

RESERVOIR SEDIMENT  
DATA SUMMARY

SCS-34 Rev. 6-66

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Old Hickory

NAME OF RESERVOIR

18-10

DATA SHEET NO.

|                         |  |  |                                  |                                  |  |                             |                         |                                     |
|-------------------------|--|--|----------------------------------|----------------------------------|--|-----------------------------|-------------------------|-------------------------------------|
| DAM                     | 1. OWNER Corps of Engrs, US Army         |  | 2. STREAM Cumberland             |                                  | 3. STATE Tennessee                     |                             |                         |                                     |
|                         | 4. SEC. TWP. RANGE                       |  | 5. NEAREST P.O. Old Hickory      |                                  | 6. COUNTY Davidson-Sumner              |                             |                         |                                     |
|                         | 7. LAT. 36° 17' 50" LONG. 86° 39' 20"    |  | 8. TOP OF DAM ELEVATION 455.0    |                                  | 9. SPILLWAY CREST ELEV. 447.0 1/       |                             |                         |                                     |
| RESERVOIR               | 10. STORAGE ALLOCATION                   | 11. ELEVATION TOP OF POOL                  | 12. ORIGINAL SURFACE AREA, ACRES | 13. ORIGINAL CAPACITY, ACRE-FEET | 14. GROSS STORAGE, ACRE-FEET           | 15. DATE STORAGE BEGAN      |                         |                                     |
|                         | a. FLOOD CONTROL                         | 447.0                                      | 24,500                           | 47,000                           | 467,000                                | 11 June 54                  |                         |                                     |
|                         | b. MULTIPLE USE                          |  |                                  |                                  |  |                             |                         |                                     |
|                         | c. POWER                                 | 445.0                                      | 22,500                           | 63,000                           | 420,000                                | 16. DATE NORMAL OPER. BEGAN |                         |                                     |
|                         | d. WATER SUPPLY                          |  |                                  |                                  |  |                             |                         |                                     |
|                         | e. IRRIGATION                            |  |                                  |                                  |  | 14 June 54 2/               |                         |                                     |
|                         | f. CONSERVATION                          |  |                                  |                                  |  |                             |                         |                                     |
|                         | g. INACTIVE                              | 442.0                                      | 19,600                           | 357,000                          | 357,000                                |                             |                         |                                     |
| 17. LENGTH OF RESERVOIR | 97.3                                     | MILES                                      | AV. WIDTH OF RESERVOIR           | 0.39                             | MILES                                  |                             |                         |                                     |
| WATERSHED               | 18. TOTAL DRAINAGE AREA 11,674-2,776 3/  |  | SQ. MI.                          |                                  | 22. MEAN ANNUAL PRECIPITATION 51.1     |                             | INCHES                  |                                     |
|                         | 19. NET SEDIMENT CONTRIBUTING AREA 2,741 |  | SQ. MI.                          |                                  | 23. MEAN ANNUAL RUNOFF 21.3 (28)       |                             | INCHES                  |                                     |
|                         | 20. LENGTH 529                           | MILES                                      | AV. WIDTH 22.2                   | MILES                            | 24. MEAN ANNUAL RUNOFF 13,243,000 (28) |                             | AC.-FT.                 |                                     |
|                         | 21. MAX. ELEV. 4,150                     | MIN. ELEV. 372                             |                                  |                                  | 25. ANNUAL TEMP: MEAN 60°              |                             | RANGE 0° to 100°        |                                     |
|                         | 26. DATE OF SURVEY                       | 27. PERIOD YEARS                           | 28. ACCL. YEARS                  | 29. TYPE OF SURVEY               | 30. NO. OF RANGES OR CONTOUR INT.      | 31. SURFACE AREA, ACRES     | 32. CAPACITY, ACRE-FEET | 33. C/I. RATIO, AC.-FT. PER AC.-FT. |
| June 1954               | 0  | 0  | Range                            | 65                               | 24,400                                 | 467,000                     | -                       |                                     |
| June 1965               | 11                                       | 11   | Range (Detailed)                 | 62                               | 24,400                                 | 453,703                     | -                       |                                     |
| 26. DATE OF SURVEY      | 34. PERIOD ANNUAL PRECIPITATION          | 35. PERIOD WATER INFLOW, ACRE-FEET         | 36. WATER INFL. TO DATE, AC.-FT. | a. MEAN ANNUAL                   | b. MAX. ANNUAL                         | c. PERIOD TOTAL             | a. MEAN ANNUAL          | b. TOTAL TO DATE                    |
| June 1954-<br>June 1965 | 51.1                                     | 12,651,151                                 | 18,491,863                       | 151,813,809                      | 12,651,151                             | 151,813,809                 |                         |                                     |
| 26. DATE OF SURVEY      | 37. PERIOD CAPACITY LOSS, ACRE-FEET      | 38. TOTAL SED. DEPOSITS TO DATE, ACRE-FEET | a. PERIOD TOTAL                  | b. AV. ANNUAL                    | c. PER SQ. MI.-YEAR                    | a. TOTAL TO DATE            | b. AV. ANNUAL           | c. PER SQ. MI.-YEAR                 |
| June 1954<br>June 1965  | 0<br>13,297                              | 0<br>1,209                                 | 0<br>0.441                       | 13,297                           | 1,209                                  | 0<br>0.441                  |                         |                                     |
| 26. DATE OF SURVEY      | 39. AV. DRY WGT., LBS. PER CU. FT.       | 40. SED. DEP., TONS PER SQ. MI.-YR.        | 41. STORAGE LOSS, PCT.           | 42. SED. INFLOW, PPM             | a. PERIOD                              | b. TOT. TO DATE             | a. PERIOD               | b. TOT. TO DATE                     |
|                         |  | Not Computed.                              |                                  |                                  |  |                             |                         |                                     |

|   |   |            |                 |                                 |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
|---|---|------------|-----------------|---------------------------------|------------|------------|-----------------|------------------|-------|--------|------|------|------|------|---------------|--|--|
| 26. DATE OF SURVEY  | 43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION |            |                 |                                 |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
|   | PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION            |            |                 |                                 |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
|   |   |            |                 |                                 |            |            |                 |                  |       |        |      |      |      |      | Not Computed. |  |  |
| 26. DATE OF SURVEY  | 44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR   |            |                 |                                 |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
|   | 0-10  | 10-20      | 20-30           | 30-40                           | 40-50      | 50-60      | 60-70           | 70-80            | 80-90 | 90-100 | -105 | -110 | -115 | -120 | -125          | PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION |  |
| June 1965   | 8.8   | 14.7       | 28.3            | 27.8                            | 7.1        | 5.9        | 4.3             | 2.3              | 0.8   | -0.3   |      |      |      |      |               | 4/   |  |
| 45. RANGE IN RESERVOIR OPERATION  |   |            |                 |                                 |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
| WATER YEAR  | MAX. ELEV.  | MIN. ELEV. | INFLOW, AC.-FT. | WATER YEAR                      | MAX. ELEV. | MIN. ELEV. | INFLOW, AC.-FT. |                  |       |        |      |      |      |      |               |  |  |
| 1955  | 433.4   | 413.6      | 14,745,954      | 1960                            | 445.1      | 442.2      | 15,082,871      |                  |       |        |      |      |      |      |               |  |  |
| 1956  | 436.0   | 407.9      | 14,244,902      | 1961                            | 446.0      | 442.9      | 13,516,124      |                  |       |        |      |      |      |      |               |  |  |
| 1957  | 447.5   | 435.0      | 15,123,692      | 1962                            | 449.6      | 443.6      | 18,491,873      |                  |       |        |      |      |      |      |               |  |  |
| 1958  | 445.3   | 441.9      | 16,456,346      | 1963                            | 446.0      | 443.4      | 12,076,103      |                  |       |        |      |      |      |      |               |  |  |
| 1959  | 445.1   | 442.3      | 8,619,993       | 1964                            | 446.7      | 443.3      | 10,067,472      |                  |       |        |      |      |      |      |               |  |  |
|   |   |            |                 | 1965                            | 445.6      | 442.8      | 14,334,231      |                  |       |        |      |      |      |      |               |  |  |
| 46. ELEVATION-AREA-CAPACITY DATA  |   |            |                 |                                 |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
| ELEVATION   | AREA  | CAPACITY   | ELEVATION       | AREA                            | CAPACITY   | ELEVATION  | AREA            | CAPACITY         |       |        |      |      |      |      |               |  |  |
| 385   | 0   | 0          | 420             | 6,600                           | 105,000    |            |                 |                  |       |        |      |      |      |      |               |  |  |
| 390   | 800   | 2,000      | 425             | 8,100                           | 141,000    |            |                 |                  |       |        |      |      |      |      |               |  |  |
| 395   | 1,600   | 8,000      | 430             | 10,000                          | 186,000    |            |                 |                  |       |        |      |      |      |      |               |  |  |
| 400   | 2,400   | 18,000     | 435             | 13,100                          | 243,000    |            |                 |                  |       |        |      |      |      |      |               |  |  |
| 405   | 3,300   | 32,000     | 440             | 17,800                          | 319,000    |            |                 |                  |       |        |      |      |      |      |               |  |  |
| 410   | 4,300   | 51,000     | 445             | 22,500                          | 420,000    |            |                 |                  |       |        |      |      |      |      |               |  |  |
| 415   | 5,400   | 75,000     | 450             | 27,450                          | 545,000    |            |                 |                  |       |        |      |      |      |      |               |  |  |
| 47. REMARKS AND REFERENCES  |   |            |                 |                                 |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
| <p>1/ Spillway crest at elevation 405.0 surmounted by 6 tainter gates, 41 feet high and 45 feet wide.</p> <p>2/ Closure of final cofferdam and completion of lock for temporary use. Full power plant use not effective until December 1957.</p> <p>3/ Uncontrolled drainage area is 2,776 square miles.</p> <p>4/ Negative sediment indicates scour.</p> |   |            |                 |                                 |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
| 48. AGENCY MAKING SURVEY  |   |            |                 | Department of the Army          |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
| 49. AGENCY SUPPLYING DATA   |   |            |                 | Corps of Engrs, Nashville Dist. |            |            |                 |                  |       |        |      |      |      |      |               |  |  |
|   |   |            |                 |                                 |            | 50. DATE   |                 | 16 December 1965 |       |        |      |      |      |      |               |  |  |

RESERVOIR SEDIMENT  
DATA SUMMARY

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS

Old Hickory  
NAME OF RESERVOIR

18-10a  
DATA SHEET NO.

|                         |   |                                    |  |  |   |                                  |                         |                                     |
|-------------------------|---|------------------------------------|--|--|---|----------------------------------|-------------------------|-------------------------------------|
| DAM                     | 1. OWNER Corps of Engineers                           |                                    | 2. <del>St. Louis</del> River Cumberland |  | 3. STATE Tennessee                          |                                  |                         |                                     |
|                         | 4. SEC. TWP. RANGE                                    |                                    | 5. NEAREST P O                           |  | 6. COUNTY Davidson/Sumner                   |                                  |                         |                                     |
|                         | 7. LAT 36° 17' 48" LONG 86° 39' 21"                   |                                    | 8. TOP OF DAM ELEVATION 455.0            |  | 9. SPILLWAY CREST ELEV. 447.0 <sup>1/</sup> |                                  |                         |                                     |
| RESERVOIR               | 10. STORAGE ALLOCATION                                | 11. ELEVATION TOP OF POOL          | 12. ORIGINAL SURFACE AREA, ACRES         | 13. ORIGINAL CAPACITY, ACRE-FEET           | 14. GROSS STORAGE, ACRE-FEET                | 15. DATE STORAGE BEGAN           |                         |                                     |
|                         | a. FLOOD CONTROL                                      | 447.0                              | 24,500                                   | 47,000                                     | 467,000                                     | 11 Jun 54                        |                         |                                     |
|                         | b. MULTIPLE USE                                       |                                    |  |  |   |                                  |                         |                                     |
|                         | c. POWER  | 445.0                              | 22,500                                   | 63,000                                     | 420,000                                     | 16. DATE NOR-MAL OPER. BEGAN     |                         |                                     |
|                         | d. WATER SUPPLY                                       |                                    |  |  |   |                                  |                         |                                     |
|                         | e. IRRIGATION   |                                    |  |  |   |                                  |                         |                                     |
|                         | f. CONSERVATION                                       |                                    |  |  |   |                                  |                         |                                     |
| g. INACTIVE             | 442.0   | 19,600                             | 357,000                                  | 357,000                                    | 14 Jun 54 <sup>2/</sup>                     |                                  |                         |                                     |
| WATERSHED               | 17. LENGTH OF RESERVOIR 97.3                          |                                    | MILES, AV. WIDTH OF RESERVOIR 0.39       |  | MILES                                       |                                  |                         |                                     |
|                         | 18. TOTAL DRAINAGE AREA 11,674                        |                                    | SQ. MI.                                  |  | 22. MEAN ANNUAL PRECIPITATION 51 INCHES     |                                  |                         |                                     |
|                         | 19. NET SEDIMENT CONTRIBUTING AREA 1404 <sup>3/</sup> |                                    | SQ. MI.                                  |  | 23. MEAN ANNUAL RUNOFF 21 INCHES            |                                  |                         |                                     |
|                         | 20. LENGTH 97 MILES, AV. WIDTH 22.2                   |                                    | MILES                                    |  | 24. MEAN ANNUAL RUNOFF 13,100,000 AC.-FT.   |                                  |                         |                                     |
|                         | 21. MAX. ELEV. 4,150                                  |                                    | MIN. ELEV. 372                           |  | 25. ANNUAL TEMP MEAN 59°F RANGE 37-79°F     |                                  |                         |                                     |
| SURVEY DATA             | 26. DATE OF SURVEY                                    | 27. PERIOD YEARS                   | 28. ACCL. YEARS                          | 29. TYPE OF SURVEY                         | 30. NO. OF RANGES OR CONTOUR INT.           | 31. SURFACE AREA, ACRES          | 32. CAPACITY, ACRE-FEET | 33. C.I. RATIO, AC.-FT. PER AC.-FT. |
|                         | June 1954   | 0                                  | 0  | Range                                      | 65  | 24,400                           | 467,000                 | 3/                                  |
|                         | June 1965   | 11                                 | 11                                       | Range (Detailed)                           | 62  | 24,400                           | 454,100                 |                                     |
|                         | Sept 1980   | 15.25                              | 26.25                                    | Range (Detailed)                           | 66  | 24,400                           | 441,500                 |                                     |
|                         | Sept 1985   | 5                                  | 31.25                                    | Range (Detailed)                           | 66  | 24,360                           | 441,400                 |                                     |
|                         | 26. DATE OF SURVEY                                    | 34. PERIOD ANNUAL PRECIPITATION    | 35. PERIOD WATER INFLOW, ACRE-FEET       |  |   | 36. WATER INFL. TO DATE, AC.-FT. |                         |                                     |
|                         |   |                                    | a. MEAN ANNUAL                           | b. MAX. ANNUAL                             | c. PERIOD TOTAL                             | a. MEAN ANNUAL                   | b. TOTAL TO DATE        |                                     |
|                         | June 1965   | 51.1                               | 12,651,151                               | 18,491,863                                 | 151,813,809                                 | 12,651,151                       | 151,813,809             |                                     |
|                         | Sept 1980   | 51.1                               | 15,844,260                               | 20,426,522                                 | 225,780,707                                 | 14,384,553                       | 377,594,516             |                                     |
|                         | Sept 1985   | 51.8                               | 11,988,465                               | 15,150,577                                 | 59,942,323                                  | 21,606,757                       | 437,536,839             |                                     |
| 26. DATE OF SURVEY      | 37. PERIOD CAPACITY LOSS, ACRE-FEET                   |                                    |  | 38. TOTAL SED. DEPOSITS TO DATE, ACRE-FEET |   |                                  |                         |                                     |
|                         | a. PERIOD TOTAL                                       | b. AV. ANNUAL                      | c. PER SQ. MI.-YEAR                      | a. TOTAL TO DATE                           | b. AV. ANNUAL                               | c. PER SQ. MI.-YEAR              |                         |                                     |
| June 1965               | 12,900  | 1,170                              | 3/                                       | 12,900                                     | 1,170                                       | 3/                               |                         |                                     |
| Sept 1980 <sup>4/</sup> | 12,600  | 826                                |  | 25,500                                     | 970   |                                  |                         |                                     |
| Sept 1985               | 100   | 20                                 |  | 25,600                                     | 819   |                                  |                         |                                     |
| 26. DATE OF SURVEY      | 39. AV. DRY WGT., LBS. PER CU. FT.                    | 40. SED. DEP., TONS PERSQ. MI.-YR. |  | 41. STORAGE LOSS, PCT.                     |   | 42. SED. INFLOW, PPM             |                         |                                     |
|                         |   | a. PERIOD                          | b. TOTAL TO DATE                         | a. AV. ANN.                                | b. TOT. TO DATE                             | a. PERIOD                        | b. TOT. TO DATE         |                                     |
|                         |   | -----NOT COMPUTED-----             |  |  |   |                                  |                         |                                     |

|                    |   |       |       |       |       |      |         |  |  |  |  |
|--------------------|---|-------|-------|-------|-------|------|---------|--|--|--|--|
| 26. DATE OF SURVEY | 43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION |       |       |       |       |      |         |  |  |  |  |
|                    | 66-56   | 56-46 | 46-36 | 36-26 | 26-16 | 16-6 | 6-Crest |  |  |  |  |
|                    | PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION            |       |       |       |       |      |         |  |  |  |  |
| June 1965          | 3.2   | 13.7  | 19.5  | 16.8  | 22.2  | 17.9 | 6.7     |  |  |  |  |
| Sept 1980          | 3.6   | 14.3  | 22.0  | 20.7  | 19.4  | 14.2 | 5.8     |  |  |  |  |
| Sept 1985          | 3.1   | 12.7  | 19.0  | 17.7  | 18.5  | 16.9 | 12.1    |  |  |  |  |

|                    |   |       |       |       |       |       |       |       |       |        |      |      |      |      |      |
|--------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|--------|------|------|------|------|------|
| 26. DATE OF SURVEY | 44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR |       |       |       |       |       |       |       |       |        |      |      |      |      |      |
|                    | 0-10  | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 | -105 | -110 | -115 | -120 | -125 |
|                    | PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION          |       |       |       |       |       |       |       |       |        |      |      |      |      |      |
| June 1965          | 15.9  | 16.4  | 25.5  | 21.9  | 10.4  | 4.4   | 5.1   | 2.4   | -0.2  | -1.8   | 5/   |      |      |      |      |
| Sept 1980          | 19.4  | 20.2  | 27.9  | 22.8  | 8.7   | 4.0   | 3.1   | -.3   | -1.8  | -4.0   |      |      |      |      |      |
| Sept 1985          | 20.1  | 20.2  | 27.4  | 23.1  | 6.3   | 3.0   | 2.6   | 1.1   | -1.1  | -2.7   |      |      |      |      |      |

| 45. RANGE IN RESERVOIR OPERATION |            |            |                 |            |            |            |                 |
|----------------------------------|------------|------------|-----------------|------------|------------|------------|-----------------|
| WATER YEAR                       | MAX. ELEV. | MIN. ELEV. | INFLOW, AC.-FT. | WATER YEAR | MAX. ELEV. | MIN. ELEV. | INFLOW, AC.-FT. |
| SEE ATTACHMENT 1.                |            |            |                 |            |            |            |                 |

| 46. ELEVATION-AREA-CAPACITY DATA |       |          |           |        |          |           |      |          |
|----------------------------------|-------|----------|-----------|--------|----------|-----------|------|----------|
| ELEVATION                        | AREA  | CAPACITY | ELEVATION | AREA   | CAPACITY | ELEVATION | AREA | CAPACITY |
| 385                              | 0     | 0        | 425       | 7,700  | 126,000  |           |      |          |
| 390                              | 650   | 1,500    | 430       | 9,300  | 169,000  |           |      |          |
| 395                              | 1,300 | 6,100    | 435       | 12,800 | 223,000  |           |      |          |
| 400                              | 2,000 | 14,300   | 440       | 17,300 | 297,000  |           |      |          |
| 405                              | 2,800 | 26,100   | 445       | 22,300 | 396,000  |           |      |          |
| 410                              | 3,800 | 42,600   | 450       | 27,500 | 519,400  |           |      |          |
| 415                              | 5,200 | 64,400   |           |        |          |           |      |          |
| 420                              | 6,100 | 92,200   |           |        |          |           |      |          |

47. REMARKS AND REFERENCES

1/ Spillway crest at elevation 406.0 surmounted by 6 tainter gates, 41 feet high and 45 feet wide.

2/ Closure of cofferdam and completion of lock for temporary use. Full power plant use not effective until December 1957.

3/ Six projects are upstream of Old Hickory Reservoir. Trap efficiencies are unknown.

4/ Uncontrolled drainage area was 2,776 square miles until Cordell Hull Dam closure in October 1967. After which uncontrolled drainage area became 1404 square miles.

5/ Negative sediment indicates scour.

48. AGENCY MAKING SURVEY U S Army Corps of Engineers

49. AGENCY SUPPLYING DATA U S Army Corps of Engineers

50. DATE August 1987

ATTACHMENT 1

Range in Old Hickory  
Reservoir Operation  
Water Years 1966-1985

| WATER<br>YEAR | MAXIMUM<br>ELEVATION | MINIMUM<br>ELEVATION | INFLOW<br>AC-FT |
|---------------|----------------------|----------------------|-----------------|
| 1966          | 433.4                | 413.6                | 14,745,954      |
| 1966          | 436.0                | 407.9                | 14,244,902      |
| 1967          | 447.5                | 405.0                | 15,123,692      |
| 1968          | 445.3                | 441.9                | 16,456,346      |
| 1969          | 445.1                | 442.3                | 9,619,953       |
| 1960          | 445.1                | 442.2                | 15,062,671      |
| 1961          | 446.0                | 442.7                | 13,516,124      |
| 1962          | 449.6                | 443.6                | 13,491,673      |
| 1963          | 446.0                | 443.4                | 12,076,103      |
| 1964          | 446.7                | 443.3                | 10,067,472      |
| 1965          | 445.6                | 442.6                | 14,334,331      |
| 1966          | 446.4                | 443.3                | 7,826,338       |
| 1967          | 446.5                | 442.3                | 15,473,433      |
| 1968          | 445.2                | 442.0                | 15,392,797      |
| 1969          | 445.3                | 443.0                | 9,313,062       |
| 1970          | 446.3                | 442.0                | 13,277,823      |
| 1971          | 445.4                | 442.3                | 14,453,470      |
| 1972          | 445.4                | 443.0                | 16,613,334      |
| 1973          | 447.2                | 442.0                | 20,400,639      |
| 1974          | 448.9                | 442.9                | 19,390,973      |
| 1975          | 450.1                | 442.7                | 20,426,522      |
| 1976          | 447.1                | 442.6                | 13,350,144      |
| 1977          | 445.7                | 443.1                | 10,382,376      |
| 1978          | 446.0                | 442.1                | 14,820,793      |
| 1979          | 447.7                | 442.8                | 18,826,305      |
| 1980          | 447.3                | 443.2                | 15,047,940      |
| 1981          | 445.9                | 442.5                | 6,562,302       |
| 1982          | 446.5                | 442.3                | 13,613,673      |
| 1983          | 446.1                | 442.8                | 15,150,577      |
| 1984          | 450.0                | 442.6                | 14,933,612      |
| 1985          | 445.1                | 443.0                | 11,988,465      |