U. S. DEPARTMENT OF COMMERCE
Sinclair Weeks, *Secretary*

BUREAU OF THE CENSUS
Robert W. Burgess, *Director*

CURRENT POPULATION REPORTS

POPULATION ESTIMATES

March 16, 1956 | Washington 25, D. C. | Series P-25, No. 133

ILLUSTRATIVE EXAMPLE OF A METHOD OF ESTIMATING THE CURRENT POPULATION OF SUBDIVISIONS OF THE UNITED STATES*

(This report replaces Current Population Reports, Series P-25, No. 20)

This report presents a revision of the illustrative example of the method used by the Bureau of the Census in preparing population estimates for subdivisions of the United States. The original illustrative example was presented in 1949 in Current Population Reports, Series P-25, No. 20. Although it has been used by the Bureau primarily for the preparation of State estimates, the method is also applicable to counties, cities, or any other areas for which the necessary data are available.

This method, designated as Method II, is one variety of the migration-and-natural-increase, or component, method of making population estimates. The component method involves (1) estimating the civilian population on April 1, 1950, (2) adding to this civilian population an estimate of births for the period between the census and the estimate date, (3) subtracting an estimate of civilian deaths, (4) adding or subtracting an estimate of net civilian migration, (5) subtracting or adding an estimate of the net movement of civilians into the Armed Forces, and (6) adding an estimate of the number of persons in the Armed Forces stationed in the area on the estimate date. The distinguishing feature of Method II, and the feature which differentiates it from other component methods, is the procedure by which net migration is estimated from a comparison of the reported number of elementary school children on the estimate date, and the expected number of children of elementary school age surviving from the appropriate age group in the last decennial census.

The presentation of a revision of the illustrative example of Method II at this time in no sense implies that this method represents a final and definitive answer to the problem of making local population estimates. Since the publication of the initial illustrative example, improvements growing out of experience and research have been incorporated into the procedure; and there is every reason to believe that this process will continue. Furthermore, any method in which the estimate of net migration turns on the behavior of a small segment of the total population, such as the population of school age, is defective on a priori grounds. To meet this deficiency, studies of other series, such as a series on the change of address of workers covered by OASI or OASI beneficiaries, which might serve as indices of net migration for other age groups in the population, are in progress.

It is to be hoped then that further improvements in the current estimating procedure may be developed. Once they have been adequately tested, they will be introduced into the official procedure. Such changes, of course, will be noted in appropriate issues of the P-25 series.

In spite of its provisional character, from the long-term point of view, the evidence suggests that given the current state of knowledge in this field, Method II has much to recommend it. As a component method, it is characterized by a straightforward logic involving separate treatment of the basic elements in population change. Moreover, a series of tests over the past three decades indicates that Method II in essentially its present form may be expected to yield more accurate estimates for subdivisions of the United States than other commonly

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used methods, such as arithmetic projection, the natural increase method, or the vital rates method.[1]

Although no other method now in use has yet been demonstrated to be better than Method II, systematic tests of some methods that are being used for particular types of areas have not been conducted. Possibly the use of building permits, gas meters, electric meters, etc., may give better results for urban areas; but the availability of these data is spotty, and thus they do not readily lend themselves to programs involving estimates of all the counties of a State or all the States of the Nation.

The most frequently expressed objection to Method II operationwise has been the relatively large amount of time needed to carry out the procedure and the difficulty of the manipulation of life table functions. With these objections in mind, the Bureau has explored the possibility of introducing shortcuts in Method II that would not appreciably affect its reliability. Such shortcuts have been found and have been used by the Bureau for some time. Other labor-saving devices, especially one eliminating the actual manipulation of life table functions, are also introduced in this report. In addition, recent research at the Bureau has developed some improvements in Method II that have been incorporated in the preparation of the latest official current estimates of the population of States. The estimating technique illustrated in this report is the result of all these various developments and should enhance the usefulness of Method II for the many persons who need up-to-date population estimates.

The illustrative example that follows is a description of the procedure for making an unofficial current estimate of the population of Madison County, Illinois, by Method II. A specific county rather than a fictitious one was selected here because it was felt that the reader would be better able to follow the steps where data are obtained from various sources if he could actually find the required numbers himself in the source volumes or reports. This particular county was selected because a large part of the required data was already available at the Bureau of the Census.

ILLUSTRATIVE EXAMPLE OF THE ESTIMATION OF THE CURRENT POPULATION OF MADISON COUNTY BY METHOD II

Summary for Madison County, Illinois; Estimate Date: July 1, 1955

Item 1.	Civilian population on April 1, 1950, the date of the last census	181,874
Item 2.	Natural increase, April 1, 1950, to July 1, 1955	17,106
Item 3.	Estimated net civilian migration, April 1, 1950, to July 1, 1955	+16,673
Item 4.	Net loss to the Armed Forces, April 1, 1950, to July 1, 1955	1,788
Item 5.	Estimated civilian population on July 1, 1955 (item 1 plus item 2 plus item 3 minus item 4)	213,865
Item 6.	Military personnel stationed in the county on July 1, 1955	538
Item 7.	Estimated total population on July 1, 1955 (item 5 plus item 6)	214,403

DETAILED PROCEDURE

Item 1. Civilian population of Madison County on April 1, 1950 181,874

1a. Total population on April 1, 1950 182,307
Source: U. S. Bureau of the Census, 1950 Census of Population, Vol. II, Characteristics of the Population, Part 13, Illinois, table 43.

1b. Persons 14 years old and over in the labor force on April 1, 1950 73,791
Source: Same as item 1a.

1c. Persons 14 years old and over in the civilian labor force on April 1, 1950 73,358
Source: Same as item 1a.

1d. Military personnel stationed in the county on April 1, 1950: 1b - 1c 433

1e. Civilian population on April 1, 1950: 1a - 1d 181,874
Items 1a to 1c for cities of 10,000 or more are given in table 35 of the State chapter of Volume II; for cities of 2,500 to 10,000, item 1a and items 1b and 1c are given in tables 38 and 39, respectively, of the State chapter of Volume II.

Item 2. Natural increase in Madison County, April 1, 1950, to July 1, 1955 17,106

2a. Births, by residence, April 1, 1950, to July 1, 1955 25,715

Month and year	Registered births
1950 (April to December)	3,218
1951	4,632
1952	4,892
1953	5,074
1954	5,244
1955 (January to June)	2,655
Total	25,715

[1] An evaluation of the accuracy of these methods is given in: Jacob S. Siegel, Henry S. Shryock, Jr., and Benjamin Greenberg, "Accuracy of Postcensal Estimates of Population for States and Cities," American Sociological Review, 19 (4): 440-446, August 1954. For an earlier evaluation see: Henry S. Shryock, Jr., and Norman Lawrence, "The Current Status of State and Local Population Estimates in the Census Bureau," Journal of the American Statistical Association, 44 (246): 157-173, June 1949. In view of the inferior showing which Method I made in these tests, it has not been incorporated in this revision.

Given above is the number of registered births for each calendar year, 1951 through 1954, based on the residence of the mother at the time of birth. The entry for the period April to December 1950 represents nine-twelfths of the number of registered births in 1950. Similarly, the entry for the period January to June 1955 is obtained by proration and represents one-half of the number of registered births in 1955. More refined estimates using proportions based on monthly figures for larger areas may be made but are probably unnecessary.

Source: National Office of Vital Statistics, annual reports, Vital Statistics of the United States.

Figures for counties and urban places of 10,000 inhabitants or more are given in these reports. Figures for smaller urban places may be available, by residence, in State Health Departments. If such figures are not available for smaller urban places, they may have to be estimated from data compiled by place of occurrence.

Final figures for 1954 and 1955 were not yet available when the estimates were made, but provisional figures for States and for five large cities were available on an occurrence basis in the Monthly Vital Statistics Bulletin of the National Office of Vital Statistics. These may be converted to a residence basis by the use of the ratio of resident births to births by occurrence that prevailed in 1953. For all counties and most cities, recent data on births by residence will have to be estimated in a similar manner from provisional data that are available in State Health Departments.

2b. Percent completeness of birth registration in Madison County by place of residence..... 99.1

Source: National Office of Vital Statistics, Vital Statistics--Special Reports, Vol. 39, No. 4, "Birth Registration Completeness in the United States and Geographic Areas, 1950," Part II, Data for Local Areas, January 20, 1955. Data for States, counties, and urban places of 10,000 inhabitants or more are given in this report.

For counties and cities where completeness of birth registration is already high, the figure for 1950 may be used to adjust births for the years 1950 to 1955 and for the remaining years in the decade. The accuracy of the estimates of births will be affected very little by the use of a single factor for the decade.

2c. Births, by residence, adjusted for underregistration, April 1, 1950, to July 1, 1955: 2a ÷ 2b..... 25,949

For areas where considerable improvement in birth registration is still possible, the 1950 percentage completeness of registration of births "in hospitals" and "not in hospitals" may be used to adjust births for the years 1950 to 1955 and for the remaining years in the decade in the following manner:

2c(1) Number of births "in hospitals" in Pulaski County, Ill., for 1953.... 176
Source: Same as 2a above.

2c(2) Number of births "not in hospitals" in Pulaski County for 1953..... 116
Source: Same as 2a above.

2c(3) 1950 percentage completeness of birth registration "in hospitals" for Pulaski County..... 100.0
Source: Unpublished data available upon request from the National Office of Vital Statistics.

2c(4) 1950 percentage completeness of birth registration "not in hospitals" for Pulaski County..... 71.1
Source: Same as 2c(3) above.

2c(5) Births "in hospitals" in Pulaski County adjusted for underregistration for 1953:
2c(1) ÷ 2c(3)..... 176

2c(6) Births "not in hospitals" in Pulaski County adjusted for underregistration for 1953:
2c(2) ÷ 2c(4)..... 163

2c(7) Total births in Pulaski County adjusted for underregistration for 1953:
2c(5) + 2c(6)..... 339

2d. Deaths, by residence, April 1, 1950, to July 1, 1955..... 8,843

Month and year	Registered deaths
1950 (April to December).....	1,219
1951.....	1,632
1952.....	1,724
1953.....	1,688
1954.....	1,759
1955 (January to June).....	821
Total.....	8,843

Given above is the number of registered deaths for each calendar year, 1951 through 1954, based on the place of residence of the deceased rather than the place in which the death occurred. The entries for the periods April to December 1950 and January to June 1955 are obtained by proration as was the case for births in 2a above. The data needed for this column may be obtained from the same sources set forth above in the discussion of data on births in 2a.

Some adjustment of death statistics for underregistration could be made on deaths to infants under 1 year of age, using the same factor that was used for correcting births. The effect of such a correction on the final estimate is so small that this step may be omitted.

2e. Natural increase, April 1, 1950, to July 1, 1955, births minus deaths: 2c - 2d..... 17,106

Item 3. Net civilian migration for Madison County, April 1, 1950, to July 1, 1955.. +16,673

3a. General procedure

As illustrated here, net civilian migration is estimated in the following manner: (1) A net migration rate for children 7½ to 14½ years old is developed on the basis of data from the 1950 Census and statistics on school enrollment in the elementary grades 2 to 8; (2) this rate is multiplied by a factor of 1.2 to obtain an estimated migration rate for the total population; (3) this rate is applied to the civilian population of all ages in the area in 1950 to obtain an estimate of net civilian migration for the period since 1950.

The estimate of net migration for children of elementary school age in the area is derived from a comparison of the reported number of elementary school children on the estimate date and the expected number of children of elementary school age surviving from the appropriate age group in 1950. The reported number of elementary school children is available in terms of grades and the expected number of children in terms of age. Investigation of various possible age-grade combinations at the national level indicates that greatest comparability is usually obtained by using enrollment in grades 2 to 8 and survivors (from the 1950 Census) 7½ to 14½ years old at the estimate date; further investigation at the State level indicates that greatest accuracy of the estimates is also usually obtained by using this age-grade combination. If any other grade range is used for a particular area, the age range should be chosen for logical consistency with the grade range. It is even possible that grades 2 to 8 in some areas might better be represented by an age range other than 7½ to 14½ years old.

3b. Evaluation of school data

Since Method II depends largely on school statistics for the measurement of net migration, serious errors of estimation can creep in at the very beginning of the estimating process unless the school data used are assembled with the main purpose always in mind. School statistics are needed to approximate as closely as possible the number of children in a fixed age group. Some types of school data do so better than others. For example, statistics relating only to children of compulsory school age are more useful than those relating to all school children regardless of age since many of the latter go to school only by choice. Data on enrollment by age are to be preferred over data on enrollment by grade for the purpose of making population estimates. If data on enrollment by age are not available, as is usually the case, grade enrollment figures are next to be preferred over other types of pupil statistics. When such figures are used, they should generally be restricted to the elementary grades, which comprise pupils most of whom are within the ages of compulsory school enrollment. For some areas, however, high school enrollment may be used in addition to elementary enrollment if there is now little room for further increase in the proportion of children of high school age who are enrolled.

Two other types of school statistics are usually available. The first, average daily attendance, should probably be avoided. It is obvious that an increase in average daily attendance may often reflect no increase in enrollment or population but merely improved school administration or better weather during the school year. Over the long run, improved economic conditions or changes in parental attitudes conducive to more regular attendance at school may also be important factors. Statistics on attendance are usually very accurate, however, and investigation in some areas may demonstrate that fluctuations in average daily attendance are caused almost entirely by fluctuations in the number of children of school age, which is the desired relationship.

The second type of school statistics is derived from the school census. Experience has taught us to proceed cautiously before using them to estimate population. It is no simple task to enumerate the population of an area with reasonable completeness even when trained enumerators do the job under well-organized administrative controls. Yet, in most instances, school censuses are taken by school teachers, policemen, or unpaid volunteers, often without the geographic and other administrative controls needed to assure reasonably complete enumeration. Sometimes a house-to-house canvass is not even attempted. As a result, school census data frequently vary in accuracy from year to year, making it difficult to estimate the population in an age group by reference to the relationship between the corresponding counts in the school census and in the United States census. In theory, however, the school census provides a more direct measure of what is wanted than school enrollment, just as enrollment provides a more direct measure than attendance.

A series that closely reflects the size of a fixed age group may nevertheless contain a defect from the standpoint of measuring net migration for a given area. One such situation occurs when the area for which the estimate is being prepared is not the same as the area for which

the school statistics are compiled. Sometimes data are available for school districts that do not conform to county or city boundaries.

Another stumbling block in the use of school statistics is a concealed inconsistency. Frequently a series of school data appears reasonable, but subsequent investigation reveals an administrative act which renders the figures useless unless an adjustment can be made to obtain consistency. Thus, a change from a 7- to an 8-grade elementary school system may give a sudden, misleading increase in elementary enrollment. Similarly, a change in the minimum age requirements for entrance into the first grade or the introduction of public kindergarten pupils into the elementary enrollment statistics will produce a misleading change in a school data series. Sometimes these changes are not noted in the statistical tables. (In general, kindergarten pupils should be excluded from the school statistics because attendance for these children is not compulsory.) Still another illustration of essentially the same situation is the omission from the school data series of pupils in junior high schools or pupils in special or ungraded classes. The omission might become a matter of consequence if the school system is in the process of expanding such programs and is assigning more students to the junior high schools or steadily reclassifying its pupils and assigning them into the special or ungraded classes from the regular classes.

In many areas, a substantial proportion of the population of elementary school age does not attend public school but receives its education at parochial or other private schools. For such areas, it is very important that the enrollment figures include parochial as well as public schools. Method II using public school data only in these areas would tend to give low estimates to the extent that there is a shift in recent years away from public schools and to parochial schools. For most areas, the enrollment data need include only the Catholic school data because enrollment in other parochial or private schools is negligible. The latter data should be collected where they are important.

3c. Public school data for Madison County, Illinois

The following figures on enrollment in grades 2 to 8 of the public schools in Madison County, as of the close of the school year, were obtained from the county school superintendent:

Close of school year[1]	Number
1948-1949	17,350
1949-1950	18,224
1950-1951	18,992
1951-1952	20,110
1952-1953	20,637
1953-1954	22,020
1954-1955	23,249

[1] For convenience it is assumed here that the close of the school year refers to July 1, since this is the estimate date.

If school data by grades are not available, then enrollment in the elementary grades as a whole should be used. School data for cities may be obtained from State school authorities or from city or county school authorities.

3d. Parochial school data

The following figures on enrollment in grades 1 to 8 of the parochial schools in Madison County as of October 1 of each year were obtained from the superintendent of Catholic schools of the Springfield Diocese:

October 1 of each year	Number
1949	3,498
1950	3,568
1951	3,702
1952	3,788
1953	4,266
1954	4,576
1955	4,900

Here, grade data were not available; so, enrollment in the elementary grades 1 to 8 (excluding kindergarten) is used instead of enrollment in grades 2 to 8.

3e. Public school enrollment, April 1, 1950. 18,006
- 3e(1) Enrollment, July 1, 1949..... 17,350
- 3e(2) Enrollment, July 1, 1950..... 18,224
- 3e(3) Enrollment, April 1, 1950..... 18,006

  This figure is obtained by linear interpolation between 3e(1) and 3e(2), viz: $\frac{3}{4}$ 3e(2) + $\frac{1}{4}$ 3e(1).

3f. Parochial school enrollment, April 1, 1950..... 3,533
- 3f(1) Enrollment, October 1, 1949..... 3,498
- 3f(2) Enrollment, October 1, 1950..... 3,568
- 3f(3) Enrollment, April 1, 1950..... 3,533

  This figure is obtained by linear interpolation between 3f(1) and 3f(2), viz: $\frac{1}{2}$ 3f(1) + $\frac{1}{2}$ 3f(2).

3g. Total elementary enrollment, April 1, 1950: 3e + 3f..... 21,539

3h. Public school enrollment, July 1, 1955.. 23,249

3i. Parochial school enrollment, July 1, 1955..... 4,819
- 3i(1) Enrollment, October 1, 1954..... 4,576
- 3i(2) Enrollment, October 1, 1955..... 4,900
- 3i(3) Enrollment, July 1, 1955..... 4,819

  This figure is obtained by linear interpolation between 3i(1) and 3i(2), viz: $\frac{3}{4}$ 3i(2) + $\frac{1}{4}$ 3i(1).

3j. Total elementary enrollment, July 1, 1955: 3h + 3i..... 28,068

3k. Expected population of elementary school age, assuming no migration, July 1, 1955..... 26,793
- 3k(1) The expected population of elementary school age, assuming no migration, on July 1, 1955, is the survivors $7\frac{1}{2}$ to $14\frac{1}{2}$

years old (7.50 to 15.49) from the appropriate age group in 1950. This group was 2¼ to 9¼ years old (2.25 to 10.24) on April 1, 1950.

3k(2) The population of Madison County under 16 years old on April 1, 1950, as presented in table 41 of 1950 Census of Population, Vol. II, Characteristics of the Population, Part 13, Illinois, is distributed by age, color, and sex, as follows:

Table 1.--POPULATION UNDER 16 YEARS OLD, BY AGE, COLOR, AND SEX, FOR MADISON COUNTY, ILL.: APRIL 1, 1950

Age	White		Nonwhite	
	Male	Female	Male	Female
Under 1 year.....	1,816	1,750	118	107
1 and 2 years.....	3,805	3,737	233	234
3 and 4 years.....	3,452	3,410	216	243
5 years.....	1,417	1,411	90	98
6 years.....	1,491	1,522	99	92
7 to 9 years.....	4,298	4,303	300	294
10 to 13 years.....	4,938	4,924	347	367
14 years.....	1,225	1,136	87	68
15 years.....	1,099	1,185	72	73

Age data for the State similar to those shown above are given in table 15 of Volume II and in table 33 for cities of 10,000 or more. Single-year-of-age data for the State and for cities of 250,000 or more are given in table 51. Five-year age groups for cities of 2,500 to 10,000 are given in table 38 of that volume.

These figures in table 1 are required to obtain an estimate of the number of children 2¼ to 9¼ years old who were living in Madison County on April 1, 1950. The survivors of this group on July 1, 1955, are the expected population 7½ to 14½ years old, assuming no migration, in Madison County. Additional age detail is needed for computation of the group 7¼ to 14¼ years old on April 1, 1950, in a later step.

3k(3) In order to estimate the population 2¼ to 9¼ years old on April 1, 1950, it is necessary to compute estimates of the single-year-of-age distribution by splitting the available age detail in table 1 in the following manner:

Table 2.--PROCEDURE FOR OBTAINING A SINGLE-YEAR-OF-AGE DISTRIBUTION OF THE POPULATION 1 TO 4 AND 7 TO 13 YEARS OLD, FOR MADISON COUNTY, ILL: APRIL 1, 1950

(Figures not yet adjusted for undercount of children under 5 years old)

Age	Population of Illinois				Percent distribution of the population of Illinois, by single years of age				Estimated population of Madison County, by single years of age			
	White		Nonwhite		White		Nonwhite		White		Nonwhite	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
1 and 2 years.....	164,960	160,035	15,505	15,545	100.0	100.0	100.0	100.0	3,805	3,737	233	234
1 year.....	79,905	77,265	7,525	7,515	48.4	48.3	48.5	48.3	1,842	1,805	113	113
2 years.....	85,055	82,770	7,980	8,030	51.6	51.7	51.5	51.7	1,963	1,932	120	121
3 and 4 years.....	154,050	147,040	12,770	12,135	100.0	100.0	100.0	100.0	3,452	3,410	216	243
3 years.....	88,625	84,490	7,100	6,850	57.5	57.5	55.6	56.4	1,985	1,961	120	137
4 years.....	65,425	62,550	5,670	5,285	42.5	42.5	44.4	43.6	1,467	1,449	96	106
7 to 9 years.....	190,885	184,360	15,775	15,535	100.0	100.0	100.0	100.0	4,298	4,303	300	294
7 years.....	71,325	68,780	5,870	5,550	37.4	37.3	37.2	35.7	1,608	1,605	112	105
8 years.....	63,055	61,445	5,015	4,995	33.0	33.3	31.8	32.2	1,418	1,433	95	95
9 years.....	56,505	54,135	4,890	4,990	29.6	29.4	31.0	32.1	1,272	1,265	93	94
10 to 13 years.....	215,465	206,360	18,300	18,755	100.0	100.0	100.0	100.0	4,938	4,924	347	367
10 years.....	53,580	52,275	4,805	5,045	24.9	25.3	26.3	26.9	1,230	1,246	92	98
11 years.....	54,775	52,310	4,765	4,480	25.4	25.4	26.0	23.9	1,254	1,250	90	88
12 years.....	55,045	52,355	4,540	4,695	25.5	25.4	24.8	25.0	1,259	1,251	86	92
13 years.....	52,065	49,420	4,190	4,535	24.2	23.9	22.9	24.2	1,195	1,177	79	89

Table 2, columns b to e: The population of Illinois, by color and sex, by single years of age, is given in table 51 of 1950 Census of Population, Vol. II, Characteristics of the Population, Part 13, Illinois.

Table 2, columns f to i: The percentage distributions shown in these columns are obtained by computing the percentage that each single-year-of-age State figure in columns b to e is of its group total in these columns. For example, the 56,505 white males 9 years old in column b comprise 29.6 percent of the 190,885 white males 7 to 9 years old in column b. This percentage is shown in column f.

Table 2, columns j to m: The group totals in these columns for Madison County are taken from table 1. The single-year-of-age figures for the county are computed by distributing the grouped data for the county by the single-year-of-age percentage distributions for the State in columns f to i. For example, to estimate the number of white females in Madison County 12 years old in column k apply the

State percentage figure of 25.4 percent for white females 12 years old in column g to the county figure of 4,924 for ages 10 to 13 combined in column k.

3k(4) Censuses commonly miss a sizable number of children under 5 years of age. On the other hand, underenumeration is not believed to be a very important factor for the age range 7½ to 14½ years old, which corresponds to the population in grades 2 to 8. Since the population 7½ to 14½ years old on July 1, 1955, was 2½ to 9½ years old on April 1, 1950, it is important to adjust the figures for the age range under 5 years to take account of underenumeration. If this adjustment is not made, the survivors of the 1950 population on July 1, 1955, would be substantially lower than the presumed number that would be enumerated in a census on that date. The adjustment for underenumeration of the population of Madison County under 5 years old on April 1, 1950, is explained in table 3.

Table 3.--ADJUSTMENT FOR UNDERENUMERATION OF THE POPULATION UNDER 5 YEARS OLD, FOR MADISON COUNTY, ILL.: APRIL 1, 1950

Age and sex	White			Nonwhite		
	Population (tables 1 and 2)	Percentage completeness of enumeration for Illinois (appendix table A)	Population corrected for underenumeration	Population (tables 1 and 2)	Percentage completeness of enumeration for Illinois (appendix table A)	Population corrected for underenumeration
(a)	(b)	(c)	(d) = (b) ÷ (c)	(b)	(c)	(d) = (b) ÷ (c)
MALE						
Under 1 year	1,816	89.9	2,020	118	80.5	147
1 year	1,842	96.4	1,911	113	83.1	136
2 years	1,963	94.7	2,073	120	91.6	131
3 years	1,985	97.5	2,036	120	95.6	126
4 years	1,467	97.5	1,505	96	85.4	112
FEMALE						
Under 1 year	1,750	90.5	1,934	107	82.9	129
1 year	1,805	96.9	1,863	113	83.0	136
2 years	1,932	95.7	2,019	121	94.3	128
3 years	1,961	97.9	2,003	137	95.9	143
4 years	1,449	97.8	1,482	106	87.8	121

Table 3, column b: In this column are inserted the population figures from tables 1 and 2.

Table 3, column c: In this column is inserted the percentage completeness of enumeration for Illinois obtained from appendix table A. Since measures of completeness of enumeration for counties and cities are not available, it is necessary to use, as an approximation, the figures for the State. For States with relatively small nonwhite population, these measures of completeness of enumeration are available only for the white population. Had this been so for Illinois, the figures for the whites and nonwhites in column b would have been divided by the same factors, those for the white population.

Table 3, column d: The population under 5 years old on April 1, 1950, corrected for underenumeration is computed by dividing the figures in column b by the factors in column c.

3k(5) The population of Madison County under 16 years old on April 1, 1950, with the group under 5 years old corrected for underenumeration, is estimated by single years of age, color, and sex in table 4. The figures for under 5 years come from table 3; those for 5, 6, 14, and 15 from table 1; the remaining figures from table 2.

Table 4.--POPULATION UNDER 16 YEARS OLD, BY SINGLE YEARS OF AGE, COLOR, AND SEX, WITH THE GROUP UNDER 5 YEARS OLD ADJUSTED FOR UNDERENUMERATION, FOR MADISON COUNTY, ILL.: APRIL 1, 1950

Age	White		Nonwhite	
	Male	Female	Male	Female
Under 1 year	2,020	1,934	147	129
1 year	1,911	1,863	136	136
2 years	2,073	2,019	131	128
3 years	2,036	2,003	126	143
4 years	1,505	1,482	112	121
5 years	1,417	1,411	90	98
6 years	1,491	1,522	99	92
7 years	1,608	1,605	112	105
8 years	1,418	1,433	95	95
9 years	1,272	1,265	93	94
10 years	1,230	1,246	92	98
11 years	1,254	1,250	90	88
12 years	1,259	1,251	86	92
13 years	1,195	1,177	79	89
14 years	1,225	1,136	87	68
15 years	1,099	1,185	72	73

Note: The computations necessary to complete tables 2 to 4 need be done only once for the 1950-1960 decade.

3k(6) The number of survivors on July 1, 1955, of the population $2\frac{1}{4}$ to $9\frac{1}{4}$ years old (2.25 to 10.24) on April 1, 1950, is estimated in the following table:

Table 5.--PROCEDURE FOR ESTIMATING THE NUMBER OF SURVIVORS $7\frac{1}{2}$ TO $14\frac{1}{2}$ YEARS OLD ON JULY 1, 1955, OF THE POPULATION $2\frac{1}{4}$ TO $9\frac{1}{4}$ YEARS OLD ON APRIL 1, 1950, FOR MADISON COUNTY, ILL.

Color and sex	Population, $2\frac{1}{4}$ to $9\frac{1}{4}$ years old, April 1, 1950	Survival factor (factors for 1955 for Illinois in appendix table B)	Survivors, $7\frac{1}{2}$ to $14\frac{1}{2}$ years old, July 1, 1955
(a)	(b)	(c)	(d)=(b)x(c)
White:			
Male.....	12,609	.99650	12,563
Female.....	12,547	.99766	12,518
Nonwhite:			
Male.....	848	.99498	844
Female.....	869	.99679	866

Table 5, column b: On the assumption of a rectangular distribution of population within both the ages 2 and 10 years, the figures in this column are computed by taking three-fourths of the number 2 years old plus the number 3 to 9 years old plus one-fourth of the number 10 years old given in table 4 (the group $2\frac{1}{4}$ to $9\frac{1}{4}$ years old includes children the youngest of whom is $2\frac{1}{4}$ years old, the oldest is just under $10\frac{1}{4}$ years old. In this notation, any figure represents the 12-month span beginning with that exact age).

Table 5, columns c and d: The estimated proportion of the population at a given age who will be alive at a given date in the future is called the survival factor. The State survival factors in column c are given for Illinois in the column headed "1955" of appendix table B, which contains survival factors to be used in the computation of estimates for each estimate date, July 1, 1950 to 1959, and April 1, 1960. The appendix also gives an explanation of how these survival factors were derived and of how they should be used for each of the estimate dates in the 1950-1960 decade. Since survival factors for counties and cities are not available, it is necessary to use, as an approximation, the figures for the State. These survival factors assume the internal age distribution of the life table used rather than the actual distribution of table 4. The error introduced by this assumption is negligible.

3k(7) The expected population of elementary school age ($7\frac{1}{2}$ to $14\frac{1}{2}$ years old) on July 1, 1955, for Madison County, assuming no migration, obtained by summing the color-sex groups in column d of table 5, is.. 26,793

If population estimates are being prepared for all the counties in the State, it is recommended that the estimates of the expected population for the counties obtained in (k) above be adjusted to add to an independently derived estimate of the expected population for the State as a whole. Upon request, the Bureau of the Census will provide its estimate of the expected population $7\frac{1}{2}$ to $14\frac{1}{2}$ years old on the estimate date for the State. The Bureau's State figures have already been adjusted to add to an independently derived estimate of the expected population $7\frac{1}{2}$ to $14\frac{1}{2}$ years old for the United States on the estimate date. Recent tests have demonstrated that some gain in the average accuracy of the population estimates of States is made by adjustments of this kind at this stage of the procedure. However, if any grade and age combination is being used other than grades 2 to 8 and $7\frac{1}{2}$ to $14\frac{1}{2}$ years old, the Bureau's State figures for the group $7\frac{1}{2}$ to $14\frac{1}{2}$ years old cannot be used to adjust the county figures. In such a case, the local estimator's State figure will have to be used in this step.

3m. Estimated population of elementary school age ($7\frac{1}{2}$ to $14\frac{1}{2}$ years old) on July 1, 1955, including effect of migration..... 28,716

3m(1) Population $7\frac{1}{4}$ to $14\frac{1}{4}$ years old (7.25 to 15.24) on April 1, 1950..... 22,037
Table 4: $\frac{3}{4}$ (7 years) + (8 to 14 years) + $\frac{1}{4}$ (15 years).

3m(2) Number enrolled on April 1, 1950:
Item 3g..... 21,539

3m(3) Ratio: 3m(1) ÷ 3m(2)..... 1.0231

3m(4) Number enrolled on July 1, 1955:
Item 3j..... 28,068

3m(5) Estimated population $7\frac{1}{2}$ to $14\frac{1}{2}$ years old on July 1, 1955:
3m(3) x 3m(4)..... 28,716

Here, too, if population estimates are being prepared for all the counties in the State, it is recommended that the estimates of the population $7\frac{1}{2}$ to $14\frac{1}{2}$ years old for the counties obtained in 3m(5) above be adjusted to add to an independently derived estimate of the population $7\frac{1}{2}$ to $14\frac{1}{2}$ years old for the State as a whole. The Bureau of the Census will also provide, upon request, its State estimate for this group, which estimate has already been adjusted to the national total.

3n. Net change in population in this cohort due to migration..... +1,923

The difference between the 28,716 persons 7½ to 14½ years old on July 1, 1955, item 3m, and the estimated 26,793 survivors of the same age, item 3k, represents a net change of +1,923 persons, or a net gain of population in this age range due to net in-migration.

3p. Migration rate for this cohort, April 1, 1950, to July 1, 1955..... +.0716

3p(1) Net in-migration for the cohort: Item 3n..... +1,923

3p(2) Size of the cohort on April 1, 1950..... 26,873

The cohort on April 1, 1950, comprises persons 2½ to 9½ years old and is obtained by summing the color-sex groups in column b of table 5.

3p(3) The migration rate for the period between April 1, 1950, and July 1, 1955, is equal to 3p(1) ÷ 3p(2).... +.0716

3q. Migration rate for the population of all ages, April 1, 1950, to July 1, 1955: 1.2 x item 3p..... +.0859

It is assumed that the rate of net migration for persons of all ages between April 1, 1950, and the estimate date for Madison County is 1.2 times the rate for children 7½ to 14½ years old for the same county. Evidence for this assumption was found in annual interstate migration data by age for the United States as a whole for recent years, obtained in the Current Population Survey, and in estimates of net migration, 1940 to 1950, for States, made by the "residual" method.

This factor of 1.2 is being used at the present time by the Bureau of the Census in its application of Method II to State estimates. A great deal of research has been undertaken to find a separate factor for each State that would increase the over-all accuracy of the estimates. To date this search has not been successful. Our tests have thus far not demonstrated that greater accuracy is obtainable, on the average, by using separate State factors based on age-specific net interstate migration rates of earlier decades.

It is assumed in this illustration that the national factor of 1.2 is applicable to Madison County (and for the other counties or cities in the State). The local estimator may modify this assumption from county to county on the basis of available information. The Bureau may, in the future, modify its national factor as evidence for such a change is found in data from the Current Population Survey or use different factors for each State in preparing its official State estimates if further research indicates increased accuracy by their use. Furthermore, some formula may be found for changing the factor(s) in each year of the decade to allow for the variable length of exposure to "risk" of migration. It is suggested that the local estimator watch Series P-25 for such possible changes. It should be emphasized here, too, that the use of the factor of 1.2 depends on the grade-age combination being used by the local estimator. Any combination different from grades 2 to 8 and 7½ to 14½ years old might require a different factor. Such would probably be the case if grades 1 to 12 (6 to 17 years old) were used.

3r. Estimated total net civilian migration, April 1, 1950, to July 1, 1955..... +16,673

3r(1) Civilian population of Madison County on April 1, 1950 (item 1).. 181,874

3r(2) One-half births during the period (item 2c)..... 12,975

3r(3) Net loss to the Armed Forces for Madison County, April 1, 1950, to July 1, 1955 (item 4 below)..... 1,788

3r(4) Population of Madison County under 5 years old, not enumerated on April 1, 1950..... 1,034

This figure is obtained by subtracting the number under 5 years old in column b of table 3 from the number under 5 years old in column d of the same table.

3r(5) Population base for computing estimate of net migration at all ages: 3r(1) + 3r(2) - 3r(3) + 3r(4)..... 194,095

3r(6) Net civilian migration at all ages: 3r(5) x item 3q..... +16,673

This procedure allows for net migration among persons alive on the base date and also among persons born subsequently. It is assumed that births between the base date and the estimate date were evenly distributed throughout the period and that, on the average, the newly born persons were alive for only half the period and should therefore have experienced net migration at only half the computed rate. Since the product of the number of births by half the net migration rate is equal to the product of half the births by the entire net migration rate, the desired result, an estimate of net

migrants for the total population, is achieved by adding the base date population and half of the subsequent births and by multiplying this sum by the estimated net migration rate from item 3q.

Net loss to the Armed Forces is subtracted from the base population since persons who move between civilian life and the Armed Forces cannot also move into or out of an area as part of net civilian migration.

The population under 5 years old not enumerated on April 1, 1950, is added to the base population since these children may also migrate into or out of an area.

Item 4. Net loss to the Armed Forces for Madison County, April 1, 1950, to July 1, 1955..... 1,788

4a. Male population 18 to 24 years old for Madison County on April 1, 1950..... 8,584
Source: Table 41 of 1950 Census of Population, Vol. II, Characteristics of the Population, Part 13, Illinois.

4b. Male population 18 to 24 years old for Illinois on April 1, 1950..... 422,423
Source: Table 15 of 1950 Census of Population, Vol. II, Characteristics of the Population, Part 13, Illinois.

4c. Ratio: 4a ÷ 4b..... .0203

4d. Total strength of the Armed Forces of the United States on July 1, 1955..... 2,964,000
Source: Current Population Reports, Series P-25, No. 119. Future reports in this series will give the strength of the Armed Forces for dates later than July 1, 1955. The strength of the Armed Forces is obtained by subtracting the civilian population from the total population including Armed Forces overseas.

4e. Armed Forces of the United States on July 1, 1954..... 3,331,000
Source: Current Population Reports, Series P-25, No. 119.

4f. Ratio: 4d ÷ 4e..... .8898

4g. Net loss to Armed Forces for Illinois, April 1, 1950, to July 1, 1954..... 99,000
Source: Current Population Reports, Series P-25, No. 124. Future reports in this series will give net loss figures for years after 1954.

4h. Net loss to Armed Forces for Illinois, April 1, 1950, to July 1, 1955: 4f x 4g..... 88,090

It is assumed here that the net loss to the Armed Forces for Illinois for April 1, 1950, to July 1, 1955, is not yet available in a Bureau of the Census report.

4i. Net loss to Armed Forces for Madison County, April 1, 1950, to July 1, 1955: 4c x 4h..... 1,788

Item 5. Civilian population of Madison County on July 1, 1955..... 213,865

5a. Civilian population on April 1, 1950 (item 1)..... 181,874

5b. Natural increase, April 1, 1950, to July 1, 1955 (item 2)..... 17,106

5c. Estimated net civilian migration, April 1, 1950, to July 1, 1955 (item 3)..... +16,673

5d. Net loss to Armed Forces, April 1, 1950, to July 1, 1955 (item 4)..... 1,788

5e. Estimated civilian population on July 1, 1955: 5a + 5b + 5c - 5d..... 213,865

Item 6. Military personnel stationed in Madison County on July 1, 1955..... 538

The number of military personnel stationed in the county may be available from the local Army, Air Force, Navy, Marine, and Coast Guard Offices. (It cannot be supplied by the Bureau of the Census.) If the information cannot be obtained locally, the Department of Defense in Washington, D. C., can provide the necessary data.

Item 7. Total population of Madison County on July 1, 1955..... 214,403

7a. Civilian population on July 1, 1955 (item 5)..... 213,865

7b. Military personnel stationed in Madison County on July 1, 1955 (item 6)... 538

7c. Total population on July 1, 1955: 7a + 7b..... 214,403

APPENDIX A

PERCENTAGE COMPLETENESS OF ENUMERATION OF THE POPULATION UNDER 5 YEARS OLD, BY AGE, COLOR, AND SEX, FOR STATES: APRIL 1, 1950

The percentage completeness of enumeration of the population under 5 years old in 1950 is the percent that the enumerated population in this age group is of the estimated number of children under 5 years old in 1950 based on appropriate data for births, deaths, and migration. Such estimates by age, color, and sex, for the United States, by regions, divisions, and States, are presented in the appendix of Current Population Reports, Series P-25, No. 106. The measures of percentage completeness of enumeration shown in this appendix were computed by dividing the enumerated population by the corresponding estimates given in appendix table A-5 of that report.

Table A.--ESTIMATED PERCENTAGE COMPLETENESS OF ENUMERATION OF THE POPULATION UNDER 5 YEARS OLD, BY AGE, COLOR, AND SEX, FOR STATES: APRIL 1, 1950

State and age	White		Nonwhite[1]	
	Male	Female	Male	Female
ALABAMA				
Under 1 year	89.3	90.3	83.6	85.1
1 year	94.9	95.2	87.3	87.9
2 years	90.7	91.6	95.4	93.7
3 years	93.6	94.2	97.6	99.7
4 years	100.0	100.0	91.4	90.3
ARIZONA				
Under 1 year	88.1	87.5	76.8	79.5
1 year	95.5	93.5	97.8	96.9
2 years	93.1	91.7	98.8	96.0
3 years	100.0	100.0	99.1	100.0
4 years	100.0	100.0	82.5	89.3
ARKANSAS				
Under 1 year	87.4	88.4	82.3	86.0
1 year	93.1	93.4	81.9	82.1
2 years	91.3	92.9	87.5	87.4
3 years	94.6	94.9	89.8	92.2
4 years	100.0	100.0	75.9	78.1
CALIFORNIA				
Under 1 year	89.7	90.4	85.3	85.5
1 year	96.2	96.1	88.0	88.0
2 years	94.0	94.7	98.5	98.9
3 years	99.1	99.6	100.0	97.1
4 years	97.2	97.3	95.7	95.9
COLORADO				
Under 1 year	90.3	91.6	...	...
1 year	94.3	94.0	...	...
2 years	93.5	94.2	...	...
3 years	98.6	100.0	...	...
4 years	99.9	100.0	...	...
CONNECTICUT				
Under 1 year	89.4	90.4	...	...
1 year	95.4	96.4	...	...
2 years	95.2	94.8	...	...
3 years	97.9	97.3	...	...
4 years	96.6	96.7	...	...
DELAWARE				
Under 1 year	90.6	91.8	...	...
1 year	99.8	98.4	...	...
2 years	100.0	97.2	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
DISTRICT OF COLUMBIA				
Under 1 year	89.4	90.4	80.9	83.0
1 year	83.9	82.7	85.4	85.8
2 years	100.0	100.0	95.9	94.7
3 years	100.0	100.0	94.7	96.9
4 years	100.0	100.0	94.7	96.9
FLORIDA				
Under 1 year	90.4	91.5	85.6	85.3
1 year	100.0	100.0	87.9	88.1
2 years	97.7	97.1	90.1	92.2
3 years	100.0	100.0	95.2	97.2
4 years	100.0	98.3	88.3	88.9
GEORGIA				
Under 1 year	89.3	89.9	81.2	83.4
1 year	94.6	96.3	83.8	84.8
2 years	90.7	93.1	89.6	89.7
3 years	94.0	96.2	94.1	95.4
4 years	98.6	99.5	86.7	87.5
IDAHO				
Under 1 year	91.5	90.0	...	...
1 year	94.6	96.4	...	...
2 years	93.4	95.4	...	...
3 years	98.9	100.0	...	...
4 years	97.5	96.5	...	...
ILLINOIS				
Under 1 year	89.9	90.5	80.5	82.9
1 year	96.4	96.9	83.1	83.0
2 years	94.7	95.7	91.6	94.3
3 years	97.5	97.9	95.6	95.9
4 years	97.5	97.8	85.4	87.8
INDIANA				
Under 1 year	89.9	90.5	82.9	84.7
1 year	95.9	96.6	85.8	87.7
2 years	94.9	96.0	95.6	98.3
3 years	99.2	99.7	100.0	100.0
4 years	98.7	99.9	88.7	91.5
IOWA				
Under 1 year	93.2	93.7	...	...
1 year	98.4	98.9	...	...
2 years	98.8	99.5	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
KANSAS				
Under 1 year	90.0	90.3	...	...
1 year	97.9	98.0	...	...
2 years	95.2	97.0	...	...
3 years	97.2	97.2	...	...
4 years	94.4	94.7	...	...
KENTUCKY				
Under 1 year	84.3	85.5	84.1	86.7
1 year	91.7	94.2	89.4	87.9
2 years	91.0	93.9	100.0	100.0
3 years	95.4	98.6	100.0	100.0
4 years	98.6	100.0	100.0	100.0

[1] Percent not shown where population under 5 years old is less than 10,000.

Table A.--ESTIMATED PERCENTAGE COMPLETENESS OF ENUMERATION OF THE POPULATION UNDER 5 YEARS OLD, BY AGE, COLOR, AND SEX, FOR STATES: APRIL 1, 1950--Con.

State and age	White		Nonwhite[1]	
	Male	Female	Male	Female
LOUISIANA				
Under 1 year	89.3	89.9	82.8	84.6
1 year	97.1	97.0	87.1	88.3
2 years	92.2	94.4	92.6	92.5
3 years	94.2	96.1	96.0	97.1
4 years	98.8	98.8	89.9	90.6
MAINE				
Under 1 year	90.3	90.8	...	...
1 year	94.4	96.0	...	...
2 years	96.0	96.2	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
MARYLAND				
Under 1 year	89.4	90.4	80.9	82.9
1 year	100.0	100.0	87.4	86.6
2 years	95.8	95.3	93.5	93.7
3 years	100.0	100.0	98.2	100.0
4 years	98.1	98.5	90.5	92.6
MASSACHUSETTS				
Under 1 year	89.6	90.7	...	...
1 year	97.7	98.7	...	...
2 years	98.6	99.1	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
MICHIGAN				
Under 1 year	91.4	91.4	85.9	87.9
1 year	96.3	97.5	88.0	90.0
2 years	95.8	95.7	99.6	97.8
3 years	99.2	99.7	100.0	100.0
4 years	99.3	99.0	94.2	93.4
MINNESOTA				
Under 1 year	92.6	93.3	...	...
1 year	97.6	98.1	...	...
2 years	97.9	97.7	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
MISSISSIPPI				
Under 1 year	88.3	89.3	82.0	83.9
1 year	98.1	99.2	88.8	88.6
2 years	92.8	94.7	93.3	95.0
3 years	95.5	97.0	98.2	98.3
4 years	100.0	100.0	91.7	91.3
MISSOURI				
Under 1 year	89.6	90.1	82.5	83.1
1 year	96.1	97.2	82.9	84.3
2 years	97.0	96.5	97.7	94.6
3 years	100.0	100.0	100.0	100.0
4 years	100.0	100.0	93.9	96.0
MONTANA				
Under 1 year	88.5	88.7	...	...
1 year	98.1	97.0	...	...
2 years	94.1	97.0	...	...
3 years	100.0	100.0	...	...
4 years	98.6	99.0	...	...
NEBRASKA				
Under 1 year	92.3	91.5	...	...
1 year	97.2	97.7	...	...
2 years	97.7	98.1	...	...
3 years	100.0	98.5	...	...
4 years	100.0	100.0	...	...
NEVADA				
Under 1 year	95.2	92.9	...	...
1 year	96.2	98.3	...	...
2 years	96.2	98.8	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
NEW HAMPSHIRE				
Under 1 year	87.4	89.3	...	...
1 year	96.0	96.1	...	...
2 years	95.4	97.2	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
NEW JERSEY				
Under 1 year	88.9	89.7	77.3	82.3
1 year	96.3	96.5	84.7	84.2
2 years	93.6	94.5	92.7	94.0
3 years	97.0	98.4	96.7	96.9
4 years	94.4	94.5	89.1	95.9
NEW MEXICO				
Under 1 year	85.8	86.4	...	...
1 year	94.1	92.8	...	...
2 years	90.3	92.6	...	...
3 years	98.4	98.3	...	...
4 years	95.4	95.5	...	...
NEW YORK				
Under 1 year	88.4	89.2	78.5	79.4
1 year	96.5	96.7	84.1	83.6
2 years	95.3	96.1	97.6	97.0
3 years	99.6	100.0	100.0	100.0
4 years	100.0	100.0	100.0	100.0
NORTH CAROLINA				
Under 1 year	87.8	88.4	82.2	82.6
1 year	97.0	96.5	87.9	89.1
2 years	93.5	93.8	94.1	92.4
3 years	98.8	99.9	100.0	100.0
4 years	100.0	100.0	91.4	92.0
NORTH DAKOTA				
Under 1 year	89.4	88.4	...	...
1 year	99.2	99.8	...	...
2 years	99.8	100.0	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
OHIO				
Under 1 year	91.4	91.7	86.4	87.7
1 year	96.2	97.7	87.4	88.3
2 years	95.7	96.1	96.9	96.2
3 years	98.8	99.8	100.0	100.0
4 years	99.2	100.0	93.8	95.8
OKLAHOMA				
Under 1 year	92.7	93.2	81.9	82.3
1 year	97.8	98.4	82.5	81.6
2 years	96.2	96.6	89.0	86.8
3 years	96.1	95.9	81.2	80.4
4 years	95.9	96.0	77.9	75.1
OREGON				
Under 1 year	92.2	92.6	...	...
1 year	96.3	96.8	...	...
2 years	95.1	95.7	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
PENNSYLVANIA				
Under 1 year	88.9	89.8	82.4	84.8
1 year	95.7	96.8	89.5	89.3
2 years	95.6	96.4	99.7	100.0
3 years	98.9	100.0	100.0	100.0
4 years	100.0	100.0	91.5	89.2
RHODE ISLAND				
Under 1 year	90.0	90.3	...	...
1 year	96.2	98.7	...	...
2 years	97.7	97.7	...	...
3 years	99.4	100.0	...	...
4 years	100.0	100.0	...	...

[1] Percent not shown where population under 5 years old is less than 10,000.

Table A.--ESTIMATED PERCENTAGE COMPLETENESS OF ENUMERATION OF THE POPULATION UNDER 5 YEARS OLD, BY AGE, COLOR, AND SEX, FOR STATES: APRIL 1, 1950--Con.

State and age	White		Nonwhite[1]	
	Male	Female	Male	Female
SOUTH CAROLINA				
Under 1 year	88.1	88.9	78.5	80.8
1 year	94.0	96.9	85.2	86.4
2 years	90.8	91.9	89.8	90.2
3 years	94.3	93.5	95.7	98.5
4 years	99.0	100.0	90.1	88.1
SOUTH DAKOTA				
Under 1 year	90.8	91.8	...	...
1 year	98.9	98.8	...	...
2 years	97.4	99.4	...	...
3 years	100.0	100.0	...	...
4 years	99.5	100.0	...	...
TENNESSEE				
Under 1 year	88.0	89.0	84.1	86.4
1 year	96.7	96.5	87.4	88.8
2 years	95.9	95.3	93.5	93.6
3 years	96.7	98.7	94.9	96.0
4 years	99.4	100.0	84.8	84.1
TEXAS				
Under 1 year	87.4	88.0	84.1	85.4
1 year	93.8	94.4	87.6	87.4
2 years	92.1	92.7	91.3	92.7
3 years	94.1	95.1	93.1	95.1
4 years	93.9	95.0	85.0	84.0
UTAH				
Under 1 year	91.7	91.9	...	...
1 year	98.3	98.0	...	...
2 years	98.8	98.3	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
VERMONT				
Under 1 year	90.7	91.7	...	...
1 year	94.4	95.1	...	...
2 years	93.9	93.0	...	...
3 years	100.0	98.2	...	...
4 years	95.8	97.7	...	...
VIRGINIA				
Under 1 year	89.4	90.4	80.9	82.9
1 year	99.2	100.0	88.6	87.6
2 years	96.5	96.2	92.2	92.6
3 years	100.0	100.0	100.0	100.0
4 years	100.0	100.0	88.8	92.5
WASHINGTON				
Under 1 year	93.1	94.2	...	...
1 year	99.3	99.5	...	...
2 years	98.6	99.1	...	...
3 years	100.0	100.0	...	...
4 years	100.0	100.0	...	...
WEST VIRGINIA				
Under 1 year	86.6	86.6	87.4	85.8
1 year	93.8	93.1	94.9	93.3
2 years	93.1	93.7	100.0	97.0
3 years	98.6	99.8	100.0	100.0
4 years	100.0	100.0	88.7	92.7
WISCONSIN				
Under 1 year	91.9	92.3	...	...
1 year	97.0	97.9	...	...
2 years	97.6	97.2	...	...
3 years	99.9	100.0	...	...
4 years	100.0	100.0	...	...
WYOMING				
Under 1 year	92.1	95.2	...	...
1 year	98.8	95.7	...	...
2 years	95.1	94.1	...	...
3 years	97.7	96.4	...	...
4 years	92.4	92.0	...	...

[1] Percent not shown where population under 5 years old is less than 10,000.

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APPENDIX B

SURVIVAL FACTORS FOR COMPUTING THE NUMBER OF CHILDREN OF ELEMENTARY SCHOOL AGE ($7\frac{1}{2}$ TO $14\frac{1}{2}$ YEARS OLD), FOR ESTIMATE DATES JULY 1, 1950 TO 1959, AND APRIL 1, 1960

To estimate the proportion of the population at a given age who will be alive at a date in the future, it is necessary to compute a survival factor which reflects mortality trends prevailing in the area during the period. It is generally impossible to obtain such factors for the right area or the right period. Instead, it is necessary to use the most appropriate life table. In the absence of life tables for counties, a State life table is used here to compute survival factors to reflect mortality trends in the counties or cities in that State. If the local estimator has better measures of current mortality for his areas, he should use them instead of the values given in this appendix.

The L_x column of a standard life table, which presents the age distribution of a stationary population subject to the mortality rates existing at the date to which the life table refers, and to an annual 100,000 births, may be used to compute these survival factors. An estimate of the proportion of the population aged x years at the start of a period who will still be alive y years later is $\frac{L_{x+y}}{L_x}$.

The L_x values used in the computation of the survival factors given in this appendix were based on L_x values obtained from "State Life Tables, 1949-51" published by the National Office of Vital Statistics, United States Public Health Service. (At the time this report was written, only a few of these State life tables had been published but the remainder were expected to be in print by the end of 1956.)

In this illustration, the estimate date is July 1, 1955. Therefore, the survival factors given in the column headed "1955" of appendix table B are used in table 5 to estimate the number of survivors on July 1, 1955, from the population $2\frac{1}{4}$ to $9\frac{1}{4}$ years old on April 1, 1950. The survival factors in this column were computed on the basis of the formula $\frac{L_{7\frac{1}{2}\text{ to }14\frac{1}{2}}}{L_{2\frac{1}{4}\text{ to }9\frac{1}{4}}}$. An estimate of $L_{2\frac{1}{4}\text{ to }9\frac{1}{4}}$ was computed by taking 3/4 of L_2 plus $L_{3\text{ to }9}$ plus 1/4 of L_{10}. $L_{7\frac{1}{2}\text{ to }14\frac{1}{2}}$ was computed by taking 1/2 of L_7 plus $L_{8\text{ to }14}$ plus 1/2 of L_{15}.

It should be noted that, under the heading "1958" (to be used for the estimate date July 1, 1958), there are two columns of figures. One of these columns bears the subheading "Births, April to December 1950"; the other column has the subheading "Population under $7\frac{1}{4}$ years old on April 1, 1950." These two sets of survival factors are needed to estimate the number of children $7\frac{1}{2}$ to $14\frac{1}{2}$ years old on July 1, 1958, assuming no migration. These children are the survivors of the group under $7\frac{1}{4}$ years old on April 1, 1950, and of the group born from April to December 1950. The survival factors in the first column were computed on the basis of the formula $\frac{\frac{1}{2}L_7 + \frac{1}{4}L_8}{\frac{3}{4}l_0}$ where l_0 is equal to 100,000. The survival factors in the second column were based on the formula $\frac{L_{8\frac{1}{4}\text{ to }14\frac{1}{2}}}{L_0\text{ to }L_{6\frac{1}{4}}}$. To estimate the number of survivors on July 1, 1958, of the population under $7\frac{1}{4}$ years old and of births from April to December 1950, (a) the survival factor in the first column is multiplied by the number of births for the 3/4-year period April to December 1950, (b) the survival factor in the second column is multiplied by the population under $7\frac{1}{4}$ years old on April 1, 1950, and (c) the figures obtained in (a) and (b) are summed.

One other example should help further clarify the use of appendix table B. In preparing estimates for July 1, 1959, the two columns of survival factors under the heading "1959" are to be used. The children $7\frac{1}{2}$ to $14\frac{1}{2}$ years old on July 1, 1959, assuming no migration, are the survivors of the group under $6\frac{1}{4}$ years old on April 1, 1950, and of the group born in the period April 1950 to December 1951. To estimate these survivors on July 1, 1959, (a) the survival factor in the first column, headed "births, April 1950 to December 1951," is multiplied by the number of births from April 1950 to December 1951; (b) the survival factor in the second column, headed "population under $6\frac{1}{4}$ years old on April 1, 1950," is multiplied by the population under $6\frac{1}{4}$ years old on April 1, 1950; and (c) the figures obtained in (a) and (b) are summed.

Birth statistics required for these computations are obtained from the same sources given in item 2 in which natural increase is estimated. The number of births for the period April to December 1950 is obtained by taking three-fourths of the number of births in 1950. Similarly, the number of births for the period April 1950 to September 1952 is obtained by taking three-fourths of the number of births in 1950 plus the number of births in 1951 plus three-fourths of the number of births in 1952.

Survival factors for the estimate date April 1, 1960, are included in appendix table B for future use in preparing estimates for that date to test the accuracy of these estimates against the 1960 Census counts. Such tests are useful not only to give some measure of the accuracy of estimates obtained by Method II but also to obtain correction factors to be used in preparing intercensal estimates for the 1950-1960 decade.

Table B.--SURVIVAL FACTORS FOR COMPUTING THE EXPECTED NUMBER OF CHILDREN OF ELEMENTARY SCHOOL AGE ($7\frac{1}{2}$ TO $14\frac{1}{2}$ YEARS OLD), FOR ESTIMATE DATES JULY 1, 1950 TO 1959, AND APRIL 1, 1960

State, color, and sex	1950 — Population $7\frac{1}{2}$-$14\frac{1}{2}$ years old on April 1, 1950	1951 — Population $6\frac{1}{2}$-$13\frac{1}{2}$ years old on April 1, 1950	1952 — Population $5\frac{1}{2}$-$12\frac{1}{2}$ years old on April 1, 1950	1953 — Population $4\frac{1}{2}$-$11\frac{1}{2}$ years old on April 1, 1950	1954 — Population $3\frac{1}{2}$-$10\frac{1}{2}$ years old on April 1, 1950	1955 — Population $2\frac{1}{2}$-$9\frac{1}{2}$ years old on April 1, 1950	1956 — Population $1\frac{1}{2}$-$8\frac{1}{2}$ years old on April 1, 1950	1957 — Population $0\frac{1}{2}$-$7\frac{1}{2}$ years old on April 1, 1950	1958 — Births, April to December 1950	1958 — Population under $7\frac{1}{2}$ years old on April 1, 1950	1959 — Births, April 1950 to December 1951	1959 — Population under $6\frac{1}{2}$ years old on April 1, 1950	1960 — Births, April 1950 to September 1952	1960 — Population under $5\frac{1}{2}$ years old on April 1, 1950
ALABAMA														
White:														
Male	.99981	.99908	.99838	.99768	.99694	.99613	.99518	.99372	.95627	.99266	.95594	.99170	.95574	.99091
Female	.99990	.99951	.99908	.99860	.99806	.99742	.99663	.99539	.96699	.99455	.96675	.99384	.96661	.99327
Nonwhite:														
Male	.99975	.99880	.99790	.99700	.99605	.99496	.99356	.99104	.93441	.98935	.93401	.98794	93375	.98674
Female	.99980	.99902	.99827	.99749	.99666	.99573	.99456	.99245	.94596	.99105	.94559	.98987	.94536	.98888
ARIZONA														
White:														
Male	.99981	.99910	.99837	.99758	.99668	.99563	.99431	.99231	.94639	.99095	.94603	.98976	.94581	.98879
Female	.99984	.99920	.99856	.99790	.99718	.99637	.99536	.99374	.95683	.99262	.95651	.99165	.95632	.99085
Nonwhite:														
Male	.99962	.99808	.99645	.99457	.99222	.98899	.98407	.97586	.84468	.97004	.84398	.96702	.84355	.96360
Female	.99965	.99839	.99717	.99582	.99409	.99156	.98739	.98022	.86795	.97606	.86752	.97267	.86726	.96964
ARKANSAS														
White:														
Male	.99981	.99905	.99830	.99754	.99674	.99586	.99484	.99336	.96032	.99225	.95995	.99126	.95971	.99046
Female	.99990	.99947	.99902	.99853	.99797	.99731	.99650	.99526	.96899	.99441	.96875	.99368	.96861	.99307
Nonwhite:														
Male	.99975	.99884	.99795	.99702	.99598	.99473	.99307	.99045	.94717	.98870	.94678	.98718	.94653	.98590
Female	.99983	.99917	.99853	.99787	.99713	.99620	.99493	.99289	.95756	.99155	.95725	.99042	.95705	.98946
CALIFORNIA														
White:														
Male	.99983	.99918	.99855	.99790	.99722	.99645	.99554	.99423	.96413	.99326	.96383	.99239	.96364	.99168
Female	.99990	.99948	.99906	.99860	.99809	.99751	.99682	.99579	.97315	.99505	.97293	.99441	.97279	.99389
Nonwhite:														
Male	.99978	.99889	.99801	.99710	.99614	.99508	.99380	.99179	.95173	.99036	.95131	.98911	.95103	.98809
Female	.99987	.99935	.99883	.99828	.99765	.99691	.99595	.99431	.95959	.99323	.95934	.99232	.95919	.99156
COLORADO														
White:														
Male	.99977	.99890	.99806	.99724	.99640	.99548	.99439	.99272	.95171	.99148	.95134	.99036	.95111	.98942
Female	.99984	.99923	.99861	.99800	.99737	.99667	.99584	.99451	.96371	.99356	.96341	.99273	.96321	.99204
Nonwhite:														
Male	.99957	.99788	.99614	.99424	.99194	.98885	.98416	.97627	.84943	.97152	.84873	.96762	.84828	.96423
Female	.99966	.99842	.99722	.99592	.99427	.99186	.98787	.98100	.87417	.97700	.87377	.97374	.87352	.97081
CONNECTICUT														
White:														
Male	.99989	.99945	.99900	.99852	.99799	.99738	.99668	.99565	.97061	.99491	.97039	.99425	.97025	.99372
Female	.99991	.99956	.99918	.99879	.99838	.99793	.99740	.99658	.97728	.99600	.97707	.99549	.97694	.99508
Nonwhite:														
Male	.99974	.99873	.99776	.99675	.99571	.99456	.99323	.99115	.95085	.98964	.95037	.98831	.95006	.98722
Female	.99983	.99918	.99854	.99790	.99722	.99645	.99551	.99382	.95365	.99267	.95334	.99172	.95312	.99094
DELAWARE														
White:														
Male	.99981	.99908	.99838	.99769	.99697	.99621	.99536	.99415	.96505	.99321	.96470	.99235	.96448	.99166
Female	.99987	.99935	.99885	.99836	.99787	.99737	.99682	.99592	.97188	.99524	.97164	.99462	.97148	.99412
Nonwhite:														
Male	.99955	.99780	.99608	.99441	.99275	.99103	.98908	.98606	.92903	.98377	.92822	.98171	.92769	.98004
Female	.99982	.99914	.99845	.99770	.99684	.99581	.99449	.99233	.95143	.99091	.95110	.98969	.95090	.98867
DISTRICT OF COLUMBIA														
White:														
Male	.99988	.99941	.99896	.99854	.99813	.99769	.99721	.99631	.96363	.99566	.96342	.99510	.96328	.99463
Female	.99995	.99975	.99956	.99935	.99911	.99883	.99847	.99775	.97333	.99730	.97323	.99694	.97316	.99664
Nonwhite:														
Male	.99975	.99879	.99786	.99694	.99596	.99488	.99362	.99170	.95623	.99030	.95576	.98906	.95546	.98805
Female	.99987	.99938	.99890	.99838	.99778	.99708	.99622	.99475	.96296	.99378	.96270	.99297	.96254	.99231
FLORIDA														
White:														
Male	.99983	.99917	.99850	.99779	.99701	.99614	.99512	.99366	.96105	.99259	.96071	.99164	.96051	.99087
Female	.99991	.99955	.99917	.99875	.99825	.99768	.99696	.99584	.97011	.99508	.96993	.99442	.96982	.99387
Nonwhite:														
Male	.99972	.99863	.99760	.99658	.99553	.99434	.99282	.99021	.93407	.98843	.93359	.98690	.93329	.98562
Female	.99984	.99920	.99853	.99782	.99700	.99603	.99481	.99266	.94600	.99126	.94564	.99012	.94542	.98918
GEORGIA														
White:														
Male	.99983	.99917	.99851	.99784	.99714	.99637	.99547	.99415	.96163	.99318	.96130	.99230	.96109	.99160
Female	.99991	.99954	.99916	.99876	.99831	.99777	.99709	.99603	.97117	.99531	.97097	.99470	.97084	.99419
Nonwhite:														
Male	.99975	.99880	.99790	.99699	.99602	.99495	.99360	.99123	.93952	.98962	.93909	.98826	.93882	.98714
Female	.99981	.99910	.99840	.99767	.99688	.99598	.99483	.99282	.94955	.99148	.94921	.99035	.94900	.98941

Table B.—SURVIVAL FACTORS FOR COMPUTING THE EXPECTED NUMBER OF CHILDREN OF ELEMENTARY SCHOOL AGE ($7\frac{1}{2}$ TO $14\frac{1}{2}$ YEARS OLD), FOR ESTIMATE DATES JULY 1, 1950 TO 1959, AND APRIL 1, 1960—Con.

State, color, and sex	1950 — Population $7\frac{1}{4}$-$14\frac{1}{4}$ years old on April 1, 1950	1951 — Population $6\frac{3}{4}$-$13\frac{3}{4}$ years old on April 1, 1950	1952 — Population $5\frac{3}{4}$-$12\frac{3}{4}$ years old on April 1, 1950	1953 — Population $4\frac{3}{4}$-$11\frac{3}{4}$ years old on April 1, 1950	1954 — Population $3\frac{3}{4}$-$10\frac{3}{4}$ years old on April 1, 1950	1955 — Population $2\frac{3}{4}$-$9\frac{3}{4}$ years old on April 1, 1950	1956 — Population $1\frac{3}{4}$-$8\frac{3}{4}$ years old on April 1, 1950	1957 — Population $0\frac{3}{4}$-$7\frac{3}{4}$ years old on April 1, 1950	1958 — Births, April to December 1950	1958 — Population under $7\frac{1}{4}$ years old on April 1, 1950	1959 — Births, April 1950 to December 1951	1959 — Population under $6\frac{1}{4}$ years old on April 1, 1950	1960 — Births, April 1950 to September 1952	1960 — Population under $5\frac{1}{2}$ years old on April 1, 1950
IDAHO														
White:														
Male	.99977	.99890	.99805	.99720	.99631	.99532	.99416	.99258	.96120	.99137	.96077	.99028	.96049	.98940
Female	.99986	.99932	.99878	.99825	.99770	.99708	.99634	.99522	.97164	.99441	.97137	.99369	.97120	.99310
Nonwhite:														
Male	.99958	.99789	.99613	.99420	.99185	.98868	.98393	.97613	.85791	.97141	.85713	.96755	.85664	.96421
Female	.99968	.99851	.99739	.99617	.99460	.99227	.98837	.98171	.88139	.97784	.88099	.97469	.88076	.97186
ILLINOIS														
White:														
Male	.99983	.99916	.99852	.99788	.99722	.99650	.99568	.99448	.96585	.99357	.96555	.99274	.96535	.99207
Female	.99990	.99948	.99906	.99863	.99817	.99766	.99707	.99614	.97357	.99547	.97336	.99488	.97323	.99441
Nonwhite:														
Male	.99978	.99891	.99805	.99715	.99614	.99498	.99357	.99128	.94492	.98971	.94452	.98836	.94426	.98725
Female	.99985	.99931	.99878	.99822	.99757	.99679	.99578	.99403	.95644	.99288	.95623	.99191	.95610	.99109
INDIANA														
White:														
Male	.99979	.99901	.99825	.99749	.99670	.99586	.99491	.99355	.96203	.99250	.96167	.99153	.96144	.99075
Female	.99987	.99938	.99887	.99834	.99778	.99715	.99642	.99532	.97099	.99452	.97073	.99381	.97057	.99323
Nonwhite:														
Male	.99974	.99875	.99778	.99676	.99563	.99434	.99281	.99036	.94119	.98865	.94074	.98716	.94044	.98594
Female	.99983	.99920	.99860	.99794	.99718	.99627	.99513	.99321	.95389	.99193	.95365	.99084	.95348	.98992
IOWA														
White:														
Male	.99982	.99911	.99844	.99776	.99705	.99630	.99544	.99418	.96395	.99322	.96363	.99234	.96343	.99162
Female	.99990	.99951	.99912	.99871	.99827	.99777	.99718	.99624	.97411	.99558	.97390	.99501	.97378	.99454
Nonwhite:														
Male	.99972	.99864	.99751	.99631	.99494	.99332	.99124	.98792	.92683	.98572	.92626	.98384	.92592	.98229
Female	.99981	.99907	.99832	.99749	.99649	.99522	.99348	.99067	.94293	.98888	.94258	.98738	.94236	.98611
KANSAS														
White:														
Male	.99980	.99904	.99831	.99759	.99685	.99606	.99518	.99392	.96515	.99294	.96481	.99204	.96458	.99131
Female	.99986	.99933	.99880	.99827	.99771	.99711	.99640	.99535	.97361	.99457	.97337	.99386	.97321	.99328
Nonwhite:														
Male	.99971	.99857	.99739	.99614	.99474	.99309	.99098	.98767	.92799	.98544	.92738	.98354	.92702	.98198
Female	.99977	.99889	.99800	.99705	.99594	.99456	.99270	.98978	.94247	.98787	.94207	.98624	.94181	.98487
KENTUCKY														
White:														
Male	.99981	.99907	.99836	.99765	.99689	.99603	.99498	.99332	.95147	.99215	.95113	.99112	.95091	.99027
Female	.99987	.99935	.99883	.99827	.99766	.99695	.99604	.99459	.96111	.99360	.96085	.99276	.96068	.99206
Nonwhite:														
Male	.99971	.99852	.99731	.99603	.99467	.99318	.99144	.98864	.93225	.98665	.93162	.98497	.93122	.98360
Female	.99975	.99882	.99791	.99700	.99604	.99496	.99359	.99126	.94407	.98968	.94362	.98834	.94334	.98723
LOUISIANA														
White:														
Male	.99984	.99921	.99858	.99794	.99725	.99648	.99558	.99426	.96347	.99329	.96315	.99242	.96296	.99172
Female	.99991	.99953	.99914	.99871	.99824	.99768	.99698	.99590	.97165	.99516	.97146	.99452	.97133	.99399
Nonwhite:														
Male	.99972	.99867	.99767	.99668	.99568	.99457	.99321	.99080	.93679	.98913	.93634	.98770	.93605	.98649
Female	.99983	.99916	.99845	.99767	.99682	.99582	.99454	.99230	.94363	.99084	.94323	.98966	.94299	.98869
MAINE														
White:														
Male	.99982	.99915	.99848	.99779	.99705	.99620	.99519	.99367	.95652	.99258	.95622	.99159	.95603	.99078
Female	.99990	.99950	.99908	.99863	.99812	.99753	.99681	.99565	.96737	.99486	.96714	.99420	.96700	.99365
Nonwhite:														
Male	.99968	.99843	.99724	.99603	.99477	.99339	.99176	.98918	.93704	.98732	.93650	.98567	.93615	.98430
Female	.99982	.99912	.99844	.99773	.99697	.99606	.99493	.99289	.94400	.99154	.94365	.99043	.94342	.98951
MARYLAND														
White:														
Male	.99986	.99928	.99870	.99809	.99744	.99671	.99586	.99466	.96723	.99377	.96689	.99299	.96668	.99238
Female	.99990	.99950	.99909	.99864	.99817	.99762	.99696	.99597	.97376	.99527	.97355	.99466	.97341	.99416
Nonwhite:														
Male	.99977	.99890	.99804	.99717	.99621	.99508	.99370	.99137	.94048	.98979	.94007	.98845	.93982	.98732
Female	.99982	.99909	.99838	.99764	.99687	.99601	.99498	.99319	.95507	.99195	.95473	.99090	.95451	.99003
MASSACHUSETTS														
White:														
Male	.99987	.99937	.99886	.99832	.99773	.99705	.99627	.99512	.96775	.99429	.96749	.99356	.96732	.99296
Female	.99992	.99958	.99924	.99886	.99844	.99795	.99736	.99646	.97500	.99583	.97483	.99528	.97472	.99482
Nonwhite:														
Male	.99973	.99866	.99761	.99655	.99545	.99424	.99282	.99063	.94804	.98903	.94753	.98762	.94720	.98647
Female	.99983	.99921	.99860	.99797	.99728	.99647	.99548	.99369	.95144	.99250	.95115	.99150	.95096	.99067

Table B.—SURVIVAL FACTORS FOR COMPUTING THE EXPECTED NUMBER OF CHILDREN OF ELEMENTARY SCHOOL AGE ($7\frac{1}{2}$ TO $14\frac{1}{2}$ YEARS OLD), FOR ESTIMATE DATES JULY 1, 1950 TO 1959, AND APRIL 1, 1960—Con.

State, color, and sex	1950 — Population $7\frac{1}{2}$-$14\frac{1}{2}$ years old on April 1, 1950	1951 — Population $6\frac{1}{2}$-$13\frac{1}{2}$ years old on April 1, 1950	1952 — Population $5\frac{1}{2}$-$12\frac{1}{2}$ years old on April 1, 1950	1953 — Population $4\frac{1}{2}$-$11\frac{1}{2}$ years old on April 1, 1950	1954 — Population $3\frac{1}{2}$-$10\frac{1}{2}$ years old on April 1, 1950	1955 — Population $2\frac{1}{2}$-$9\frac{1}{2}$ years old on April 1, 1950	1956 — Population $1\frac{1}{2}$-$8\frac{1}{2}$ years old on April 1, 1950	1957 — Population $0\frac{1}{2}$-$7\frac{1}{2}$ years old on April 1, 1950	1958 — Births, April to December 1950	1958 — Population under $7\frac{1}{2}$ years old on April 1, 1950	1959 — Births, April 1950 to December 1951	1959 — Population under $6\frac{1}{2}$ years old on April 1, 1950	1960 — Births, April 1950 to September 1952	1960 — Population under $5\frac{1}{2}$ years old on April 1, 1950
MICHIGAN														
White:														
Male	.99981	.99910	.99839	.99768	.99693	.99613	.99524	.99394	.96335	.99295	.96301	.99205	.96280	.99133
Female	.99989	.99942	.99893	.99841	.99786	.99725	.99655	.99549	.97189	.99472	.97163	.99405	.97146	.99352
Nonwhite:														
Male	.99976	.99884	.99792	.99694	.99585	.99461	.99313	.99075	.94248	.98910	.94205	.98768	.94177	.98651
Female	.99984	.99924	.99865	.99800	.99726	.99637	.99526	.99338	.95479	.99214	.95453	.99108	.95436	.99021
MINNESOTA														
White:														
Male	.99981	.99908	.99838	.99768	.99698	.99621	.99535	.99412	.96612	.99316	.96578	.99229	.96556	.99159
Female	.99990	.99947	.99903	.99858	.99808	.99753	.99689	.99592	.97316	.99521	.97293	.99460	.97278	.99411
Nonwhite:														
Male	.99972	.99861	.99746	.99624	.99487	.99324	.99115	.98786	.92893	.98566	.92833	.98380	.92796	.98226
Female	.99980	.99903	.99823	.99735	.99631	.99498	.99319	.99034	.94201	.98851	.94164	.98697	.94140	.98568
MISSISSIPPI														
White:														
Male	.99982	.99913	.99847	.99783	.99718	.99647	.99561	.99424	.95871	.99325	.95841	.99237	.95822	.99163
Female	.99990	.99949	.99906	.99860	.99808	.99748	.99675	.99559	.96772	.99480	.96749	.99412	.96734	.99357
Nonwhite:														
Male	.99971	.99861	.99754	.99645	.99529	.99400	.99239	.98972	.93523	.98788	.93476	.98627	.93446	.98493
Female	.99980	.99901	.99825	.99746	.99659	.99561	.99435	.99221	.94941	.99077	.94905	.98956	.94882	.98855
MISSOURI														
White:														
Male	.99981	.99907	.99834	.99761	.99685	.99602	.99505	.99364	.96185	.99259	.96150	.99164	.96128	.99087
Female	.99989	.99948	.99906	.99861	.99810	.99751	.99679	.99567	.96976	.99489	.96957	.99421	.96945	.99364
Nonwhite:														
Male	.99972	.99859	.99742	.99617	.99475	.99305	.99085	.98739	.92483	.98509	.92421	.98315	.92385	.98154
Female	.99980	.99904	.99826	.99739	.99633	.99497	.99310	.99010	.93873	.98819	.93839	.98659	.93817	.98522
MONTANA														
White:														
Male	.99975	.99878	.99785	.99694	.99604	.99510	.99408	.99266	.96152	.99151	.96107	.99044	.96078	.98958
Female	.99990	.99949	.99907	.99862	.99810	.99751	.99678	.99568	.97231	.99491	.97210	.99425	.97196	.99369
Nonwhite:														
Male	.99955	.99776	.99593	.99394	.99158	.98847	.98385	.97622	.85819	.97156	.85741	.96771	.85691	.96441
Female	.99972	.99869	.99768	.99654	.99501	.99270	.98881	.98216	.88199	.97835	.88165	.97524	.88145	.97245
NEBRASKA														
White:														
Male	.99981	.99907	.99835	.99763	.99688	.99608	.99518	.99388	.96513	.99288	.96479	.99197	.96458	.99123
Female	.99987	.99934	.99882	.99829	.99774	.99714	.99645	.99545	.97449	.99470	.97422	.99403	.97404	.99348
Nonwhite:														
Male	.99971	.99859	.99742	.99618	.99477	.99311	.99098	.98763	.92797	.98538	.92738	.98348	.92702	.98190
Female	.99978	.99890	.99802	.99708	.99597	.99460	.99276	.98989	.94331	.98801	.94289	.98641	.94262	.98507
NEVADA														
White:														
Male	.99981	.99909	.99838	.99764	.99685	.99596	.99486	.99316	.95184	.99196	.95149	.99093	.95126	.99009
Female	.99985	.99926	.99868	.99808	.99746	.99677	.99594	.99469	.96853	.99379	.96823	.99298	.96805	.99232
Nonwhite:														
Male	.99961	.99808	.99646	.99464	.99239	.98932	.98462	.97670	.84956	.97198	.84885	.96817	.84841	.96488
Female	.99967	.99845	.99729	.99600	.99437	.99196	.98798	.98118	.87856	.97723	.87815	.97399	.87790	.97110
NEW HAMPSHIRE														
White:														
Male	.99984	.99919	.99851	.99778	.99700	.99616	.99521	.99386	.96323	.99285	.96284	.99197	.96260	.99127
Female	.99990	.99949	.99907	.99865	.99820	.99769	.99707	.99612	.97425	.99544	.97403	.99485	.97390	.99437
Nonwhite:														
Male	.99969	.99847	.99726	.99602	.99473	.99335	.99177	.98937	.94360	.98759	.94298	.98604	.94258	.98479
Female	.99981	.99911	.99843	.99776	.99704	.99621	.99519	.99335	.95071	.99211	.95038	.99108	.95015	.99023
NEW JERSEY														
White:														
Male	.99986	.99932	.99877	.99821	.99763	.99699	.99627	.99521	.96868	.99441	.96840	.99370	.96823	.99313
Female	.99991	.99957	.99921	.99883	.99843	.99797	.99742	.99655	.97529	.99594	.97511	.99541	.97499	.99498
Nonwhite:														
Male	.99976	.99883	.99792	.99700	.99602	.99495	.99369	.99154	.94384	.99003	.94340	.98874	.94315	.98766
Female	.99985	.99925	.99864	.99797	.99721	.99633	.99525	.99339	.95423	.99216	.95392	.99113	.95375	.99028
NEW MEXICO														
White:														
Male	.99973	.99871	.99773	.99677	.99578	.99469	.99332	.99103	.93091	.98943	.93045	.98805	.93016	.98690
Female	.99983	.99916	.99848	.99777	.99700	.99608	.99489	.99281	.93964	.99145	.93930	.99031	.93909	.98937
Nonwhite:														
Male	.99954	.99770	.99581	.99377	.99133	.98807	.98309	.97458	.83087	.96948	.83009	.96534	.82959	.96175
Female	.99965	.99835	.99710	.99570	.99391	.99127	.98693	.97930	.85235	.97490	.85191	.97134	.85164	.96817

Table B.—SURVIVAL FACTORS FOR COMPUTING THE EXPECTED NUMBER OF CHILDREN OF ELEMENTARY SCHOOL AGE (7½ TO 14½ YEARS OLD), FOR ESTIMATE DATES JULY 1, 1950 TO 1959, AND APRIL 1, 1960—Con.

State, color, and sex	1950 — Population 7¼-14¼ years old on April 1, 1950	1951 — Population 6¼-13¼ years old on April 1, 1950	1952 — Population 5¼-12¼ years old on April 1, 1950	1953 — Population 4¼-11¼ years old on April 1, 1950	1954 — Population 3¼-10¼ years old on April 1, 1950	1955 — Population 2¼-9¼ years old on April 1, 1950	1956 — Population 1¼-8¼ years old on April 1, 1950	1957 — Population 0¼-7¼ years old on April 1, 1950	1958		1959		1960	
									Births, April to December 1950	Population under 7¼ years old on April 1, 1950	Births, April 1950 to December 1951	Population under 6¼ years old on April 1, 1950	Births, April 1950 to September 1952	Population under 5¼ years old on April 1, 1950
NEW YORK														
White:														
Male	.99985	.99925	.99866	.99805	.99741	.99672	.99594	.99480	.96755	.99395	.96725	.99317	.96706	.99255
Female	.99990	.99953	.99914	.99873	.99828	.99777	.99718	.99626	.97464	.99561	.97444	.99504	.97431	.99458
Nonwhite:														
Male	.99974	.99876	.99781	.99683	.99581	.99468	.99336	.99114	.94273	.98957	.94227	.98821	.94201	.98709
Female	.99984	.99921	.99857	.99786	.99706	.99613	.99501	.99310	.95359	.99183	.95326	.99076	.95309	.98988
NORTH CAROLINA														
White:														
Male	.99984	.99921	.99858	.99795	.99727	.99654	.99568	.99440	.96228	.99345	.96197	.99261	.96177	.99193
Female	.99990	.99947	.99903	.99856	.99804	.99746	.99676	.99566	.97020	.99489	.96995	.99424	.96980	.99371
Nonwhite:														
Male	.99978	.99892	.99807	.99718	.99620	.99505	.99361	.99104	.93165	.98935	.93126	.98793	.93101	.98673
Female	.99983	.99915	.99846	.99772	.99689	.99593	.99477	.99268	.94552	.99130	.94518	.99015	.94498	.98918
NORTH DAKOTA														
White:														
Male	.99983	.99917	.99856	.99797	.99736	.99671	.99592	.99468	.96196	.99376	.96170	.99293	.96154	.99223
Female	.99991	.99954	.99915	.99874	.99829	.99777	.99714	.99614	.97241	.99545	.97219	.99487	.97205	.99440
Nonwhite:														
Male	.99973	.99870	.99764	.99652	.99526	.99373	.99172	.98842	.92492	.98626	.92441	.98443	.92410	.98289
Female	.99982	.99910	.99835	.99752	.99652	.99522	.99344	.99057	.94129	.98875	.94093	.98725	.94070	.98598
OHIO														
White:														
Male	.99983	.99916	.99851	.99785	.99715	.99639	.99551	.99421	.96389	.99325	.96357	.99239	.96336	.99170
Female	.99989	.99945	.99900	.99853	.99802	.99745	.99678	.99575	.97197	.99501	.97174	.99436	.97159	.99384
Nonwhite:														
Male	.99978	.99891	.99804	.99711	.99607	.99487	.99340	.99102	.94301	.98940	.94259	.98802	.94233	.98688
Female	.99985	.99928	.99872	.99812	.99742	.99657	.99549	.99364	.95487	.99242	.95463	.99139	.95449	.99052
OKLAHOMA														
White:														
Male	.99981	.99907	.99834	.99761	.99683	.99595	.99490	.99337	.95964	.99226	.95927	.99126	.95904	.99046
Female	.99988	.99938	.99886	.99833	.99776	.99709	.99628	.99508	.96975	.99423	.96945	.99350	.96927	.99290
Nonwhite:														
Male	.99971	.99863	.99759	.99653	.99536	.99392	.99195	.98861	.92291	.98644	.92252	.98435	.92227	.98291
Female	.99979	.99901	.99829	.99756	.99674	.99571	.99431	.99181	.93997	.99021	.93969	.98885	.93950	.98767
OREGON														
White:														
Male	.99978	.99894	.99816	.99740	.99662	.99578	.99484	.99352	.96563	.99249	.96527	.99152	.96504	.99072
Female	.99989	.99947	.99903	.99858	.99808	.99752	.99685	.99586	.97535	.99515	.97511	.99452	.97497	.99401
Nonwhite:														
Male	.99972	.99865	.99762	.99660	.99554	.99441	.99310	.99109	.95320	.98959	.95273	.98824	.95242	.98714
Female	.99986	.99933	.99881	.99825	.99764	.99692	.99598	.99438	.96175	.99332	.96149	.99243	.96134	.99168
PENNSYLVANIA														
White:														
Male	.99984	.99920	.99856	.99791	.99723	.99649	.99566	.99445	.96432	.99353	.96399	.99271	.96379	.99206
Female	.99990	.99949	.99908	.99864	.99817	.99764	.99702	.99603	.97200	.99534	.97180	.99473	.97167	.99423
Nonwhite:														
Male	.99973	.99871	.99771	.99669	.99562	.99445	.99308	.99078	.93960	.98916	.93911	.98776	.93883	.98660
Female	.99983	.99918	.99851	.99778	.99696	.99600	.99485	.99288	.95101	.99156	.95069	.99045	.95051	.98953
RHODE ISLAND														
White:														
Male	.99988	.99941	.99894	.99845	.99792	.99730	.99657	.99546	.96721	.99467	.96699	.99397	.96685	.99338
Female	.99992	.99962	.99930	.99898	.99863	.99825	.99779	.99700	.97333	.99646	.97316	.99600	.97305	.99562
Nonwhite:														
Male	.99973	.99870	.99769	.99668	.99564	.99449	.99313	.99096	.94752	.98941	.94705	.98803	.94674	.98688
Female	.99984	.99924	.99866	.99808	.99747	.99677	.99591	.99424	.94981	.99313	.94953	.99222	.94933	.99148
SOUTH CAROLINA														
White:														
Male	.99984	.99922	.99860	.99796	.99727	.99650	.99561	.99424	.95884	.99325	.95854	.99237	.95835	.99166
Female	.99987	.99936	.99883	.99828	.99768	.99701	.99624	.99508	.96980	.99425	.96952	.99351	.96935	.99291
Nonwhite:														
Male	.99976	.99885	.99796	.99703	.99602	.99484	.99330	.99056	.93172	.98877	.93133	.98726	.93109	.98597
Female	.99982	.99913	.99842	.99766	.99679	.99576	.99443	.99214	.94524	.99065	.94490	.98940	.94469	.98836
SOUTH DAKOTA														
White:														
Male	.99985	.99926	.99866	.99804	.99738	.99665	.99581	.99458	.96621	.99368	.96588	.99290	.96567	.99228
Female	.99989	.99947	.99905	.99863	.99820	.99772	.99714	.99621	.97507	.99555	.97485	.99498	.97471	.99451
Nonwhite:														
Male	.99976	.99878	.99774	.99659	.99527	.99367	.99160	.98833	.92903	.98617	.92842	.98440	.92807	.98295
Female	.99980	.99902	.99825	.99742	.99643	.99518	.99344	.99064	.94387	.98885	.94350	.98736	.94327	.98609

Table B.--SURVIVAL FACTORS FOR COMPUTING THE EXPECTED NUMBER OF CHILDREN OF ELEMENTARY SCHOOL AGE ($7\frac{1}{2}$ TO $14\frac{1}{2}$ YEARS OLD), FOR ESTIMATE DATES JULY 1, 1950 TO 1959, AND APRIL 1, 1960--Con.

State, color, and sex	1950 — Population $7\frac{1}{4}$-$14\frac{1}{4}$ years old on April 1, 1950	1951 — Population $6\frac{1}{4}$-$13\frac{1}{4}$ years old on April 1, 1950	1952 — Population $5\frac{1}{4}$-$12\frac{1}{4}$ years old on April 1, 1950	1953 — Population $4\frac{1}{4}$-$11\frac{1}{4}$ years old on April 1, 1950	1954 — Population $3\frac{1}{4}$-$10\frac{1}{4}$ years old on April 1, 1950	1955 — Population $2\frac{1}{4}$-$9\frac{1}{4}$ years old on April 1, 1950	1956 — Population $1\frac{1}{4}$-$8\frac{1}{4}$ years old on April 1, 1950	1957 — Population $0\frac{1}{4}$-$7\frac{1}{4}$ years old on April 1, 1950	1958 — Births, April to December 1950	1958 — Population under $7\frac{1}{4}$ years old on April 1, 1950	1959 — Births, April 1950 to December 1951	1959 — Population under $6\frac{1}{4}$ years old on April 1, 1950	1960 — Births, April 1950 to September 1952	1960 — Population under $5\frac{1}{2}$ years old on April 1, 1950
TENNESSEE														
White:														
Male	.99983	.99917	.99853	.99787	.99716	.99635	.99539	.99388	.95452	.99281	.95422	.99187	.95403	.99109
Female	.99987	.99937	.99887	.99833	.99774	.99707	.99625	.99491	.96173	.99399	.96149	.99320	.96134	.99253
Nonwhite:														
Male	.99977	.99889	.99805	.99720	.99630	.99525	.99390	.99145	.93416	.98983	.93373	.98850	.93347	.98739
Female	.99981	.99909	.99841	.99774	.99702	.99620	.99515	.99323	.95005	.99195	.94974	.99087	.94954	.98997
TEXAS														
White:														
Male	.99979	.99900	.99822	.99742	.99657	.99561	.99441	.99253	.94713	.99121	.94675	.99006	.94652	.98912
Female	.99987	.99935	.99884	.99829	.99769	.99697	.99600	.99435	.95641	.99328	.95618	.99237	.95604	.99159
Nonwhite:														
Male	.99973	.99869	.99770	.99670	.99564	.99445	.99290	.99017	.93213	.98835	.93170	.98679	.93142	.98548
Female	.99981	.99907	.99832	.99752	.99663	.99558	.99423	.99192	.94503	.99040	.94464	.98913	.94440	.98808
UTAH														
White:														
Male	.99976	.99883	.99794	.99707	.99619	.99526	.99418	.99268	.96383	.99151	.96341	.99042	.96314	.98954
Female	.99985	.99925	.99867	.99809	.99750	.99687	.99611	.99502	.97393	.99419	.97365	.99344	.97346	.99283
Nonwhite:														
Male	.99956	.99782	.99602	.99407	.99173	.98863	.98395	.97624	.86024	.97155	.85948	.96769	.85900	.96436
Female	.99966	.99844	.99728	.99601	.99440	.99205	.98815	.98151	.88345	.97763	.88306	.97445	.88282	.97160
VERMONT														
White:														
Male	.99983	.99919	.99859	.99798	.99732	.99658	.99570	.99434	.96028	.99336	.96001	.99248	.95984	.99175
Female	.99990	.99950	.99907	.99860	.99808	.99747	.99674	.99564	.97087	.99487	.97060	.99423	.97044	.99371
Nonwhite:														
Male	.99968	.99848	.99734	.99621	.99504	.99377	.99227	.98984	.94072	.98810	.94021	.98655	.93987	.98526
Female	.99982	.99912	.99843	.99771	.99692	.99599	.99485	.99287	.94740	.99155	.94703	.99046	.94678	.98957
VIRGINIA														
White:														
Male	.99982	.99910	.99841	.99771	.99697	.99616	.99521	.99377	.95801	.99271	.95769	.99176	.95749	.99098
Female	.99989	.99947	.99903	.99857	.99808	.99751	.99681	.99569	.96861	.99491	.96839	.99425	.96824	.99370
Nonwhite:														
Male	.99973	.99869	.99767	.99659	.99542	.99408	.99247	.98969	.92724	.98780	.92677	.98619	.92648	.98484
Female	.99981	.99909	.99838	.99764	.99687	.99600	.99489	.99281	.94500	.99144	.94466	.99032	.94444	.98939
WASHINGTON														
White:														
Male	.99981	.99909	.99838	.99766	.99691	.99609	.99515	.99382	.96385	.99281	.96353	.99187	.96332	.99111
Female	.99990	.99951	.99909	.99864	.99814	.99756	.99688	.99585	.97293	.99512	.97270	.99450	.97256	.99400
Nonwhite:														
Male	.99976	.99880	.99784	.99686	.99584	.99472	.99342	.99138	.95145	.98991	.95102	.98859	.95072	.98752
Female	.99987	.99937	.99887	.99832	.99770	.99696	.99601	.99437	.95937	.99329	.95911	.99241	.95896	.99166
WEST VIRGINIA														
White:														
Male	.99982	.99910	.99838	.99762	.99681	.99591	.99483	.99317	.95103	.99199	.95066	.99096	.95043	.99013
Female	.99989	.99944	.99897	.99846	.99790	.99724	.99641	.99506	.96207	.99415	.96184	.99337	.96170	.99272
Nonwhite:														
Male	.99976	.99883	.99791	.99697	.99593	.99475	.99330	.99089	.94124	.98924	.94083	.98782	.94057	.98663
Female	.99984	.99924	.99863	.99797	.99720	.99627	.99514	.99315	.94828	.99184	.94803	.99073	.94788	.98978
WISCONSIN														
White:														
Male	.99982	.99912	.99843	.99775	.99703	.99626	.99540	.99416	.96439	.99320	.96406	.99233	.96385	.99162
Female	.99990	.99950	.99910	.99869	.99824	.99774	.99713	.99617	.97355	.99550	.97334	.99491	.97321	.99443
Nonwhite:														
Male	.99977	.99886	.99796	.99701	.99595	.99474	.99329	.99096	.94348	.98935	.94307	.98795	.94280	.98681
Female	.99986	.99933	.99882	.99828	.99765	.99686	.99584	.99407	.95640	.99291	.95621	.99194	.95608	.99111
WYOMING														
White:														
Male	.99965	.99831	.99705	.99586	.99473	.99361	.99243	.99079	.95401	.98939	.95345	.98806	.95306	.98698
Female	.99983	.99919	.99857	.99796	.99732	.99661	.99579	.99459	.96877	.99370	.96847	.99289	.96828	.99224
Nonwhite:														
Male	.99945	.99730	.99513	.99286	.99028	.98699	.98222	.97438	.85149	.96948	.85059	.96538	.85001	.96187
Female	.99965	.99838	.99718	.99588	.99422	.99179	.98783	.98109	.87877	.97715	.87836	.97391	.87811	.97102