 200,414 | 2,912 | 1.47 |  |  | 1,882 | 9.2 |
| 1968-1969. | 203,326 | 2,998 | 1.47 1.51 | 4,580 4,725 | 22.4 22.7 | 1,901 | 9.1 |
| 1969-1970. | 206,324 | 3,124 | 1.51 1.55 | 4, 4,870 | 23.1 | 1, 919 | 9.1 |
| 1990-1971. | 209,448 | 3,251 | 1.59 | 5,013 | 23.4 | 1,938 | 9.0 |
| 1972-1973. | 212,699 | 3,375 3,497 | 1.62 | 5,153 | 23.7 | 1,955 | 9.0 |
|  | 216,075 | 3,497 | 1.62 |  |  |  | 8.9 |
| 1973-1974. | 219,572 | 3,617 | 1. 65 | 5,290 5,425 | 23.9 24.1 | 1,989 | 8.8 |
| 1974-1975. | 223,189 | 3,736 | 1.67 | 5,425 5,557 | 24.3 | 2,005 | 8.8 |
| 1975-1976. | 226,925 | 3,852 | 1.70 1.72 | 5,557 | 24.3 24.4 | 2,021 | 8.7 |
| $\begin{aligned} & \text { 1976-1977. } \\ & 1977-1978 . \end{aligned}$ | 230,777 | 3,962 4,065 | 1.72 | 5,801 | 24.5 | 2,036 | 8.6 |
|  | 234,739 | 4,065 | 1.73 |  |  |  | 8.5 |
| 1978-1979. | 238,804 | 4,158 | 1.74 | 5,908 6,006 | 24.5 | 2,064 | 8.4 |
| $1979-1980$. | 242,962 | 4,241 | 1.75 | 6,006 | 24.5 | 2,078 | 8.3 |
|  | 247,203 | 4,31.3 | 1.74 | 6,091 | 24.4 24.3 | 2,092 | 8.2 |
| 1981.-1982............. | 251,516 | 4,373 | 1.74 | 6,2028 | 24.1 | 2,106 | 8.2 |
| 1982-1983................................ | 255,889 | 4,422 | 1.73 | 6,228 |  |  |  |
| $\begin{aligned} & 1983-1984 . \\ & 1984-1985 . \\ & 1985-1986 . \end{aligned}$ | 260,311 | 4,464 | 1.71 | 6,284 | 23.9 23.7 | 2,120 | 8.0 |
|  | 264, 7775 | 4,503 | 1.70 | 6,338 |  |  |  |
|  | 269,279 |  |  |  |  |  |  |

1 Percent of population at beginning of fiscal year.
${ }^{2}$ Rate per 1,000 population at middle of fiscal year.
Assumes constant annual net immigration of 300,000 . Figures for net change include net fmmigration component, not shown separately.

Table B-I.--ANNUAL PROJECTIONS OF TYE POPULATION AND OF POPULATTON CHANGR BY COMPONENTS, ASSUMING VARIOUS LEVEIS OF MORTALITY AND NET IMMIGRATION, FOR THE UNITED STATES: 1963 TO 1985-CCOn.
(Numbers in thousands. Figures include Armed forces abroad. All series assume the Series b level of fertility. For an explanation of the assumptions underlying the projections, see text)


[^22]Table b-z.--ESTIMATES AND FROJECTIONS OF THE POPULATION OF THE UNITED STATES, BY AGE AND SEX, ASSUMING VARIOUS LEVELS OF MORTALITY AND NET IMMIGRATION: 1960 TO 1985
(In thousands. Figures relate to July 1 and include Armed Forces abroad. All series assume the Series $B$ level of fertility af'ter July 1, 1963. Series with imnigration assume constant annual net immigration of 300,000 affer July 1 , 1963 . For an explanation of the assumptions underlying the projections, see text. Figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963)


Table B-2.--ESTIMATES AND PROJECTIONS OF THE FOPULATION OF THE $\operatorname{dNTTED~STATES,~BY~AGE~AND~SEX,~ASSUMING~VARIOUS~LeveIS~}$ OF MORTALTTYY AND NET TMMTCRATION: 1960 TO 1985.-COn.
(In thousands. Figures relate to July 1 and include Armed Forces abroad. All series assume the Series $B$ level of fertility after July 1, 1963. Sexies with immigration assume constant annual net immigration of 300,000 after July 1 , 1963. For an explanation of the assumptions underlying the projections, see text. Figures incide heavy lines represent, in whole or part, survivors of births projected for years after 1963)

| Series, age, and sex | 1960 | 1963 | 1965 | 1970 | 2975 | 1980 | 1.985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BOMH SEXES--COn. <br> Slightly Declining Mortality, No Net Imnigration |  |  |  |  |  |  |  |
| All ages...................... | 180,676 | 189,278 | 194,057 | 206,592 | 221,384 | 238,543 | 257,112 |
| Under 5. | 20,364 | 20,722 | 20,720 | 21,627 | 24,483 | 27,395 | 29,313 |
| 5 to 9. | 18,825 | 20,012 | 20,375 | 20,636 | 21,540 | 24,386 | 27,289 |
| 10 to 14. | 16,910 | 18,000 | 18,853 | 20,332 | 20,593 | 21,495 | 24,336 |
| 15 to 19. | 13,465 | 15,536 | 116,924 | 18,792 | 20,265 | 20,525 | 21,425 |
| 20 to 24. | 11,112 | 12,600 | 13,520 | 16,832 | 18,689 | 20,155 | 20,413 |
| 25 to 29. | 10,931 | 10,9771 | 11,223 | 13,434 | 16,725 | 18,571 | 20,029 |
| 30 to 34. | 11,978 | 11,385 | 10,990 | 11,144 | 13,341. | 16,612 | 18,446 |
| 35 to 39. | 12,542 | 12,343 | 11,957 | 10,886 | 11,042 | 13,222 | 16,466 |
| 40 to 44. | 11,681 | 12,261 | 12,429 | 11,786 | 10,734.4 | 10,891 | 13,045 |
| 45 to 49. | 10,926 | 11,234 | 11,458 | 12,147 | 11,523 | 10,500 | 10,661 |
| 50 to 54. | 9,655 | 10,255 | 10,565 | 11,045 | 11,719 | 11,124 | 10,144 |
| 55 to 59. | 8,465 | 8,866 | 9,154 | 9,990 | 10,457 | 11,107 | 10,553 |
| 60 to 64. | 7,162 | 7,528 | 7,795 | 8,415 | 9,199 | 9,648 | 10,264 |
| 65 to 69. | 6,264 | 6,242 | 6,302 | 6,867 | 7,432 | 8,1.44 | 8,562 |
| 70 to 74. | 4,769 | 5,093 | 5,185 | 5,225 | 5,713 | 6,206 | 6,824 |
| 75 to 79. | 3,084 | 3,404 | 3,584 | 3,896 | 3,950 | 4,339 | 4,737 |
| 80 to 84. | 1,601 | 1,826 | 1,962 | 2,280 | 2,494 | 2,547 | 2,81.4 |
| 85 and over. | 940 | 1,002 | 1,060 | 1,258 | 1,485 | 1,677 | 1,791 |
| MALE |  |  |  |  |  |  |  |
| Slightiy Declining Mortality, With Immigration |  |  |  |  |  |  |  |
| All ages... | 89,328 | 93,369 | 95,914 | 102,756 | 210,971 | 120,562 | 131,005 |
| Under 5. | 10,352 | 10,554 | 10,604 | 11,236 | 12,861 | 14,473 | 15,560 |
| 5 to 9. | 9,572 | 10,171 | 10,374 | 10,618 | 11,248 | 12,866 | 14,473 |
| 10 to 14. | 8,595 | 9,153 | 9,601 | 10,392 | 10,638 | 11,266 | 12,881 |
| 15 to 19. | 6,81,4 | 7,872 | 8,612 | 9,609 | 10,399 | 10,642 | 11,268 |
| 20 to 24. | 5,558 | 6,315 | 6,843 | 8,621 | 9,611 | 10,394 | 10,635 |
| 25 to 29. | 5,422 | 5,449 | 5,619 | 6,884 | 8,647 | 9,627 | 10,404 |
| 30 to 34. | 5,901 | 5,625 | 5,469 | 5,656 | 6,910 | 8,658 | 9,631 |
| 35 to 39. | 6,140 | 6,054 | 5,899 | 5,467 | 5,654 | 6,896 | 8,627 |
| 40 to 44. | 5,733 | 5,989 | 6,078 | 5,836 | 5,414 | 5,600 | 6,824 |
| 45 to 49. | 5,384 | 5,501 | 5,600 | 5,932 | 5,700 | 5,294 | 5,478 |
| 50 to 54. | 4,758 | 5,018 | 5,154 | 5,357 | 5,679 | 5,463 | 5,081 |
| 55 to 59. | 4,143 | 4,307 | 4,430 | 4,794 | 4,990 | 5,296 | 5,102 |
| 60 to 64. | 3,41.8 | 3,585 | 3,709 | 3,965 | 4,297 | 4,480 | 4,762 |
| 65 to 69. | 2,929 | 2,866 | 2,881 | 3,237 | 3,362 | 3,651 | 3,815 |
| 70 to 74. | 2,195 | 2,284 | 2,290 | 2,261 | 2,471 | 2,658 | 2,897 |
| 75 to 79. | 2,372 | 1,486 | 1,542 | 1,607 | 1,596 | 1,753 | 1,895 |
| 80 to 84. | 674 | 756 | 806 | -908 | . 951 | -952 | 1,054. |
| 85 and ovex. | 367 | 385 | 404 | 472 | 543 | 592 | 618 |
| Rapidly Deciining Mortality, With Immigration |  |  |  |  |  |  |  |
| All ages.............. | 89,328 | 93,369 | 95,965 | 103,036 | 111,620 | 121,718 | 132,801 |
| Under 5. | 10,352 | 10,554 | 10,607 | 11,251 | 12,892 | 14,524 | 15,636 |
| 5 to 9. | 9,572 | 10,172 | 10,374 | 10,623 | 11,266 | 12,903 | 14,522 |
| 10 to 14. | 8,595 | 9,153 | 9,601. | 10,396 | 10,645 | 11,288 | 12,922 |
| 5 to 19. | 6,814 | 7,872 | 18,613 | 9,612 | 10,205 | 10,655 | 21, 298. |
| 0 to 24. | 5,558. | 6,315 | 6,844 | 8,626 | 9,620 | 20,411 | 10,662 |
| 5 to 29. | 5,422 | 5,449 | 5,619 | 6,888 | 8,658 | - 9,648 | 10,435 |
| 0 to 34. | 5,901 | 5,625 | 5,470 | 5,659 | 6,920 | -8,679 | 9,665 |
| 35 to 39. | 6,140 | 6,054 | 5,900 | 5,471 | 5,662 | 6,914 | 8,662 |
| 0 to 44. | 5,733 | 5,989 | 6,079 | 5,842 | 5,427 | 5,621 | 6,861 5,525 |
| 5 to 49. | 5,384 | 5,501 | 5,602 | 5,943 | 5,722 | 5,326 | 5,525 |
| 0 to 54. | 4,758 | 5,018 | 5,158 | 5,375 | 5,718 | 5,521 | 5,156 |
| 5 to 59. | 4,143 | 4,307 | 4,436 | 4,821 | 5,048 | 5,393 | 5,231 |
| 0 to 64. | 3,418 | 3,585 | 3,716 | 4,001 | 4,378 | 4,615 | 4,963 |
| 5 to 69. | 2,929 | 2,866 | 2,889 | 3,182 | 3,461 | 3,826 | 4,074 |
| to 74. | 2,195 | 2,284 | 2,298 | 2,302 | 2,570 | 2,834 | 3,275 |
| 5 to 79.............................. | 1,372 | '1,486 | 2,547 | 1,639 | 1,668 | 1,892 | 2,119 |
| to 84.............................. | 674 | 756 | 808 | 925 | 995 | 1,031 | 1,190 |
| 5 and over........................... | 367 | 385 | 405 | 479 | 565 | 638 | 695 |



Table B-2.--ESTTMATES AND PROJECTIONS OF THE POPULATION OF THE UNITIED STATES, BY AGE AND SEX, ASSUMING VARIOUS LEVELS OF MORTALITY AND NET IMMIGRATION: 1960 TO 2985-COD.
In thousands, Figures relate to July 1 and include Armed Forces abroad. All series assume the Series $B$ level of fertility after July 1 , 1963. Series with immigration ascume constant annual net immigration of 300 , 000 after July 1 , 1963 . For an explanation of the assumptions underlying the projections, see text. Figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963)


TQble B-2.--ESTIMATES AND PROJECTIONS OF THE POPULATTON OF THE UNITED STATES, BY AGE AND SEX, ASSUMING VARTOUS LEVELS OF MORTALITY AND NET IMMIGRATION: 1960 TO. 1985-COn.
(In thousends. Figures relate to July land include Armed Forces abroad. All series assume the Series B level of fertility after July 1, 1963. Series with immigration assume constant annual net imnigration of 300,000 after July 1, 1963. For an explanation of the assumptions underlying the projections, see text. Figures inside heavy lines represent, in whole on part, survivors of births projected for years after 1963)

| Series, age, and sex | 1960 | 1963 | 1965 | 1970 | 1975 | 1980 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FEMALE--COn. |  |  |  |  |  |  |  |
| All ages....................... | 91,347 | 95,909 | 98,788 | 106,412 | 115,305 | 125,486 | 136,478 |
| Under 5. | 10,013 | 10,168 | 10,1.81 | $\begin{aligned} & 10,790 \\ & 10,207 \end{aligned}$ | 12,356 | 13,913 | 14,97013,933 |
| 5 to 9............................. | 9,254 | 9,841 | $\begin{aligned} & 10,046 \\ & 9,288 \end{aligned}$ |  | 10,815 | 12,378 |  |
| 10 to 14.............................. | 8,314 | 8,848 |  | 10,076 | 10,237 | 10,845 | 12,408 |
| 15 to 19............................... | 6,6515,554 | 7,664 6,285 | 8,365 | 9,332 | 10,120 | 10,282 | 10,890 |
| 20 to 24. |  | 6,2855,522 | 6,781. | 8,484 | 9,450 | 10,2379,576 | 10,399 |
| 25 to 29. | 5,509 |  | 5,701 | 6,913 | 8,6.12 |  | 10,3629,636 |
| 30 to 34. | 6,077 | 5,760 | 5,587 | 5,771 | 6,979 | 9,576 8,673 |  |
| 35 to 39. | 6,402 | 6,289 | 6,105 | 5,614 | 5,800 |  | 9,636 8,691 |
| 40 to 44. | 5,948 | 6,272 | 6,382 | 6,086 | 5,603 | 7,004 5,791 | 6,989 |
| 45 to 49. | 5,541 | 5,733 | 5,884 | 6,313 | 6,028 | 5,558 | 5,749 |
| 50 to 54. | 4,896 | 5,237 | 5,432 | 5,773 | 6,2005,604 | 5,929 | 5,4785,779 |
| 55 to 59. | 4,322 | 4,558 | 4,740 | 5,264 |  | 6,030 |  |
| 60 to 64. | 3,744 | 3,943 | 4,099 | 4,505 | 5,017 | 5,359 | 5,779 5,783 |
| 65 to 69. | 3,335 | 3,376 | 3,431 | 3,777 | 4,170 | 4,667 | 5,009 |
| 70 to 74. | 2,574 | 2,809 | 2,902 | 3,003 | 3,329 | 3,701 | 4,1703,031 |
| 75 to 79. | 1,712 | 1,918 | 2,046 | 2,31,4 | 2,416 | 2,702 |  |
| 80 to 84. | 927 | 1,070 | $\begin{array}{r} 1,159 \\ 659 \end{array}$ | 1,388 | 1,583 | 1,672 | 3,031 1,890 |
| 85 and over.......................... | 573 | 617 |  | 803 | 984 | 1,168 | 1,310 |
| Constant Mortality, With Immigration |  |  |  |  |  |  |  |
| All ages. | 91,347 | 95,909 | 98,707 | 106,047 | 114,533 | 124, 143 |  |
| Under 5. | 10,013 | 10,168 | 10,147 | $\begin{aligned} & 10,715 \\ & 10,170 \\ & \hline \end{aligned}$ | $\begin{aligned} & 12,287 \\ & 10,736 \\ & 10,199 \end{aligned}$ | 13,803 | $\frac{134,384}{14,799}$ |
| 5 to 9. | 9,254. | 10,841 | 10,046 |  |  | $\begin{aligned} & 12,302 \\ & 10,763 \\ & 10,240 \end{aligned}$ | $\begin{aligned} & 14,799 \\ & 13,812 \\ & 12,327 \\ & 10,804 \\ & 10,351 \end{aligned}$ |
| 10 to 14. | $\begin{aligned} & 8,314 \\ & 6,651 \end{aligned}$ | 8,848 | $\begin{aligned} & 9,288 \\ & 8,365 \end{aligned}$ | $\begin{array}{r} 10,075 \\ 9,331 \end{array}$ |  |  |  |
| 15 to 19. |  | $7,664$ |  |  | 10,116 <br> 9,445 |  |  |
| 20 to 24. | $\begin{aligned} & 5,554 \\ & 5,509 \end{aligned}$ | $6,285$ | $\begin{aligned} & 8,365 \\ & 6,780 \end{aligned}$ | 8,482 |  | 10,2289,565 |  |
| 25 to 29. |  | 5,5225,760 | 5,700 | 6,910 | 8,606 |  |  |  |  |
| 30 to 34. | 6,077 |  | 5,586 | 5,768 | 6,972 | $\begin{aligned} & 9,565 \\ & 8,659 \end{aligned}$ | -9,613 |
| 35 to 39............................... | $\begin{aligned} & 6,402 \\ & 5,948 \end{aligned}$ | 6,289 | $\begin{aligned} & 6,104 \\ & 6,380 \end{aligned}$ | 5,610 | 5,791 | 6,986 | 8,660 |
| 40 to 44...... . . . . . . . . . . . . . . . . . . . |  | 6,2725,733 |  | 6,079 | 5,590 | 5,770 | 6,9525,703 |
| 45 to 49.............................. | 5,541 |  | $\begin{aligned} & 6,380 \\ & 5,882 \end{aligned}$ | 6,302 | 6,006 | 5,526 |  |
| 50 to 54. | 4,896 | 5,237 | 5,429 | 5,758 | 6,167 | 5,678 | 5,4105,674 |
| 55 to 59. | 4,322 | 4,558 | 4,737 | 5,244 | 5,560 | 5,953 |  |
| 60 to 64. | 3,7443,335 | 3,943 | $\begin{aligned} & 4,094 \\ & 3,425 \end{aligned}$ | 4,478 | 4,956 |  | 5,622 |
| 65 to 69. |  | 3,376 |  | 3,743 | 4,093 | 4,528 | 4,800 |
| 70 to 74. | 2,574 | 2,809 | 2,895 | 2,965 | 3,24] | 3,544 | 3,919 |
| 75 to 79. | 1,712 | 1,918 | 2,040 | 2,278 | 2,334 | 2,551 | 2,790 |
| 80 to 84.. | 927 | 1,070 | 1,154 | 1,361 | 1,516 | 1,554 | 1,700 |
| 85 and over.......... | 573 | 617 | 655 | 777 | 918 | 1,040 | 1,104 |
| Slightly Declining Mortality, No Net Immigration |  |  |  |  |  |  |  |
| All ages.. | 91,347 | 95,909 | 98,416 | 104,921 | 112,456 | 121,084 | 130,349 |
| Under 5. | 10,033 | 10,168 | 10,148 | 10,589 | 11,985 | 13,408 | 14,344 |
| 5 to 9.. | 9,254 | 9,841 | 10,024 | 10,112 | 10,551 | 11,943 | 13,362 |
| 10 to 14. | 8,314 | 8,848 | 9,270 | 10,007 | 10,095 | 10,534 | 11,923 |
| 15 to 19. | 6,651 | 7,664 | 8,334 | 9,251 | 9,986 | 10,074 | 10,512 10,043 |
| 20 to 24. | 5,554 | 6,285 | 6,712 | 8,308 | 9,222 | 9,955 | 10,043 |
| 25 to 29. | 5,509 | 5,522 | 5,646 | 6,686 | 8,277 | 9,188 | 9,919 9,145 |
| 30 to 34. | 6,077 | 5,760 | 5,552 | 5,617 | 6,653 | 8,237 | 9,145 8,182 |
| 35 to 39. | 6,402 | 6,289 | 6,081 | 5,512 | 5,578 | 6,608 | 8,182 6,541 |
| 40 to 44. | 5,948 5,541 | 6,272 5,733 | 6,365 5,870 | 6,014 6,259 | 5,452 5,915 | 5,520 5,365 | 6,541 5,434 |
| 50 to 54. | 4,896 | 5,237 | 5,420 | 5,722 | 6,104 | 5,772 | 5,238 |
| 55 to 59. | 4,322 | 4,558 | 4,730 | 5,220 | 5,515 | 5,888 | 5,572 |
| 60 to 64. | 3,7444 | 3,943 | 4,090 | 4,465 | 4,934 | 5,222 | 5,582 |
| 5 to 69. | 3,335 | 3,376 | 3,423 | 3,740 | 4,090 | 4,528 | 4,800 |
| 70 to 74. | 2,574 | 2,809 | 2,896 | 2,970 | 3,253 | 3,566 | 3,957 2,856 |
| 5 to 79................................ | 1,712 | 1,91.8 | 2,043 | 2,291 | 2,359 | 2,594 | 2,856 1.765 |
| 80 to 84.............................. | 927 | 2,070 | 1,156 | 1,372 | 1,543 | 1,597 | 1,179 |
| 35 and over........................... | 573 | 617 | 656 | 786 | 942 | 1,085 | 1,17) |

## APPENDIX C

Tables presenting projections assuming continuation of the recent level of fertility (Series Y)

Table
Page
C-1.--Anmual projections of the population and of population change by components, assuming continuation of the recent level of fertility, for the United States: 2963 to 1985
C-2.--Estimates and projections of the population of the United states, by age and sex, assuming contimuation of the recent level of fertility: 1960 to 1985..

Table C-1.--ANNUL PROTECTIONS OF THE POPULATION AND OF POPULATION CHANCE BY COMPONENTS, ASSUMTNG CONTINUATION OF THE RECENT LEVEL OF FERTILITY, FOR THE UNITED STATES: 1963 TO 1985
(Numbers in thousands. Figures include Armed Forces abroad. Series $Y$ projections assume (1) a continuation of the 1960-63 level of agemspecific fertility, (2) silightiy declining mortality, and (3) an annual net immigration of $300,000)$

| Series and year (July 1 to June 30) | ```Population at beginning of year``` | Net change during year ${ }^{2}$ |  | Births |  | Deaths |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Amount | Percent ${ }^{2}$ | Anount | Rate ${ }^{3}$ | Anount | Rate ${ }^{3}$ |
| 1963-1964. | 189,278 | 2,889 | 1.53 | 4,423 | 23.2 | 1,835 | 9.6 |
| 1964-1965. | 192,167 | 2,970 | 1.55 | 4,533 | 23.4 | 1,863 | 9.6 |
| 1965-1966. | 195,137 | 3,071 | 1.57 | 4,663 | 23.7 | 1,892 | 9.6 |
| 1966-1967. | 198,208 | 3,187 | 1.61 | 4,808 | 24.1 | 1,921 | 9.6 |
| 1967-1968. | 201, 395 | 3,309 | 1.64 | 4,959 | 24.4 | 1,950 | 9.6 |
| 1968-1969.. | 204,704 | 3,434 | 1.68 | 5,112 | 24.8 | 1,979 | 9.6 |
| 1969-1970. | 208, 138 | 3,562 | 1.71 | 5,270 | 25.1 | 2,007 | 9.6 |
| 1970-1971. | 211,700 | 3,695 | 1.75 | 5,430 | 25.4 | 2,036 | 9.5 |
| 1971.1972. | 215,395 | 3,828 | 1.78 | 5,592 | $25.7{ }^{\prime}$ | 2,064 | 9.5 |
| 1972-1973. | 219,223 | 3,962 | 1.81 | 5,753 | 26.0 | 2,091 | 9.5 |
| 1973-1974. | 223,185 | 4,095 | 1.84 | 5,913 | 26.3 | 2,118 | 9.4 |
| 1974-1975. | 227,281 | - 4,227 | 1.86 | 6,071 | 26.5 | 2,144 | 9.3 |
| 1975-1976. | 231,508 | 4,356 | 1.88 | 6,225 | 26.6 | 2,170 | 9.3 |
| 1976-1977. | 235,864 | 4,480 | 1.90 | 6,375 | 26.8 | 2,195 | 9.2 |
| 1977-1978. | 240, 344 | 4,597 | 1.91 | 6,516 | 26.9 | 2,219 | 9.1 |
| 1978-1979. | 244, 940 | 4,704 | 1.92 | 6,647 | 26.9 | 2,243 | 9.1 |
| 1979-1980. | 249,645 | 4,805 | 1.92 | 6,771 | 26.9 | 2,266 | 9.0 |
| 1980-1981. | 254,449 | 4,897 | 1.92 | 6,887 | 26.8 | 2,290 | 8.9 |
| 1981-1982. | 259,346 | 4,984 | 1.92 | 6,997 | 26.7 | 2,313 | 8.8 |
| 1982-1983. | 264,330 | 5,069 | 1.92 | 7,106 | 26.6 | 2,337 | 8.8 |
| 1983-1984. | 269,400 | 5,157 | 1.91 | 7,218 | 26.5 | 2,361 | 8.7 |
| 1984-1985. | 274,556 | 5,250 | 1.91 | 7,337 | 26.5 | 2,387 | 8.6 |
| 1985-1986. | 279,807 | . . . | ... | ... | ... | ... | ... |

[^23]Table $0-2 .-$-ESTIMATES AND PROJECTIONS OF THE POPULATION OF THE UNITED STATES, BY AGE AND SEX, ASSUMING CONTINUATION OF THE RECENT LEVEL OF FERTILITY: 1960 TO 1985
(In thousands. Figures relate to July 1 and include Armed Forces abroad. Series Y projections assume (I) a continuation of the 1960-63 level of age-specific fertility, (2) slightly declining mortality, and (3) an annual net immigration of 300,000 . Figures inside heavy lines represent, in whole or in part, survivors of births projected for years after 1963)

| Age and sex | 1960 | 1963 | 2965 | 1970 | 1975 | 1980 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Both sexes, all ages. | 180,676 | 189,278 | 195,137 | 211,700 | 231,508 | 254,449 | 279,807 |
| Under 5 years. | 20,364 | 20,722 | 21,249 | 24,254 | 28,136 | 31,861 | 34, 847 |
| 5 to 9 years. | 1.8,825 | 20,012 | 20,420 | 21,284 | 24,278 | 28,147 | 31,860 |
| 10 to 14 y years. | 16,910 | 18,000 | 18,888 | 20,469 | 21,332 | 24,320 | 28,182 |
| 15 to 19 years | 13,465 | 15,536 | 16,977 | 18,941 | 20,516 | 21,376 | 24,356 |
| 20 to 24 years. | 11,112 | 12,600 | 13,623 | 17,104 | 19,057 | 20,624 | 21,479 |
| 25 to 29 years. | 10,931 | 10,971 | 11,319 | 13,795 | 17,254 | 19,195 | 20,753 |
| 30 to 34 years. | 11,978 | 11,385 | 11,055 | 11,425 | 13,885 | 17,322 | 19,252 |
| 35 to 39 years. | 12,542 | 12,343 | 12,003 | 11,079 | 11,448 | 13,889 | 17,299 |
| 40 to 44 years | 11,681 | 12,261 | 12,459 | 11, 917 | 11,010 | 11,378 | 13,790 |
| 45 to 49 years. | 10,926 | 11,234 | 11,483 | 12,239 | 11,715 | 10,833 | 11,200 |
| 50 to 54 years. | 9,655 | 10,255 | 10,585 | 11,121 | 11,859 | 11,361 | 10,518 |
| 55 to 59 years. | 8,465 | 8,866 | 9,169 | 10,046 | 10,567 | 11,279 | 10,816 |
| 60 to 64 years. | 7,162 | 7,528 | 7,805 | 8,454 | 9,278 | 9,777 | 10,450 |
| 65 to 69 years. | 6,264 | 6,242 | 6,308 | 6,892 | 7,484 | 8,231 | 8,694 |
| 70 to 74 years. | 4,769 | 5,093 | 5,188 | 5,239 | 5,743 | 6,258 | 6,906 |
| 75 to 79 years. | 3,084 | 3,404 | 3,585 | 3,901 | 3,963 | 4,364 | 4,780 |
| 80 to 84 years. | 1,601 | 1,826 | 1,962 | 2,281 | 2,497 | 2,555 | 2,831 |
| 85 years and over. | 940 | 1,002 | 1,060 | 1,258 | 1,485 | 1,678 | 1,796 |
| Male, all ages. | 89,328 | 93,369 | 96,152 | 104,136 | 113,848 | 125,224 | 137,884 |
| Uncer 5 years. | 10,352 | 10,554 | 10,842 | 12,379 | 14,364 | 16,268 | 17,795 |
| 5 to 9 years. | 9,572 | 10,271 | 10,374 | 10,855 | 12,386 | 14,362 | 16,260 |
| 10 to 14 years. | 8,595 | 9,153 | 9,601 | 10,394 | 10,874 | 12,402 | 14,374 |
| 15 to 19 years. | 6,814 | 7,872 | 8,612 | 9,609 | 10,399 | 10,8477 | 12,399 |
| 20 to 24 years. | 5,558 | 6,315 | 6,843 | 8,621 | 9,611 | 10,394 | 10,868 |
| 25 to 29 years. | 5,422 | 5,449 | 5,619 | 6,8884 | 8,647 | 9,627 | 10,404 |
| 30 to 34 yeers. | 5,901 | 5,625 | 5,469 | 5,656 | 6,910 | 8,658 | 9,631 |
| 35 to 39 years. | 6,140 | 6,054 | 5,899 | 5,467 | 5,654 | 6,896 | 8,627 |
| 40 to 44 years. | 5,733 | 5,989 | 6,078 | 5,836 | 5,414 | 5,600 | 6,824 |
| 45 to 49 years. | 5,384 | 5,501 | 5,600 | 5,932 | 5,700 | 5,294 | 5,478 |
| 50 to 54 years. | 4,758 | 5,018 | 5,154 | 5,357 | 5,679 | 5,463 | 5,081 |
| 55 to 59 years. | 4,143 | 4,307 | 4,430 | 4,794 | 4,990 | 5,296 | 5,102 |
| 60 to 64 years | 3,418 | 3,585 | 3,709 | 3,965 | 4;297 | 4,480 | 4,762 |
| 65 to 69 years. | 2,929 | 2,866 | 2,881 | 3,137 | 3,362 | 3,651 | 3,815 |
| 70 to 744 years. | 2,195 | 2,284 | 2,290 | 2,261 | 2,471 | 2,658 | 2,897 |
| 75 to 79 years. | 1,372 | 1,486 | 1,542 | 1,607 | 1,596 | 1,753 | 1,895 |
| 80 to 84 years. | 674 | 756 | 806 | 908 | 951 | 952 | 1,054 |
| 85 years and over. | 367 | 385 | 404 | 472 | 54.3 | 592 | 618 |
| Female, all ages. | 91,347 | 95,909 | 98,985 | 107,564 | 117,660 | 129,225 | 141,922 |
| Under 5 years. | 10,013 | 10,168 | 10,407 | 11,875 | 13,773 | 15,593 | 17,052 |
| 5 to 9 years. | 9,254 | 9,841 | 10,046 | 10,430 | 11,892 | 13,785 | 15,600 |
| 10 to 14 years | 8,314 | 8,848 | 9,288 | 10,075 | 10,458 | 11,919 | 13,808 |
| 15 to 19 years. | 6,651 | 7,664 | 8,365 | 9,331 | 10,117 | 10,499 | 11,957 |
| 20 to 24 years. | 5,554 | 6,285 | 6.780 | 8,483 | 9,446 | 10,229 | 10,611 |
| 25 to 29 years. | 5,509 | 5,522 | 5,700 | 6,911 | 8,607 | 9,568 | 10,349 |
| 30 to 34 years. | 6,077 | 5,760 | 5,586 | 5,769 | 6,975 | 8,664 | 9,620 |
| 35 to 39 years. | 6,402 | 6,289 | 6,105 | 5,612 | 5,795 | 6,993 | 8,672 |
| 40 to 44 years. | 5,948 | 6,272 | 6,381 | 6,082 | 5,596 | 5,778 | 6,956 |
| 45 to 49 years. | 5,541 | 5,733 | 5,883 | 6,307 | 6,015 | 5,539 | 5,722 |
| 50 to 54 years. | 4,896 | 5,237 | 5,431 | 5,764 | 6,180 | 5,898 | 5,437 |
| 55 to 59 years. | 4,322 | 4,558 | 4,738 | 5,252 | 5,577 | 5,983 | 5,715 |
| 60 to 64 years. | 3,744 | 3,943 | 4,096 | 4,489 | 4,981 | 5,296 | 5,688 |
| 65 to 69 years. | 3,335 | 3,376 | 3,427 | 3,755 | 4,122 | 4,580 | 4,879 |
| 70 to 74 years. | 2,574 | 2,809 | 2,898 | 2,979 | 3,272 | 3,600 | 4,009 |
| 75 to 79 years. | 1,712 | 1,918 | 2,043 | 2,294 | 2,367 | 2,611 | 2,884 |
| 80 to 84 years. | 927 | 1,070 | 1,156 | 1,372 | 1,545 | 1,603 | 1,777 |
| 85 years and over. | 573 | 617 | 656 | 786 | 942 | 1,087 | 1,178 |

## APPENDIX D

## Tables relating to population projections of the Scripps Foundation for Research in Population Problems

TableD.1.--Estimated and projected cumulative marriage and fertility rates up toages 45 to 49 , for birth cohorts of women: Birth years, 1900-1905 toD-2.--Estimated and projected cumulative marriage and fertility rates, bysuccessive ages, for cohorts of women born in 1930 to 1935
D-3.--Estimated and projected cumulative fertility rates by successive agesaccording to the medium series, for birth cohorts of women: Birth years,1900-1905 to 1965-197079
D-4.--Projected completed fertility rates and gross reproduction rates, for five-year periods: 1960-1965 to 1980-1985........................................
79
79
D.5.--Projections of births and birth rates: 1960-1965 to 1980-1985. ..... 79
79
D.6.--Projections of births and bir of the United States, by age and sex ..... 1965to 1985.80
Page

TGDLE D-1.--ESTIMATED AND PROJECTED CUMULATIVE MARRIAGE AND FERTIEITY RATES UP TO AGES 45 TO 49, FOR BIRTH COHORTS OF WOMEN: BIRTH YEARS, 1900-1905 TO 1950-1955
(Percents and rates below the horizontal line are projections)

| Birth years of women ${ }^{1}$ | Yeer in which cohorts reach-- |  | High series |  |  | Medium series |  |  | Low series |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Ages <br> 15 to 19 | Ages 45 to 49 | Percent ever married |  | Births per 1,000 total women | Percent ever mamied | ```Bixths per 1,000 women ever married``` | Births <br> per <br> 1,000 <br> total <br> women | Percent ever marmied | $\begin{gathered} \text { Births } \\ \text { per } 1,000 \\ \text { vomen } \\ \text { ever } \\ \text { married } \end{gathered}$ | $\begin{aligned} & \text { Births } \\ & \text { per } \\ & 1,000 \\ & \text { total } \\ & \text { women } \end{aligned}$ |
| 1900-1905. | 1920... | 1950... | 92.2 | 2,625 | 2,420 | 92.2 | 2,625 | 2,420 | 92.2 | 2,625 |  |
| 1905-1910, | 1925... | 1955. | 92.4 | 2,458 | 2,271 | 92.4 | 2,458 | 2,271 | 92.4 | 2,458 | 2,271 |
| 1910-1915. | 1930... | 1960. | 93.3 | 2,481 | 2,315 | 93.3 | 2,481 | 2,315 | 93.3 | 2,481 | 2,315 |
| 1915-1920. | 1935.. | 1965. | 95.0 | - 2,720 | 2,584 | 95.0 | 2,700 | 2,565 | 95.0 | 2,680 | 2,546 |
| 1920-1925. | 1940. | 1970. | 96.5 | 3,030 | 2,924 | 96.5 | 3,000 | 2,895 | 96.5 | 2,970 | 2,866 |
| 1925-1930. | 1945. | 1975... | 96.5 | 3,400 | 3,281 | 96.0 | 3,300 | 3,168 | 95.5 | 3,200 | 3,056 |
| 1930-1935. | 1950... | 1980... | 96.5 | 3,600 | 3,474 | 95.5 | 3,4.50 | 3,295 | 94.5 | 3,300 | 3,118 |
| 1935-1940. | 1955... | 1985... | 96.5 | 3,500 | 3,378 | 95.0 | 3,300 | 3,135 | 93.5 | 3,100 | 2,898 |
| 1940-1945. | 1960... | 1990. | 96.5 | 3,500 | 3,378 | 94.5 | 3,200 | 3,024 | 92.5 | 2,900 | 2,682 |
| 1945-1950. | 1965... | 1995. | 97.0 | 3,500 | 3,395 | 94.5 | 3,100 | 2,930 | 92.0 | 2,700 | 2,484 |
| 1950-1955. | 1970... | 2000... | 97.0 | 3,500 | 3,395 | 94.0 | 3,000 | 2,820 | 91.0 | 2,500 | 2,275 |
| 1955 or later. | $\begin{gathered} 1975 \text { or } \\ \text { later. } \end{gathered}$ | 2005 or later. | 97.0 | 3,500 | 3,395 | 94.0 | 3,000 | 2,820 | 91.0 | 2,500 | 2,275 |

1 period extends from July 1 of initial year to June 30 of terminal year.
Source: Unpublished data provided by Pascal K. Whelpton, Director of the Soripps Foundation for Research in Population Problems, These data will appear in a book reporing on the 1960 Growth of Amertcan Families Study by the late Pascal K. Whelpton, Arthur A. Campbell, and John E. Patterson, now in preparation.

Table D-2.--ESTMMATED AND PROJECTED CUMULATIVE MARRIAGE AND FERTILTYY RATES, BY SUCOESSIVE AGES, FOR COHORTS OF WOMEN BORN IN 1930 TO 1935
(These cohorts reach 15 to 19 years of age in 1950 and 45 to 49 years of age in 1980 . Percents and rates below the horizontal line are projections)

| Age | High series |  |  | Medium series |  |  | Low series |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Cumula~ <br> tive percent ever married | Number of birthe per 1,000 women ever married | Number of births per 1,000 total women | Cumula- <br> tive <br> percent ever married ${ }^{\text {I }}$ | Number of births per 1,000 women ever married | Number of birthe per 1,000 total women | Cumulative percent ever married ${ }^{7}$ | Number. of births per 1,000 women ever married | Number of births per 1,000 total women |
| 15 to 19 years. | 17.3 | 729 | 126 | 17.3 | 729 | 126 | 17.3 | 729 | 126 |
| 20 to 24 years. | 69.8 | 1, 397 | 975 | 69.8 | 1,397 | 975 | 69.8 | 1,397 | 975 |
| 25 to 29 years: | 89.3 | 2,390 | 2,1.34 | 89.3 | 2,390 | 2,134 | 89.3 | 2,390 | 2,134 |
| 30 to 34 years. | 93.5 | 3,110 | 2,908 | 92.5 | 3,075 | 2,844 | 91.5 | 3,040 | 2,782 |
| 35 to 39 years. | 95.0 | 3,440 | 3,268 | 94.0 | 3,350 | 3,149 | 93,0 | 3,260 | 3,032 |
| 40 to 44 years. | 96.0 | 3,585 | 3,442 | 95.0 | 3,440 | 3,268 | 94.0 | 3,295 | 3,097 |
| 45 to 49 years. | 96.5 | 3,600 | 3,474 | 95.5 | 3,450 | 3,295 | 94.5 | 3,300 | 3,118 |

Source: Same as table D-1.

Table D-3.--EST IMATED AND FROJECTED CUMULATIVE FBRTILTTY RATES BY SUCCESSTVE AGES ACCORDING TO THE MEDIUM SERIES, FOR BIATH COHORTS OF WOMEN: BIRTH YEARS, 1900-1905 TO 1965-1970
(Rates represent cumplative live births per 1,000 women up to age indicated. Rates below the heavy line are projections)

| Birth years of women ${ }^{3}$ | Year in which cohorts reach-- |  | Cumulative rates by age (years) |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Ages 15 to 19 | $\begin{gathered} \text { Ages } \\ 45 \text { to } 49 \end{gathered}$ | $\begin{gathered} 15 \text { to } \\ 19 \end{gathered}$ | $\begin{gathered} 20 \text { to } \\ 24 \end{gathered}$ | $\begin{gathered} 25 \text { to } \\ 29 \end{gathered}$ | $\begin{gathered} 30 \text { to } \\ 34 \end{gathered}$ | $\begin{gathered} 35 \text { to } \\ 39 \end{gathered}$ | $40 \text { to }$ $44$ | $\begin{gathered} 45 \text { to } \\ 49 \end{gathered}$ |
| 1900-1905. | 1920...... | 1950...... | 85 | 700 | 1,435 | 1.9337 | 2,238 | 2,387 | 2,420 |
| 1905-1910. | 1925..... | 1955..... | 94 | 642 | 1,267 | 1,738 | 2,073 | 2,241 | 2,271 |
| 1910-1915. | 1930...... | 1960..... | 88 | 559 | 1,177 | 1,734 | 2,119 | 2,285 | 2,315 |
| 1915-1920. | 1935..... | 1965..... | 78 | 564 | 1,298 | 1,941 | 2,347 | 2,524 | 2,565 |
| 1920-1925. | 1940. | 1970...... | 85 | 635 | 1,524 | 2,247 | 2,674 | 2,861 | 2,895 |
| 1925-1930. | 1945. | 1975. | 86 | 788 | 1,804 | 2,565 | 2,972 | 3,137 | 3,168 |
| 1930-1935. | 1950...... | 1980...... | 126 | -975 | 2,134 | 2,844 | 3,249 | 3,268 | 3,295 |
| 1935-1940. | 1955..... | 1985...... | 143 | 1,097 | 2,209 | 2,815 | 3,029 | 3,114 | 3,135 |
| 1940-1945. | 1960...... | 1990. | 146 | 1,070 | 2,153 | 2,731 | 2,925 | 3,003 | 3,024 |
| 1945-1950. | 1965...... | 1995. | 137 | 1,006 | 2,048 | 2,618 | 2,837 | 2,908 | 2,930 |
| 1950-1955. | 1970..... | 2000...... | 127 | 939 | 1,943 | 2,503 | 2,728 | 2,799 | 2,820 |
| 1955-1.1960. | 1975...... | 2005...... | 125 | 933 | 1,925 | 2,484 | 2,725 | 2,799 | 2,820 |
| 1960-1965. | 1980...... | 2010...... | 122 | 925 | 1,902 | 2,460 | 2,722 | 2,799 | 2,820 |
| $1.965-1970$. | 1985. | 2015..... | 121 | 922 | 1,887 | 2,444 | 2,720 | 2,799 | 2,820 |

1 period extends from July 1 of initial year to June 30 of terminal year.
Source: Same as table D-1.

Table D-4.--PROJECTED COMPLETED FERTIITY RATES AND GROSS REPRODUCTION RATES, FOR FIVE-YEAR PERIODS: 1960-1965 TO 1980-1985
(Rates per 1,000 women)

| Peridd ${ }^{\text {² }}$ | completed fertility rates |  |  | Gross reproduction rates |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { High } \\ \text { sertes } \end{gathered}$ | Medium series | Low series | $\begin{aligned} & \text { High } \\ & \text { series } \end{aligned}$ | Medium series | Iow series |
| 1960-1965. | 3,828 | 3,518 | 3,213 | 1,867 | 1,716 | 2,567 |
| 1965-1970.. | 3,762 | 3,189 | 2,64,6 | 1,835 | 1,556 | 1,291 |
| 1970-1975. | 3,632 | 2,921 | 2,280 | 1,772 | 1,425 | 1,112 |
| 1975-1980. | 3,581. | 2,810 | 2,141 | 1,747 | 1,371 | 1,044 |
| 1980-1985. | 3,532 | 2,794 | 2,160 | 1,723 | 1,362 | 1,054 |

${ }^{2}$ Period extends from Juily 1 of initial year to June 30 of terminal year.
Source: Same as table D-1.

TabIe D-5.--PROJECTIONS OF BIRTHS AND BIRTH RATES: 2960-1965 TO 1980-1985

| Period ${ }^{1}$ | Births (millions) |  |  | Birth rates (per 1,000 population) ${ }^{2}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { High } \\ \text { serfes } \end{gathered}$ | Medium <br> series | Low series | High series | Medium series | $\begin{aligned} & \text { Low } \\ & \text { series } \end{aligned}$ |
| 1960-1965. | 23.3 | 21.4 | 19.6 | 24.8 | 22.9 | 21.0 |
| 1965-1970. | 26.4 | 22.3 | 18.4 | 25.7 | 22.1 | 18.6 |
| 1970-1975. | 29.8 | 23.9 | 18.6 | 26.5 | 22.1 | 17.9 |
| 1975-1980. | 33.4 | 25.9 | 19.6 | 27.0 | 22.3 | 17.9 |
| 1980-1985. | 36.8 | 27.8 | 20.7 | 27.0 | 22.3 | 18.1 |

[^24]Table D-6.--PROJECTIONS OF THE POPULATION OF THE UNITED STATES, BY AGE AND SEX: 1965 TO 1985
(In thousands. Figures relate to July 1 and include Armed porces abroad. Figures inside heavy lines represent, in whole or part, survivors of births projected for years after 1963. projections assume slight declines in mortality and constant annual net immigration of 300,000 after July 1,1960 ; these assumptions correspond essentially to those emo ployed in the projections of the Census Bureau shown in tables 1 and 2. Small differences between the projections shown here and those shown in tables 1 and 2, for the age cohorts 5 years and over on July 1 , 1965, result from differences in the application of the mortality and migration assumptions. For further explanation of the besis of computation, see text, pages $33-35$ )

| Series, age, and sex | 1960 | 2965 | 1970 | 1975 | $\mathrm{T}^{1980}$ | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BOLh SExESHigh SeriesAll ages........... | 180,673 |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  | 1.96,512 | 214,660 | 235,499 | 259,279 | 285,795 |
| Under 5. | $\begin{aligned} & 20,365 \\ & 18,826 \\ & 16,909 \\ & 13,465 \\ & 11,112 \end{aligned}$ | 22,794 | $\begin{aligned} & 25,783 \\ & 22,823 \\ & \hline 20,451 \\ & 18,929 \\ & 17,093 \end{aligned}$ | $\begin{aligned} & 29,130 \\ & 25,800 \\ & 22,867 \\ & \hline 20,498 \\ & 19,045 \end{aligned}$ | $\begin{aligned} & 32,692 \\ & 29,135 \\ & 25,838 \\ & 22,905 \\ & \hline 20,606 \end{aligned}$ | $\begin{aligned} & 36,0,33 \\ & 32,684 \\ & 29,166 \\ & 25,967 \\ & 23,000 \\ & \hline \end{aligned}$ |
| 5 to 9. |  | $\begin{aligned} & 20,402 \\ & 18,878 \\ & 16,966 \\ & 13,611 \end{aligned}$ |  |  |  |  |
| 10 to 14. |  |  |  |  |  |  |
| 15 to 19. |  |  |  |  |  |  |
| 20 to 24. |  |  |  |  |  |  |
| Medum Series |  |  |  |  |  |  |
| All ages. | 180,673 | 194,661 | 208,833 | 223,932 | 240,458 | 258,252 |
| Under 5. | $\begin{aligned} & 20,365 \\ & 18,826 \\ & 16,909 \\ & 13,465 \\ & 11,112 \end{aligned}$ | 20,943 | $\begin{aligned} & 21,800 \\ & 20,979 \end{aligned}$ | $\begin{aligned} & 23,368 \\ & 21,834 \\ & 21,028 \end{aligned}$ | $\begin{aligned} & 25,400 \\ & 23,397 \\ & 21,880 \\ & 21,072 \end{aligned}$ | 27,24725,420 |
| 5 to 9. |  | 20,40218,878 |  |  |  |  |
| 10 to 14. |  |  | 20,451 |  |  | $\begin{aligned} & 23,441 \\ & 21,922 \\ & 21,177 \end{aligned}$ |
| 15 to 19. |  | 16,966 | 18,929 | $\frac{21,028}{20,498}$ |  |  |
| 20 to 24. |  | 13,611 | 17,093 | 19,045 | 20,606 |  |
| Low Series |  |  |  |  |  |  |
| All ages..... | 180,673 | 192,838 | 203,260 | 213,237 | 223,605 | 234,539 |
| Under 5. | 20,365 | 19,120 | $\begin{aligned} & 18,043 \\ & 19,163 \end{aligned}$ | $\begin{aligned} & 18,229 \\ & 18,091 \\ & 19,215 \end{aligned}$ | 19,209 | $\begin{aligned} & 20,331 \\ & 19,254 \\ & 18,331 \\ & 18,199 \\ & 19,379 \\ & \hline \end{aligned}$ |
| 5to 9.............................. | 18,826 | $\begin{aligned} & 20,402 \\ & 18,878 \\ & 16,966 \\ & 13,611 \end{aligned}$ |  |  | $\begin{aligned} & 18,277 \\ & 18,145 \end{aligned}$ |  |
| 10 to 14. | 16,909 |  | $\frac{19,163}{20,451}$ |  |  |  |
| 15 to 19. | 13,465 |  | $\begin{aligned} & 20,451 \\ & 18,929 \end{aligned}$ | $\begin{aligned} & 20,498 \\ & 19,045 \end{aligned}$ | 19,265 |  |
| 20 to 24. | 11,112 |  | 17,093 |  | 20,606 |  |
| All Series--25 Years old and Over |  |  |  |  |  |  |
| 25 to 29........................... | 10,931 | 11,300 | 13,784 | 17,244 | 19,184 | 20,735 |
| 30 to 34. | 11,978 | 11,038 | 11,406 | 13,875 | 17,312 | 19,241 |
| 35 to 39. | 12,542 | 11,991 | 11,063 | 11,429 | 13,878 | 17,288 |
| 40 to 44... . . . . . . . . . . . . . . . . . . . . | 111,681 | 12,446 | 11,906 | 10,995 | 11,360 | 13,779 |
| 45 to 49. | 10,925 | 12,473 | 12,227 | 11,705 | 10,819 | 11,181 |
| 50 to 54. | 9,654 | 10,573 | 11,111 | 11,849 | 11,353 | 10,506 |
| 55 to 59. | 8,465 | 9,154 | 10,036 | 10,558 | 11,270 |  |
| 60 to 64. | 7,162 | 7,791 | 8,440 | 9,269 | 9,767 | 10,442 |
|  | 6,264 | 6,311 | 6,879 | 7,470 | 8,223 | 8,685 |
| 70 to 74............................ | 4,769 | 5,180 | 5,241 | 5,732 | 6,246 | 6,900 |
| 75 to 79. | 3,084 | 3,568 | 3,901 | 3,969 | 4,360 | 4,774 |
| 30 to 84..... . . . . . . . . . . . . . . . . . . | 1,601 | 1,942 | 2,265 | 2,496 | 2,558 | 2,826 |
| 85 and over......................... | 940 | 1,094 | 1,322 | 1,568 | 1,773 | 1,876 |

Table D-6.---PROJECTIONS OF THE POPULATION OF THE UNTTED STATES, BY AGE AND SEX: 1965 TO 1985~-COn.


Table D-6.--PROJECTIONS OF THE FOPULATION OF THE UNITED STATES, EY AGE AND SEX: 1965 TO 1985--COn.


Source: Same as table D-1.

## APPENDIX E

## Tables relating to the marriage-parity-progression method of projecting fertility

Page
Table ..... 84
-1.--Assumed (high ser e-2.--Assumed (high series) first birth rates, by interval since first mar-riage of women and color84
-3.-Assumed (high series) initial and terminal values for parity-specific birth rates of children of second to fifth order, by birth interval and ..... 85
color
color
86
86 E-5.--Projections (high series) of first marriages and births by order: 1960- 1965 to 1980-1985 ..... 86

Table E-I.--ASSUMED (HIGH SERIES) FIRST MARRIACE RATES, BY AGE AND COLOR (First marriages at age $\underline{x}$ per 1,000 women single at age $x-1$ )

| Age at last birthday | White | Nonwhite | Age at last birthday | White | Nonwhite |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1.4 years. | 11. | 8 | 30 years. | 60 | 85 |
| 15 years. | 12 | 20 | 31 years.. | 45 | 75 |
| 16 years. | 35 | 40 | 32 years. | 35 | 65 |
| 17 years. | 67 | 73 | 33 years. | 29 | 60 |
| 18 years.. | 142 | 130 | 34 years. | 23 | 55 |
| 19 years......... | 21.2 | 168 |  |  |  |
|  |  |  | 35 years. | 1.8 | 50 |
| 20 years. | 239 | 190 | 36 years. | 17 | 45 |
| 21. years. | 255 | 190 | 37 years. | 1.6 | 40 |
| 22 years. | 250 | 185 | 38 years. | 15 | 36 |
| 23 years. | 235 | 175 | 39 years. | 13 | 34 |
| 24 years. | 200 | 160 |  |  |  |
|  |  |  | 40 years.. | 11 | 32 |
| 25 years.. | 170 | 145 | 41 years. | 10 | 28 |
| 26 years. | 140 | 130 | 42 years. | 8 | 26 |
| 27 years... | 120 | 115 | 43 years. | 7 | 24 |
| 28 years.. | 100 | 105 | 44 years. . . . . . . . . . . . | 7 | 22 |
| 29 years.. | 80 | 95 |  |  |  |

TADIE E-2. - ASSUMED (HIGH SERTES) FIRST BIRTH RATES, BY INIERVAL SINCE FIRST MARRIAGE OF WOMAN AND COLOR (First births during interval per 1,000 ever-merried women ohildless at start of interval)

| Interval since first marriage of woman (months) | White | Nonwhite | Interval since first marriage of woman (months) | White | Nonwhite |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0 to 11. | 332 | 446 | 156 to 167. | 17 | 29 |
| 12 to 23. | 409 | 323 | 168 to 179. | 13 | 25 |
| 24 to 35. | 317 | 228 | 180 to 191. | 13 | 23 |
| 36 to 47. | 234 | 122 | 192 to 203. | 11 | 19 |
| 48 to 59. | 179 | 74 | 204 to 215. | 8 | 16 |
| 60 to 71. | 153 | 74 | 216 to 227. | 7 | 12 |
| 72 to 83. | 118 | 73 | 228 to 239. | 5 | 9 |
| 84 to 95.. | 85 | 65 | 240 to 251. | 6 | 80 |
| 96 to 107. | 62 | 58 | 252 to 263. | 4 | 7 |
| 108 to 119. | 43 | 51 | 264 to 275. | 3 | 5 |
| 120 to 131. | 39 | 42 | 276 to 287. | 2 | 3 |
| 132 to 143. | 30 | 36 | 288 to 299. | 1 | 1 |
| 144 to 155. | 23 | 31 | 300 and over. | . | ... |

Table E-3.--ASSUMED (HIGH SERTES) TNTIIAL AND TERMINAL VALUES FOR PARTHY-SPECTFIC BTRTH RATES OF CHILDREN OF SECOND TO FIFTH ORDER, BY BIRTH INTERVAL AND COLOR
(Births of given order $n$ during interval per 1,000 women of parity $\underline{n-1}$ at staxt of interval)

| Interval since birth date of previous child (months) | White |  |  |  | Nonwhite |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ```2nd births per 1,000 Imparity women``` | ```3rd births per 1,000 2-parity women``` | 4th births <br> per 1,000 3-parity women | ```5th birthe per 1,000 4-parity women``` | ```2nd births per 1,000 1-parity women``` | ```3rd births per 1,000 2-parity women``` | 4th births <br> per 1,000 <br> 3-parity <br> women | 5 th births per 1,000 4-parity women |
| INTTTAL VALUES |  |  |  |  |  |  |  |  |
| - ${ }^{\text {¢ }}$ |  |  | 23 | 20 | 57 | 56 | 60 | 59 |
| 0 to 11.............. | 39 357 | 221 | 201 | 1.80 | 41.1 | 383 | 376 | 373 |
| 12 to 23............. | 357 | 215 | 188 | 170 | 368 | 281 | 332 | 327 |
| 24 to $35 . \ldots . . . . . . .$. | 351 | 184 | 147 | 133 | 189 | 193 | 161 | 155 |
| 36 to $47 . \ldots . . . . . . . . .$. | 262 | 142 | 108 | 99 | 112 | 124 | 173 | 165 |
|  | 199 | 108 | 59 | 55 | 114 | 123 | 76 | 72 |
| 60 to 71.............. | 159 | 85 | 50 | 48 | 116 | 102 | 63 | 61 |
| 72 to 83................. | 1.25 | 68 | 41. | 41 | 111 | 81 | 50 | 51 |
|  | 108 | 56 | 36 | 36 | 103 | 67 | 42 | 45 39 |
| 108 to 119............ | 87 | 46 | 30 | 31 | 89 | 54 | 35 | 39 |
| 120 to 131. | 63 | 21 | 22 | 22 | 64 | 37 | 36 | 40 |
| 132 to 143............... | 49 | 18 | 14 | 14 | 55 | 34. | 25 | 27 |
| 144 to 155.... . . . . . . | 43 | 16 | 10 | 10 | 53 | 33 | 19 | 20 |
| 156 to 167............ | 44 | 16 | 8 | 8 5 | 44 | 31 | 11 | 11 |
| 168 to 179........... | 42 | 15 | 6 | 5 | 4.4 |  |  |  |
| 180 to 191............ | 31 | 11 | 3 | 3 | 35 | 23 | 5 | 6 |
| 192 to 203............ | 20 | 6 | $\cdots$ | $\cdots$ | 24 | 1.3 | $\cdots$ | . $\cdot$ |
| 204 to 215............ | 14 | -•' | $\cdots$ | . | 17 | $\cdots$ | . | . |
| 216 to 227........... | 10 | $\cdots$ | $\cdots$ | $\cdots$ | 6 | $\ldots$ | . . | $\cdots$ |
| 228 to 239............ | 5 | $\cdots$ | . | $\cdots$ |  | . |  |  |
| 240 to 251. . . . . . . . . . | 2 | $\ldots$ | $\ldots$ | . $\cdot$ | 3 | ** | $\cdots$ | - |
| 252 to 263............ | 1 | $\cdots$ | $\cdots$ | $\cdots$ | 1 | . . $\cdot$ | - $\quad \cdots$ | $\ldots$ |
| 264 and over.......... | $\cdots$ | ... | $\cdots$ | ... | $\cdots$ | $\ldots$ | $\cdots$ | .. |
| TERMINAL VALUES |  |  |  |  |  |  |  |  |
|  | 36 | 25 | 21 | 20 | 53 | 54 | 57. | 57 |
|  | 335 | 198 | 183 | 172 | 382 | 366 | 355 | 354 |
| 24 to 35.................... | 323 | 191 | 168 | 155 | 329 | 261 | 299 | 298 |
| 36 to 47 . | 261 | 158 | 125 | 114 | 156 | 171 | 133 | +133 |
| 48 to 59. | 214 | 119 | 88 | 79 | 87 | 103 | 135 | 135 |
| 60 to 71............... | 150 | 89 | 42 | 35 | 82 | 96 | 54 | 51 |
| 72 to 83. .................. | 117 | 69 | 35 | 30 | 80 | 77 | 44 | 42 |
| 84 to 95. | 92 | 54 | 28 | 25 | 74 | 60 | 34 | 34 |
| 96 to 107. | 75 | 444 | 24 | 22 | 66 | 48 | 28 23 | 25 |
| 108 to 119. | 61 | 36 | 20 | 19 | 55 | 38 | 23 |  |
| 120 to 131 | 44 | 1.3 | 10 | 9 | 35 | 20 | 27 | 18 |
| 132 to 143. | 38 | 11 | 7 | 6 | 29 | 18 | 12 | 12 |
| 144 to $155 . . . . . . . . . . . .$. | 34 | 10 | 5 | 4 | 27 | 18 | 9 | 8 |
| 156 to 167............ | 27 | 10 | 4 | 3 | 26 | 17 | 7 | 5 |
| 168 to 179............ | 22 | 9 | 3 | 2 | 22 | 16 |  |  |
| 180 to 191............ | 18 | 7 | 1 | 1 | 17 | 12 | 2 | 2 |
| 192 to 203............... | 1.3 | 4 | . | . $\cdot$ | 11 | 7 | . $\cdot$ | -•• |
| 204 to 215............. | 8 | ... | ... | ... | 8 | . $\cdot$ | $\cdots$ | $\cdots$ |
| 216 to 227........... | 4 | ... | $\cdots$ | $\cdots$ | 3 | $\ldots$ | $\cdots$ | $\ldots$ |
| 228 to 239............ | 3 | $\cdots$ | - | $\cdots$ | 3 | -•• | $\cdots$ | ... |
| 240 to 251. | 2 | $\ldots$ | $\ldots$ | $\cdots$ | 1 | $\cdots$ | $\cdots$ | $\cdots$ |
| 252 to 263............ | 1 | ... | ... | $\cdots$ | $\cdots$ | $\cdots$ | $\cdots$ | . $\cdot$ |
| 264 and over.......... | ... | $\ldots$ | . . |  |  |  |  |  |

Table E-4,--ANNUAL PROJEOTIONS (HIGH SERIES) OF BIRTHS AND BIRTH RATES: 1960 TO 1985

| Year or period ${ }^{\text {² }}$ | $\begin{gathered} \text { Births } \\ \text { (thousands) } \end{gathered}$ | Birth rates ${ }^{2}$ | Year or period ${ }^{\text {I }}$ | $\begin{gathered} \text { Births } \\ \text { (thousands) } \end{gathered}$ | Birth rates ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1960-1965. | 21,476 | 22.9 | 1975-1980. | 26,498 | 23.1 |
| 1960-1961. | 4, 331 | 323.8 | 1975-1976. | 5,104 | 22.9 |
| 1961-1962. | 4,305 | 323.2 | 1976-1977. | * 5,208 | 23.0 |
| 1962-1963. | 4,287 | 322.8 | 1977-1978. | - 5,307 | 23.1 |
| 1963-1964. | 4,277 | 22.5 | 1978-1.979. | 5,398 | 23.1 |
| 1964-1965. | 4,276 | 22.2 | 1979-1980. | 5,481 | 23.2 |
| 1965-1970... | 21,964 | 21.9 |  |  |  |
| 1965-1966. | 4,294 | 22.0 | $1980-1985 .$. 1980-1981. | 28,358 5,555 |  |
| 1966-1967. | 4,334 | 21.9 | 1980-1981. | 5,555 5,621 | 23.1 23.0 |
| 1967-1968. | 4,382 | 21.9 | 1981-1982. | 5,621 5,680 | 23.0 22.9 |
| 1968-1969.. | 4,444 4,510 | 21.9 22.0 | 1983-1984. | 5,732 | 22.9 22.8 |
| 1970-1975. |  | 22.0 22.4 | 1984-1985*. | 5,770 | 22.7 |
| 1970-1971. | 4,585 | 22.0 |  |  |  |
| 1971-1972. | 4,680 | 22.2 |  |  |  |
| 1972-1973. | 4,782 | 22.4 |  |  |  |
| 1973-1974. | 4,889 | 22.6 |  |  |  |
| 1974-1975. | 4,997 | 22.7 |  |  |  |

1 From July 1 of initial year to June 30 of terminal year.
2 Based on births computed by the marriage-parity-progression method and population projections consistent with those shown in table $R$ assuming the $B$ level of fertility, slightiy declifing mortality, and no net immigration.
${ }^{3}$ Based on current estimates of population.
4 April 1, 1984, to March 31, 1985.

Table E-5,--PROJECTIONS (HIGH SERTES) OF FIRST MARRIAGFS AND BIRTHS BY ORDER: 1960-1965 TO 1980-1985
(In millions)

| Period ${ }^{1}$ | First marriages of women 14 to 44 years | Births by order |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total | First | Second | Third | Fourth | Fifth | $\begin{aligned} & \text { Sixth } \\ & \text { and } \\ & \text { higher } \end{aligned}$ |
| 1960-1965. | 6.3 | 21.5 | 5.9 | 5.1 | 3.9 | 2.6 | 1.6 | 2.4 |
| 1965-1970. | 7.6 | 21.9 | 6.9 | 5.5 | 3.6 | 2.2 | 1.4 | 2.3 |
| 1970-1975. | 8.6 | 23.8 | 7.9 | 6.4 | 4.1 | 2.2 | 1.2 | 2.0 |
| 1975-1980. | 9.3 | 26.4 | 8.6 | 7.2 | 4.6 | 2.5 | 1.4 | 2.1 |
| 1980-1985. | 9.5 | 28.3 | 8.9 | 7.6 | 5.1 | 2.9 | 1.5 | 2.3 |

[^25]
[^0]:    ${ }^{2}$ The bases used in the computation of these percents are the mean of the Series $A$ and $D$ projections and the mean of the series I and IV projections.

[^1]:    ${ }^{1}$ sex ratios for future years are based on the $B$ series of population projections. The sex ratios for the other sextes in 1985 are as follows: Series A, 971 ; Series $0,96.5$; and Series D, 96.3 .

[^2]:    3 See, for example, Conrad Taeuber and Morris H. Hansen, "A Preliminary Evaluation of the 1960 Censuses of Population and Housing," Proceedings of the Social Statistics Section, 1963 Amual meeting of the Amerjcan Statistical Assoctation, Cleveland, Ohio. September 5, 1963.

[^3]:    4 These age-specific birth rates represented annual births per 1,000 women of childbearing age in a given 5 -year age group at the middle of the year. The gross reproduction rate represents the number of daughters a hypothetical cohort of 1,000 women entering the chilabearing period together would bear durIng their lives if they were subject to a given set of age-speaific birth rates and there were no deaths In this cohort between birth and completion of the childbearing period. The gross reproduction rate serves as a summary measure of amnual fertility which permits comparison from year to year unaffected by changes in age composition. Variations in the pattern of age-specific birth rates tend to have little effect on the levels of the corresponding gross reproduction rates, so that the gross pate is a useful substitute for making projections of births by the age-specific birth rate method.

[^4]:    5 The cohort fertility rates prepared by the Scripps Foundation contain a small variable downward adjustment to allow for assumed net undercount of women in the various censuses. They are, therefore, not exactly consistent with the fertility rates published annually by the National Center for Health Statistics.

    The cohort fertility data are presented in: Nam tional Office of Vital Statistics, Fertllity Tables for Birth Cohorts of American Women, Part 1, by P. K. Whelpton and Arthur A. Campbell, Vital Statism tics-Special Reports, Vo1. 51, No. 1, Jan. 29, 1960; and unpublished records. See also P. K. Whelpton, "Cohort Analysis and Fertility Projections," Emerging Techniques in Population Research, $1962^{\circ}$ Conference of the Milbank Memorial Fund, New York, 1963.

[^5]:    6 The methods and results of the 1960 survey will be described in a book by the late P. K. Whelpton, A. A. Campbeil, and J. E. Petterson, now in preparation. The methods and results of the 1955 survey are described in: R. Freedman, P. K. Wheipton, and A. A. Campbe11, Family Planning, Sterility, and Population Growth, MeGraw-Hill, New York, 1959. The data for 1960 are based on a national probability sample of 3,256 married women under 44 years of age living with

[^6]:    ${ }^{1}$ Rates based on female population adjusted for net census undercounts, as computed by Seripps Foundation.
    ${ }^{2}$ In indicated age group and all later age groups.
    3 Includes births to women under 15 years of age.
    4 Indudes birthe to women 50 years old and over.

[^7]:    7 Before the actual application of the annual agespecific birth rates to the projected female population, the rates corresponding to the cohorts of women born prior to 1960 were inflated by approximately 2 percent so as to remove the adjustment of this size for assumed net census undercount of women included in the base of the cohort rates. This calculation made the rates more appropriate for use with population projections. which do not take account of census underenumeration and more consistent with the annual fertillty rates published by the National Center for Health Statistics.

    The annual age-specific birth rates for each year in Series 3, C, and D were, in fact, applied to the population of each subsequent year as a result of an error in the computer operations, discovered just befor publication of this report. The direct effect of this error was generally to assign higher birth rates in Series $B, C$, and $D$ to each year than the original assumptions called for, particularly in the first several years of the projection period; the increase was greatest for Series $D$ and least for Series B because of the differences between the serfes in the magnitude of the year-to-year. changes. The error does not significantly modify the underlying assumptions and has little effect on the level of the population projections. It does, however, result in a perceptible narrowing of the range of variation, in the short-run, among the various series of annual fertility rates and among the various projections of births and population growth. The numbers of births during the first year of the projection period (July l, 1963, to June 30, 1964) can now be closely estimated, and this estimate falls well within the range of the projections of births for this year, The range originally intended for 1963-64 has been narrowed somewhat, and the range in the projection of births for 1964-65 now corresponds approximately to the range originally intended for 1963-64.

    8 Ansley J. Coale and C. Y. Iye, "The Significance of Age Patterns of Fertility in High Fertility Popu2ations, "Milbank Memorial Fund Quarterly, Vol. 39, No. 4, pp. 631-646, October 1961.

[^8]:    ${ }^{1}$ Based on death statistics obtained from the National Center for Health Statistics, U.S. Public Health Service
    ${ }^{2}$ Estimated from projected 5 -year survival rates for 1960-65 developed by the Social Security Administration (Illustrative United States Population Projections, Actuarial Study No. 46, by T. N. E. Greville, May 1957).
    ${ }_{4}^{3}$ Mnus sign ( - ) denotes that the projected rate is greater than the actual rate.
    ${ }^{4}$ Less than 0.05.

[^9]:    ${ }^{9}$ National Center for Health Statistics, "The Change in Mortality Trend in the United states," Vital and Health Statistics, Analytical Studies, by I. M. Moriyama, Series 3, No. 1, March 1964.

[^10]:    10 Barnes Woodhall and Seymour Jablon, "Prospects for Future Increase in Average Longevity," Geriatpics, Vol. 12, No. 12, October 1957, pp. 586-591.

[^11]:    ${ }^{1}$ Base for projections. A more recent estimate for July 1 , 1963 , prepared after these projections had been completed, ist 189, 375,000.

[^12]:    " For annual data on net civilian immigration, see U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 278.

[^13]:    12 See headnote of table A-2 for an explanation of the slight difference between the terminal levels of cohort fertility and period completed fertility in 2010.

[^14]:    13 U.S. Bureau of Labor Statistics, "Interim Revised Projections of the U.S. Labor Force, 1965-1975, Special Labor Force Report, No. $2^{44}, 1962$.

[^15]:    ${ }^{1}$ Rates based on female population adjusted for net census undercounts, as computed by Scripps Fomdation.
    $\|^{2}$ Rates for 1959-61 adjusted to the level of total births for 1960-63 and to a base of female population not adjusted for net census undercounts, i.e., comparable to the 1960 Census counts.
    ${ }_{4}{ }_{4}$ Includes births to females under 15 years of age.
    4 Includes births to females 50 years of age and over.

[^16]:    Period extends from July 1 of initial year to June 30 of terminal year.
    ${ }_{2}$ Differs from the period completed fertility rate $(3,595)$ because of the downard adjustment, to allow for net census undercounts of women in the cohort rates, of those annual age. specific birth rates after 1962 which correspond to cohorts born before 1960.
    ${ }^{3}$ Under 10 on July 1, 1962, or born after that date.

[^17]:    14 See footnote 6 .

[^18]:    15 Whelpton and Campbell have pointed out that, for this reason, these assumptions may be considered extreme. They have stated that even if the completed fertility rates used in the high or low series are actually reached by some cohorts, it is unlikely that these rates $w 11$ remain constant for later cohorts, as is assumed for the high and low series.

[^19]:    16 J.S. Bureau of the Census, Curpent Population Reports, Series P-20, No. 108, "Marriage, Fertility, and Chflaspacing, August 1959," by Wilson H. Grabill and Robert Parke, Jr., July 12, 1961. U.S. Public Health Service, National Center for Health Statistics, annual volumes of Vital Statistics of the United states.

[^20]:    1 Includes annual net immigration of 300,000 , not shown separately
    2 Percent of population at beginning of fiscal year. $\quad 3$ Rate per 1,000 population at middle of fiscal year.
    4 A revised estimate of total population for July I, 1963, prepared after these projections had been completed, is 189,375,000. See Current Population Reports, Series P-25, No. 278, for other revised data for 1960-63.

[^21]:    Tables presenting projections based on alternative assumptions of mortality and net immigration

[^22]:    1 percent of population at beginning of fiscal year.
    a Rate per 1, 000 population at middie of fiscal year.
    ${ }^{3}$ Assumes constant annuel net immigration of 300,000 .
    shown separately.

[^23]:    ${ }^{1}$ Includes annual net immigration of 300,000 , not shown separately.
    ${ }^{2}$ Percent of population at beginning of fiscal year.
    ${ }^{3}$ Rate per 1,000 population at middle of fiscal year.

[^24]:    ${ }_{2}^{1}$ From July 1 of indtal year to June 30 of terminal year.
    ${ }^{2}$ Based on population estimates and projections consistent with figures in table D-6.
    Source: Same as table D-1.

[^25]:    ${ }^{1}$ Period extends from April I of initial year to March 31 of terminal year.

