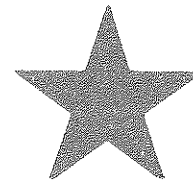


HE  
147.6  
.M5  
RH4

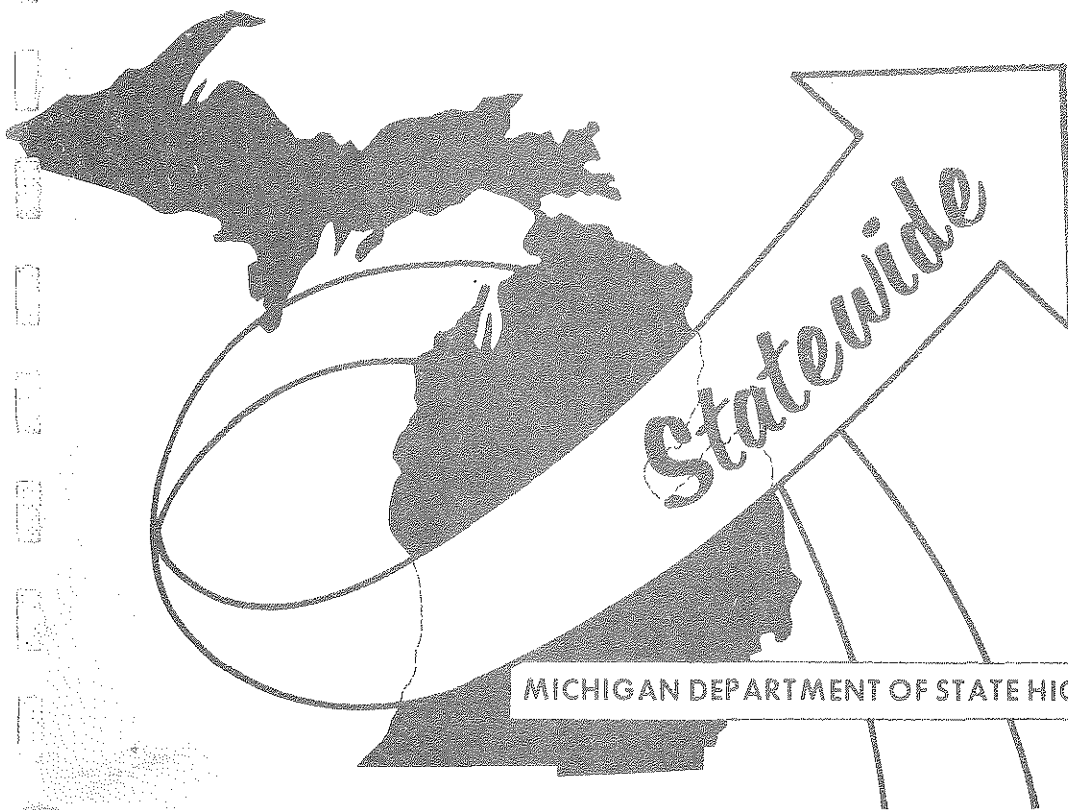
Statewide



# Transportation Analysis & Research

MICHIGAN'S STATEWIDE  
TRANSPORTATION MODELING SYSTEM  
TRUCK COMMODITY  
SUMMARIES  
STATEWIDE TRANSPORTATION  
PLANNING PROCEDURES  
REFERENCE HANDBOOK NO. 4

MAY, 1980



MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

# MICHIGAN DEPARTMENT OF TRANSPORTATION

## BUREAU OF TRANSPORTATION PLANNING

MICHIGAN'S STATEWIDE  
TRANSPORTATION MODELING SYSTEM

TRUCK COMMODITY  
SUMMARIES

STATEWIDE TRANSPORTATION  
PLANNING PROCEDURES

REFERENCE HANDBOOK NO. 4

MAY, 1980

### STATE TRANSPORTATION COMMISSION

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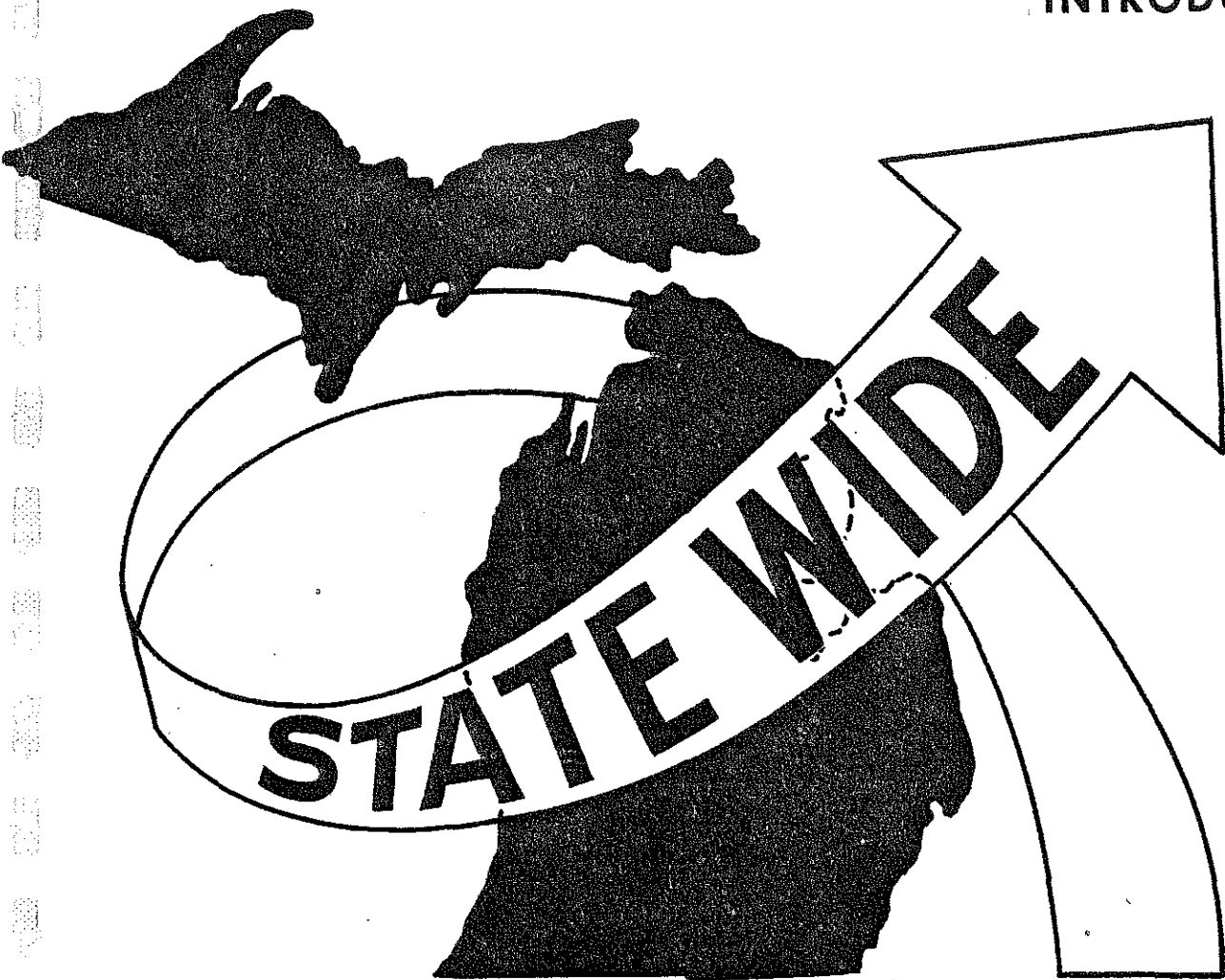
# TRUCK COMMODITY SUMMARIES

BY

JUAIDA A. NORRELL

|  |     |
|--|-----|
| INTRODUCTION . . . . .                   | 1   |
| COMMODITIES FOR ALL TRIPS. . . . .       | 3   |
| COMMODITIES FOR TERMINAL TRIPS . . . . . | .52 |
| TRIP LENGTH BY COMMODITY TYPE. . . . .   | .77 |

**INTRODUCTION**



## INTRODUCTION

By utilizing information collected in origin and destination studies, the Statewide Transportation Procedures Section, Bureau of Transportation Planning, Michigan Department of Transportation, has prepared commodity summaries for studies completed in 1974, 1975, and 1978 at selected sites throughout the state. The O&D data collection process is based upon the 547 zone system with Michigan consisting of 508 zones (Figure 1) and the remaining zones representing out of state locations. The geographical locations of the O&D studies are shown in Figure 2. The commodities are classified under 20 different categories, such as: auto carriers - any transportation equipment and auto parts; building products, gypsum roofing, lumber, etc.; chemicals, acids, plastics, rubber, etc.; and so on. A complete listing of commodity code categories can be found in Figure 3.

The data in this handbook is organized so that for each site the number of trips carrying any given commodity is listed. The different commodities are also shown as a percentage of the total number of trips carrying commodities for each study. The total of all commodity trips is shown as a percentage of the total number of all trips for each study. (See Figure 4 for sample.) No attempt was made to eliminate the possibility of trips between studies being counted twice.

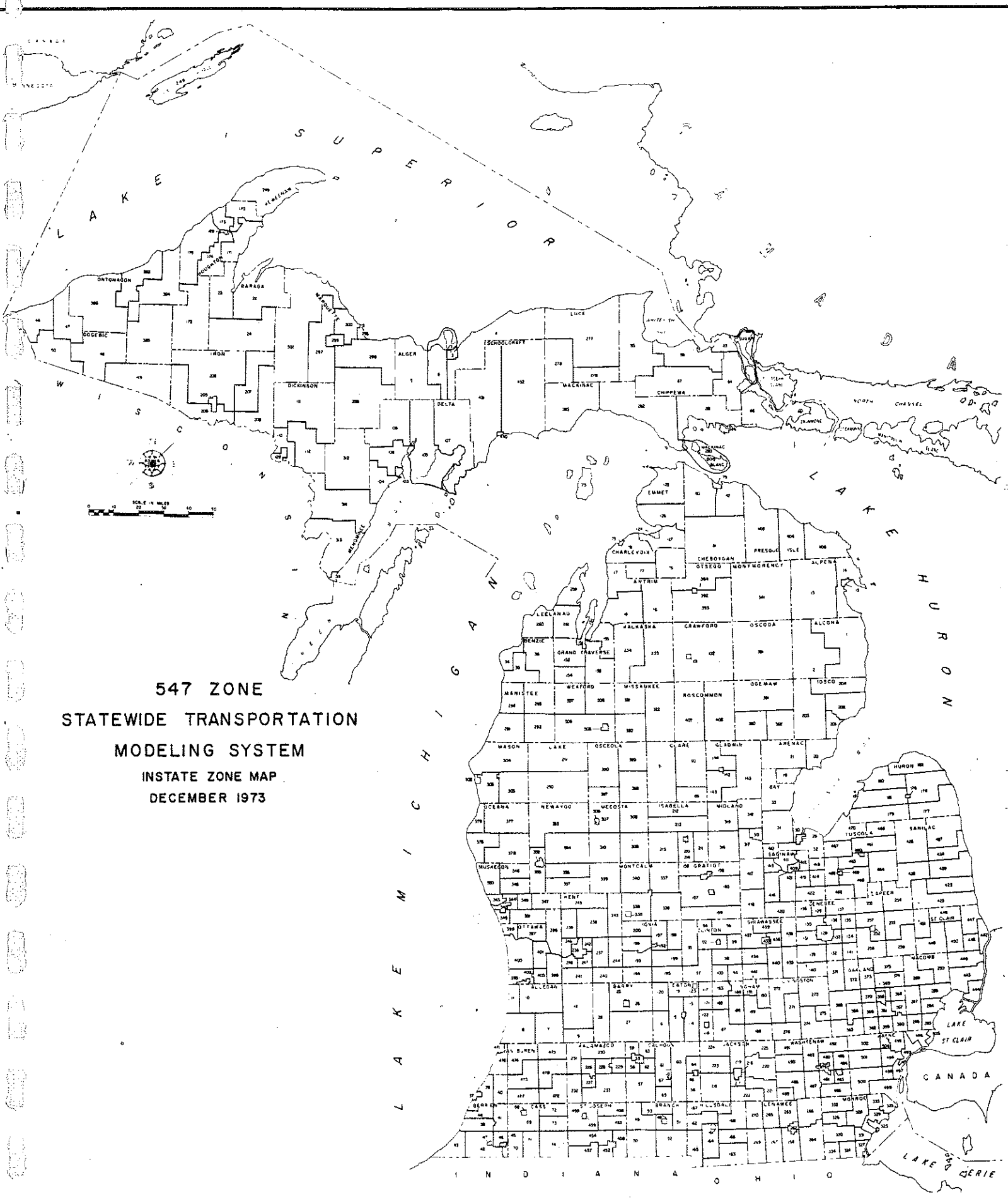
To analyze trip lengths, a trip length-frequency diagram was produced for all commodity trips. The trip lengths were measured in minutes. Figure 5 shows the number of trips vs. their length in minutes.

The next section contains the summaries for all trips and is in order alphabetically by city name. The second section contains the same kind of summaries,

but for terminal trips only. All trips which do not begin or end in the study region are neglected.

To analyze the trip-length variation by commodity type, all the minor O&D studies for 1975 were combined into one file. The trip-length diagrams were produced for each of the 20 different categories. These diagrams can be found in the final section.

Due to a rounding error, some values expressed in percentages are too high by one-tenth of a percent (.1%). To save costs, the tables were not reprinted with the corrections. Most applications will not be affected by this small error. If the more precise figures are required, please contact the Transportation Planning Procedures Section.



547 ZONE  
 STATEWIDE TRANSPORTATION  
 MODELING SYSTEM  
 INSTATE ZONE MAP  
 DECEMBER 1973

FIGURE I

# INTERVIEW LOCATIONS

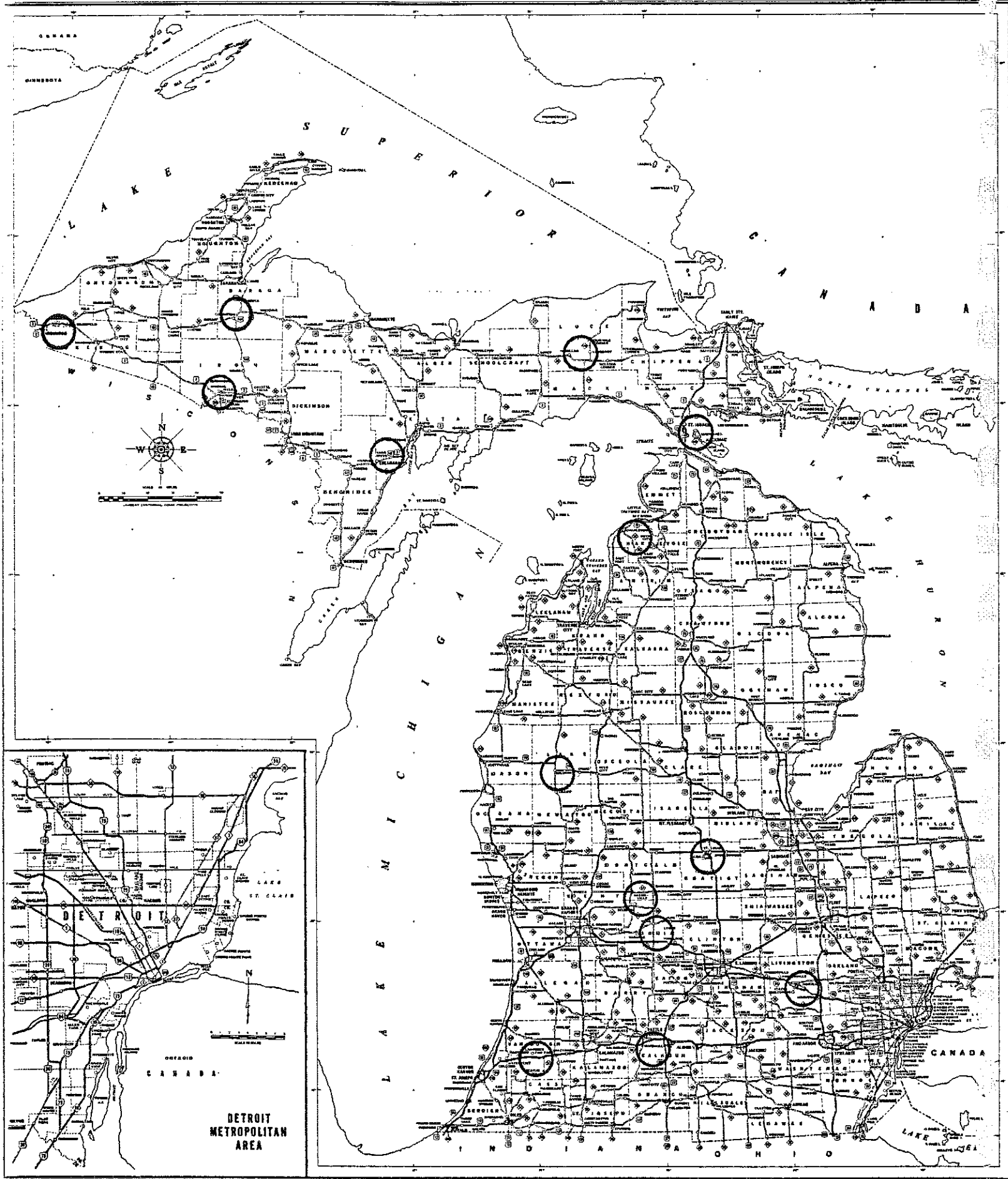


FIGURE 2



TRUCK COMMODITY CODE

Revised 1977

- A AUTO CARRIERS - ANY TRANSPORTATION EQUIPMENT: ALL AUTO PARTS, TIRES, ETC.
- B BUILDING PRODUCTS, GYPSUM ROOFING, LUMBER, ETC.
- C CHEMICALS, ACIDS, PLASTICS, RUBBER, ETC.
- D DRESS AND TEXTILES (MEN AND WOMEN) ALL CLOTHING AND CLOTH
- E EMPTY (NOTE "U" FOR UNKNOWN)
- F FOOD, MEAT (FRESH OR FROZEN) FISH, SUGAR, FLOUR, ETC. THIS DOES NOT INCLUDE FARM PRODUCE OR GRAIN
- G GRAIN - WHEAT, CORN & OTHER FARM PRODUCE
- H HOME APPLIANCES AND FURNITURE
- K RECREATIONAL & CAMPING EQUIPMENT, BOATS, SPORTS EQUIPMENT, ETC.
- L LIVESTOCK
- M MACHINERY & PARTS (OTHER THAN AUTO PARTS) INCLUDES ELECTRICAL EQUIPMENT
- N NURSERY STOCK
- Ø ALL OTHER - INCLUDING MIXED FREIGHT, DRUGS, JEWELRY, MUSICAL INSTRUMENTS, TOYS, MAIL, MOVING VANS
- P PETROLEUM, GAS, GASOLINE, OIL, ETC.
- R RAW MATERIALS, MINING & MINERALS, GRAVEL, CEMENT, COAL, ETC.
- S STEEL - ALL METALS INCLUDING CASTINGS (UNFINISHED PARTS)
- T TOBACCO - INCLUDING CANDY, BEER, LIQUOR: ALL OTHER BEVERAGES EXCEPT DAIRY PRODUCTS
- U UNKNOWN OR REFUSED
- W WOOD FOR PAPER, ALL PAPER PRODUCTS, INCLUDING NEWSPRINT
- Z SERVICE VEHICLES

FIGURE 3

CHARLEVOIX 1974

|                                     |                     |                |
|-------------------------------------|---------------------|----------------|
| A. AUTO                             | 4.65 ( 1.2%)TRIPS   |                |
| B. BUILDING                         | 16.20 ( 4.2%)TRIPS  |                |
| C. CHEMICALS                        | 6.60 ( 1.7%)TRIPS   |                |
| D. TEXTILES                         | 7.70 ( 2.0%)TRIPS   |                |
| E. EMPTY                            | 167.17 (43.1%)TRIPS |                |
| F. FOOD                             | 54.83 (14.2%)TRIPS  |                |
| G. GRAIN                            | 8.71 ( 2.3%)TRIPS   |                |
| H. FURNITURE                        | 12.42 ( 3.2%)TRIPS  |                |
| K. RECREATION EQ.                   | 0.99 ( 0.3%)TRIPS   |                |
| L. LIVESTOCK                        | 0.00 ( 0.1%)TRIPS   |                |
| M. MACHINERY                        | 21.80 ( 5.7%)TRIPS  |                |
| N. NURSERY STOCK                    | 0.00 ( 0.1%)TRIPS   |                |
| O. OTHER                            | 7.67 ( 2.0%)TRIPS   |                |
| P. PETROLEUM                        | 26.13 ( 6.8%)TRIPS  |                |
| R. RAW MATERIALS                    | 25.51 ( 6.6%)TRIPS  |                |
| S. METALS                           | 2.31 ( 0.6%)TRIPS   |                |
| T. TOBACCO, ETC.                    | 5.34 ( 1.4%)TRIPS   |                |
| U. UNKNOWN                          | 11.48 ( 3.0%)TRIPS  |                |
| W. PAPER                            | 9.20 ( 2.4%)TRIPS   |                |
| Z. SERV. VEHICLES                   | 0.00 ( 0.1%)TRIPS   |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |                     | 388.71 ( 2.6%) |
| TOTAL NO. ALL TRIPS                 | 15073.07            |                |

FIGURE 4

CHARLEVOIX

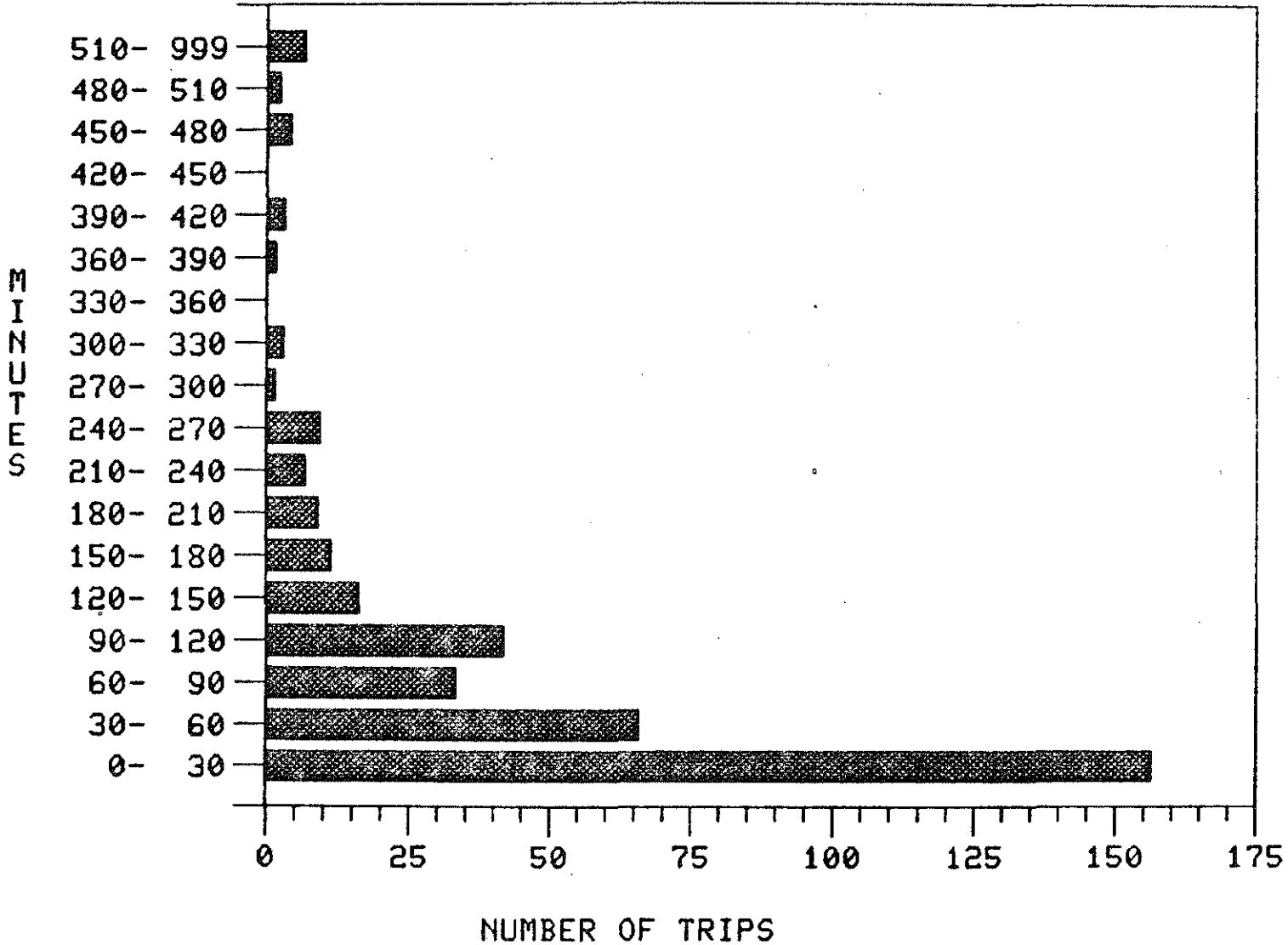
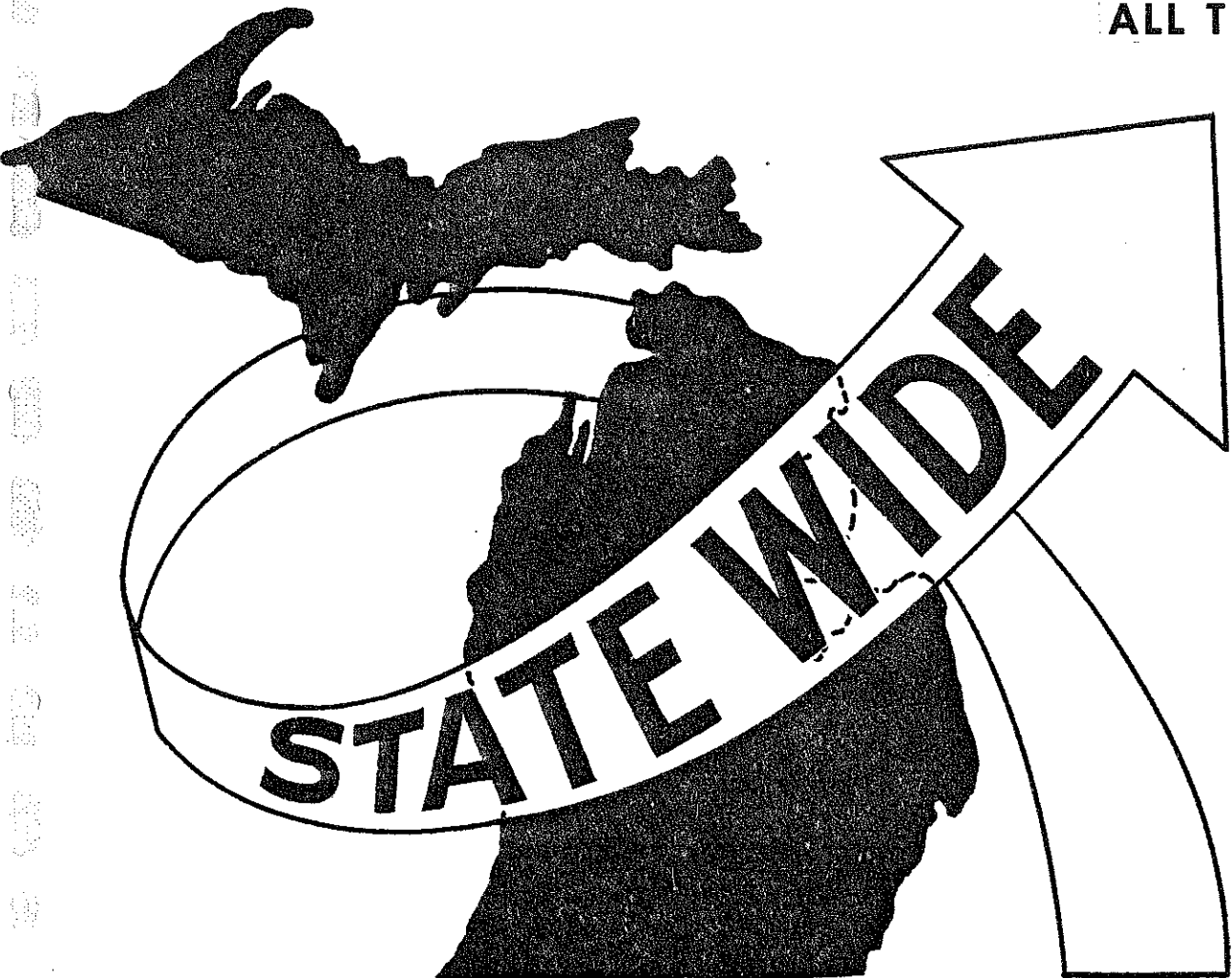


FIGURE 5

COMMODITIES

FOR

ALL TRIPS



Except for the county studies, the following are Minor O&D Interview Studies. Each city had several interview stations surrounding the study area. The data for all interview stations has been combined to give city totals.

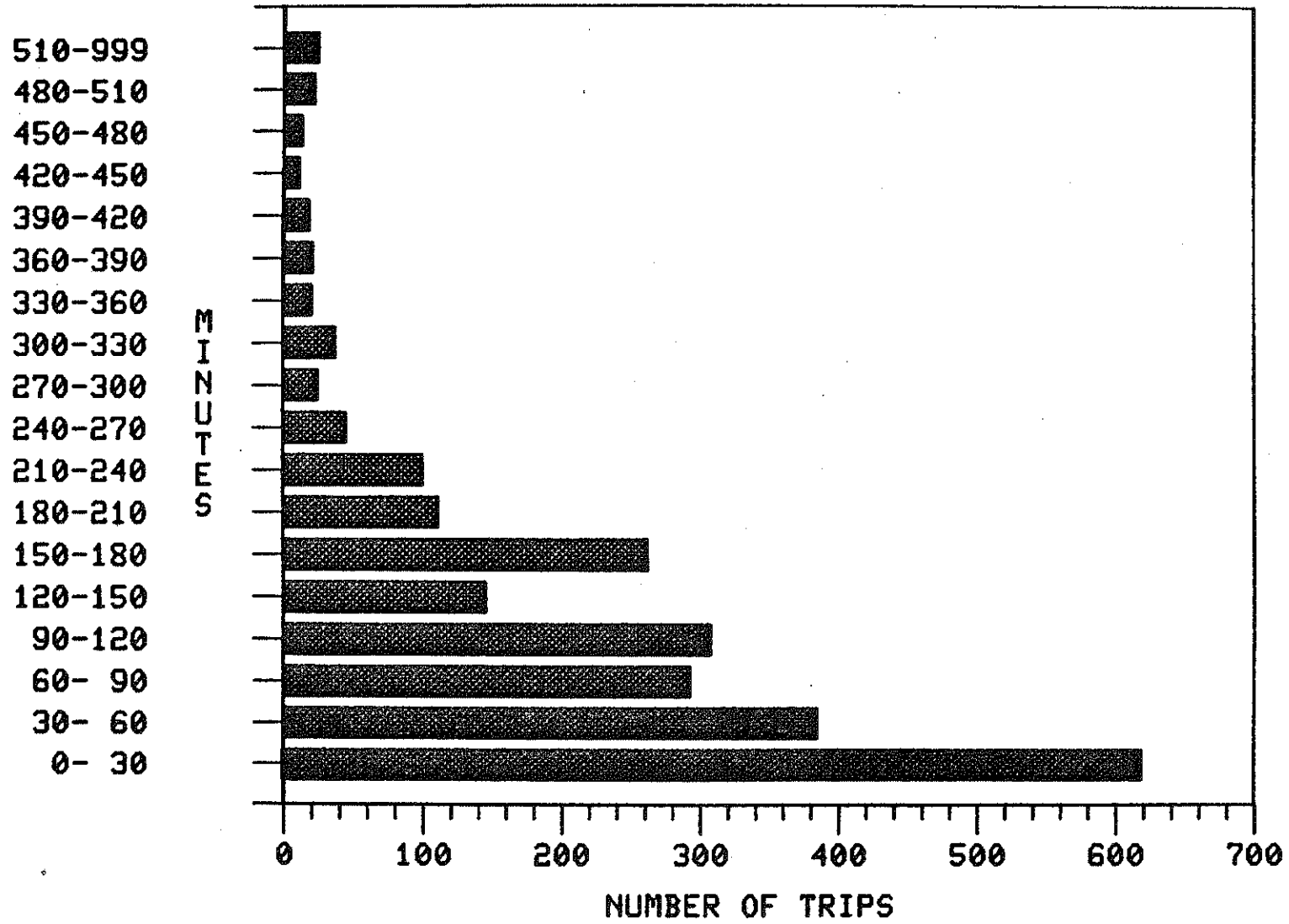
The three county studies were taken as rural single stations which surround a particular analysis zone in the 547 Zone Transportation Modeling System.

|                                | <u>Page</u> |
|--------------------------------|-------------|
| Alma-St. Louis (1974)          | 4           |
| Baraga County (1978)           |             |
| M-28 Station 070025            | 6           |
| US-41 Station 070020           | 8           |
| US-41 Station 070023           | 10          |
| US-141 Station 070024          | 12          |
| Charlevoix (1974)              | 14          |
| Escanaba-Gladstone (1974)      | 16          |
| Frankenmuth (1975)             | 18          |
| Greenville (1974)              | 20          |
| Howell (1975)                  | 22          |
| Ionia (1975)                   | 24          |
| Iron River (1975)              | 26          |
| Ironwood (1975)                | 28          |
| Lake County (1978)             |             |
| M-37 Station 430007            | 30          |
| M-37 Station 430014            | 32          |
| US-10 Station 430012           | 34          |
| US-10 Station 430013           | 36          |
| Luce County (1978)             |             |
| M-123 Station 480500           | 38          |
| M-123 Station 480039           | 40          |
| Dollarville Rd. Station 480045 | 42          |
| County Rd. 403 Station 480046  | 44          |
| Marshall (1975)                | 46          |
| Paw Paw (1975)                 | 48          |
| St. Ignace (1974)              | 50          |

## ALMASTLOUIS 1974

|                                     |          |         |       |                 |
|-------------------------------------|----------|---------|-------|-----------------|
| A. AUTO                             | 36.32    | ( 1.6%) | TRIPS |                 |
| B. BUILDING                         | 90.17    | ( 3.8%) | TRIPS |                 |
| C. CHEMICALS                        | 84.70    | ( 3.6%) | TRIPS |                 |
| D. TEXTILES                         | 20.16    | ( 0.9%) | TRIPS |                 |
| E. EMPTY                            | 1151.01  | (48.0%) | TRIPS |                 |
| F. FOOD                             | 286.28   | (12.0%) | TRIPS |                 |
| G. GRAIN                            | 102.86   | ( 4.3%) | TRIPS |                 |
| H. FURNITURE                        | 61.04    | ( 2.6%) | TRIPS |                 |
| K. RECREATION EQ.                   | 2.70     | ( 0.2%) | TRIPS |                 |
| L. LIVESTOCK                        | 13.32    | ( 0.6%) | TRIPS |                 |
| M. MACHINERY                        | 125.23   | ( 5.3%) | TRIPS |                 |
| N. NURSERY STOCK                    | 3.25     | ( 0.2%) | TRIPS |                 |
| O. OTHER                            | 6.42     | ( 0.3%) | TRIPS |                 |
| P. PETROLEUM                        | 147.62   | ( 6.2%) | TRIPS |                 |
| R. RAW MATERIALS                    | 86.36    | ( 3.6%) | TRIPS |                 |
| S. METALS                           | 65.18    | ( 2.8%) | TRIPS |                 |
| T. TOBACCO, ETC.                    | 26.32    | ( 1.1%) | TRIPS |                 |
| U. UNKNOWN                          | 29.18    | ( 1.3%) | TRIPS |                 |
| W. PAPER                            | 61.26    | ( 2.6%) | TRIPS |                 |
| Z. SERV. VEHICLES                   | 0.00     | ( 0.1%) | TRIPS |                 |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 2399.38 ( 6.7%) |
| TOTAL NO. ALL TRIPS                 | 36251.99 |         |       |                 |

# ALMASTLOUIS



M-28(070025) 1978

|                   |       |         |       |
|-------------------|-------|---------|-------|
| A. AUTO           | 3.54  | ( 3.2%) | TRIPS |
| B. BUILDING       | 10.67 | ( 9.6%) | TRIPS |
| C. CHEMICALS      | 3.51  | ( 3.2%) | TRIPS |
| D. TEXTILES       | 0.00  | ( 0.1%) | TRIPS |
| E. EMPTY          | 42.65 | (38.3%) | TRIPS |
| F. FOOD           | 10.34 | ( 9.3%) | TRIPS |
| G. GRAIN          | 0.00  | ( 0.1%) | TRIPS |
| H. FURNITURE      | 2.13  | ( 2.0%) | TRIPS |
| K. RECREATION EQ. | 1.52  | ( 1.4%) | TRIPS |
| L. LIVESTOCK      | 0.00  | ( 0.1%) | TRIPS |
| M. MACHINERY      | 5.79  | ( 5.2%) | TRIPS |
| N. NURSERY STOCK  | 0.00  | ( 0.1%) | TRIPS |
| O. OTHER          | 1.60  | ( 1.5%) | TRIPS |
| P. PETROLEUM      | 7.88  | ( 7.1%) | TRIPS |
| R. RAW MATERIALS  | 3.18  | ( 2.9%) | TRIPS |
| S. METALS         | 2.37  | ( 2.2%) | TRIPS |
| T. TOBACCO, ETC.  | 1.54  | ( 1.4%) | TRIPS |
| U. UNKNOWN        | 0.00  | ( 0.1%) | TRIPS |
| W. PAPER          | 2.28  | ( 2.1%) | TRIPS |
| Z. SERV. VEHICLES | 12.57 | (11.3%) | TRIPS |

TOTAL NO. TRIPS WITH COMMODITY CODE

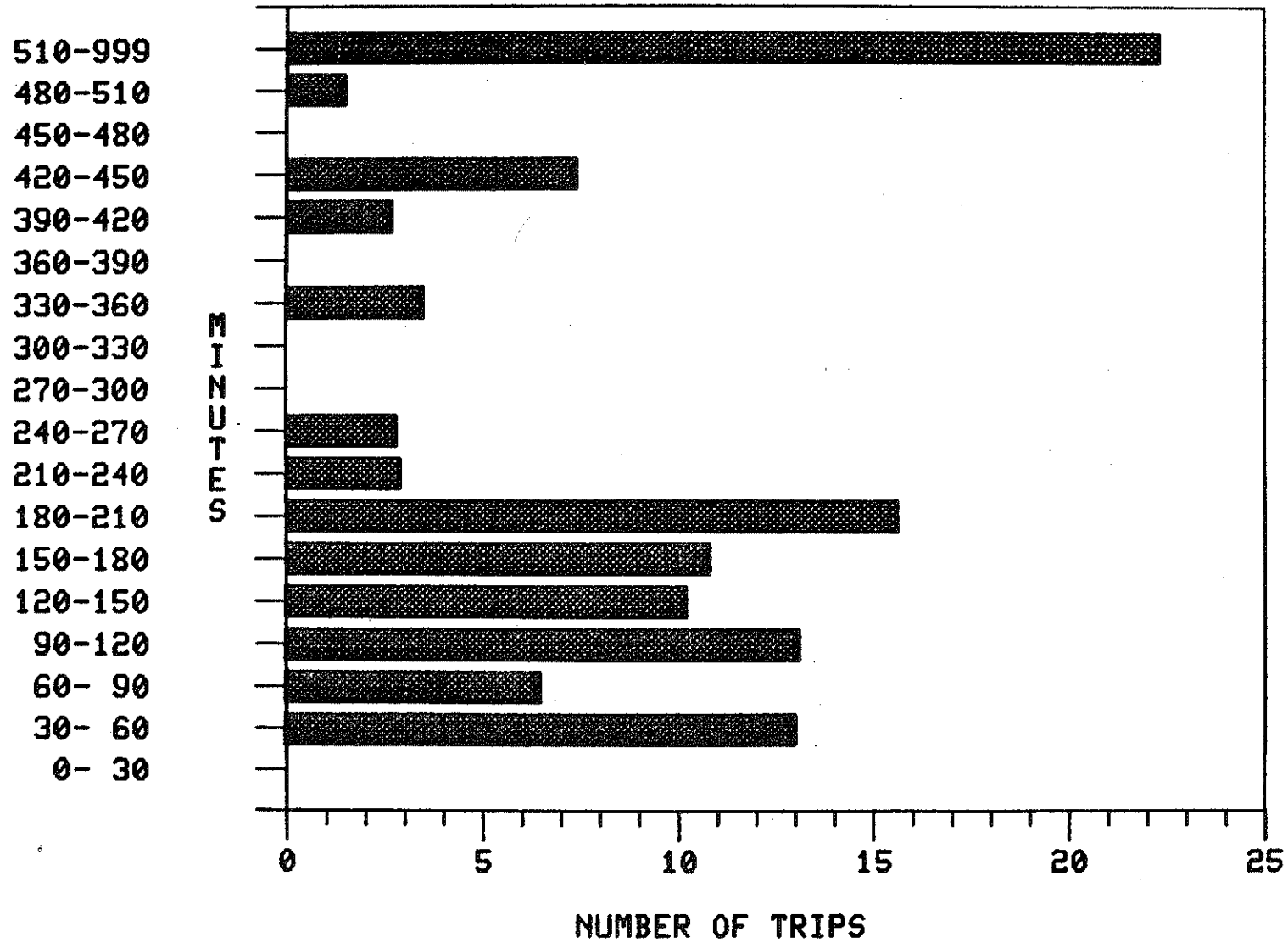
111.57( 5.9%)

TOTAL NO. ALL TRIPS

1907.31



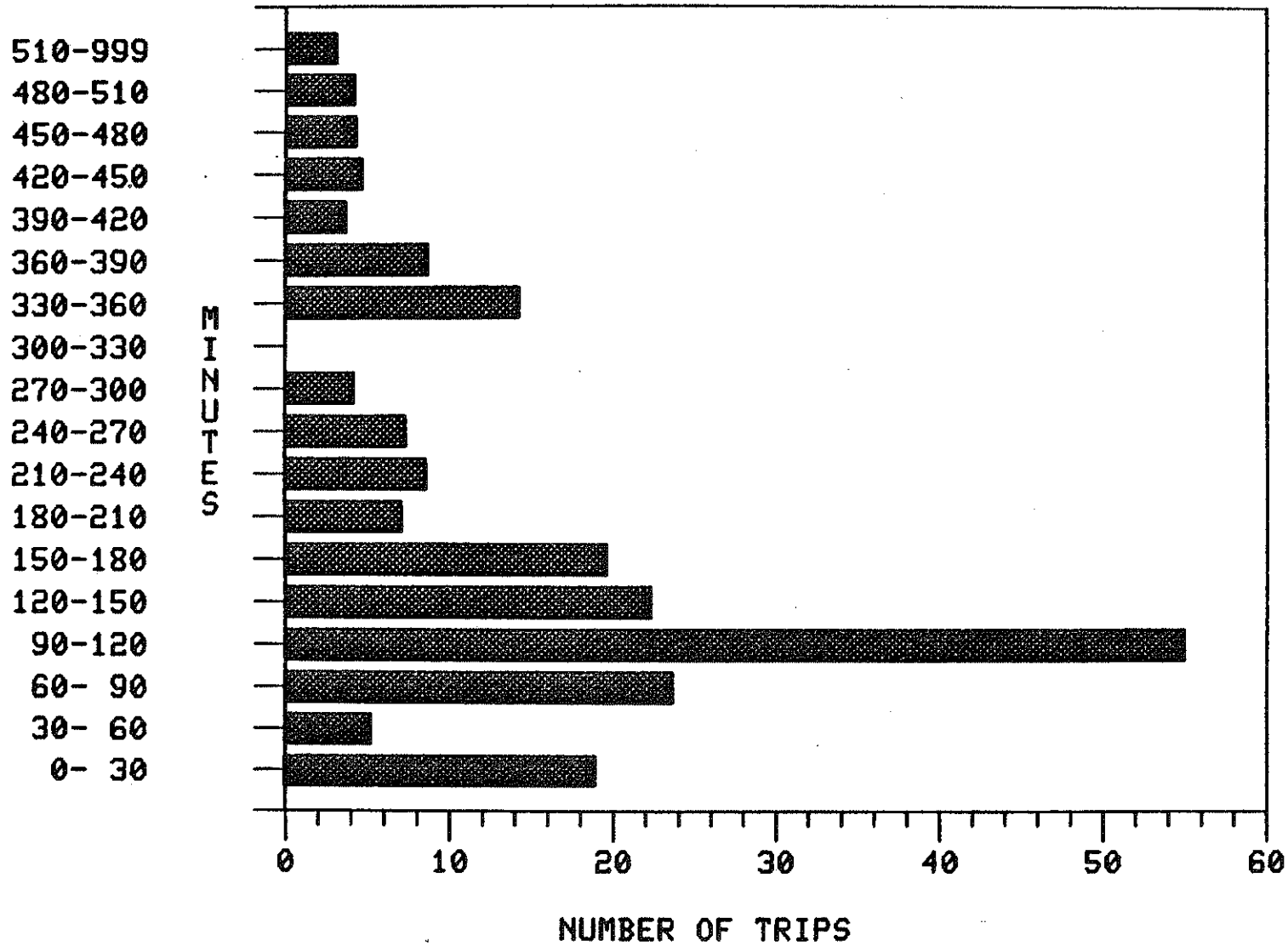
M28(070025)



US-41(070020) 1978

|                                     |         |         |       |                |
|-------------------------------------|---------|---------|-------|----------------|
| A. AUTO                             | 5.36    | ( 2.5%) | TRIPS |                |
| B. BUILDING                         | 32.82   | (15.3%) | TRIPS |                |
| C. CHEMICALS                        | 1.71    | ( 0.8%) | TRIPS |                |
| D. TEXTILES                         | 0.00    | ( 0.1%) | TRIPS |                |
| E. EMPTY                            | 94.82   | (44.3%) | TRIPS |                |
| F. FOOD                             | 10.12   | ( 4.8%) | TRIPS |                |
| G. GRAIN                            | 1.31    | ( 0.7%) | TRIPS |                |
| H. FURNITURE                        | 6.18    | ( 2.9%) | TRIPS |                |
| K. RECREATION EQ.                   | 0.00    | ( 0.1%) | TRIPS |                |
| L. LIVESTOCK                        | 0.00    | ( 0.1%) | TRIPS |                |
| M. MACHINERY                        | 6.10    | ( 2.9%) | TRIPS |                |
| N. NURSERY STOCK                    | 5.13    | ( 2.4%) | TRIPS |                |
| O. OTHER                            | 13.07   | ( 6.1%) | TRIPS |                |
| P. PETROLEUM                        | 7.62    | ( 3.6%) | TRIPS |                |
| R. RAW MATERIALS                    | 11.08   | ( 5.2%) | TRIPS |                |
| S. METALS                           | 4.28    | ( 2.0%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 1.31    | ( 0.7%) | TRIPS |                |
| U. UNKNOWN                          | 0.00    | ( 0.1%) | TRIPS |                |
| W. PAPER                            | 8.77    | ( 4.1%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 4.83    | ( 2.3%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |         |         |       | 214.51 ( 6.5%) |
| TOTAL NO. ALL TRIPS                 | 3314.67 |         |       |                |

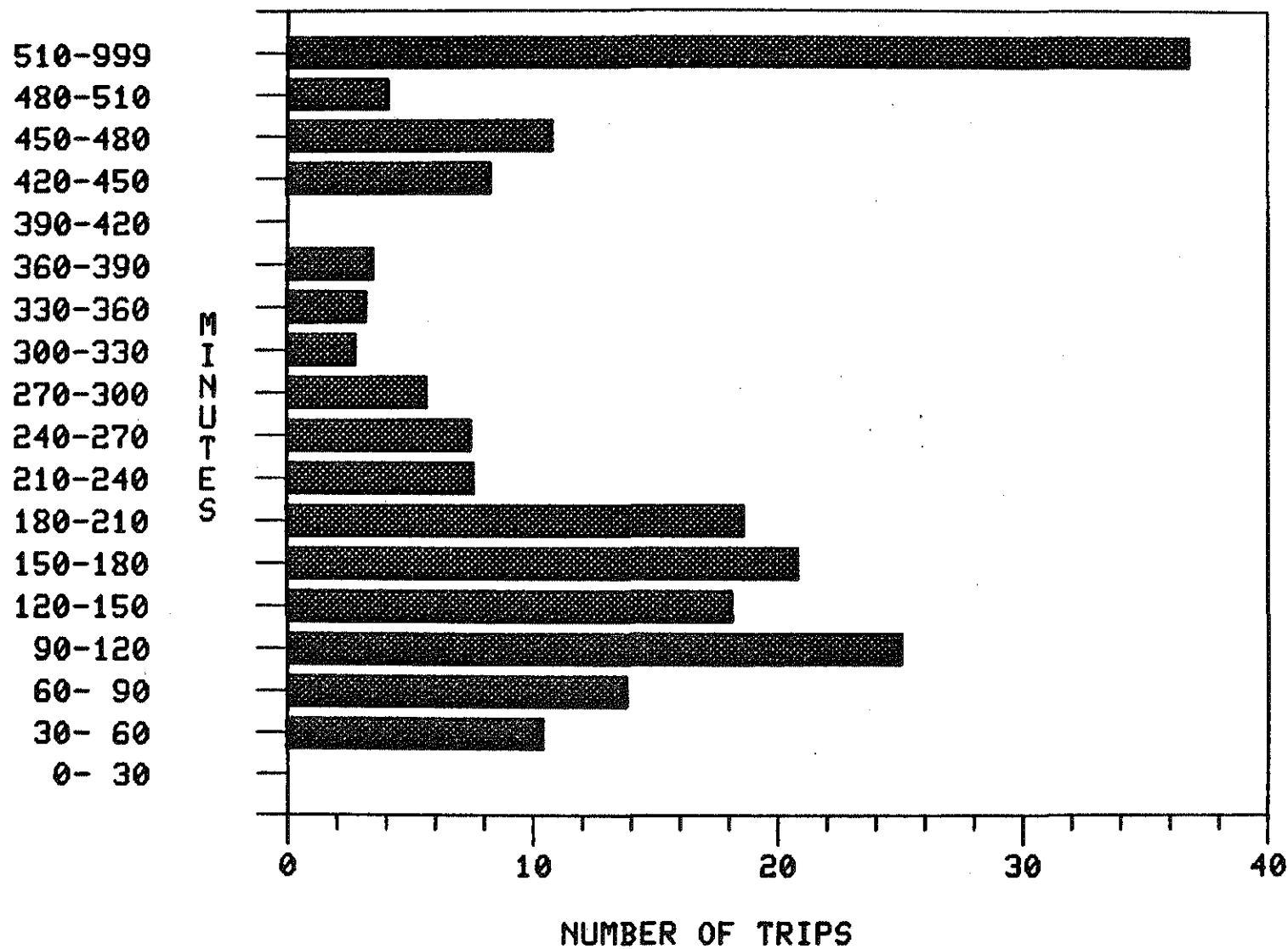
US41(070020)



US-41(070023) 1978

|                                     |         |         |       |                |
|-------------------------------------|---------|---------|-------|----------------|
| A. AUTO                             | 4.95    | ( 2.6%) | TRIPS |                |
| B. BUILDING                         | 10.40   | ( 5.3%) | TRIPS |                |
| C. CHEMICALS                        | 0.00    | ( 0.1%) | TRIPS |                |
| D. TEXTILES                         | 0.00    | ( 0.1%) | TRIPS |                |
| E. EMPTY                            | 84.16   | (42.8%) | TRIPS |                |
| F. FOOD                             | 29.54   | (15.1%) | TRIPS |                |
| G. GRAIN                            | 3.17    | ( 1.7%) | TRIPS |                |
| H. FURNITURE                        | 8.37    | ( 4.3%) | TRIPS |                |
| K. RECREATION EQ.                   | 1.60    | ( 0.9%) | TRIPS |                |
| L. LIVESTOCK                        | 0.00    | ( 0.1%) | TRIPS |                |
| M. MACHINERY                        | 2.18    | ( 1.2%) | TRIPS |                |
| N. NURSERY STOCK                    | 0.00    | ( 0.1%) | TRIPS |                |
| O. OTHER                            | 8.19    | ( 4.2%) | TRIPS |                |
| P. PETROLEUM                        | 8.26    | ( 4.2%) | TRIPS |                |
| R. RAW MATERIALS                    | 12.04   | ( 6.2%) | TRIPS |                |
| S. METALS                           | 0.00    | ( 0.1%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 3.84    | ( 2.0%) | TRIPS |                |
| U. UNKNOWN                          | 0.00    | ( 0.1%) | TRIPS |                |
| W. PAPER                            | 9.11    | ( 4.7%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 11.05   | ( 5.7%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |         |         |       | 196.86 ( 4.9%) |
| TOTAL NO. ALL TRIPS                 | 4022.78 |         |       |                |

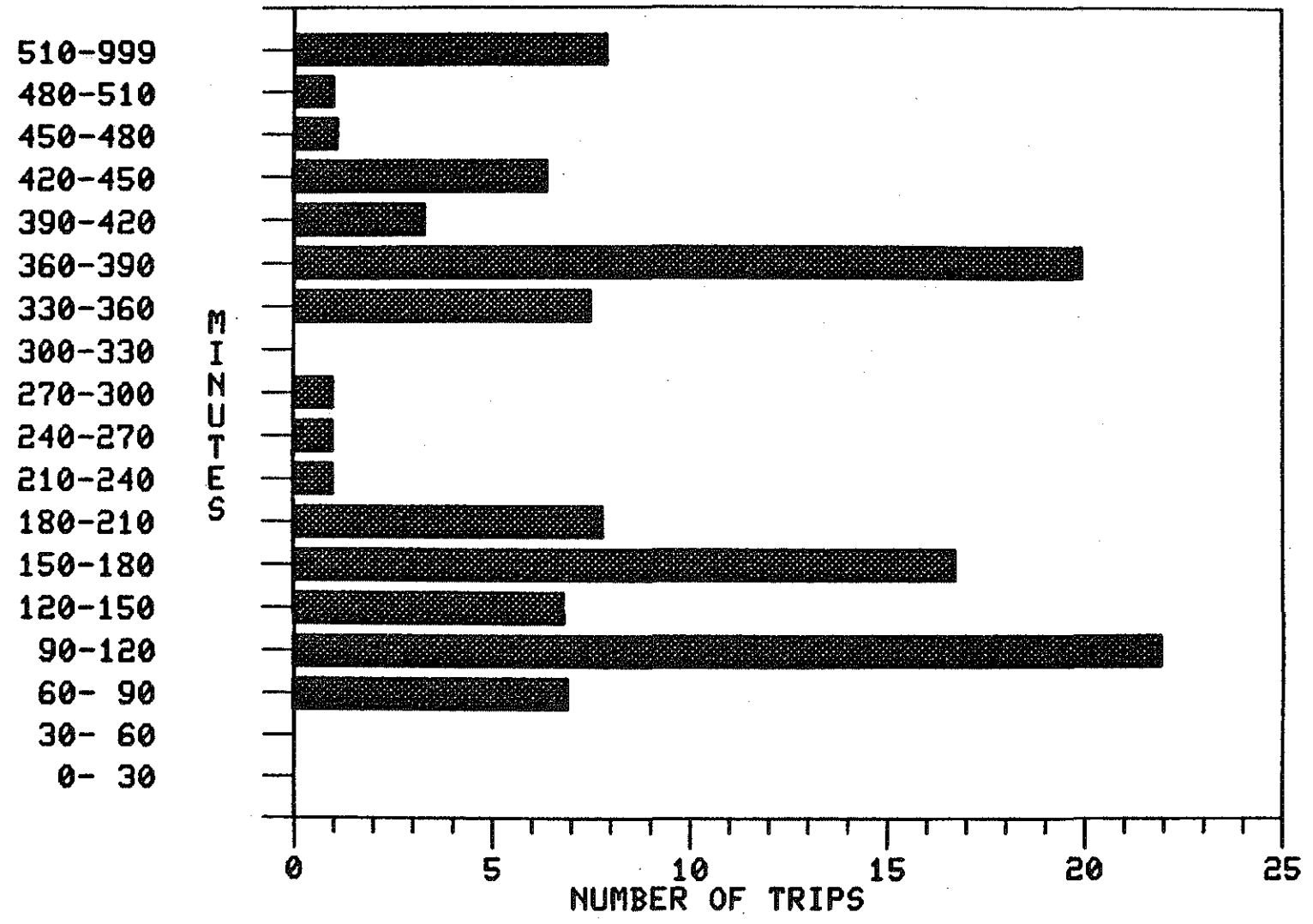
US41(070023)



US-141(070024) 1978

|                                     |        |         |       |               |
|-------------------------------------|--------|---------|-------|---------------|
| A. AUTO                             | 1.17   | ( 1.2%) | TRIPS |               |
| B. BUILDING                         | 15.56  | (15.3%) | TRIPS |               |
| C. CHEMICALS                        | 1.19   | ( 1.2%) | TRIPS |               |
| D. TEXTILES                         | 2.38   | ( 2.4%) | TRIPS |               |
| E. EMPTY                            | 42.63  | (41.7%) | TRIPS |               |
| F. FOOD                             | 8.52   | ( 8.4%) | TRIPS |               |
| G. GRAIN                            | 0.00   | ( 0.1%) | TRIPS |               |
| H. FURNITURE                        | 0.00   | ( 0.1%) | TRIPS |               |
| K. RECREATION EQ.                   | 1.04   | ( 1.1%) | TRIPS |               |
| L. LIVESTOCK                        | 0.00   | ( 0.1%) | TRIPS |               |
| M. MACHINERY                        | 3.27   | ( 3.2%) | TRIPS |               |
| N. NURSERY STOCK                    | 0.00   | ( 0.1%) | TRIPS |               |
| O. OTHER                            | 7.00   | ( 6.9%) | TRIPS |               |
| P. PETROLEUM                        | 4.84   | ( 4.8%) | TRIPS |               |
| R. RAW MATERIALS                    | 4.02   | ( 4.0%) | TRIPS |               |
| S. METALS                           | 2.38   | ( 2.4%) | TRIPS |               |
| T. TOBACCO, ETC.                    | 1.04   | ( 1.1%) | TRIPS |               |
| U. UNKNOWN                          | 0.00   | ( 0.1%) | TRIPS |               |
| W. PAPER                            | 6.10   | ( 6.0%) | TRIPS |               |
| Z. SERV. VEHICLES                   | 1.11   | ( 1.1%) | TRIPS |               |
| TOTAL NO. TRIPS WITH COMMODITY CODE |        |         |       | 102.25(14.7%) |
| TOTAL NO. ALL TRIPS                 | 699.84 |         |       |               |

US141(070024)

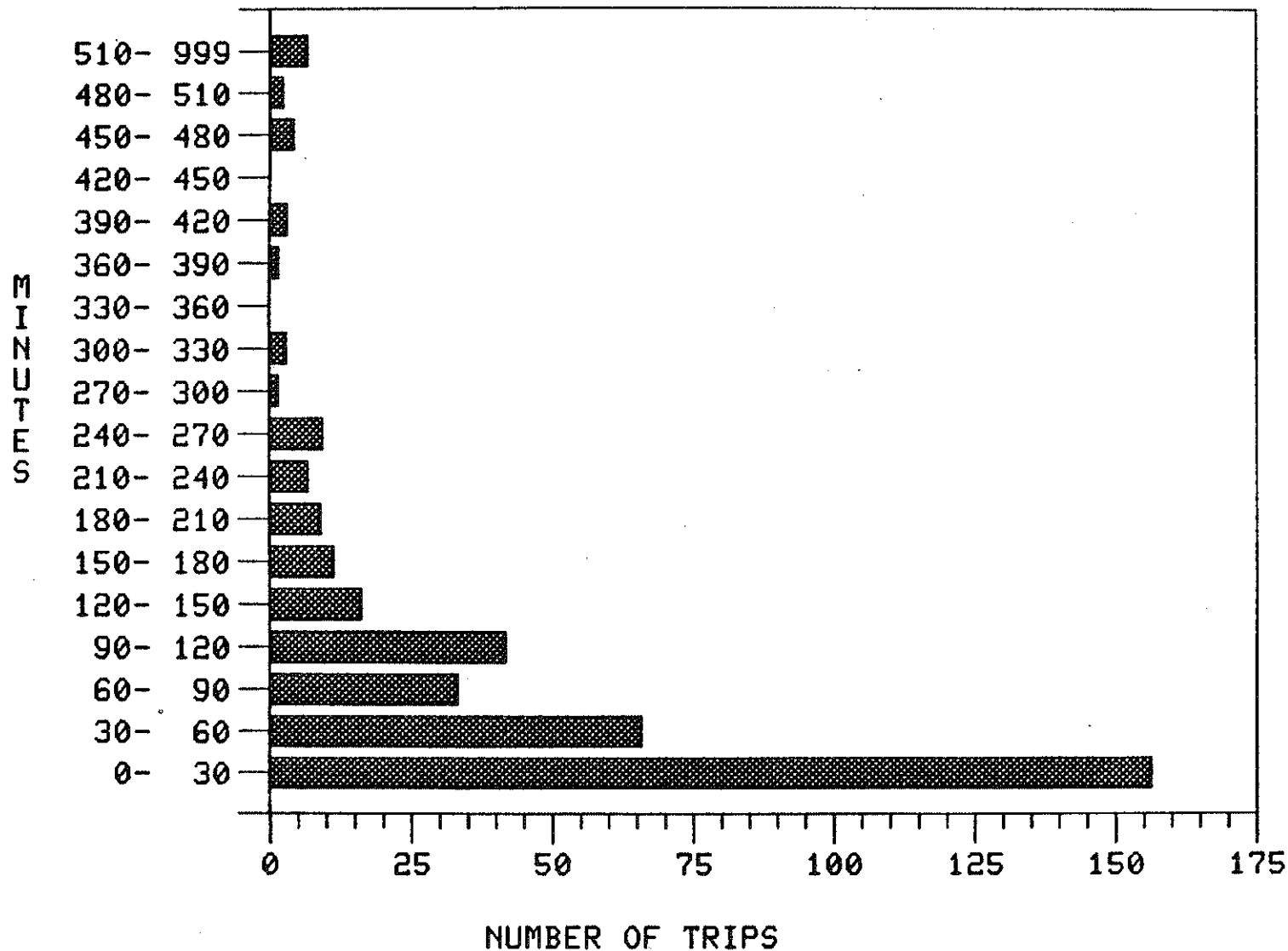


## CHARLEVOIX 1974

|                                     |          |         |       |                |
|-------------------------------------|----------|---------|-------|----------------|
| A. AUTO                             | 4.65     | ( 1.2%) | TRIPS |                |
| B. BUILDING                         | 16.20    | ( 4.2%) | TRIPS |                |
| C. CHEMICALS                        | 6.60     | ( 1.7%) | TRIPS |                |
| D. TEXTILES                         | 7.70     | ( 2.0%) | TRIPS |                |
| E. EMPTY                            | 167.17   | (43.1%) | TRIPS |                |
| F. FOOD                             | 54.83    | (14.2%) | TRIPS |                |
| G. GRAIN                            | 8.71     | ( 2.3%) | TRIPS |                |
| H. FURNITURE                        | 12.42    | ( 3.2%) | TRIPS |                |
| K. RECREATION EQ.                   | 0.99     | ( 0.3%) | TRIPS |                |
| L. LIVESTOCK                        | 0.00     | ( 0.1%) | TRIPS |                |
| M. MACHINERY                        | 21.80    | ( 5.7%) | TRIPS |                |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |                |
| O. OTHER                            | 7.67     | ( 2.0%) | TRIPS |                |
| P. PETROLEUM                        | 26.13    | ( 6.8%) | TRIPS |                |
| R. RAW MATERIALS                    | 25.51    | ( 6.6%) | TRIPS |                |
| S. METALS                           | 2.31     | ( 0.6%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 5.34     | ( 1.4%) | TRIPS |                |
| U. UNKNOWN                          | 11.48    | ( 3.0%) | TRIPS |                |
| W. PAPER                            | 9.20     | ( 2.4%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 0.00     | ( 0.1%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 388.71 ( 2.6%) |
| TOTAL NO. ALL TRIPS                 | 15073.07 |         |       |                |



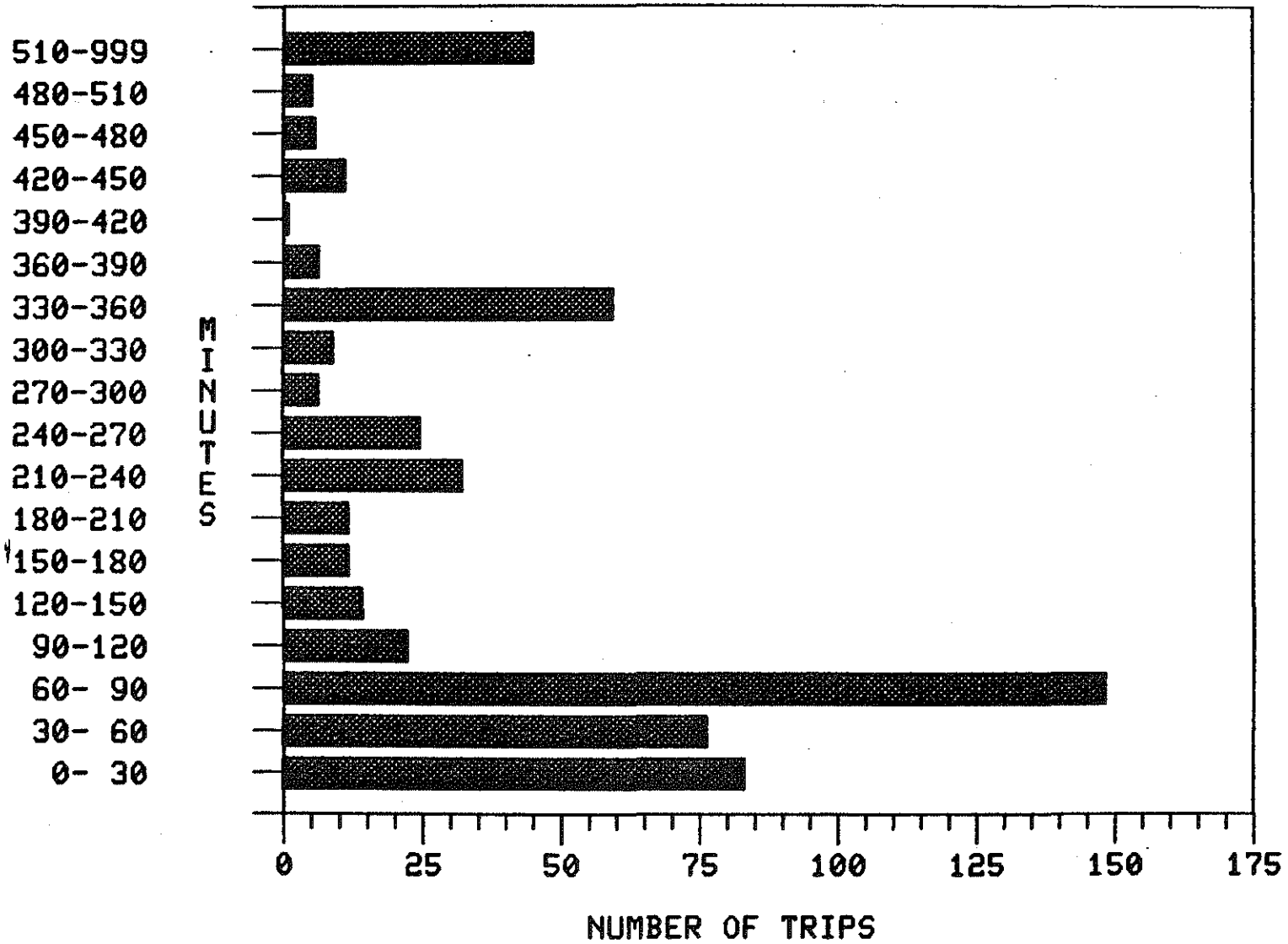
# CHARLEVOIX



## ESCAGLAD 1974

|                                     |          |         |       |                |
|-------------------------------------|----------|---------|-------|----------------|
| A. AUTO                             | 5.12     | ( 1.0%) | TRIPS |                |
| B. BUILDING                         | 18.50    | ( 3.3%) | TRIPS |                |
| C. CHEMICALS                        | 9.20     | ( 1.7%) | TRIPS |                |
| D. TEXTILES                         | 2.00     | ( 0.4%) | TRIPS |                |
| E. EMPTY                            | 246.41   | (43.4%) | TRIPS |                |
| F. FOOD                             | 16.12    | ( 2.9%) | TRIPS |                |
| G. GRAIN                            | 3.99     | ( 0.8%) | TRIPS |                |
| H. FURNITURE                        | 13.86    | ( 2.5%) | TRIPS |                |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                |
| L. LIVESTOCK                        | 0.00     | ( 0.1%) | TRIPS |                |
| M. MACHINERY                        | 19.87    | ( 3.5%) | TRIPS |                |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |                |
| O. OTHER                            | 51.76    | ( 9.2%) | TRIPS |                |
| P. PETROLEUM                        | 31.22    | ( 5.5%) | TRIPS |                |
| R. RAW MATERIALS                    | 29.72    | ( 5.3%) | TRIPS |                |
| S. METALS                           | 4.64     | ( 0.9%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 9.05     | ( 1.6%) | TRIPS |                |
| U. UNKNOWN                          | 84.94    | (15.0%) | TRIPS |                |
| W. PAPER                            | 21.92    | ( 3.9%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 0.00     | ( 0.1%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 568.32 ( 3.1%) |
| TOTAL NO. ALL TRIPS                 | 18863.29 |         |       |                |

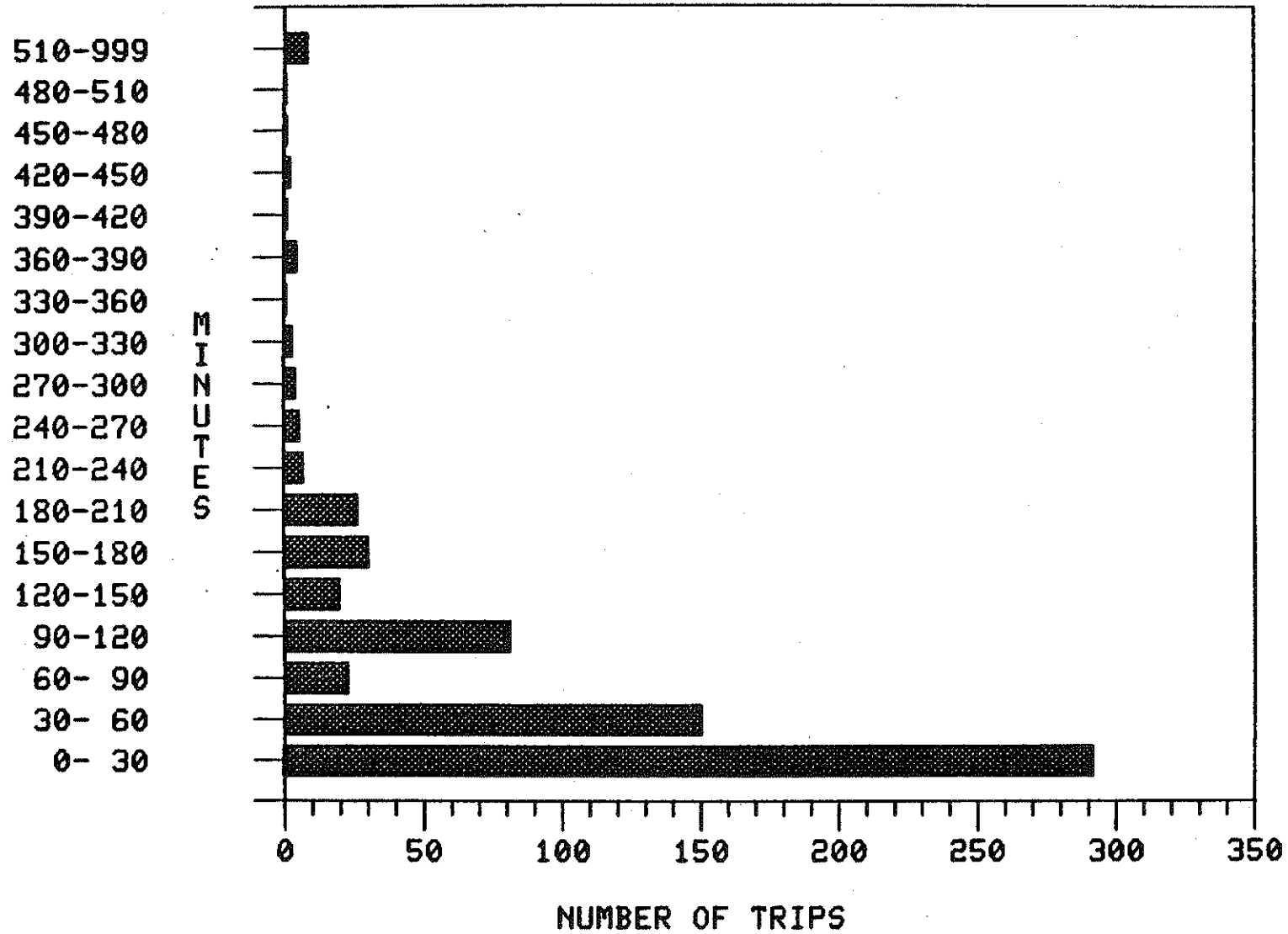
# ESCAGLAD



## FRANKENMUTH 1975

|                                     |          |         |       |                |
|-------------------------------------|----------|---------|-------|----------------|
| A. AUTO                             | 11.24    | ( 1.8%) | TRIPS |                |
| B. BUILDING                         | 22.71    | ( 3.5%) | TRIPS |                |
| C. CHEMICALS                        | 16.85    | ( 2.6%) | TRIPS |                |
| D. TEXTILES                         | 8.93     | ( 1.4%) | TRIPS |                |
| E. EMPTY                            | 221.22   | (33.7%) | TRIPS |                |
| F. FOOD                             | 80.69    | (12.3%) | TRIPS |                |
| G. GRAIN                            | 34.97    | ( 5.4%) | TRIPS |                |
| H. FURNITURE                        | 16.76    | ( 2.6%) | TRIPS |                |
| K. RECREATION EQ.                   | 1.82     | ( 0.3%) | TRIPS |                |
| L. LIVESTOCK                        | 5.07     | ( 0.8%) | TRIPS |                |
| M. MACHINERY                        | 34.43    | ( 5.3%) | TRIPS |                |
| N. NURSERY STOCK                    | 5.87     | ( 0.9%) | TRIPS |                |
| O. OTHER                            | 46.03    | ( 7.0%) | TRIPS |                |
| P. PETROLEUM                        | 18.84    | ( 2.9%) | TRIPS |                |
| R. RAW MATERIALS                    | 57.91    | ( 8.9%) | TRIPS |                |
| S. METALS                           | 11.29    | ( 1.8%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 42.04    | ( 6.4%) | TRIPS |                |
| U. UNKNOWN                          | 4.58     | ( 0.7%) | TRIPS |                |
| W. PAPER                            | 2.73     | ( 0.5%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 13.95    | ( 2.2%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 657.93 ( 5.0%) |
| TOTAL NO. ALL TRIPS                 | 13283.57 |         |       |                |

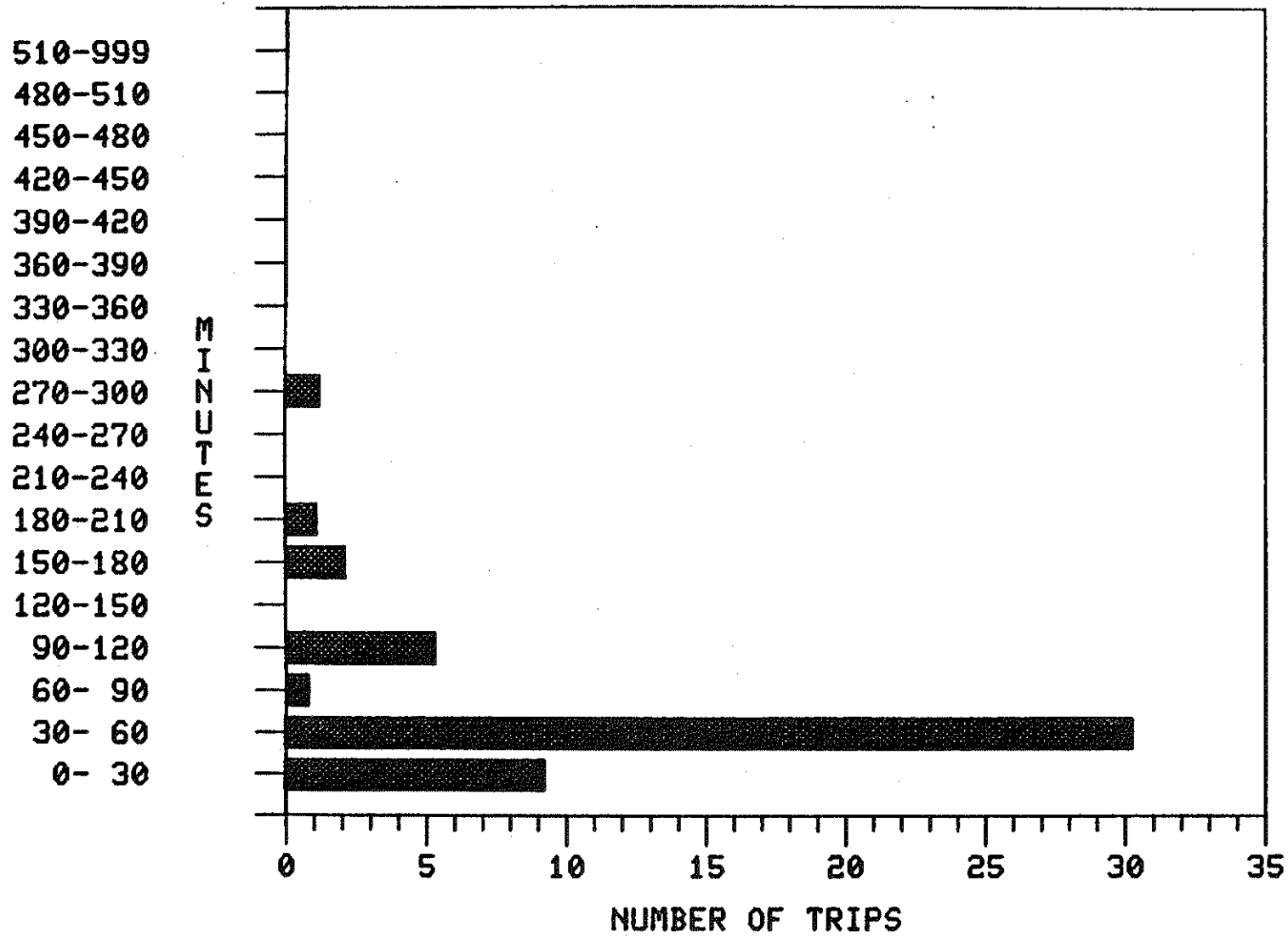
# FRANKENMUTH



## GREENVILLE 1974

|                                     |               |         |
|-------------------------------------|---------------|---------|
| A. AUTO                             | 2.44 ( 5.2%)  | TRIPS   |
| B. BUILDING                         | 0.62 ( 1.4%)  | TRIPS   |
| C. CHEMICALS                        | 0.00 ( 0.1%)  | TRIPS   |
| D. TEXTILES                         | 0.00 ( 0.1%)  | TRIPS   |
| E. EMPTY                            | 24.81 (52.7%) | TRIPS   |
| F. FOOD                             | 4.50 ( 9.6%)  | TRIPS   |
| G. GRAIN                            | 0.00 ( 0.1%)  | TRIPS   |
| H. FURNITURE                        | 2.51 ( 5.4%)  | TRIPS   |
| K. RECREATION EQ.                   | 0.00 ( 0.1%)  | TRIPS   |
| L. LIVESTOCK                        | 0.00 ( 0.1%)  | TRIPS   |
| M. MACHINERY                        | 5.83 (12.4%)  | TRIPS   |
| N. NURSERY STOCK                    | 0.00 ( 0.1%)  | TRIPS   |
| O. OTHER                            | 0.00 ( 0.1%)  | TRIPS   |
| P. PETROLEUM                        | 0.00 ( 0.1%)  | TRIPS   |
| R. RAW MATERIALS                    | 2.64 ( 5.7%)  | TRIPS   |
| S. METALS                           | 3.78 ( 8.1%)  | TRIPS   |
| T. TOBACCO, ETC.                    | 0.00 ( 0.1%)  | TRIPS   |
| U. UNKNOWN                          | 0.00 ( 0.1%)  | TRIPS   |
| W. PAPER                            | 0.00 ( 0.1%)  | TRIPS   |
| Z. SERV. VEHICLES                   | 0.00 ( 0.1%)  | TRIPS   |
| TOTAL NO. TRIPS WITH COMMODITY CODE | 47.13         | ( 0.3%) |
| TOTAL NO. ALL TRIPS                 | 21220.75      |         |

# GREENVILLE

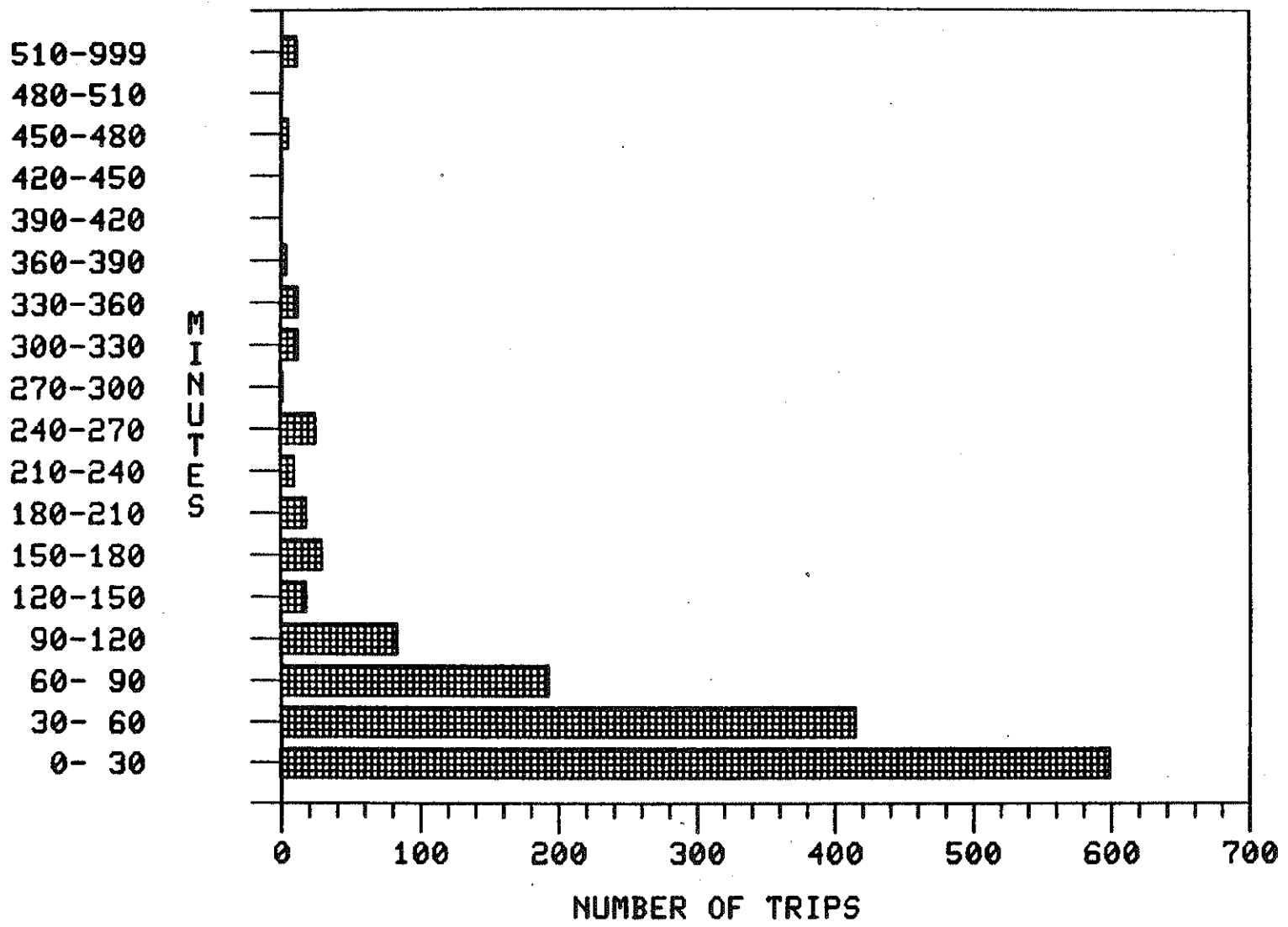


## HOWELL 1975

|                                     |          |         |       |                 |
|-------------------------------------|----------|---------|-------|-----------------|
| A. AUTO                             | 107.49   | ( 6.6%) | TRIPS |                 |
| B. BUILDING                         | 76.58    | ( 4.7%) | TRIPS |                 |
| C. CHEMICALS                        | 41.01    | ( 2.5%) | TRIPS |                 |
| D. TEXTILES                         | 3.91     | ( 0.3%) | TRIPS |                 |
| E. EMPTY                            | 538.08   | (32.8%) | TRIPS |                 |
| F. FOOD                             | 138.20   | ( 8.5%) | TRIPS |                 |
| G. GRAIN                            | 13.43    | ( 0.9%) | TRIPS |                 |
| H. FURNITURE                        | 29.87    | ( 1.9%) | TRIPS |                 |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                 |
| L. LIVESTOCK                        | 6.41     | ( 0.4%) | TRIPS |                 |
| M. MACHINERY                        | 84.58    | ( 5.2%) | TRIPS |                 |
| N. NURSERY STOCK                    | 12.94    | ( 0.8%) | TRIPS |                 |
| O. OTHER                            | 117.81   | ( 7.2%) | TRIPS |                 |
| P. PETROLEUM                        | 62.96    | ( 3.9%) | TRIPS |                 |
| R. RAW MATERIALS                    | 95.43    | ( 5.9%) | TRIPS |                 |
| S. METALS                           | 49.76    | ( 3.1%) | TRIPS |                 |
| T. TOBACCO, ETC.                    | 51.14    | ( 3.2%) | TRIPS |                 |
| U. UNKNOWN                          | 60.50    | ( 3.7%) | TRIPS |                 |
| W. PAPER                            | 35.89    | ( 2.2%) | TRIPS |                 |
| Z. SERV. VEHICLES                   | 117.77   | ( 7.2%) | TRIPS |                 |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 1643.76 ( 3.9%) |
| TOTAL NO. ALL TRIPS                 | 42790.15 |         |       |                 |



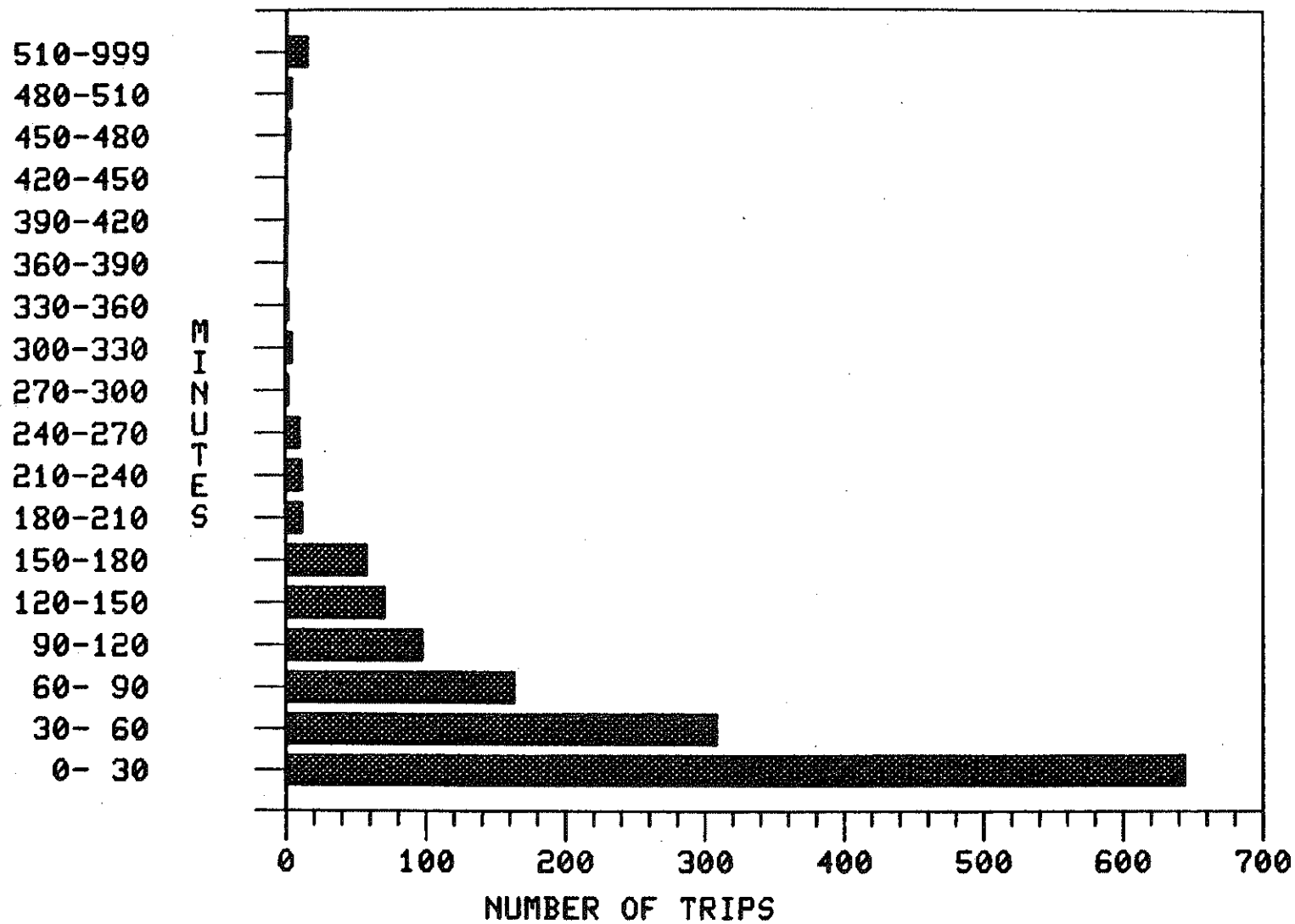
# HOWELL



## IONIA 1975

|                                     |          |         |       |                 |
|-------------------------------------|----------|---------|-------|-----------------|
| A. AUTO                             | 62.70    | ( 4.5%) | TRIPS |                 |
| B. BUILDING                         | 59.09    | ( 4.2%) | TRIPS |                 |
| C. CHEMICALS                        | 18.33    | ( 1.3%) | TRIPS |                 |
| D. TEXTILES                         | 8.18     | ( 0.6%) | TRIPS |                 |
| E. EMPTY                            | 550.96   | (38.9%) | TRIPS |                 |
| F. FOOD                             | 131.64   | ( 9.3%) | TRIPS |                 |
| G. GRAIN                            | 57.36    | ( 4.1%) | TRIPS |                 |
| H. FURNITURE                        | 28.16    | ( 2.0%) | TRIPS |                 |
| K. RECREATION EQ.                   | 0.72     | ( 0.1%) | TRIPS |                 |
| L. LIVESTOCK                        | 5.53     | ( 0.4%) | TRIPS |                 |
| M. MACHINERY                        | 47.15    | ( 3.4%) | TRIPS |                 |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |                 |
| O. OTHER                            | 101.78   | ( 7.2%) | TRIPS |                 |
| P. PETROLEUM                        | 62.39    | ( 4.4%) | TRIPS |                 |
| R. RAW MATERIALS                    | 78.43    | ( 5.6%) | TRIPS |                 |
| S. METALS                           | 33.31    | ( 2.4%) | TRIPS |                 |
| T. TOBACCO, ETC.                    | 40.45    | ( 2.9%) | TRIPS |                 |
| U. UNKNOWN                          | 14.38    | ( 1.1%) | TRIPS |                 |
| W. PAPER                            | 24.99    | ( 1.8%) | TRIPS |                 |
| Z. SERV. VEHICLES                   | 94.11    | ( 6.7%) | TRIPS |                 |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 1419.66 ( 5.1%) |
| TOTAL NO. ALL TRIPS                 | 28172.41 |         |       |                 |

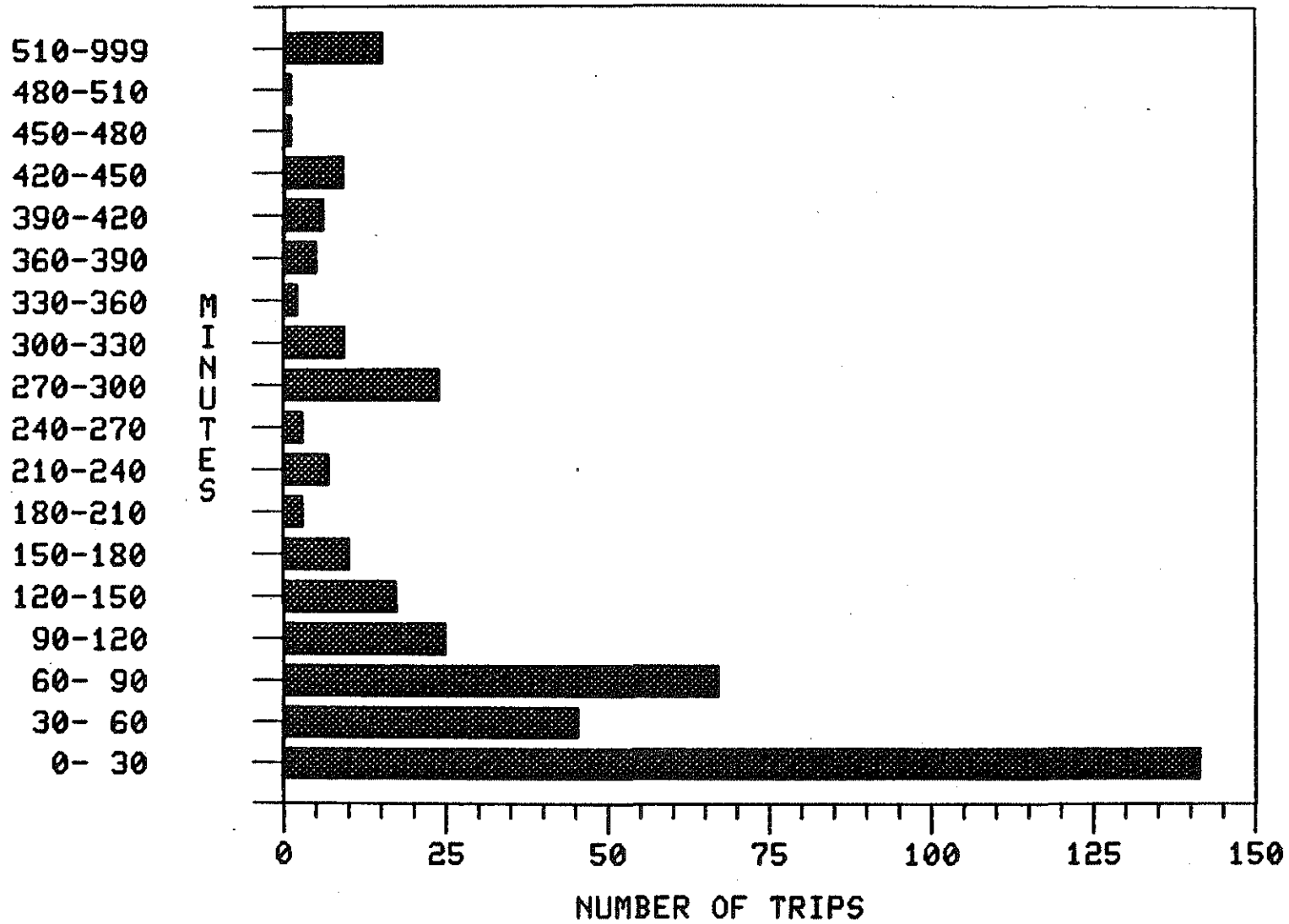
# IONIA



## IRONRIVER 1975

|                                     |                |       |                |
|-------------------------------------|----------------|-------|----------------|
| A. AUTO                             | 5.88 ( 1.5%)   | TRIPS |                |
| B. BUILDING                         | 27.61 ( 6.8%)  | TRIPS |                |
| C. CHEMICALS                        | 0.00 ( 0.1%)   | TRIPS |                |
| D. TEXTILES                         | 4.77 ( 1.2%)   | TRIPS |                |
| E. EMPTY                            | 140.57 (34.5%) | TRIPS |                |
| F. FOOD                             | 45.73 (11.3%)  | TRIPS |                |
| G. GRAIN                            | 0.00 ( 0.1%)   | TRIPS |                |
| H. FURNITURE                        | 12.33 ( 3.1%)  | TRIPS |                |
| K. RECREATION EQ.                   | 1.97 ( 0.5%)   | TRIPS |                |
| L. LIVESTOCK                        | 3.23 ( 0.8%)   | TRIPS |                |
| M. MACHINERY                        | 26.24 ( 6.5%)  | TRIPS |                |
| N. NURSERY STOCK                    | 0.00 ( 0.1%)   | TRIPS |                |
| O. OTHER                            | 22.49 ( 5.6%)  | TRIPS |                |
| P. PETROLEUM                        | 20.20 ( 5.0%)  | TRIPS |                |
| R. RAW MATERIALS                    | 18.51 ( 4.6%)  | TRIPS |                |
| S. METALS                           | 12.28 ( 3.1%)  | TRIPS |                |
| T. TOBACCO, ETC.                    | 10.72 ( 2.7%)  | TRIPS |                |
| U. UNKNOWN                          | 1.71 ( 0.5%)   | TRIPS |                |
| W. PAPER                            | 30.34 ( 7.5%)  | TRIPS |                |
| Z. SERV. VEHICLES                   | 23.42 ( 5.8%)  | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |                |       | 408.00 ( 4.4%) |
| TOTAL NO. ALL TRIPS                 | 9303.47        |       |                |

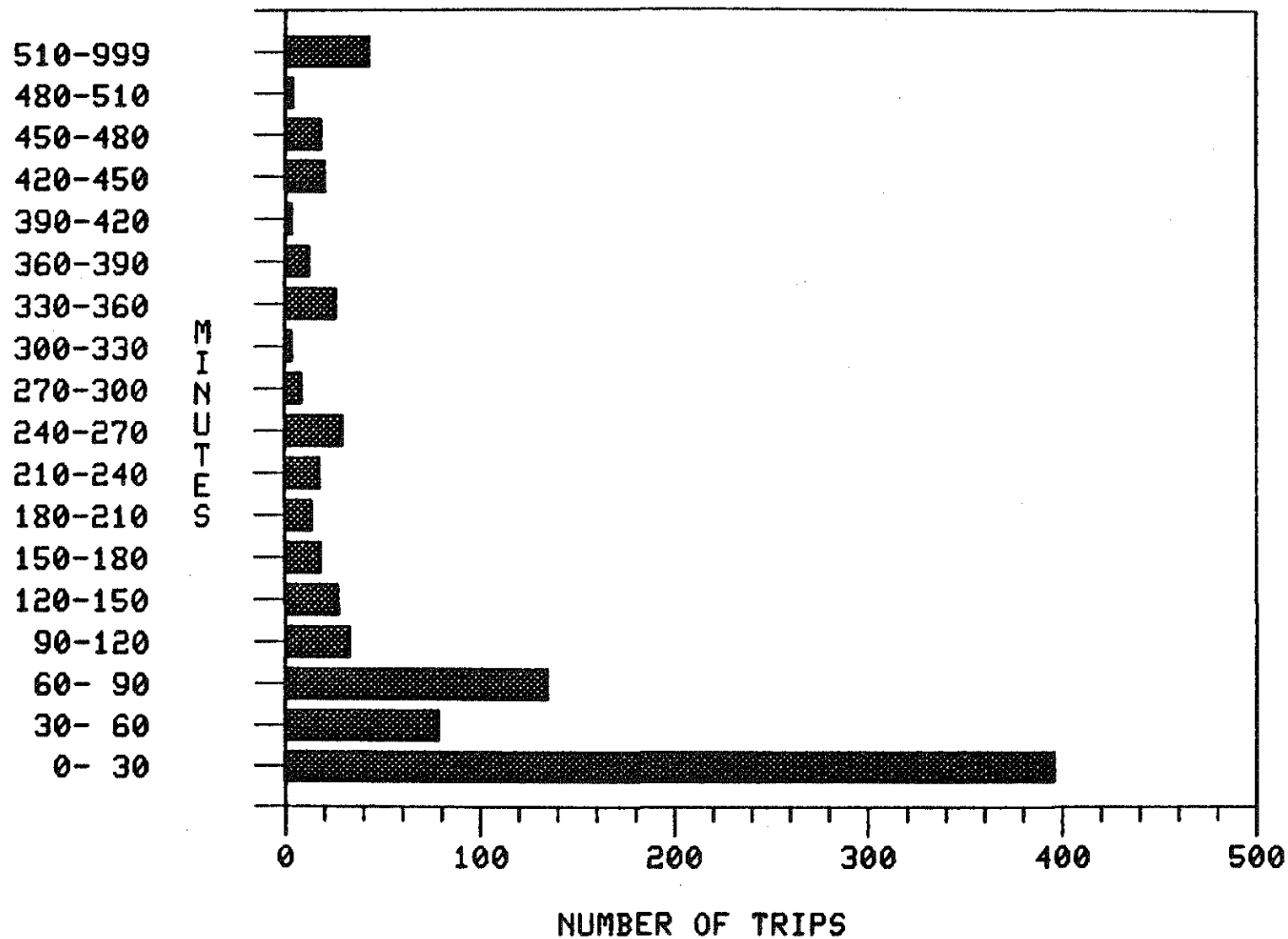
# IRONRIVER



## IWDBESWAK 1975

|                                     |          |         |       |                 |
|-------------------------------------|----------|---------|-------|-----------------|
| A. AUTO                             | 12.38    | ( 1.3%) | TRIPS |                 |
| B. BUILDING                         | 51.69    | ( 5.1%) | TRIPS |                 |
| C. CHEMICALS                        | 6.77     | ( 0.7%) | TRIPS |                 |
| D. TEXTILES                         | 4.42     | ( 0.5%) | TRIPS |                 |
| E. EMPTY                            | 446.04   | (44.0%) | TRIPS |                 |
| F. FOOD                             | 118.58   | (11.7%) | TRIPS |                 |
| G. GRAIN                            | 3.82     | ( 0.4%) | TRIPS |                 |
| H. FURNITURE                        | 8.95     | ( 0.9%) | TRIPS |                 |
| K. RECREATION EQ.                   | 1.07     | ( 0.2%) | TRIPS |                 |
| L. LIVESTOCK                        | 1.68     | ( 0.2%) | TRIPS |                 |
| M. MACHINERY                        | 23.03    | ( 2.3%) | TRIPS |                 |
| N. NURSERY STOCK                    | 1.61     | ( 0.2%) | TRIPS |                 |
| O. OTHER                            | 59.86    | ( 5.9%) | TRIPS |                 |
| P. PETROLEUM                        | 40.37    | ( 4.0%) | TRIPS |                 |
| R. RAW MATERIALS                    | 103.96   | (10.3%) | TRIPS |                 |
| S. METALS                           | 11.98    | ( 1.2%) | TRIPS |                 |
| T. TOBACCO, ETC.                    | 19.07    | ( 1.9%) | TRIPS |                 |
| U. UNKNOWN                          | 9.97     | ( 1.0%) | TRIPS |                 |
| W. PAPER                            | 31.18    | ( 3.1%) | TRIPS |                 |
| Z. SERV. VEHICLES                   | 59.03    | ( 5.9%) | TRIPS |                 |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 1015.46 ( 5.1%) |
| TOTAL NO. ALL TRIPS                 | 20230.22 |         |       |                 |

IWDBESWAK

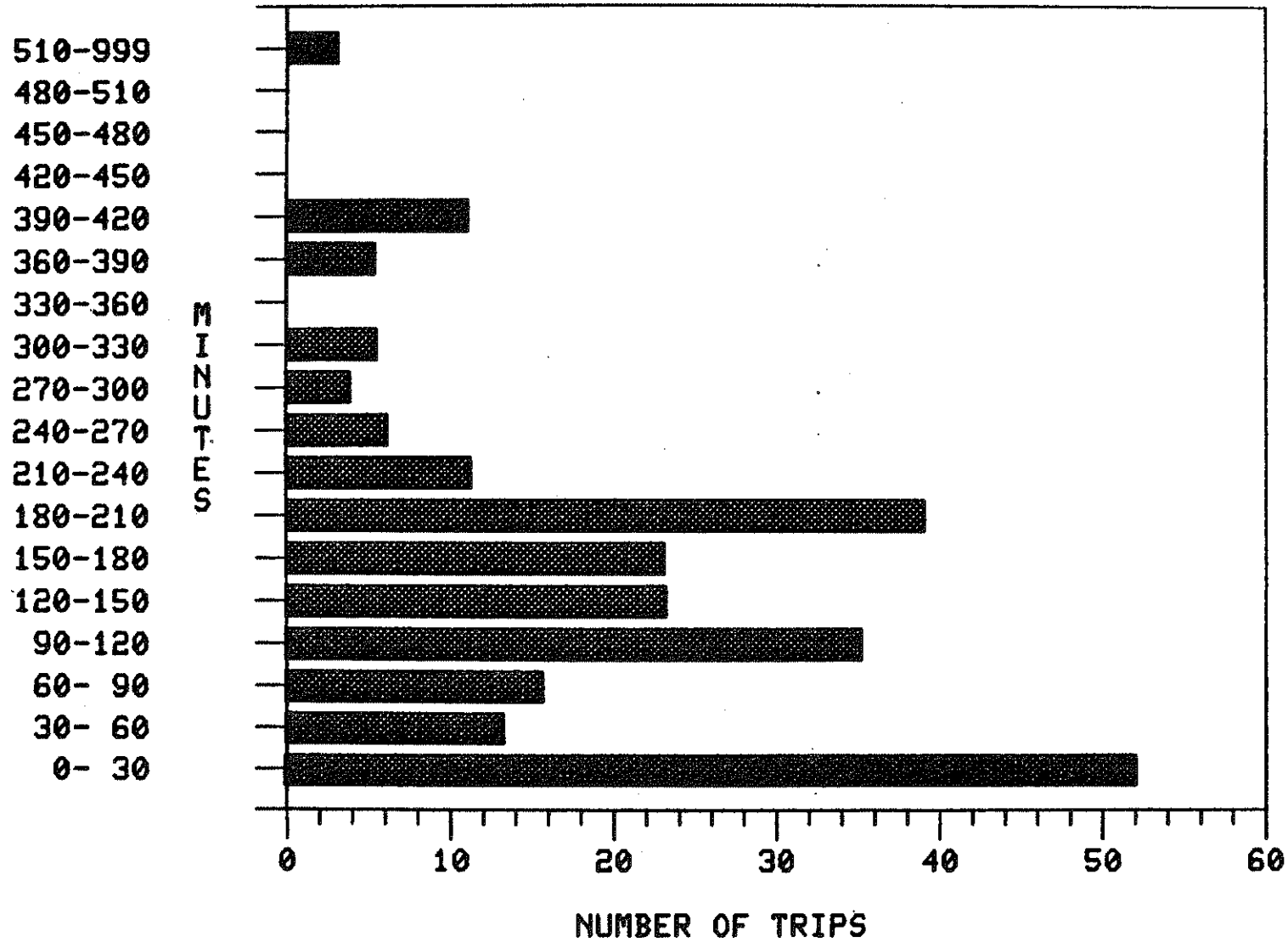


M-37(430007) 1978

|                                     |         |         |       |                |
|-------------------------------------|---------|---------|-------|----------------|
| A. AUTO                             | 6.64    | ( 2.7%) | TRIPS |                |
| B. BUILDING                         | 19.49   | ( 7.7%) | TRIPS |                |
| C. CHEMICALS                        | 10.02   | ( 4.0%) | TRIPS |                |
| D. TEXTILES                         | 1.83    | ( 0.8%) | TRIPS |                |
| E. EMPTY                            | 86.92   | (34.3%) | TRIPS |                |
| F. FOOD                             | 20.32   | ( 8.1%) | TRIPS |                |
| G. GRAIN                            | 8.45    | ( 3.4%) | TRIPS |                |
| H. FURNITURE                        | 1.48    | ( 0.6%) | TRIPS |                |
| K. RECREATION EQ.                   | 1.72    | ( 0.7%) | TRIPS |                |
| L. LIVESTOCK                        | 3.08    | ( 1.3%) | TRIPS |                |
| M. MACHINERY                        | 3.70    | ( 1.5%) | TRIPS |                |
| N. NURSERY STOCK                    | 1.48    | ( 0.6%) | TRIPS |                |
| O. OTHER                            | 9.72    | ( 3.9%) | TRIPS |                |
| P. PETROLEUM                        | 14.59   | ( 5.8%) | TRIPS |                |
| R. RAW MATERIALS                    | 8.77    | ( 3.5%) | TRIPS |                |
| S. METALS                           | 8.40    | ( 3.4%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 26.57   | (10.5%) | TRIPS |                |
| U. UNKNOWN                          | 5.40    | ( 2.2%) | TRIPS |                |
| W. PAPER                            | 5.01    | ( 2.0%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 10.00   | ( 4.0%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |         |         |       | 253.59 ( 6.6%) |
| TOTAL NO. ALL TRIPS                 | 3848.65 |         |       |                |



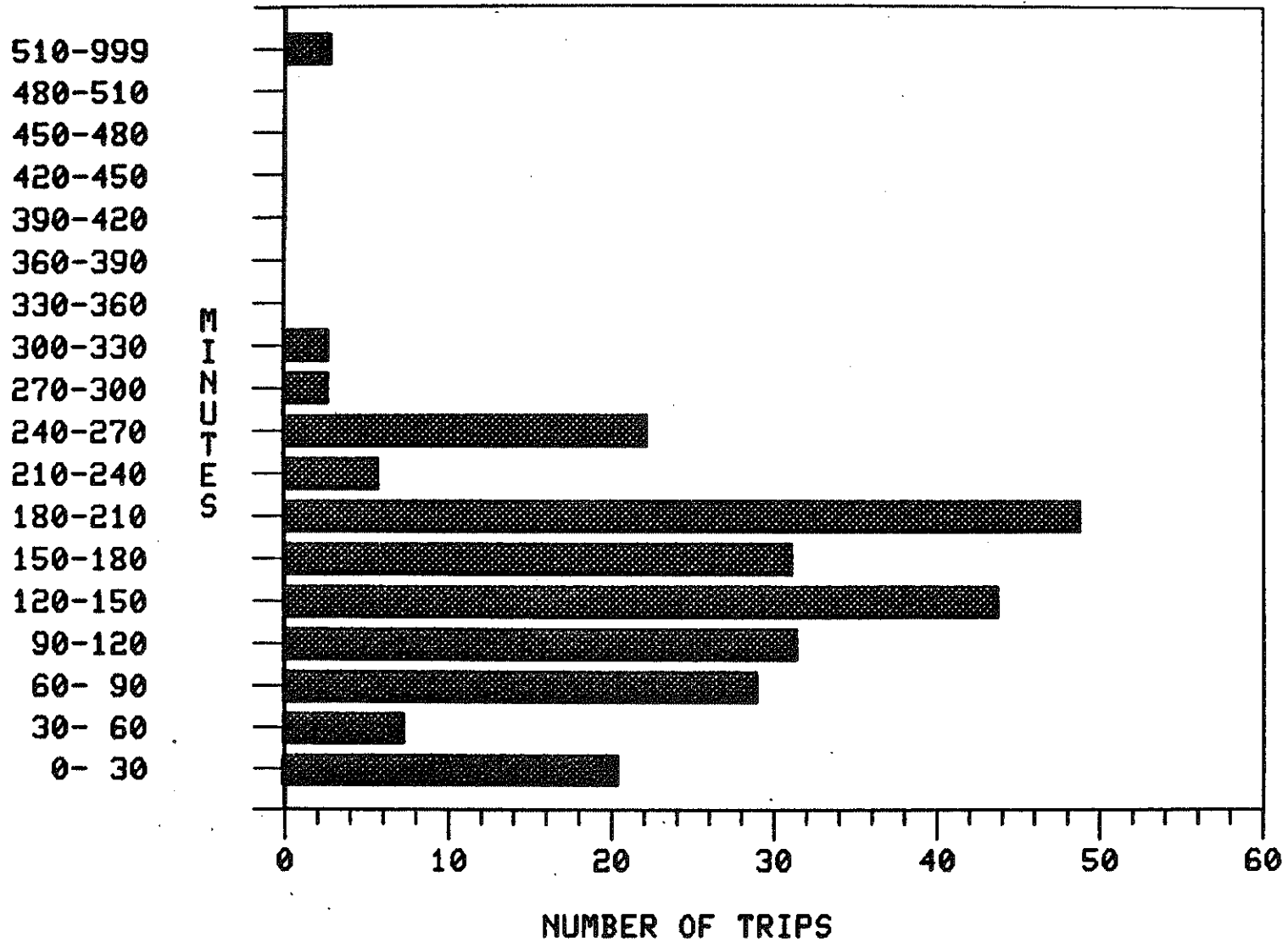
M37(430007)



M-37(430014) 1978

|                                     |         |         |       |                |
|-------------------------------------|---------|---------|-------|----------------|
| A. AUTO                             | 4.48    | ( 1.9%) | TRIPS |                |
| B. BUILDING                         | 4.98    | ( 2.1%) | TRIPS |                |
| C. CHEMICALS                        | 20.95   | ( 8.6%) | TRIPS |                |
| D. TEXTILES                         | 0.00    | ( 0.1%) | TRIPS |                |
| E. EMPTY                            | 93.43   | (38.1%) | TRIPS |                |
| F. FOOD                             | 39.01   | (16.0%) | TRIPS |                |
| G. GRAIN                            | 2.82    | ( 1.2%) | TRIPS |                |
| H. FURNITURE                        | 1.58    | ( 0.7%) | TRIPS |                |
| K. RECREATION EQ.                   | 0.00    | ( 0.1%) | TRIPS |                |
| L. LIVESTOCK                        | 0.00    | ( 0.1%) | TRIPS |                |
| M. MACHINERY                        | 3.90    | ( 1.6%) | TRIPS |                |
| N. NURSERY STOCK                    | 0.00    | ( 0.1%) | TRIPS |                |
| O. OTHER                            | 18.93   | ( 7.8%) | TRIPS |                |
| P. PETROLEUM                        | 6.34    | ( 2.6%) | TRIPS |                |
| R. RAW MATERIALS                    | 3.86    | ( 1.6%) | TRIPS |                |
| S. METALS                           | 6.09    | ( 2.5%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 4.30    | ( 1.8%) | TRIPS |                |
| U. UNKNOWN                          | 17.30   | ( 7.1%) | TRIPS |                |
| W. PAPER                            | 10.42   | ( 4.3%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 6.95    | ( 2.9%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |         |         |       | 245.34 ( 6.7%) |
| TOTAL NO. ALL TRIPS                 | 3716.74 |         |       |                |

M37(430014)



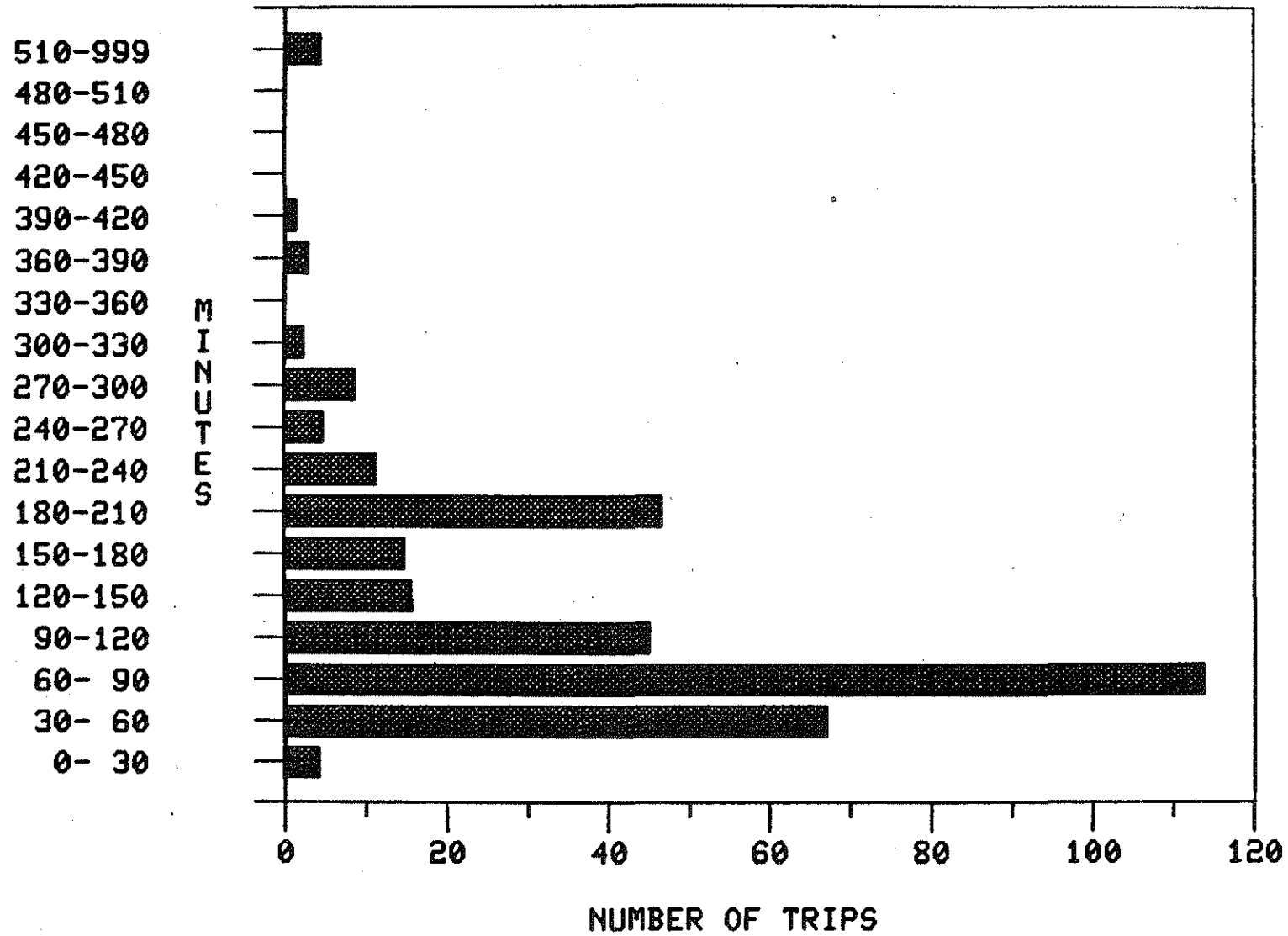
US-10(430012) 1978

|                   |        |         |       |
|-------------------|--------|---------|-------|
| A. AUTO           | 3.93   | ( 1.2%) | TRIPS |
| B. BUILDING       | 10.48  | ( 3.1%) | TRIPS |
| C. CHEMICALS      | 11.64  | ( 3.5%) | TRIPS |
| D. TEXTILES       | 2.87   | ( 0.9%) | TRIPS |
| E. EMPTY          | 133.02 | (39.1%) | TRIPS |
| F. FOOD           | 28.25  | ( 8.3%) | TRIPS |
| G. GRAIN          | 8.62   | ( 2.6%) | TRIPS |
| H. FURNITURE      | 1.68   | ( 0.5%) | TRIPS |
| K. RECREATION EQ. | 0.00   | ( 0.1%) | TRIPS |
| L. LIVESTOCK      | 4.97   | ( 1.5%) | TRIPS |
| M. MACHINERY      | 4.43   | ( 1.3%) | TRIPS |
| N. NURSERY STOCK  | 2.04   | ( 0.6%) | TRIPS |
| O. OTHER          | 22.09  | ( 6.5%) | TRIPS |
| P. PETROLEUM      | 2.55   | ( 0.8%) | TRIPS |
| R. RAW MATERIALS  | 65.19  | (19.2%) | TRIPS |
| S. METALS         | 5.72   | ( 1.7%) | TRIPS |
| T. TOBACCO, ETC.  | 14.98  | ( 4.4%) | TRIPS |
| U. UNKNOWN        | 4.04   | ( 1.2%) | TRIPS |
| W. PAPER          | 2.74   | ( 0.9%) | TRIPS |
| Z. SERV. VEHICLES | 11.69  | ( 3.5%) | TRIPS |

|                                     |        |         |
|-------------------------------------|--------|---------|
| TOTAL NO. TRIPS WITH COMMODITY CODE | 340.93 | (13.3%) |
|-------------------------------------|--------|---------|

|                     |         |
|---------------------|---------|
| TOTAL NO. ALL TRIPS | 2580.22 |
|---------------------|---------|

US10(430012)



US-10(430013) 1978

|                   |       |         |       |
|-------------------|-------|---------|-------|
| A. AUTO           | 10.59 | ( 4.8%) | TRIPS |
| B. BUILDING       | 7.89  | ( 3.6%) | TRIPS |
| C. CHEMICALS      | 4.55  | ( 2.1%) | TRIPS |
| D. TEXTILES       | 0.00  | ( 0.1%) | TRIPS |
| E. EMPTY          | 66.36 | (29.6%) | TRIPS |
| F. FOOD           | 20.80 | ( 9.3%) | TRIPS |
| G. GRAIN          | 1.86  | ( 0.9%) | TRIPS |
| H. FURNITURE      | 4.70  | ( 2.1%) | TRIPS |
| K. RECREATION EQ. | 0.00  | ( 0.1%) | TRIPS |
| L. LIVESTOCK      | 2.02  | ( 0.9%) | TRIPS |
| M. MACHINERY      | 2.76  | ( 1.3%) | TRIPS |
| N. NURSERY STOCK  | 0.00  | ( 0.1%) | TRIPS |
| O. OTHER          | 5.75  | ( 2.6%) | TRIPS |
| P. PETROLEUM      | 23.02 | (10.3%) | TRIPS |
| R. RAW MATERIALS  | 30.27 | (13.5%) | TRIPS |
| S. METALS         | 6.95  | ( 3.1%) | TRIPS |
| T. TOBACCO, ETC.  | 9.29  | ( 4.2%) | TRIPS |
| U. UNKNOWN        | 20.37 | ( 9.1%) | TRIPS |
| W. PAPER          | 0.00  | ( 0.1%) | TRIPS |
| Z. SERV. VEHICLES | 7.59  | ( 3.4%) | TRIPS |

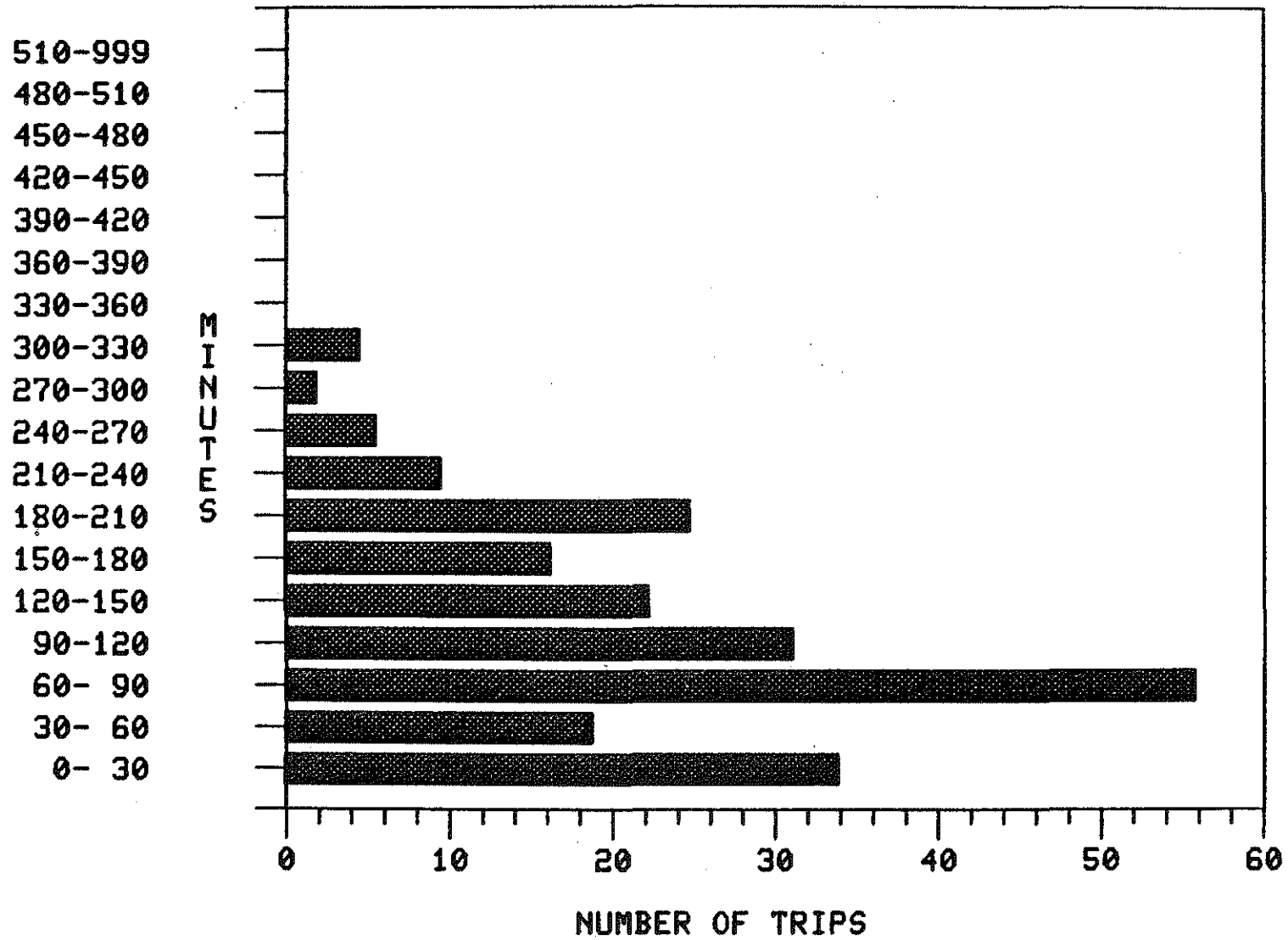
TOTAL NO. TRIPS WITH COMMODITY CODE

224.77 ( 6.9%)

TOTAL NO. ALL TRIPS

3280.17

US10(430013)



M=123(480500) 1978

|                   |       |              |
|-------------------|-------|--------------|
| A. AUTO           | 1.09  | ( 1.5%)TRIPS |
| B. BUILDING       | 1.77  | ( 2.4%)TRIPS |
| C. CHEMICALS      | 0.00  | ( 0.1%)TRIPS |
| D. TEXTILES       | 0.00  | ( 0.1%)TRIPS |
| E. EMPTY          | 27.69 | (36.9%)TRIPS |
| F. FOOD           | 4.98  | ( 6.7%)TRIPS |
| G. GRAIN          | 0.00  | ( 0.1%)TRIPS |
| H. FURNITURE      | 0.00  | ( 0.1%)TRIPS |
| K. RECREATION EQ. | 3.11  | ( 4.2%)TRIPS |
| L. LIVESTOCK      | 0.00  | ( 0.1%)TRIPS |
| M. MACHINERY      | 0.00  | ( 0.1%)TRIPS |
| N. NURSERY STOCK  | 0.00  | ( 0.1%)TRIPS |
| O. OTHER          | 9.12  | (12.2%)TRIPS |
| P. PETROLEUM      | 5.81  | ( 7.8%)TRIPS |
| R. RAW MATERIALS  | 6.76  | ( 9.1%)TRIPS |
| S. METALS         | 0.00  | ( 0.1%)TRIPS |
| T. TOBACCO, ETC.  | 4.45  | ( 6.0%)TRIPS |
| U. UNKNOWN        | 0.00  | ( 0.1%)TRIPS |
| W. PAPER          | 0.00  | ( 0.1%)TRIPS |
| Z. SERV. VEHICLES | 10.30 | (13.8%)TRIPS |

|                                     |       |         |
|-------------------------------------|-------|---------|
| TOTAL NO. TRIPS WITH COMMODITY CODE | 75.08 | ( 1.9%) |
|-------------------------------------|-------|---------|

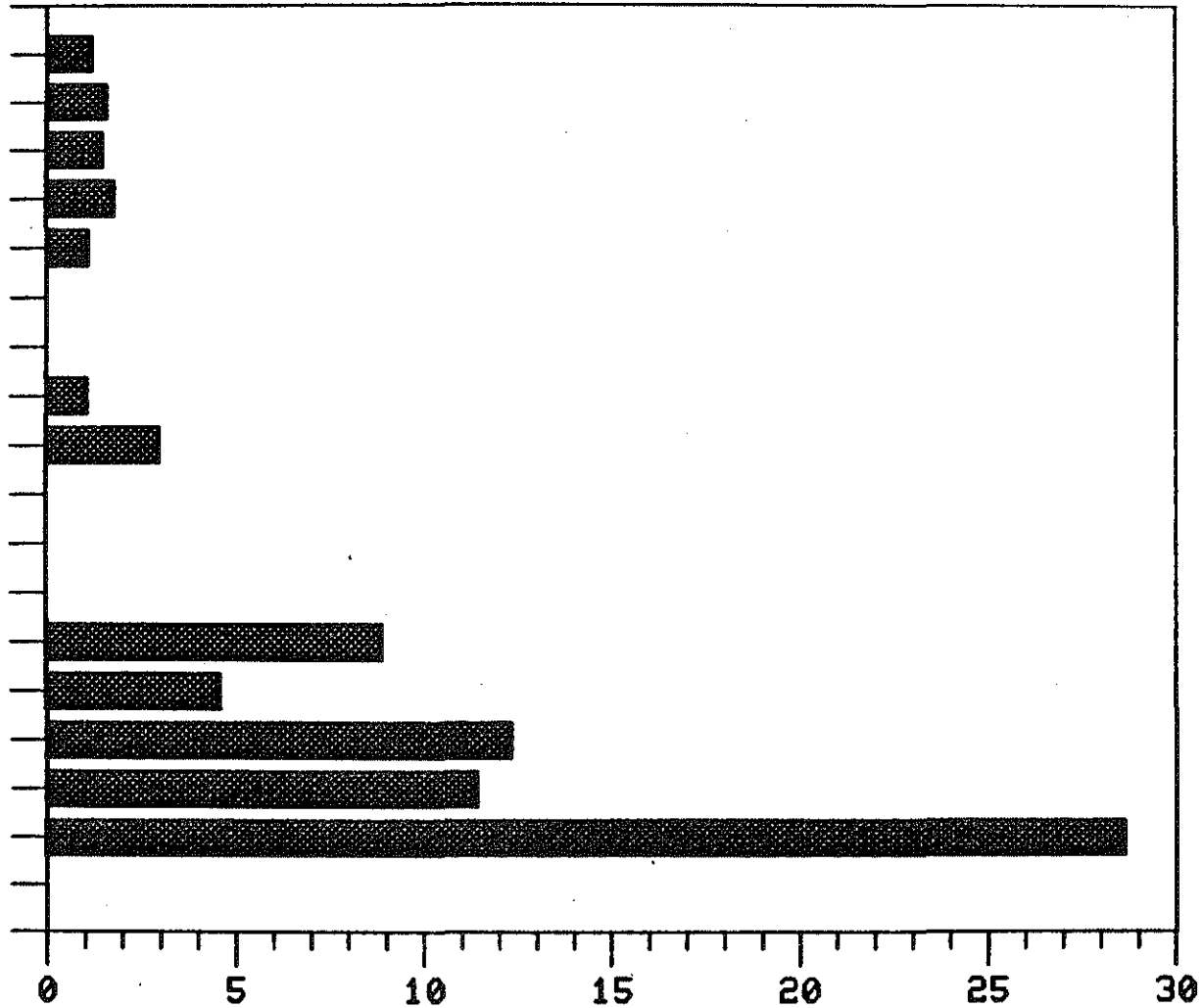
|                     |         |
|---------------------|---------|
| TOTAL NO. ALL TRIPS | 4150.49 |
|---------------------|---------|



M123(480500)

510-999  
480-510  
450-480  
420-450  
390-420  
360-390  
330-360  
300-330  
270-300  
240-270  
210-240  
180-210  
150-180  
120-150  
90-120  
60- 90  
30- 60  
0- 30

MINUTES



NUMBER OF TRIPS

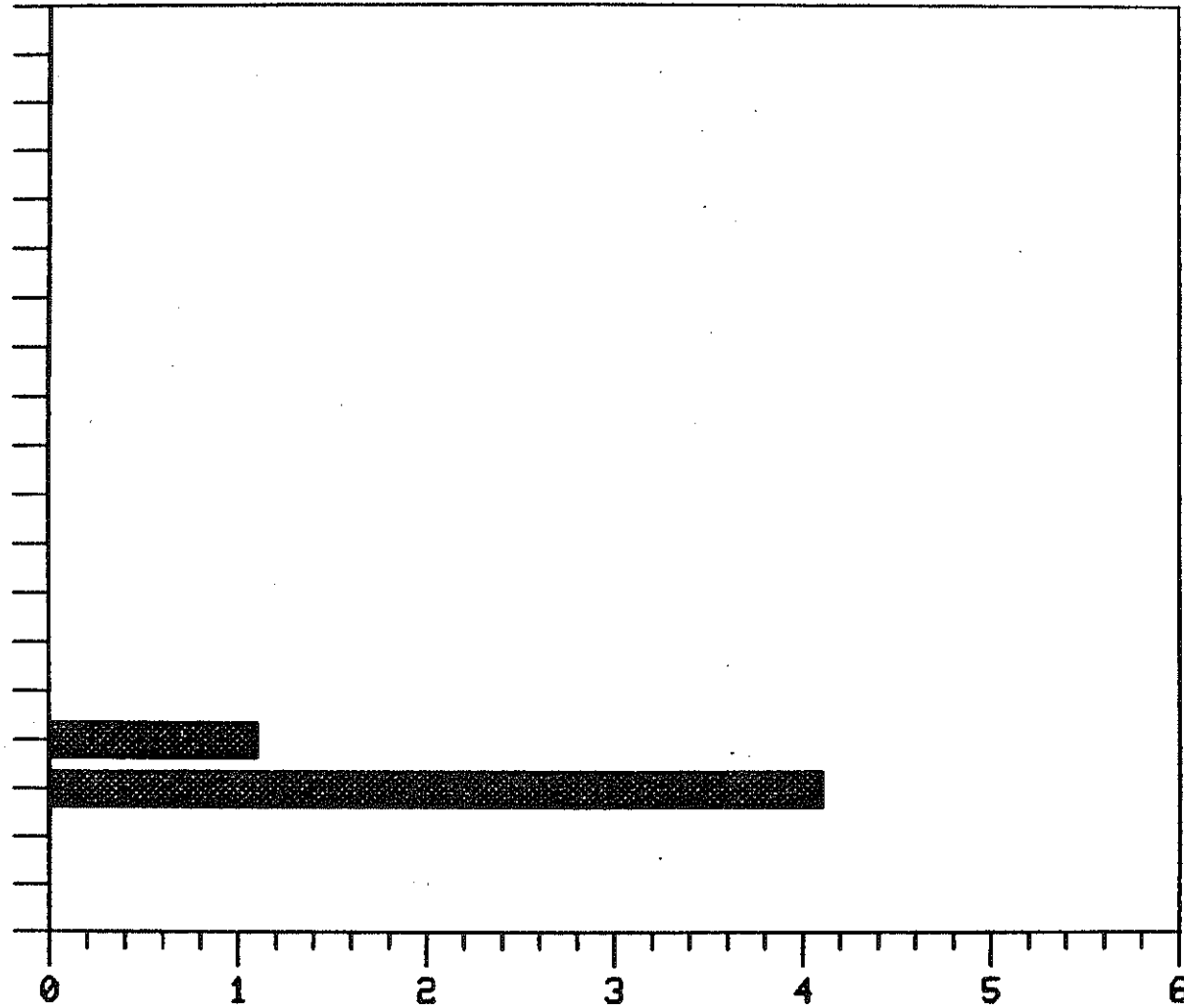
M-123(480039) 1978

|                                     |         |         |              |
|-------------------------------------|---------|---------|--------------|
| A. AUTO                             | 0.00    | ( 0.1%) | TRIPS        |
| B. BUILDING                         | 1.06    | (14.9%) | TRIPS        |
| C. CHEMICALS                        | 0.00    | ( 0.1%) | TRIPS        |
| D. TEXTILES                         | 0.00    | ( 0.1%) | TRIPS        |
| E. EMPTY                            | 4.00    | (56.2%) | TRIPS        |
| F. FOOD                             | 1.06    | (14.9%) | TRIPS        |
| G. GRAIN                            | 0.00    | ( 0.1%) | TRIPS        |
| H. FURNITURE                        | 0.00    | ( 0.1%) | TRIPS        |
| K. RECREATION EQ.                   | 0.00    | ( 0.1%) | TRIPS        |
| L. LIVESTOCK                        | 0.00    | ( 0.1%) | TRIPS        |
| M. MACHINERY                        | 0.00    | ( 0.1%) | TRIPS        |
| N. NURSERY STOCK                    | 0.00    | ( 0.1%) | TRIPS        |
| O. OTHER                            | 0.00    | ( 0.1%) | TRIPS        |
| P. PETROLEUM                        | 0.00    | ( 0.1%) | TRIPS        |
| R. RAW MATERIALS                    | 1.00    | (14.1%) | TRIPS        |
| S. METALS                           | 0.00    | ( 0.1%) | TRIPS        |
| T. TOBACCO, ETC.                    | 0.00    | ( 0.1%) | TRIPS        |
| U. UNKNOWN                          | 0.00    | ( 0.1%) | TRIPS        |
| W. PAPER                            | 0.00    | ( 0.1%) | TRIPS        |
| Z. SERV. VEHICLES                   | 0.00    | ( 0.1%) | TRIPS        |
| TOTAL NO. TRIPS WITH COMMODITY CODE |         |         | 7.12 ( 0.7%) |
| TOTAL NO. ALL TRIPS                 | 1066.88 |         |              |

M123(480039)

510-999  
480-510  
450-480  
420-450  
390-420  
360-390  
330-360  
300-330  
270-300  
240-270  
210-240  
180-210  
150-180  
120-150  
90-120  
60- 90  
30- 60  
0- 30

MINUTES

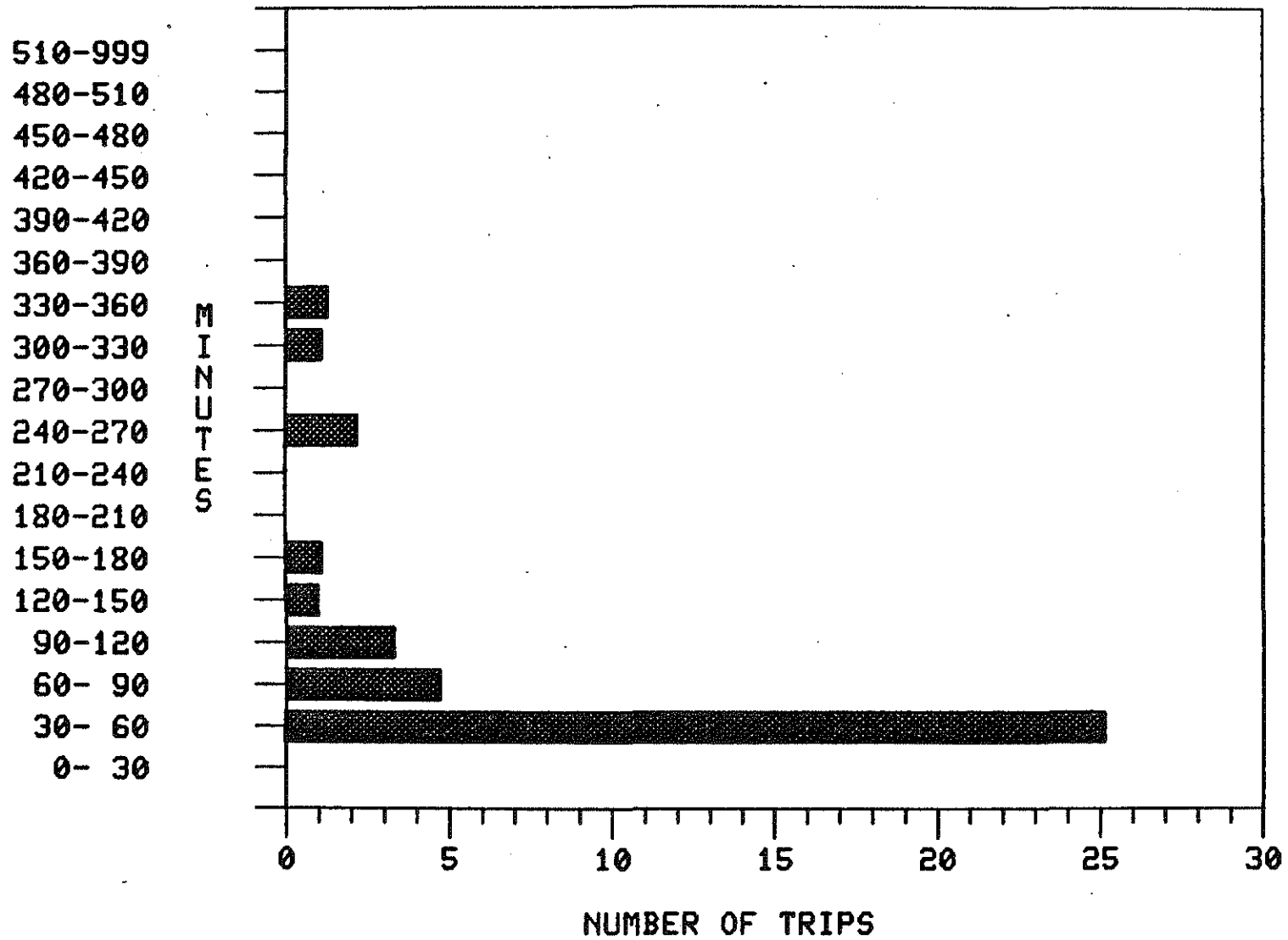


NUMBER OF TRIPS

## DOLLARVILLERD(480045) 1978

|                                     |         |              |              |
|-------------------------------------|---------|--------------|--------------|
| A. AUTO                             | 0.00    | ( 0.1%)TRIPS |              |
| B. BUILDING                         | 0.00    | ( 0.1%)TRIPS |              |
| C. CHEMICALS                        | 0.00    | ( 0.1%)TRIPS |              |
| D. TEXTILES                         | 0.00    | ( 0.1%)TRIPS |              |
| E. EMPTY                            | 15.24   | (40.0%)TRIPS |              |
| F. FOOD                             | 0.00    | ( 0.1%)TRIPS |              |
| G. GRAIN                            | 0.00    | ( 0.1%)TRIPS |              |
| H. FURNITURE                        | 0.00    | ( 0.1%)TRIPS |              |
| K. RECREATION EQ.                   | 0.00    | ( 0.1%)TRIPS |              |
| L. LIVESTOCK                        | 0.00    | ( 0.1%)TRIPS |              |
| M. MACHINERY                        | 1.08    | ( 2.9%)TRIPS |              |
| N. NURSERY STOCK                    | 0.00    | ( 0.1%)TRIPS |              |
| O. OTHER                            | 2.08    | ( 5.5%)TRIPS |              |
| P. PETROLEUM                        | 0.00    | ( 0.1%)TRIPS |              |
| R. RAW MATERIALS                    | 8.62    | (22.6%)TRIPS |              |
| S. METALS                           | 0.00    | ( 0.1%)TRIPS |              |
| T. TOBACCO, ETC.                    | 1.45    | ( 3.9%)TRIPS |              |
| U. UNKNOWN                          | 0.00    | ( 0.1%)TRIPS |              |
| W. PAPER                            | 0.00    | ( 0.1%)TRIPS |              |
| Z. SERV. VEHICLES                   | 9.68    | (25.4%)TRIPS |              |
| TOTAL NO. TRIPS WITH COMMODITY CODE |         |              | 38.15( 2.8%) |
| TOTAL NO. ALL TRIPS                 | 1392.92 |              |              |

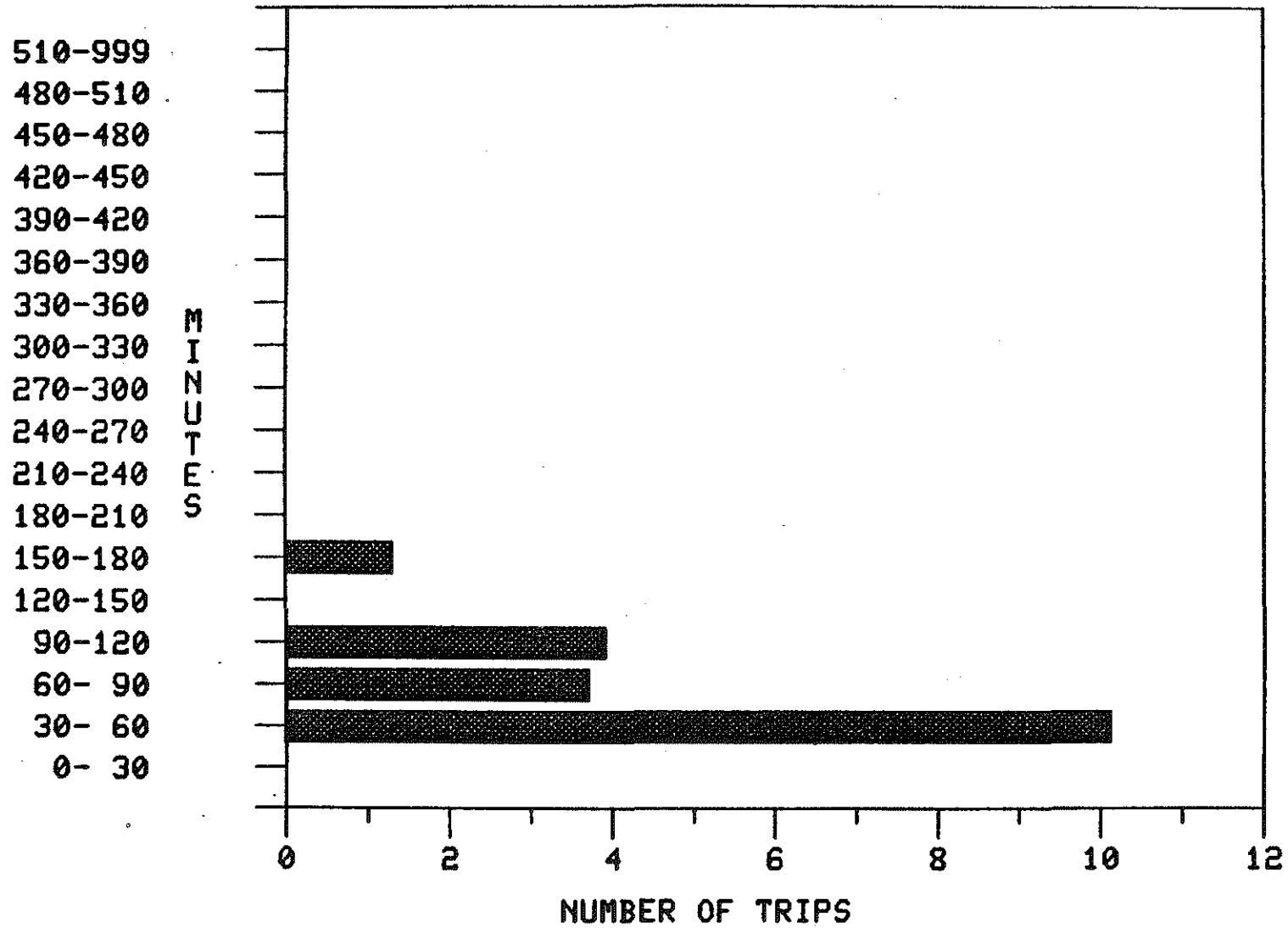
DOLLARVILLERD(480045)



CORD=403(480046) 1978

|                                     |        |         |       |               |
|-------------------------------------|--------|---------|-------|---------------|
| A. AUTO                             | 0.00   | ( 0.1%) | TRIPS |               |
| B. BUILDING                         | 1.30   | ( 6.1%) | TRIPS |               |
| C. CHEMICALS                        | 0.00   | ( 0.1%) | TRIPS |               |
| D. TEXTILES                         | 0.00   | ( 0.1%) | TRIPS |               |
| E. EMPTY                            | 6.41   | (29.8%) | TRIPS |               |
| F. FOOD                             | 1.23   | ( 5.7%) | TRIPS |               |
| G. GRAIN                            | 0.00   | ( 0.1%) | TRIPS |               |
| H. FURNITURE                        | 0.00   | ( 0.1%) | TRIPS |               |
| K. RECREATION EQ.                   | 0.00   | ( 0.1%) | TRIPS |               |
| L. LIVESTOCK                        | 0.00   | ( 0.1%) | TRIPS |               |
| M. MACHINERY                        | 1.30   | ( 6.1%) | TRIPS |               |
| N. NURSERY STOCK                    | 0.00   | ( 0.1%) | TRIPS |               |
| O. OTHER                            | 0.00   | ( 0.1%) | TRIPS |               |
| P. PETROLEUM                        | 2.53   | (11.8%) | TRIPS |               |
| R. RAW MATERIALS                    | 3.83   | (17.8%) | TRIPS |               |
| S. METALS                           | 0.00   | ( 0.1%) | TRIPS |               |
| T. TOBACCO, ETC.                    | 0.00   | ( 0.1%) | TRIPS |               |
| U. UNKNOWN                          | 0.00   | ( 0.1%) | TRIPS |               |
| W. PAPER                            | 0.00   | ( 0.1%) | TRIPS |               |
| Z. SERV. VEHICLES                   | 4.98   | (23.1%) | TRIPS |               |
| TOTAL NO. TRIPS WITH COMMODITY CODE |        |         |       | 21.58 ( 2.6%) |
| TOTAL NO. ALL TRIPS                 | 851.22 |         |       |               |

CORD403(480046)

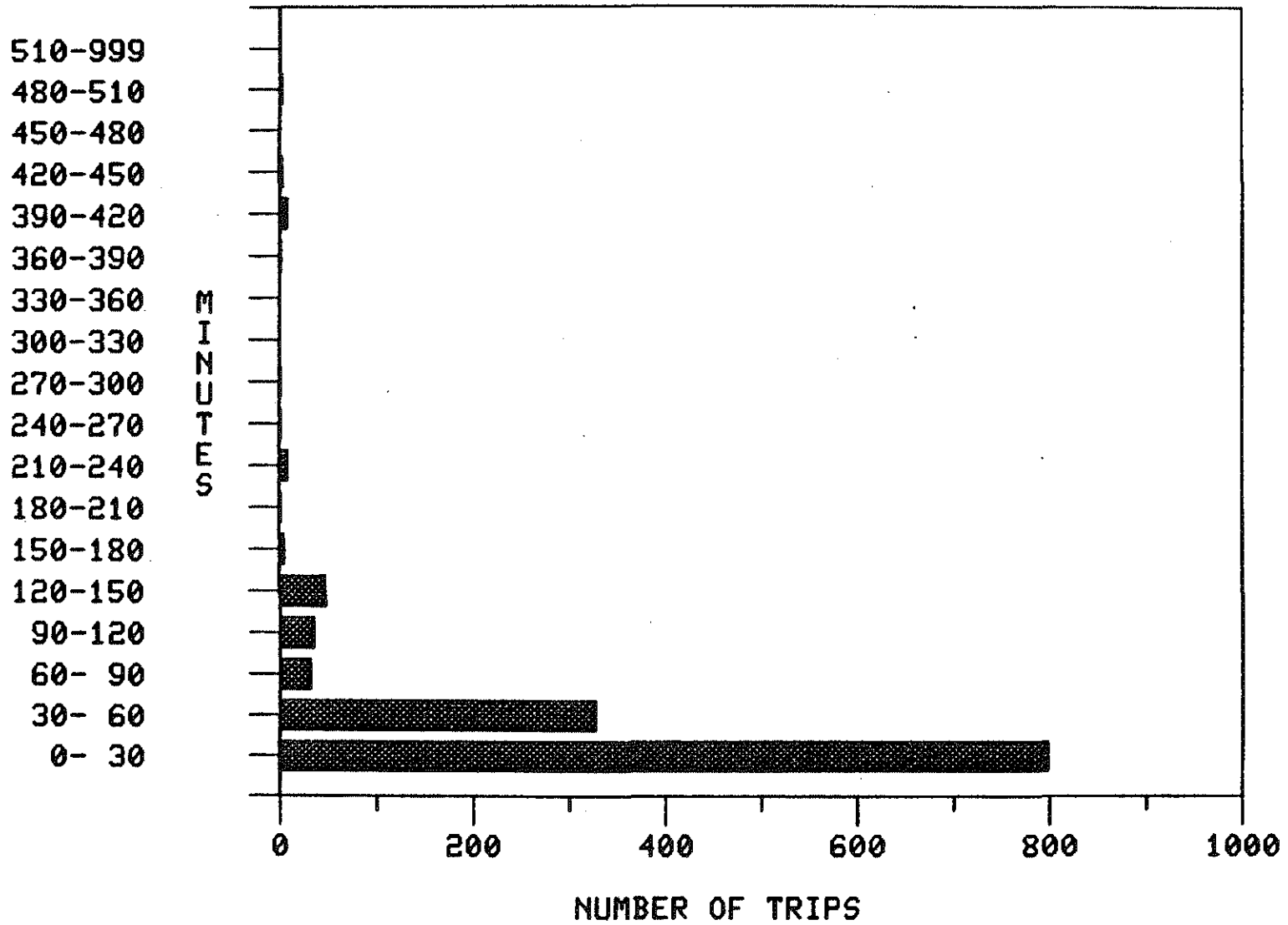


## MARSHALL 1975

|                                     |          |         |       |                 |
|-------------------------------------|----------|---------|-------|-----------------|
| A. AUTO                             | 19.77    | ( 1.6%) | TRIPS |                 |
| B. BUILDING                         | 41.34    | ( 3.3%) | TRIPS |                 |
| C. CHEMICALS                        | 14.17    | ( 1.2%) | TRIPS |                 |
| D. TEXTILES                         | 22.51    | ( 1.8%) | TRIPS |                 |
| E. EMPTY                            | 319.02   | (25.2%) | TRIPS |                 |
| F. FOOD                             | 132.94   | (10.5%) | TRIPS |                 |
| G. GRAIN                            | 5.91     | ( 0.5%) | TRIPS |                 |
| H. FURNITURE                        | 19.35    | ( 1.6%) | TRIPS |                 |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                 |
| L. LIVESTOCK                        | 6.82     | ( 0.6%) | TRIPS |                 |
| M. MACHINERY                        | 74.36    | ( 5.9%) | TRIPS |                 |
| N. NURSERY STOCK                    | 4.90     | ( 0.4%) | TRIPS |                 |
| O. OTHER                            | 109.10   | ( 8.6%) | TRIPS |                 |
| P. PETROLEUM                        | 56.42    | ( 4.5%) | TRIPS |                 |
| R. RAW MATERIALS                    | 40.16    | ( 3.2%) | TRIPS |                 |
| S. METALS                           | 22.52    | ( 1.8%) | TRIPS |                 |
| T. TOBACCO, ETC.                    | 10.68    | ( 0.9%) | TRIPS |                 |
| U. UNKNOWN                          | 31.85    | ( 2.6%) | TRIPS |                 |
| W. PAPER                            | 25.89    | ( 2.1%) | TRIPS |                 |
| Z. SERV. VEHICLES                   | 312.92   | (24.7%) | TRIPS |                 |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 1270.63 ( 5.6%) |
| TOTAL NO. ALL TRIPS                 | 22918.43 |         |       |                 |



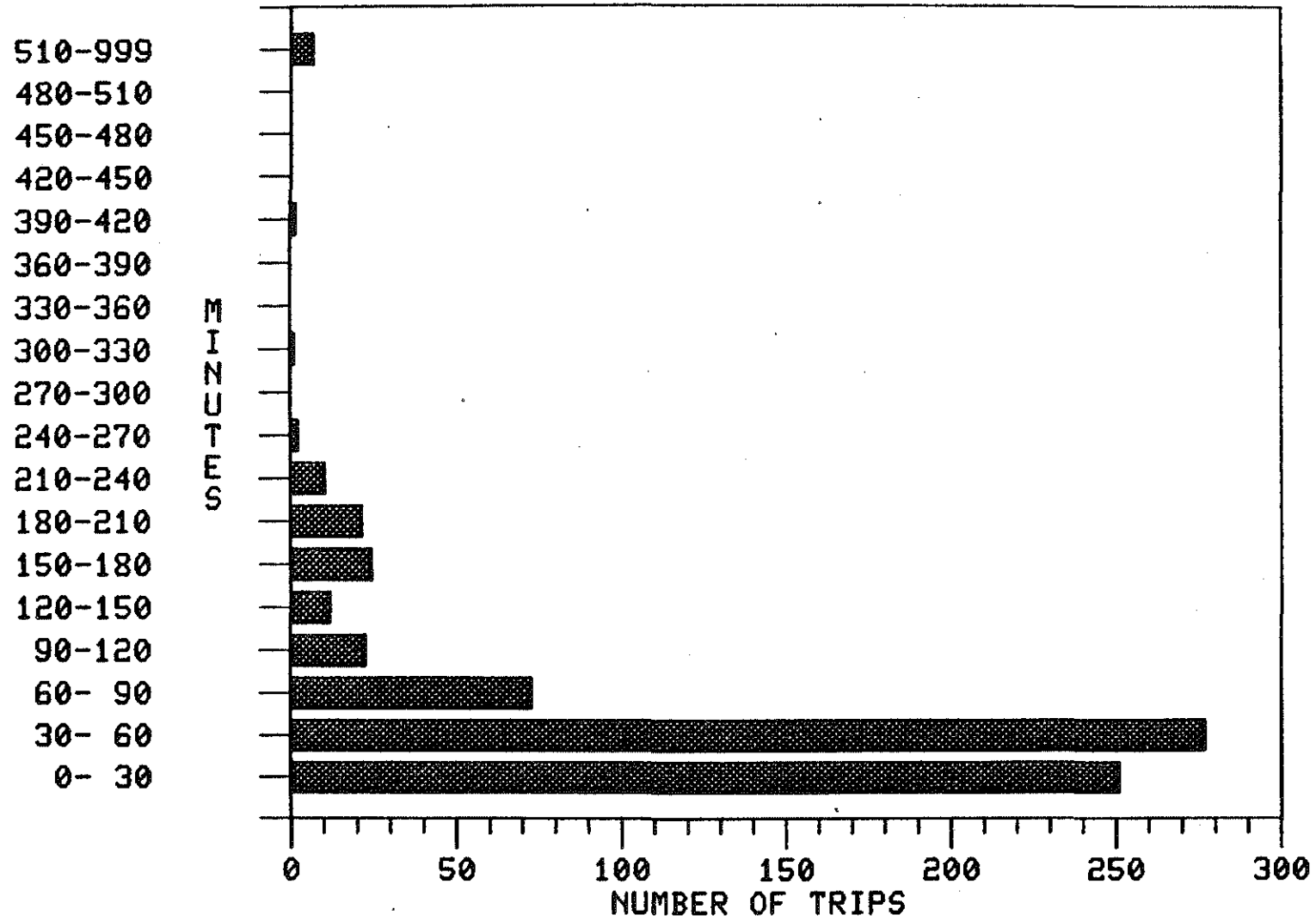
MARSHALL



## PAWPAW 1975

|                                     |          |         |       |                |
|-------------------------------------|----------|---------|-------|----------------|
| A. AUTO                             | 20.53    | ( 2.5%) | TRIPS |                |
| B. BUILDING                         | 48.87    | ( 5.8%) | TRIPS |                |
| C. CHEMICALS                        | 22.20    | ( 2.7%) | TRIPS |                |
| D. TEXTILES                         | 18.79    | ( 2.3%) | TRIPS |                |
| E. EMPTY                            | 273.75   | (32.1%) | TRIPS |                |
| F. FOOD                             | 136.09   | (16.0%) | TRIPS |                |
| G. GRAIN                            | 12.65    | ( 1.5%) | TRIPS |                |
| H. FURNITURE                        | 9.50     | ( 1.2%) | TRIPS |                |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                |
| L. LIVESTOCK                        | 4.75     | ( 0.6%) | TRIPS |                |
| M. MACHINERY                        | 29.05    | ( 3.5%) | TRIPS |                |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |                |
| O. OTHER                            | 74.01    | ( 8.7%) | TRIPS |                |
| P. PETROLEUM                        | 55.96    | ( 6.6%) | TRIPS |                |
| R. RAW MATERIALS                    | 24.32    | ( 2.9%) | TRIPS |                |
| S. METALS                           | 9.46     | ( 1.2%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 32.01    | ( 3.8%) | TRIPS |                |
| U. UNKNOWN                          | 7.34     | ( 0.9%) | TRIPS |                |
| W. PAPER                            | 7.19     | ( 0.9%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 67.16    | ( 7.9%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 853.63 ( 4.0%) |
| TOTAL NO. ALL TRIPS                 | 21633.57 |         |       |                |

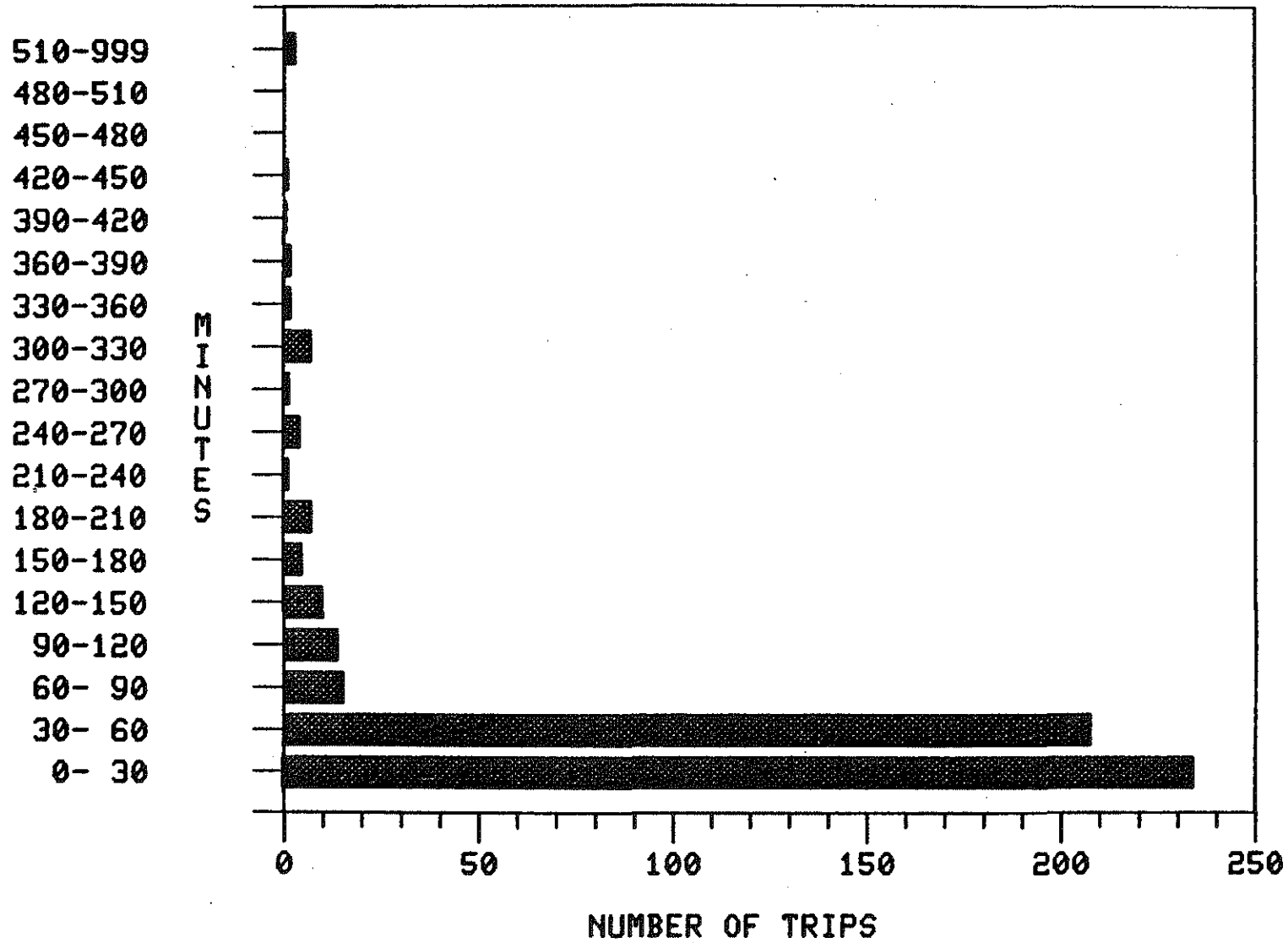
# PAUPAW



## STIGNACE 1974

|                                     |          |         |       |                 |
|-------------------------------------|----------|---------|-------|-----------------|
| A. AUTO                             | 62.70    | ( 4.5%) | TRIPS |                 |
| B. BUILDING                         | 59.09    | ( 4.2%) | TRIPS |                 |
| C. CHEMICALS                        | 18.33    | ( 1.3%) | TRIPS |                 |
| D. TEXTILES                         | 8.18     | ( 0.6%) | TRIPS |                 |
| E. EMPTY                            | 550.96   | (38.9%) | TRIPS |                 |
| F. FOOD                             | 131.64   | ( 9.3%) | TRIPS |                 |
| G. GRAIN                            | 57.36    | ( 4.1%) | TRIPS |                 |
| H. FURNITURE                        | 28.16    | ( 2.0%) | TRIPS |                 |
| K. RECREATION EQ.                   | 0.72     | ( 0.1%) | TRIPS |                 |
| L. LIVESTOCK                        | 5.53     | ( 0.4%) | TRIPS |                 |
| M. MACHINERY                        | 47.15    | ( 3.4%) | TRIPS |                 |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |                 |
| O. OTHER                            | 101.78   | ( 7.2%) | TRIPS |                 |
| P. PETROLEUM                        | 62.39    | ( 4.4%) | TRIPS |                 |
| R. RAW MATERIALS                    | 78.43    | ( 5.6%) | TRIPS |                 |
| S. METALS                           | 33.31    | ( 2.4%) | TRIPS |                 |
| T. TOBACCO, ETC.                    | 40.45    | ( 2.9%) | TRIPS |                 |
| U. UNKNOWN                          | 14.38    | ( 1.1%) | TRIPS |                 |
| W. PAPER                            | 24.99    | ( 1.8%) | TRIPS |                 |
| Z. SERV. VEHICLES                   | 94.11    | ( 6.7%) | TRIPS |                 |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 1419.66 ( 5.1%) |
| TOTAL NO. ALL TRIPS                 | 28172.41 |         |       |                 |

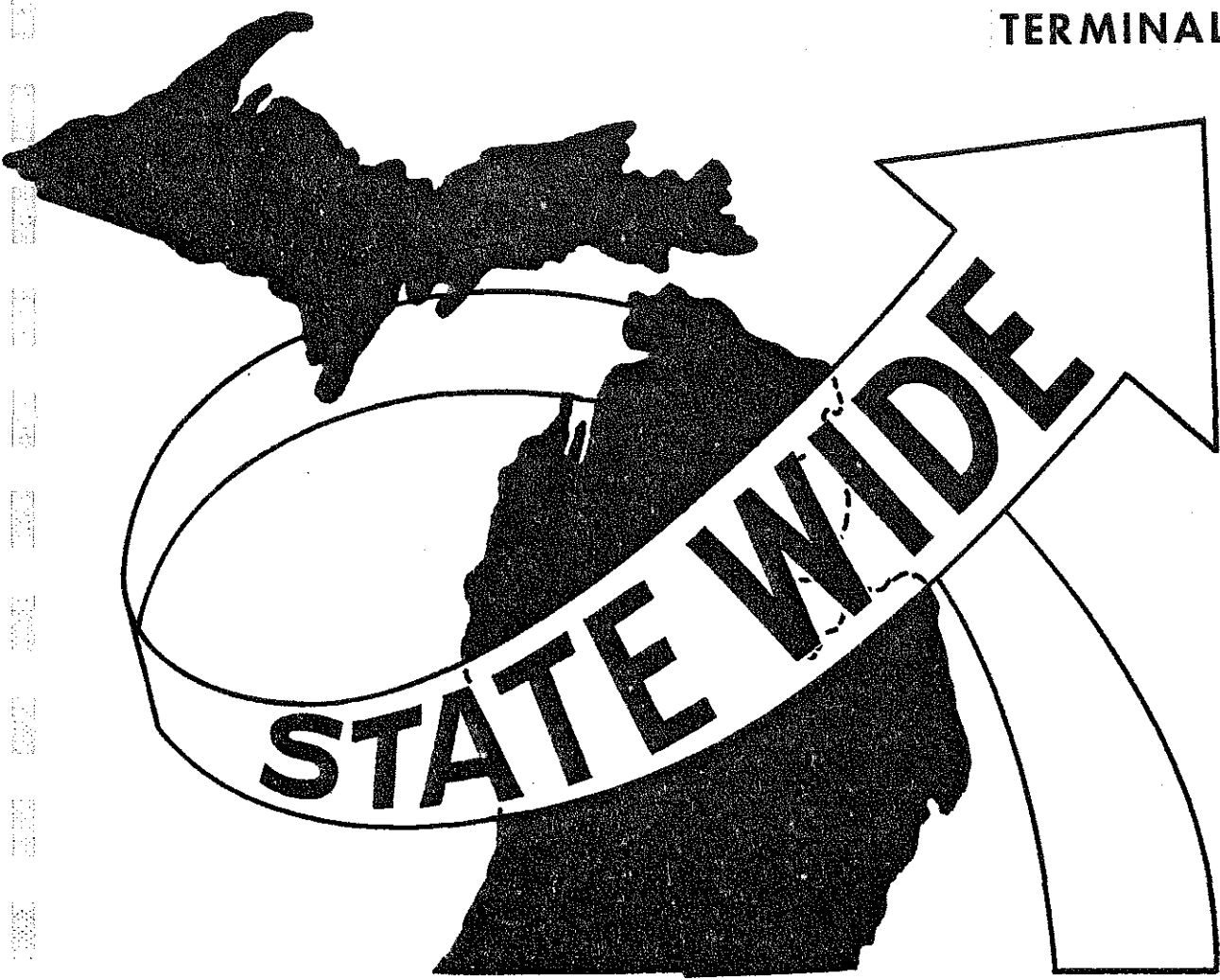
# STIGNACE



**COMMODITIES**

**FOR**

**TERMINAL TRIPS**



This section contains totals for only the terminal trips of the following Minor O&D Interview Studies:

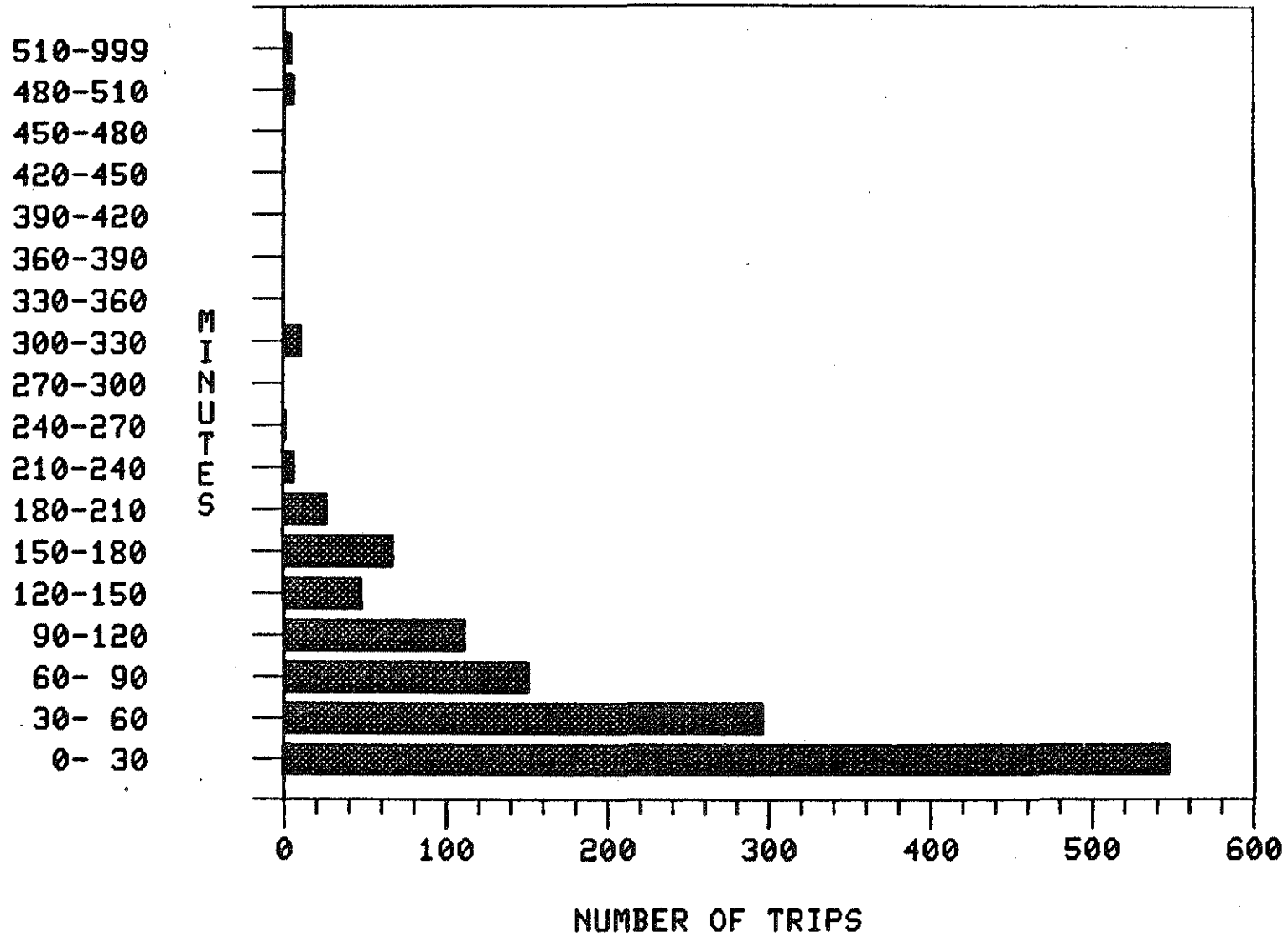
|                           | <u>Page</u> |
|---------------------------|-------------|
| Alma-St. Louis (1974)     | 53          |
| Charlevoix (1974)         | 55          |
| Escanaba-Gladstone (1974) | 57          |
| Frankenmuth (1975)        | 59          |
| Greenville (1974)         | 61          |
| Howell (1975)             | 63          |
| Ionia (1975)              | 65          |
| Iron River (1975)         | 67          |
| Ironwood (1975)           | 69          |
| Marshall (1975)           | 71          |
| Paw Paw (1975)            | 73          |
| St. Ignace (1974)         | 75          |

## ALMASTLOUIS 1974

|                                     |          |         |       |                 |
|-------------------------------------|----------|---------|-------|-----------------|
| A. AUTO                             | 14.95    | ( 1.2%) | TRIPS |                 |
| B. BUILDING                         | 37.62    | ( 3.0%) | TRIPS |                 |
| C. CHEMICALS                        | 65.71    | ( 5.3%) | TRIPS |                 |
| D. TEXTILES                         | 13.03    | ( 1.1%) | TRIPS |                 |
| E. EMPTY                            | 610.96   | (48.7%) | TRIPS |                 |
| F. FOOD                             | 150.33   | (12.0%) | TRIPS |                 |
| G. GRAIN                            | 29.65    | ( 2.4%) | TRIPS |                 |
| H. FURNITURE                        | 21.96    | ( 1.8%) | TRIPS |                 |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                 |
| L. LIVESTOCK                        | 3.23     | ( 0.3%) | TRIPS |                 |
| M. MACHINERY                        | 68.95    | ( 5.5%) | TRIPS |                 |
| N. NURSERY STOCK                    | 1.48     | ( 0.2%) | TRIPS |                 |
| O. OTHER                            | 6.42     | ( 0.6%) | TRIPS |                 |
| P. PETROLEUM                        | 112.83   | ( 9.0%) | TRIPS |                 |
| R. RAW MATERIALS                    | 55.60    | ( 4.5%) | TRIPS |                 |
| S. METALS                           | 16.70    | ( 1.4%) | TRIPS |                 |
| T. TOBACCO, ETC.                    | 11.06    | ( 0.9%) | TRIPS |                 |
| U. UNKNOWN                          | 18.14    | ( 1.5%) | TRIPS |                 |
| W. PAPER                            | 17.47    | ( 1.4%) | TRIPS |                 |
| Z. SERV. VEHICLES                   | 0.00     | ( 0.1%) | TRIPS |                 |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 1256.09 ( 5.5%) |
| TOTAL NO. ALL TRIPS                 | 23206.50 |         |       |                 |



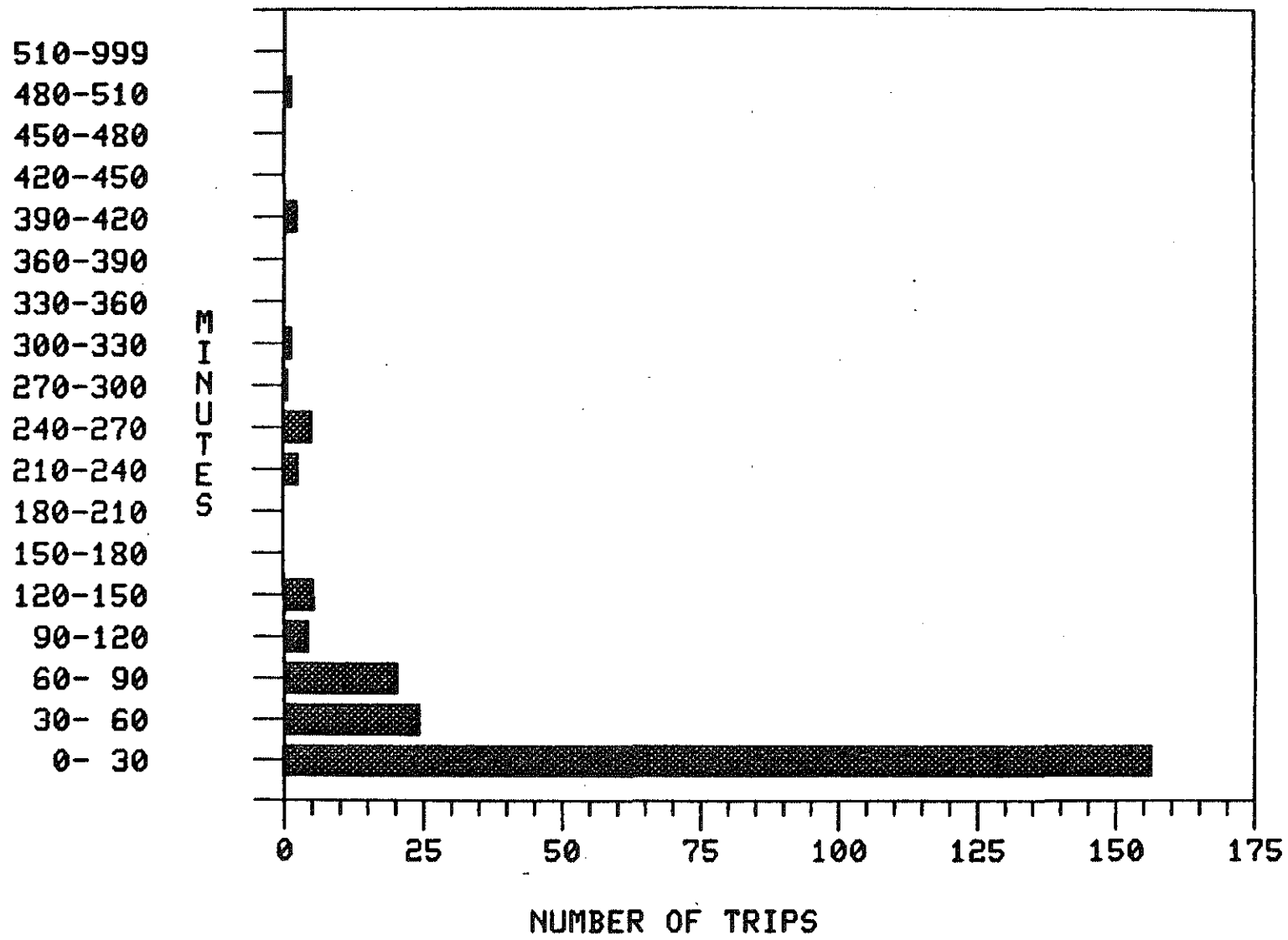
# ALMASTLOUIS TERMINAL TRIPS



## CHARLEVOIX 1974

|                                     |          |         |       |                |
|-------------------------------------|----------|---------|-------|----------------|
| A. AUTO                             | 1.20     | ( 0.6%) | TRIPS |                |
| B. BUILDING                         | 5.49     | ( 2.6%) | TRIPS |                |
| C. CHEMICALS                        | 3.35     | ( 1.6%) | TRIPS |                |
| D. TEXTILES                         | 4.58     | ( 2.2%) | TRIPS |                |
| E. EMPTY                            | 90.07    | (42.5%) | TRIPS |                |
| F. FOOD                             | 34.08    | (16.1%) | TRIPS |                |
| G. GRAIN                            | 8.71     | ( 4.2%) | TRIPS |                |
| H. FURNITURE                        | 7.84     | ( 3.7%) | TRIPS |                |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                |
| L. LIVESTOCK                        | 0.00     | ( 0.1%) | TRIPS |                |
| M. MACHINERY                        | 14.70    | ( 7.0%) | TRIPS |                |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |                |
| O. OTHER                            | 1.44     | ( 0.7%) | TRIPS |                |
| P. PETROLEUM                        | 19.00    | ( 9.0%) | TRIPS |                |
| R. RAW MATERIALS                    | 6.20     | ( 3.0%) | TRIPS |                |
| S. METALS                           | 1.17     | ( 0.6%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 3.00     | ( 1.5%) | TRIPS |                |
| U. UNKNOWN                          | 5.88     | ( 2.8%) | TRIPS |                |
| W. PAPER                            | 5.24     | ( 2.5%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 0.00     | ( 0.1%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 211.95 ( 2.0%) |
| TOTAL NO. ALL TRIPS                 | 10904.64 |         |       |                |

### CHARLEVOIX TERMINAL TRIPS



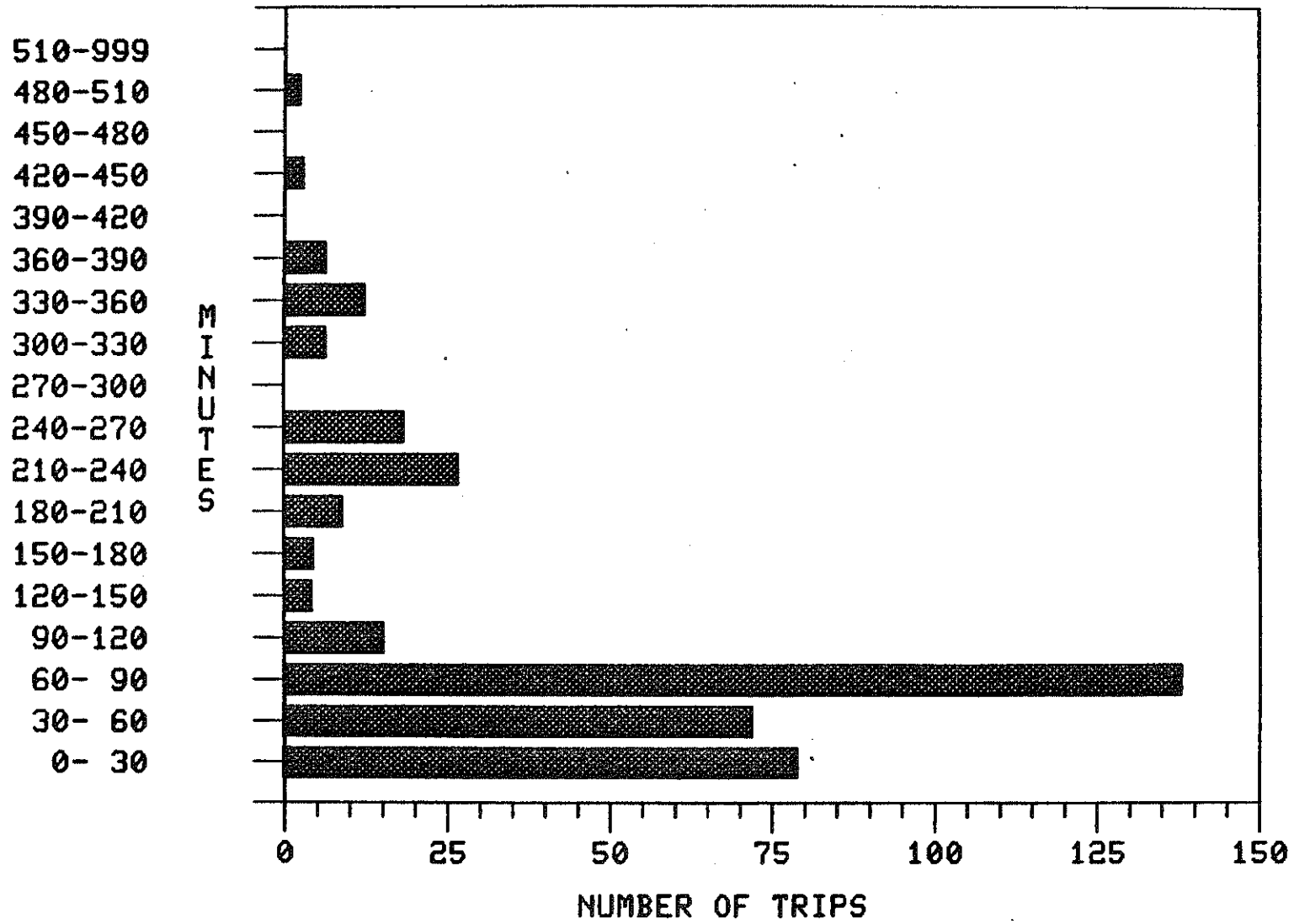
## ESCAGLAD 1974

|                   |        |         |       |
|-------------------|--------|---------|-------|
| A. AUTO           | 0.00   | ( 0.1%) | TRIPS |
| B. BUILDING       | 4.13   | ( 1.1%) | TRIPS |
| C. CHEMICALS      | 6.46   | ( 1.7%) | TRIPS |
| D. TEXTILES       | 2.00   | ( 0.6%) | TRIPS |
| E. EMPTY          | 166.84 | (42.8%) | TRIPS |
| F. FOOD           | 14.07  | ( 3.7%) | TRIPS |
| G. GRAIN          | 3.26   | ( 0.9%) | TRIPS |
| H. FURNITURE      | 11.93  | ( 3.1%) | TRIPS |
| K. RECREATION EQ. | 0.00   | ( 0.1%) | TRIPS |
| L. LIVESTOCK      | 0.00   | ( 0.1%) | TRIPS |
| M. MACHINERY      | 16.78  | ( 4.4%) | TRIPS |
| N. NURSERY STOCK  | 0.00   | ( 0.1%) | TRIPS |
| O. OTHER          | 36.16  | ( 9.3%) | TRIPS |
| P. PETROLEUM      | 27.85  | ( 7.2%) | TRIPS |
| R. RAW MATERIALS  | 24.02  | ( 6.2%) | TRIPS |
| S. METALS         | 1.00   | ( 0.3%) | TRIPS |
| T. TOBACCO, ETC.  | 7.06   | ( 1.9%) | TRIPS |
| U. UNKNOWN        | 46.58  | (12.0%) | TRIPS |
| W. PAPER          | 21.92  | ( 5.7%) | TRIPS |
| Z. SERV. VEHICLES | 0.00   | ( 0.1%) | TRIPS |

TOTAL NO. TRIPS WITH COMMODITY CODE 390.06 ( 2.7%)

TOTAL NO. ALL TRIPS 14887.47

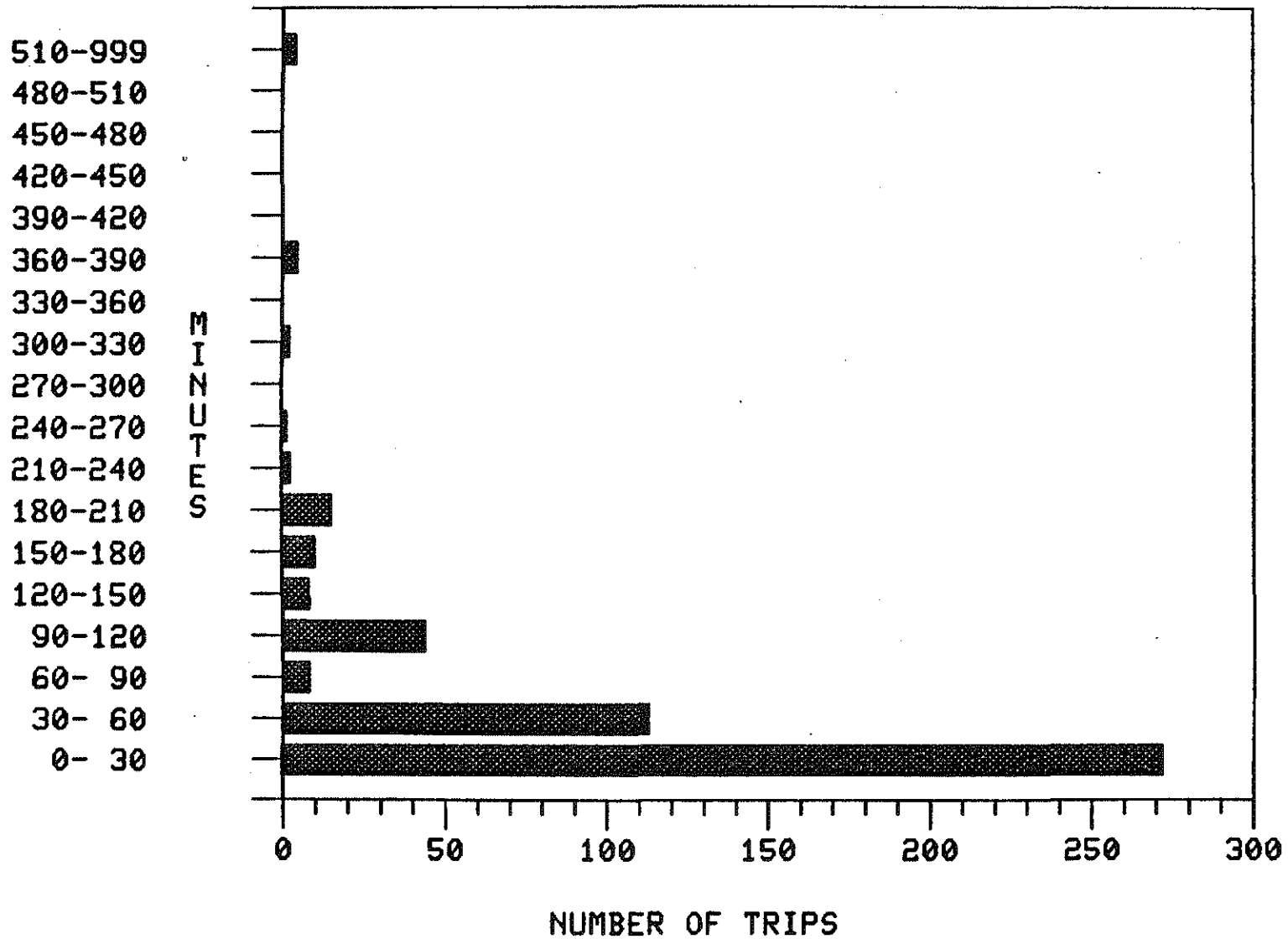
### ESCAGLAD TERMINAL TRIPS



## FRANKENMUTH 1975

|                                     |          |         |       |                |
|-------------------------------------|----------|---------|-------|----------------|
| A. AUTO                             | 5.00     | ( 1.1%) | TRIPS |                |
| B. BUILDING                         | 17.16    | ( 3.6%) | TRIPS |                |
| C. CHEMICALS                        | 8.49     | ( 1.8%) | TRIPS |                |
| D. TEXTILES                         | 5.07     | ( 1.1%) | TRIPS |                |
| E. EMPTY                            | 160.25   | (33.2%) | TRIPS |                |
| F. FOOD                             | 61.05    | (12.7%) | TRIPS |                |
| G. GRAIN                            | 28.93    | ( 6.0%) | TRIPS |                |
| H. FURNITURE                        | 14.05    | ( 3.0%) | TRIPS |                |
| K. RECREATION EQ.                   | 1.82     | ( 0.4%) | TRIPS |                |
| L. LIVESTOCK                        | 3.69     | ( 0.8%) | TRIPS |                |
| M. MACHINERY                        | 25.60    | ( 5.4%) | TRIPS |                |
| N. NURSERY STOCK                    | 1.34     | ( 0.3%) | TRIPS |                |
| O. OTHER                            | 40.78    | ( 8.5%) | TRIPS |                |
| P. PETROLEUM                        | 8.84     | ( 1.9%) | TRIPS |                |
| R. RAW MATERIALS                    | 40.18    | ( 8.4%) | TRIPS |                |
| S. METALS                           | 2.49     | ( 0.6%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 40.34    | ( 8.4%) | TRIPS |                |
| U. UNKNOWN                          | 2.46     | ( 0.6%) | TRIPS |                |
| W. PAPER                            | 2.73     | ( 0.6%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 12.45    | ( 2.6%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 482.72 ( 4.3%) |
| TOTAL NO. ALL TRIPS                 | 11398.64 |         |       |                |

# FRANKENMUTH TERMINAL TRIPS

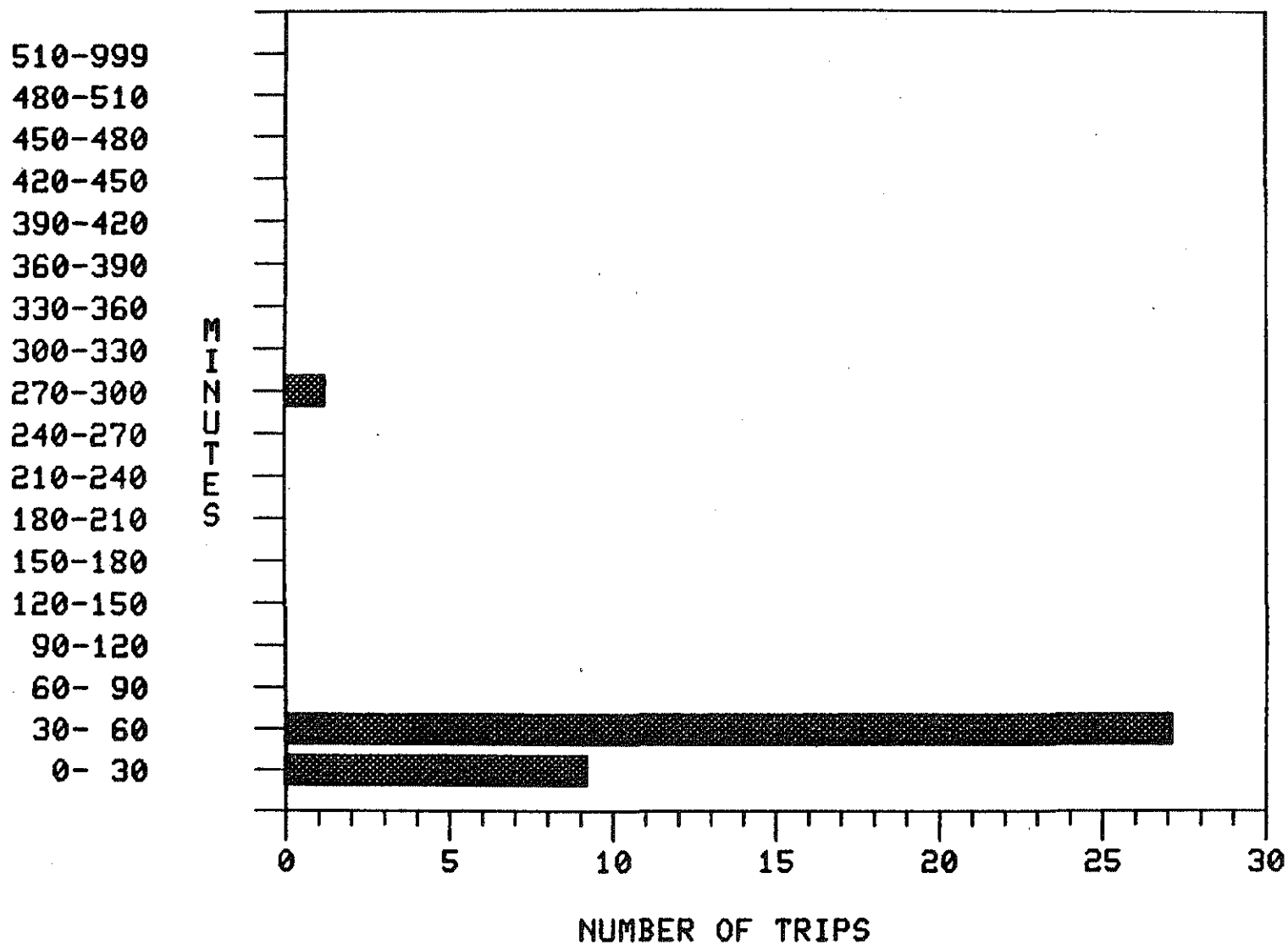


## GREENVILLE 1974

|                                     |          |         |       |               |
|-------------------------------------|----------|---------|-------|---------------|
| A. AUTO                             | 1.49     | ( 4.5%) | TRIPS |               |
| B. BUILDING                         | 0.00     | ( 0.1%) | TRIPS |               |
| C. CHEMICALS                        | 0.00     | ( 0.1%) | TRIPS |               |
| D. TEXTILES                         | 0.00     | ( 0.1%) | TRIPS |               |
| E. EMPTY                            | 19.64    | (58.2%) | TRIPS |               |
| F. FOOD                             | 2.98     | ( 8.9%) | TRIPS |               |
| G. GRAIN                            | 0.00     | ( 0.1%) | TRIPS |               |
| H. FURNITURE                        | 1.17     | ( 3.5%) | TRIPS |               |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |               |
| L. LIVESTOCK                        | 0.00     | ( 0.1%) | TRIPS |               |
| M. MACHINERY                        | 4.69     | (13.9%) | TRIPS |               |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |               |
| O. OTHER                            | 0.00     | ( 0.1%) | TRIPS |               |
| P. PETROLEUM                        | 0.00     | ( 0.1%) | TRIPS |               |
| R. RAW MATERIALS                    | 0.00     | ( 0.1%) | TRIPS |               |
| S. METALS                           | 3.78     | (11.3%) | TRIPS |               |
| T. TOBACCO, ETC.                    | 0.00     | ( 0.1%) | TRIPS |               |
| U. UNKNOWN                          | 0.00     | ( 0.1%) | TRIPS |               |
| W. PAPER                            | 0.00     | ( 0.1%) | TRIPS |               |
| Z. SERV. VEHICLES                   | 0.00     | ( 0.1%) | TRIPS |               |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 33.75 ( 0.2%) |
| TOTAL NO. ALL TRIPS                 | 18072.30 |         |       |               |



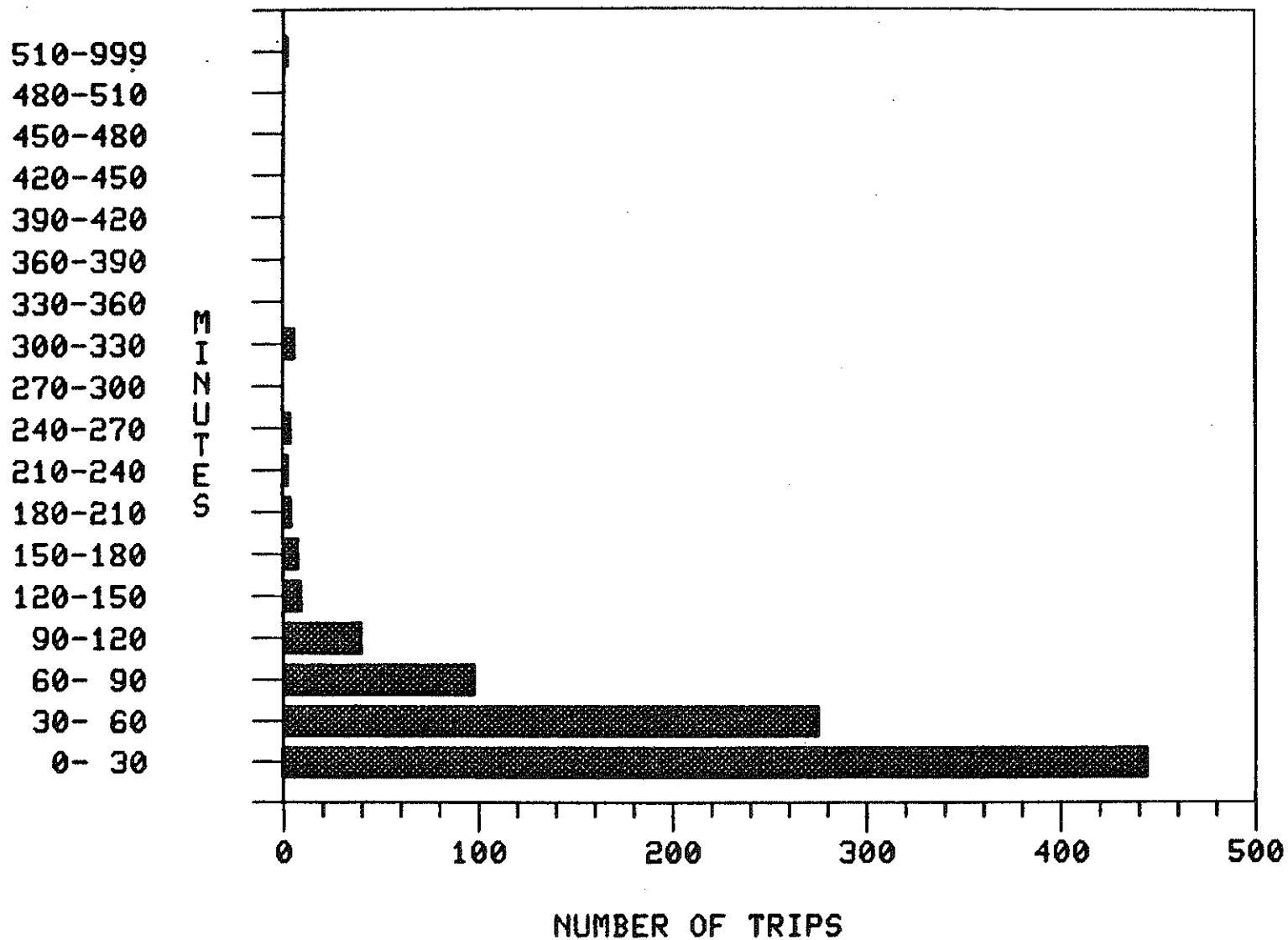
# GREENVILLE TERMINAL TRIPS



## HOWELL 1975

|                                     |          |         |       |                 |
|-------------------------------------|----------|---------|-------|-----------------|
| A. AUTO                             | 48.13    | ( 4.5%) | TRIPS |                 |
| B. BUILDING                         | 39.12    | ( 3.7%) | TRIPS |                 |
| C. CHEMICALS                        | 25.01    | ( 2.4%) | TRIPS |                 |
| D. TEXTILES                         | 1.61     | ( 0.2%) | TRIPS |                 |
| E. EMPTY                            | 330.60   | (30.8%) | TRIPS |                 |
| F. FOOD                             | 104.60   | ( 9.8%) | TRIPS |                 |
| G. GRAIN                            | 7.14     | ( 0.7%) | TRIPS |                 |
| H. FURNITURE                        | 18.67    | ( 1.8%) | TRIPS |                 |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                 |
| L. LIVESTOCK                        | 0.99     | ( 0.1%) | TRIPS |                 |
| M. MACHINERY                        | 58.38    | ( 5.5%) | TRIPS |                 |
| N. NURSERY STOCK                    | 4.96     | ( 0.5%) | TRIPS |                 |
| O. OTHER                            | 90.73    | ( 8.5%) | TRIPS |                 |
| P. PETROLEUM                        | 41.71    | ( 3.9%) | TRIPS |                 |
| R. RAW MATERIALS                    | 56.68    | ( 5.3%) | TRIPS |                 |
| S. METALS                           | 39.27    | ( 3.7%) | TRIPS |                 |
| T. TOBACCO, ETC.                    | 43.73    | ( 4.1%) | TRIPS |                 |
| U. UNKNOWN                          | 46.58    | ( 4.4%) | TRIPS |                 |
| W. PAPER                            | 29.37    | ( 2.8%) | TRIPS |                 |
| Z. SERV. VEHICLES                   | 86.48    | ( 8.1%) | TRIPS |                 |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 1073.76 ( 3.3%) |
| TOTAL NO. ALL TRIPS                 | 33257.05 |         |       |                 |

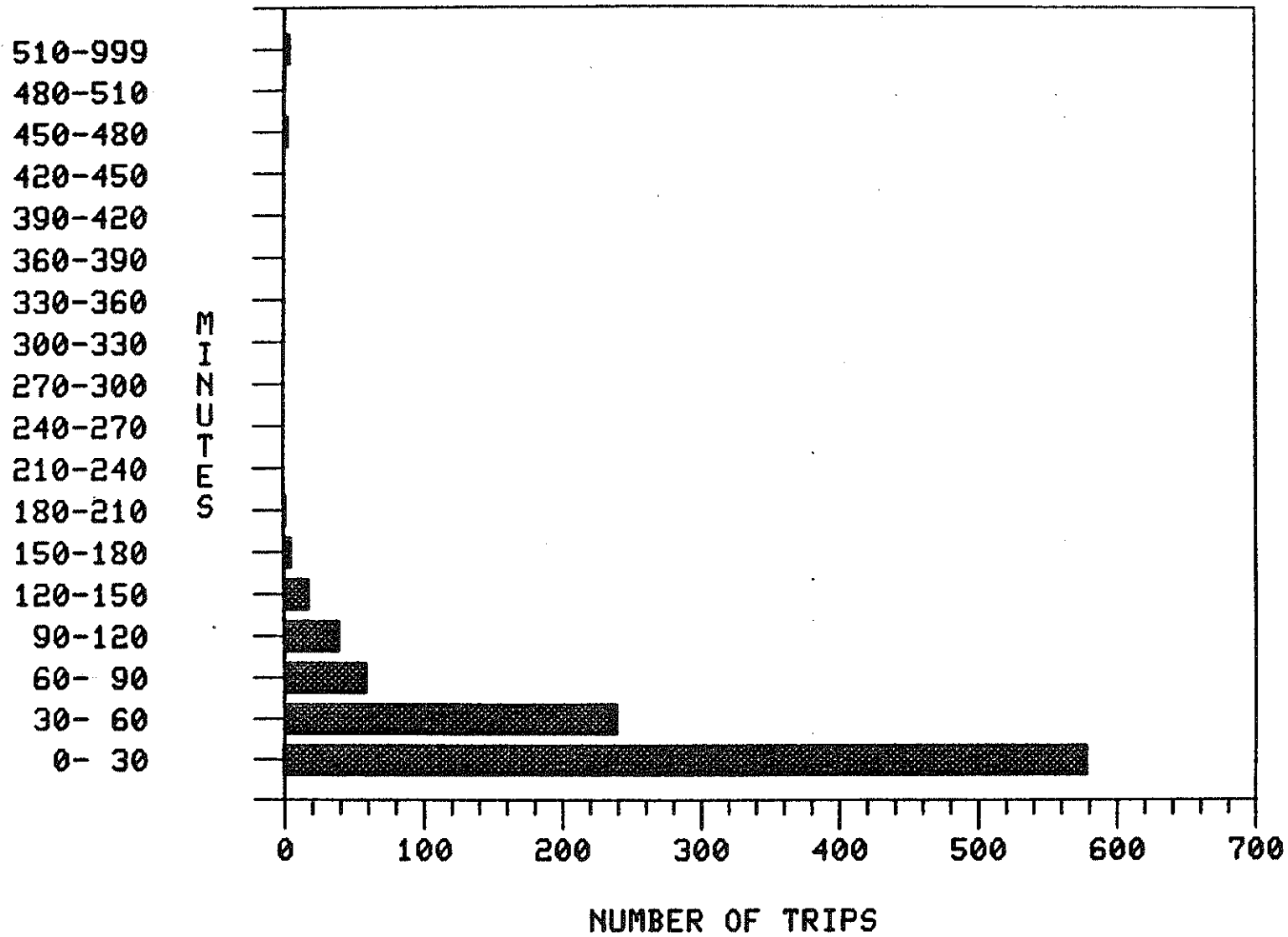
# HOWELL TERMINAL TRIPS



## IONIA 1975

|                                     |          |         |       |                |
|-------------------------------------|----------|---------|-------|----------------|
| A. AUTO                             | 41.85    | ( 4.5%) | TRIPS |                |
| B. BUILDING                         | 40.11    | ( 4.3%) | TRIPS |                |
| C. CHEMICALS                        | 6.19     | ( 0.7%) | TRIPS |                |
| D. TEXTILES                         | 5.45     | ( 0.6%) | TRIPS |                |
| E. EMPTY                            | 352.25   | (37.4%) | TRIPS |                |
| F. FOOD                             | 83.60    | ( 8.9%) | TRIPS |                |
| G. GRAIN                            | 32.72    | ( 3.5%) | TRIPS |                |
| H. FURNITURE                        | 20.53    | ( 2.2%) | TRIPS |                |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                |
| L. LIVESTOCK                        | 0.85     | ( 0.1%) | TRIPS |                |
| M. MACHINERY                        | 33.25    | ( 3.6%) | TRIPS |                |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |                |
| O. OTHER                            | 74.19    | ( 7.9%) | TRIPS |                |
| P. PETROLEUM                        | 45.21    | ( 4.8%) | TRIPS |                |
| R. RAW MATERIALS                    | 46.23    | ( 4.9%) | TRIPS |                |
| S. METALS                           | 26.60    | ( 2.9%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 32.16    | ( 3.5%) | TRIPS |                |
| U. UNKNOWN                          | 8.57     | ( 1.0%) | TRIPS |                |
| H. PAPER                            | 18.18    | ( 2.0%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 76.07    | ( 8.1%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 944.01 ( 4.3%) |
| TOTAL NO. ALL TRIPS                 | 22450.22 |         |       |                |

# IONIA TERMINAL TRIPS



## IRONRIVER 1975

|                   |        |              |
|-------------------|--------|--------------|
| A. AUTO           | 4.29   | ( 1.4%)TRIPS |
| B. BUILDING       | 17.03  | ( 5.4%)TRIPS |
| C. CHEMICALS      | 0.00   | ( 0.1%)TRIPS |
| D. TEXTILES       | 4.77   | ( 1.5%)TRIPS |
| E. EMPTY          | 102.28 | (32.1%)TRIPS |
| F. FOOD           | 39.11  | (12.3%)TRIPS |
| G. GRAIN          | 0.00   | ( 0.1%)TRIPS |
| H. FURNITURE      | 10.88  | ( 3.5%)TRIPS |
| K. RECREATION EQ. | 1.31   | ( 0.5%)TRIPS |
| L. LIVESTOCK      | 2.53   | ( 0.8%)TRIPS |
| M. MACHINERY      | 18.29  | ( 5.8%)TRIPS |
| N. NURSERY STOCK  | 0.00   | ( 0.1%)TRIPS |
| O. OTHER          | 19.89  | ( 6.3%)TRIPS |
| P. PETROLEUM      | 18.85  | ( 6.0%)TRIPS |
| R. RAW MATERIALS  | 14.70  | ( 4.7%)TRIPS |
| S. METALS         | 8.48   | ( 2.7%)TRIPS |
| T. TOBACCO, ETC.  | 9.98   | ( 3.2%)TRIPS |
| U. UNKNOWN        | 1.08   | ( 0.4%)TRIPS |
| W. PAPER          | 21.80  | ( 6.9%)TRIPS |
| Z. SERV. VEHICLES | 23.42  | ( 7.4%)TRIPS |

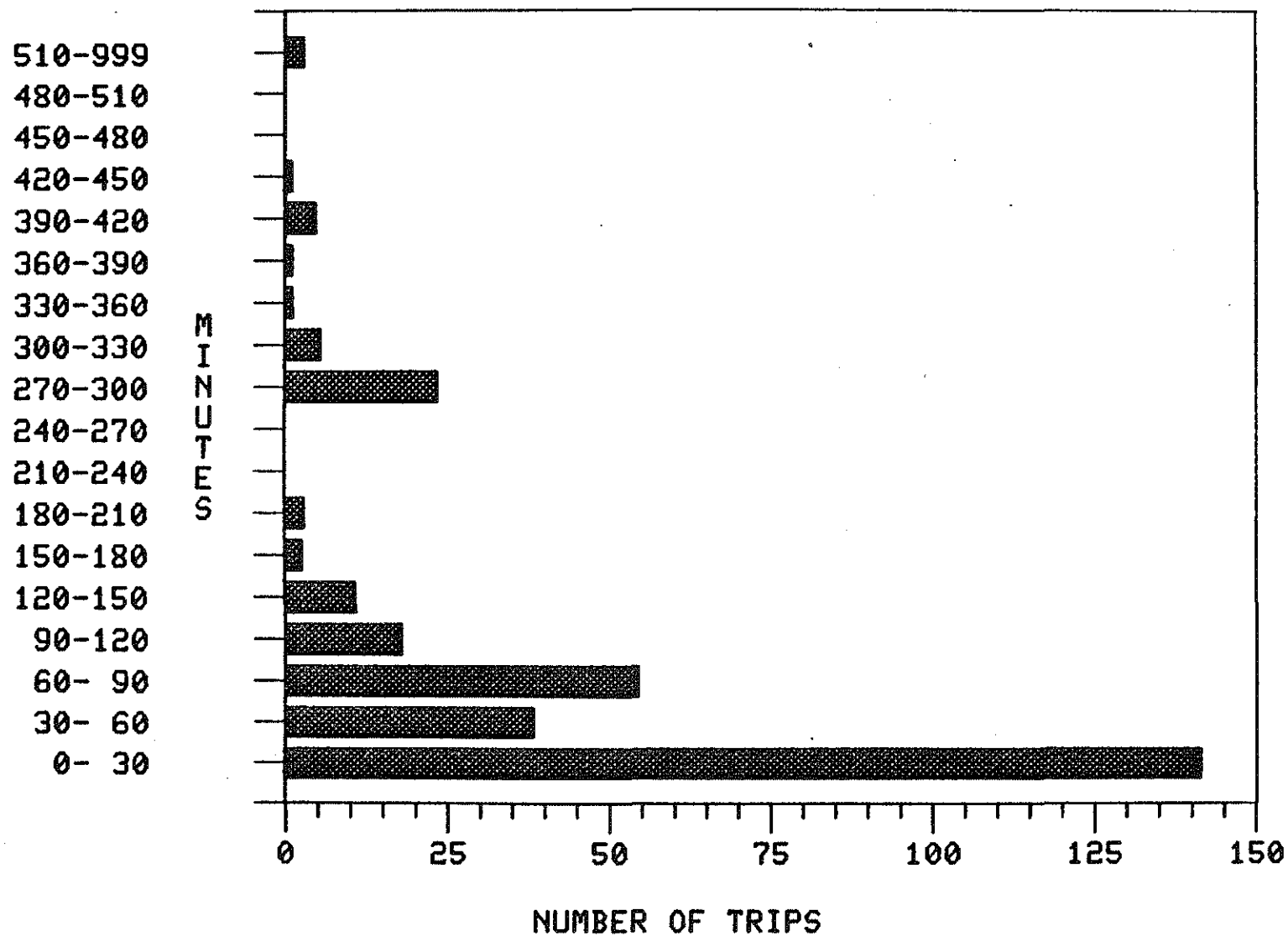
TOTAL NO. TRIPS WITH COMMODITY CODE

318.69( 4.1%)

TOTAL NO. ALL TRIPS

7816.54

# IRONRIVER TERMINAL TRIPS



## IWDBDSWAK 1975

|                   |        |         |       |
|-------------------|--------|---------|-------|
| A. AUTO           | 10.52  | ( 1.3%) | TRIPS |
| B. BUILDING       | 38.91  | ( 4.6%) | TRIPS |
| C. CHEMICALS      | 6.77   | ( 0.9%) | TRIPS |
| D. TEXTILES       | 3.49   | ( 0.5%) | TRIPS |
| E. EMPTY          | 360.05 | (42.6%) | TRIPS |
| F. FOOD           | 109.77 | (13.0%) | TRIPS |
| G. GRAIN          | 3.82   | ( 0.5%) | TRIPS |
| H. FURNITURE      | 6.55   | ( 0.8%) | TRIPS |
| K. RECREATION EQ. | 1.07   | ( 0.2%) | TRIPS |
| L. LIVESTOCK      | 0.00   | ( 0.1%) | TRIPS |
| M. MACHINERY      | 19.38  | ( 2.3%) | TRIPS |
| N. NURSERY STOCK  | 1.61   | ( 0.2%) | TRIPS |
| O. OTHER          | 54.30  | ( 6.5%) | TRIPS |
| P. PETROLEUM      | 30.71  | ( 3.7%) | TRIPS |
| R. RAW MATERIALS  | 86.74  | (10.3%) | TRIPS |
| S. METALS         | 10.34  | ( 1.3%) | TRIPS |
| T. TOBACCO, ETC.  | 19.07  | ( 2.3%) | TRIPS |
| U. UNKNOWN        | 6.49   | ( 0.8%) | TRIPS |
| W. PAPER          | 22.92  | ( 2.8%) | TRIPS |
| Z. SERV. VEHICLES | 53.61  | ( 6.4%) | TRIPS |

TOTAL NO. TRIPS WITH COMMODITY CODE

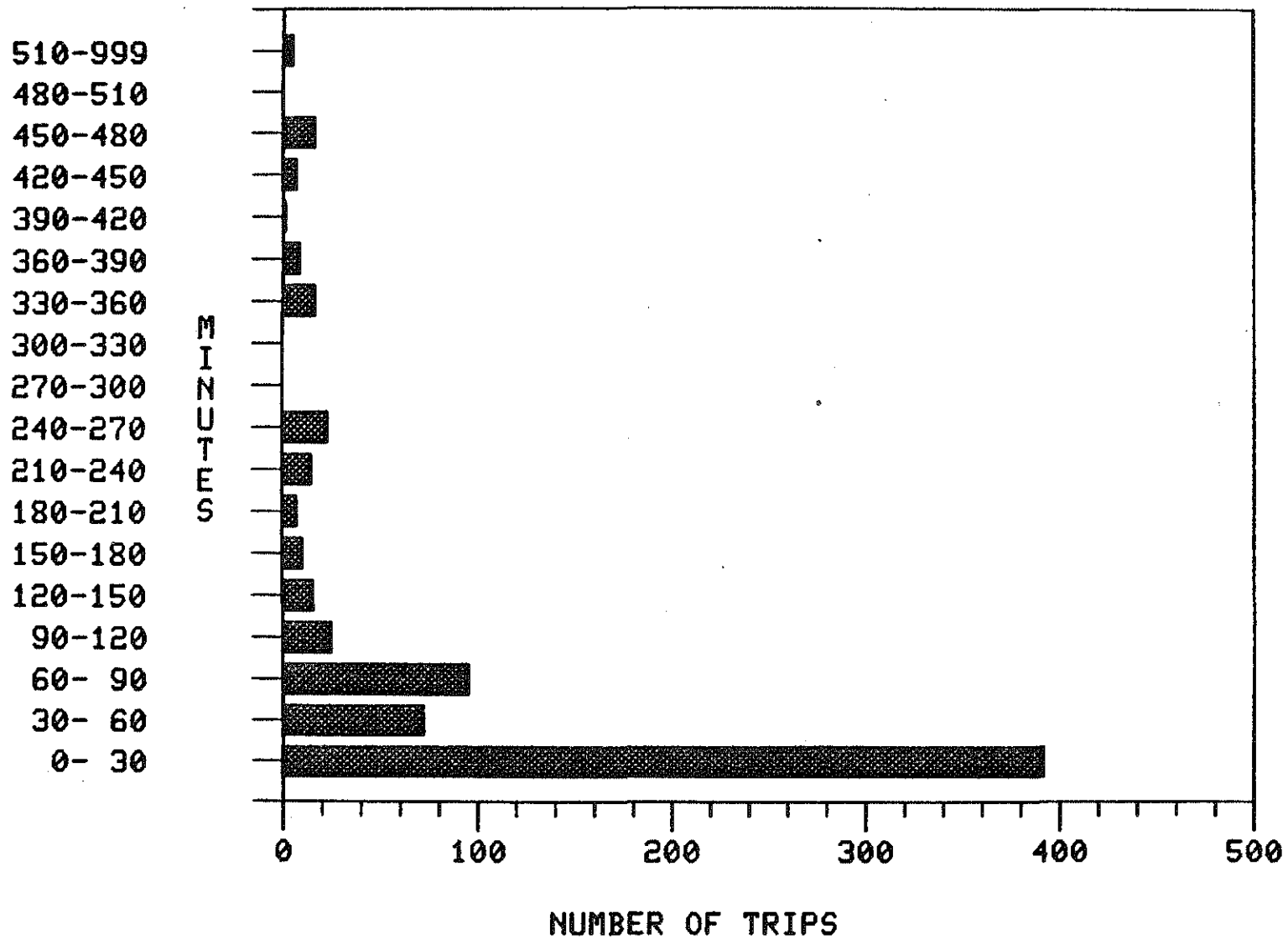
846.12 ( 4.8%)

TOTAL NO. ALL TRIPS

17652.43



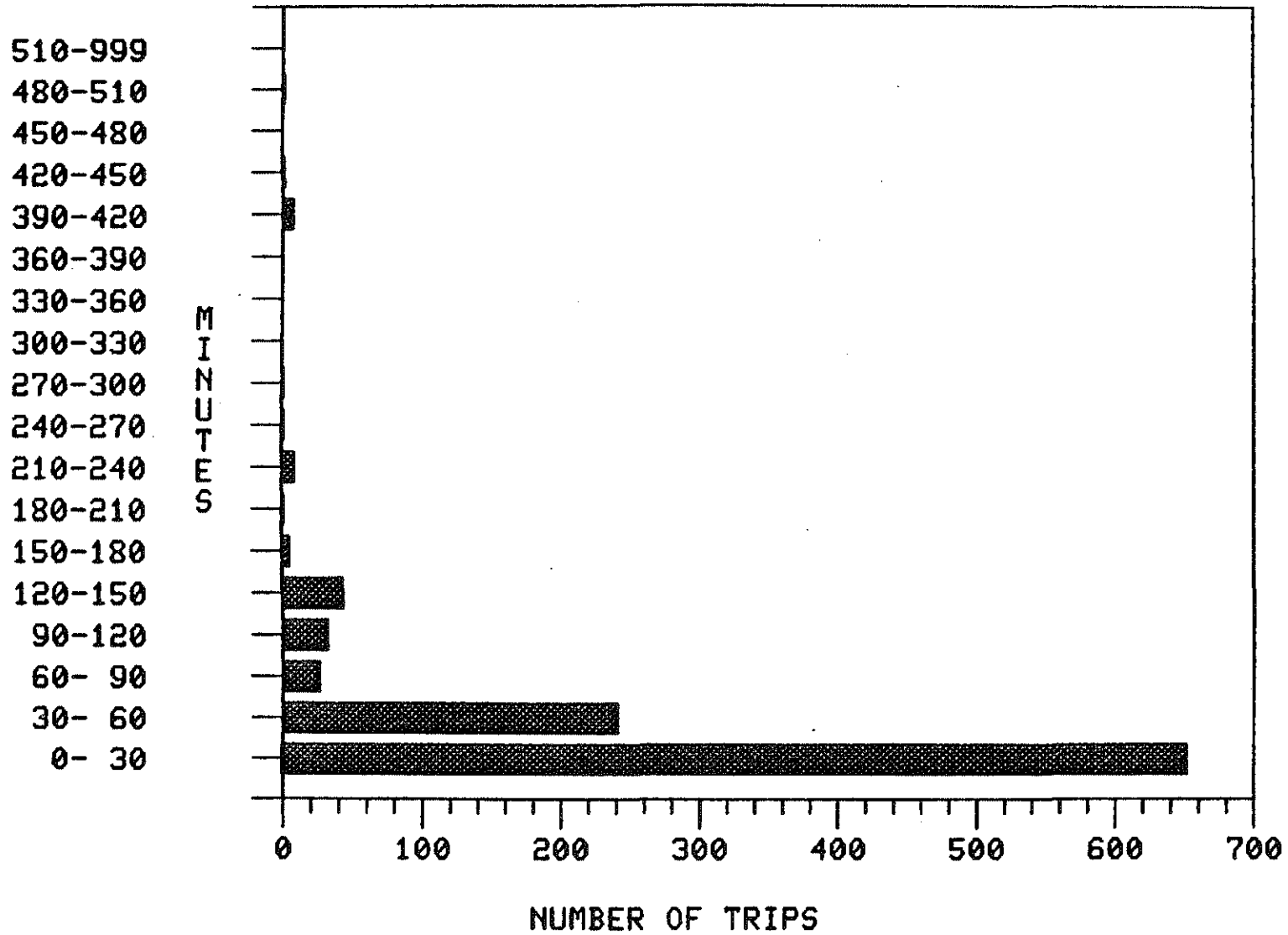
# IWDBESWAK TERMINAL TRIPS



## MARSHALL 1975

|                                     |          |         |       |                 |
|-------------------------------------|----------|---------|-------|-----------------|
| A. AUTO                             | 18.70    | ( 1.9%) | TRIPS |                 |
| B. BUILDING                         | 38.92    | ( 3.9%) | TRIPS |                 |
| C. CHEMICALS                        | 13.45    | ( 1.4%) | TRIPS |                 |
| D. TEXTILES                         | 21.29    | ( 2.1%) | TRIPS |                 |
| E. EMPTY                            | 281.49   | (27.8%) | TRIPS |                 |
| F. FOOD                             | 126.81   | (12.5%) | TRIPS |                 |
| G. GRAIN                            | 5.91     | ( 0.6%) | TRIPS |                 |
| H. FURNITURE                        | 16.93    | ( 1.7%) | TRIPS |                 |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                 |
| L. LIVESTOCK                        | 2.61     | ( 0.3%) | TRIPS |                 |
| M. MACHINERY                        | 67.15    | ( 6.7%) | TRIPS |                 |
| N. NURSERY STOCK                    | 4.90     | ( 0.5%) | TRIPS |                 |
| O. OTHER                            | 107.41   | (10.6%) | TRIPS |                 |
| P. PETROLEUM                        | 49.21    | ( 4.9%) | TRIPS |                 |
| R. RAW MATERIALS                    | 35.97    | ( 3.6%) | TRIPS |                 |
| S. METALS                           | 19.43    | ( 2.0%) | TRIPS |                 |
| T. TOBACCO, ETC.                    | 9.59     | ( 1.0%) | TRIPS |                 |
| U. UNKNOWN                          | 28.69    | ( 2.9%) | TRIPS |                 |
| W. PAPER                            | 25.89    | ( 2.6%) | TRIPS |                 |
| Z. SERV. VEHICLES                   | 141.81   | (14.0%) | TRIPS |                 |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 1016.16 ( 4.9%) |
| TOTAL NO. ALL TRIPS                 | 21025.52 |         |       |                 |

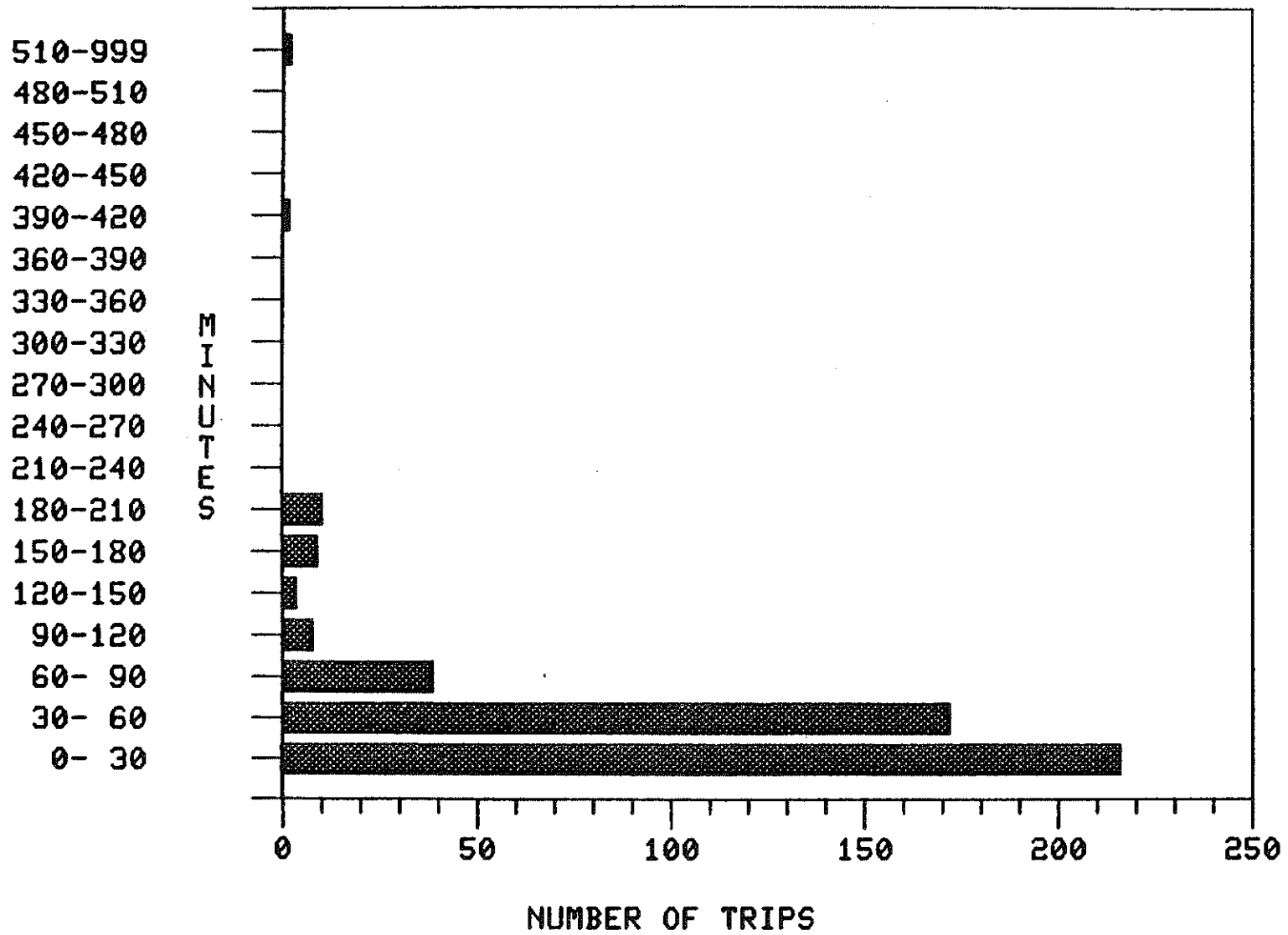
# MARSHALL TERMINAL TRIPS



## PAWPAW 1975

|                                     |          |         |       |                |
|-------------------------------------|----------|---------|-------|----------------|
| A. AUTO                             | 16.24    | ( 2.9%) | TRIPS |                |
| B. BUILDING                         | 38.43    | ( 6.8%) | TRIPS |                |
| C. CHEMICALS                        | 10.94    | ( 2.0%) | TRIPS |                |
| D. TEXTILES                         | 17.52    | ( 3.1%) | TRIPS |                |
| E. EMPTY                            | 153.01   | (26.8%) | TRIPS |                |
| F. FOOD                             | 99.18    | (17.4%) | TRIPS |                |
| G. GRAIN                            | 9.97     | ( 1.8%) | TRIPS |                |
| H. FURNITURE                        | 4.35     | ( 0.8%) | TRIPS |                |
| K. RECREATION EQ.                   | 0.00     | ( 0.1%) | TRIPS |                |
| L. LIVESTOCK                        | 2.43     | ( 0.5%) | TRIPS |                |
| M. MACHINERY                        | 16.70    | ( 3.0%) | TRIPS |                |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |                |
| O. OTHER                            | 56.84    | (10.0%) | TRIPS |                |
| P. PETROLEUM                        | 47.12    | ( 8.3%) | TRIPS |                |
| R. RAW MATERIALS                    | 12.41    | ( 2.2%) | TRIPS |                |
| S. METALS                           | 2.26     | ( 0.4%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 28.82    | ( 5.1%) | TRIPS |                |
| U. UNKNOWN                          | 4.70     | ( 0.9%) | TRIPS |                |
| W. PAPER                            | 3.05     | ( 0.6%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 47.21    | ( 8.3%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 571.18 ( 3.3%) |
| TOTAL NO. ALL TRIPS                 | 17326.84 |         |       |                |

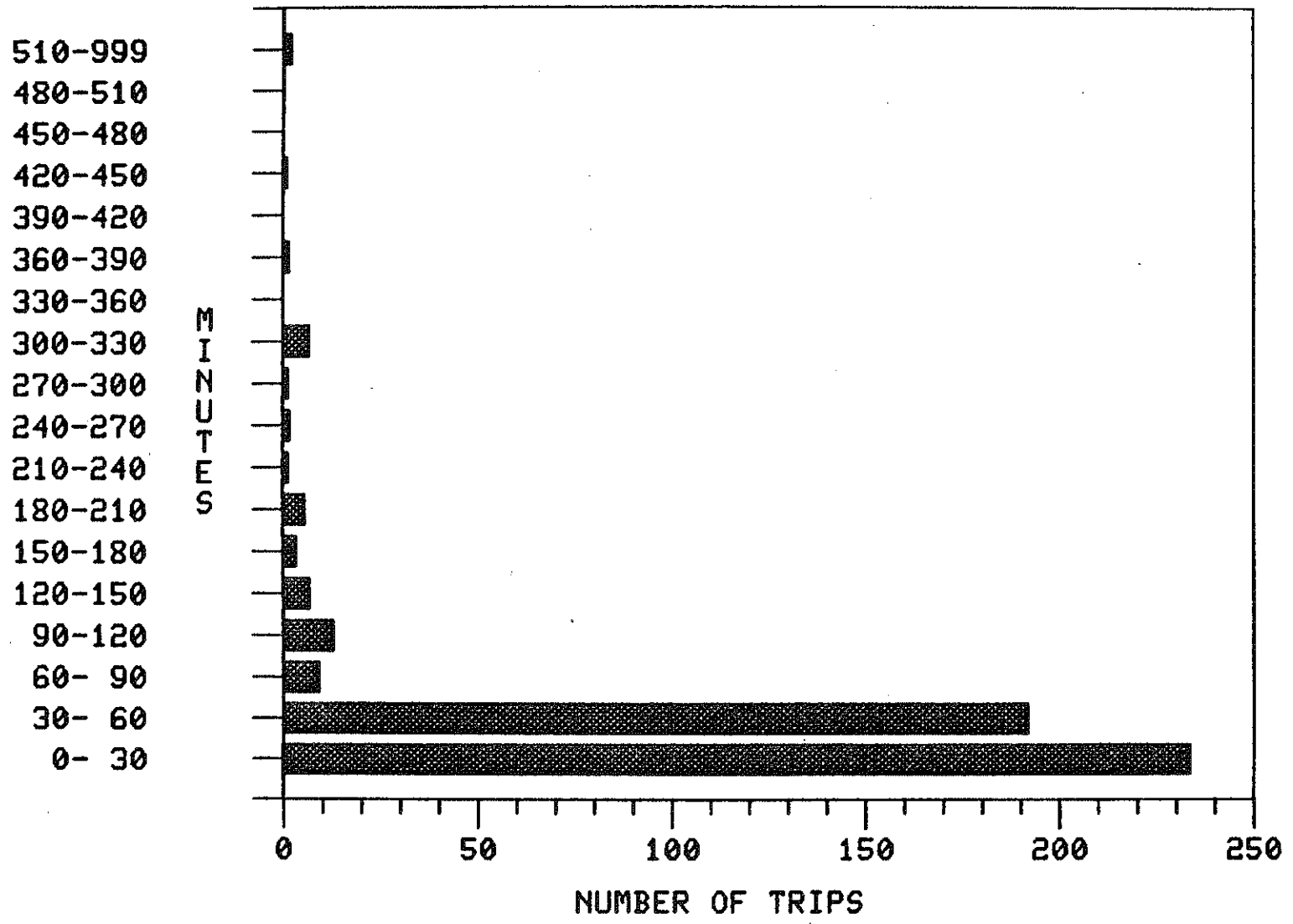
# PAWPAW TERMINAL TRIPS



## STIGNACE 1974

|                                     |          |         |       |                |
|-------------------------------------|----------|---------|-------|----------------|
| A. AUTO                             | 1.41     | ( 0.4%) | TRIPS |                |
| B. BUILDING                         | 7.57     | ( 1.7%) | TRIPS |                |
| C. CHEMICALS                        | 2.08     | ( 0.5%) | TRIPS |                |
| D. TEXTILES                         | 2.70     | ( 0.6%) | TRIPS |                |
| E. EMPTY                            | 250.38   | (54.6%) | TRIPS |                |
| F. FOOD                             | 42.33    | ( 9.3%) | TRIPS |                |
| G. GRAIN                            | 1.45     | ( 0.4%) | TRIPS |                |
| H. FURNITURE                        | 1.54     | ( 0.4%) | TRIPS |                |
| K. RECREATION EQ.                   | 13.31    | ( 2.9%) | TRIPS |                |
| L. LIVESTOCK                        | 0.00     | ( 0.1%) | TRIPS |                |
| M. MACHINERY                        | 27.77    | ( 6.1%) | TRIPS |                |
| N. NURSERY STOCK                    | 0.00     | ( 0.1%) | TRIPS |                |
| O. OTHER                            | 2.13     | ( 0.5%) | TRIPS |                |
| P. PETROLEUM                        | 34.99    | ( 7.7%) | TRIPS |                |
| R. RAW MATERIALS                    | 36.57    | ( 8.0%) | TRIPS |                |
| S. METALS                           | 3.03     | ( 0.7%) | TRIPS |                |
| T. TOBACCO, ETC.                    | 11.66    | ( 2.6%) | TRIPS |                |
| U. UNKNOWN                          | 20.11    | ( 4.4%) | TRIPS |                |
| W. PAPER                            | 0.00     | ( 0.1%) | TRIPS |                |
| Z. SERV. VEHICLES                   | 0.00     | ( 0.1%) | TRIPS |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |          |         |       | 459.03 ( 3.7%) |
| TOTAL NO. ALL TRIPS                 | 12521.97 |         |       |                |

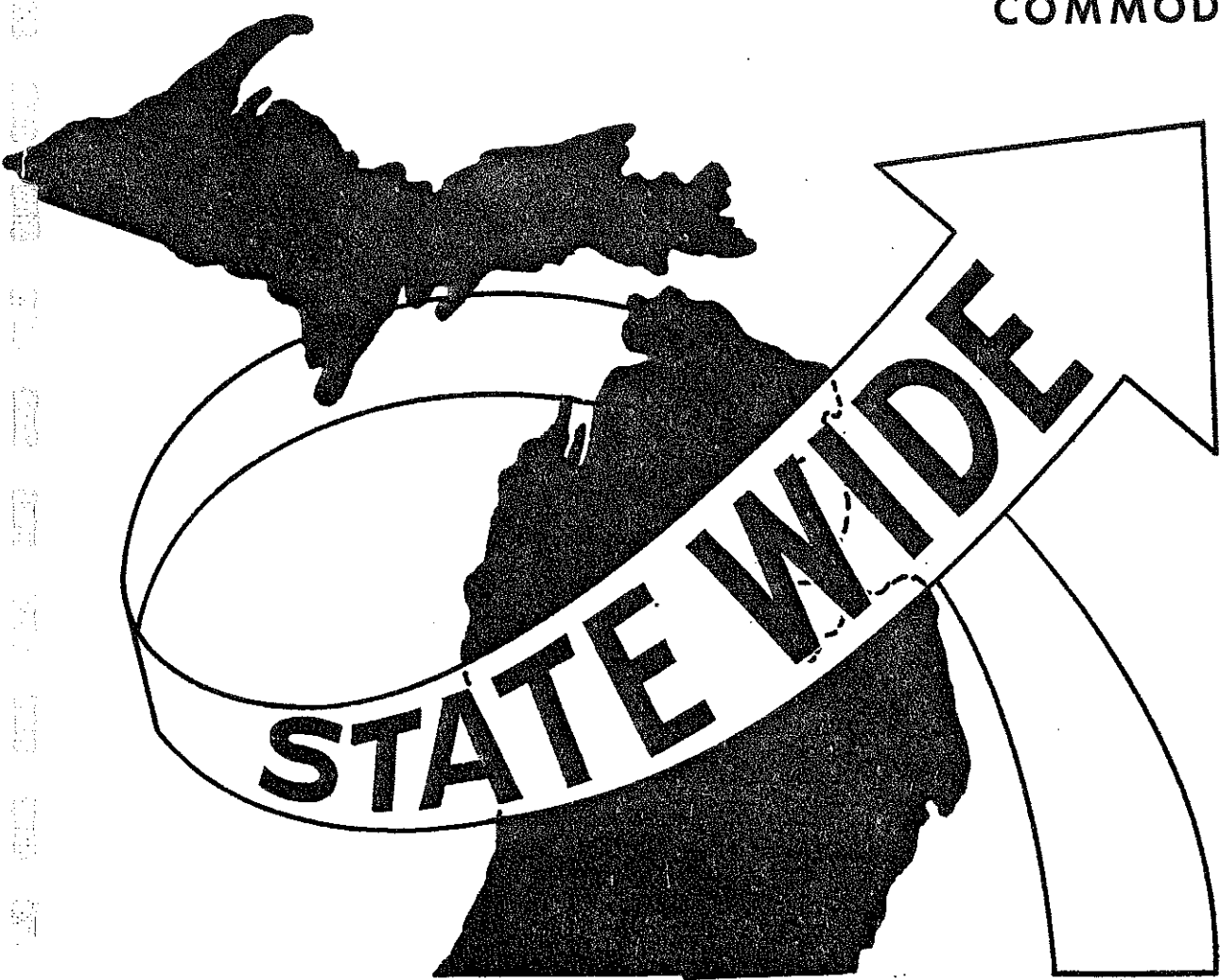
# STIGNACE TERMINAL TRIPS



**TRIP LENGTH**

**BY**

**COMMODITY TYPE**





This section contains trip length information about each of the 20 commodity types using all of the 1975 Minor O&D studies as one file.

They include:

Frankenmuth

Howell

Ionia

Iron River

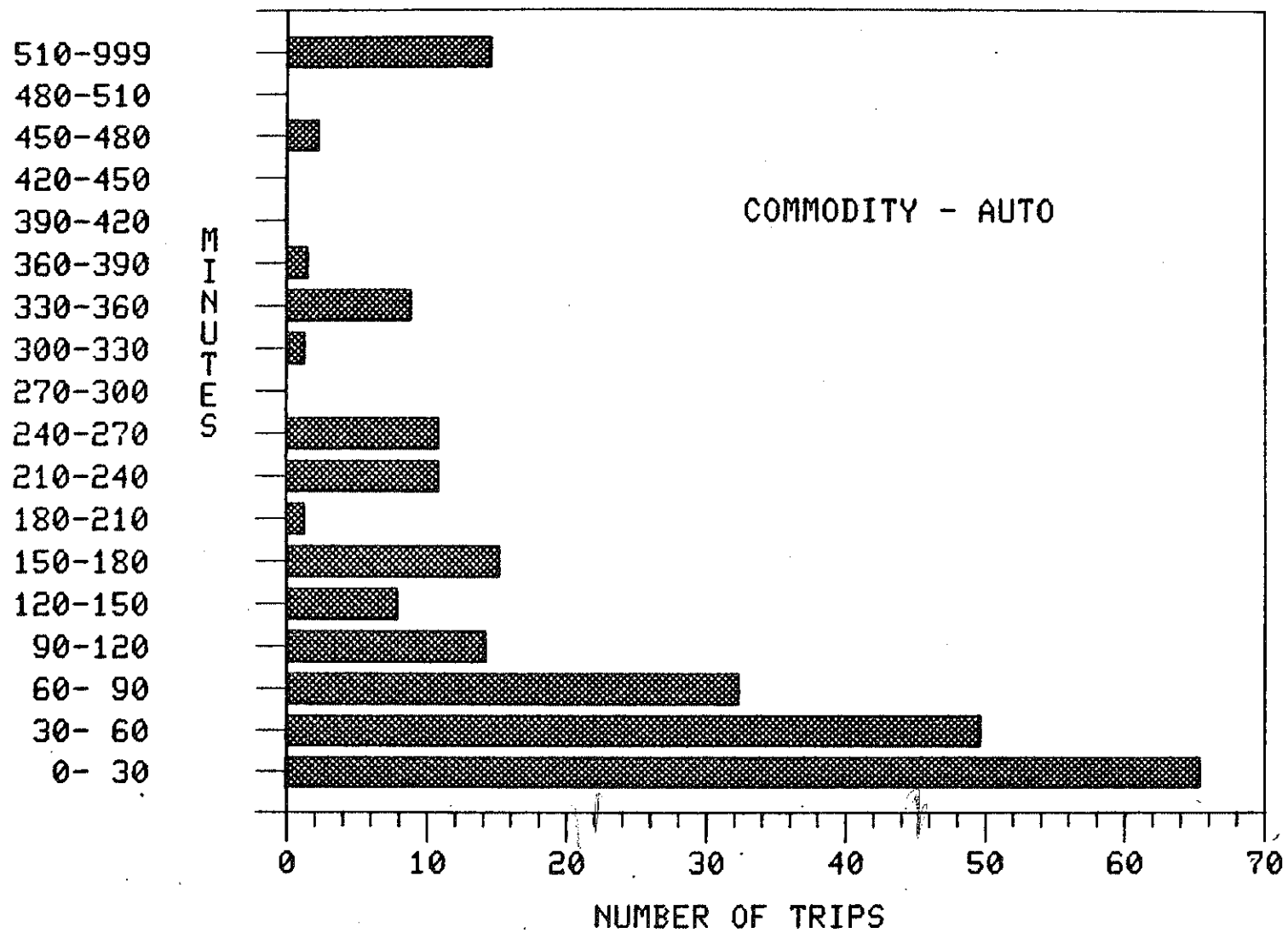
Ironwood

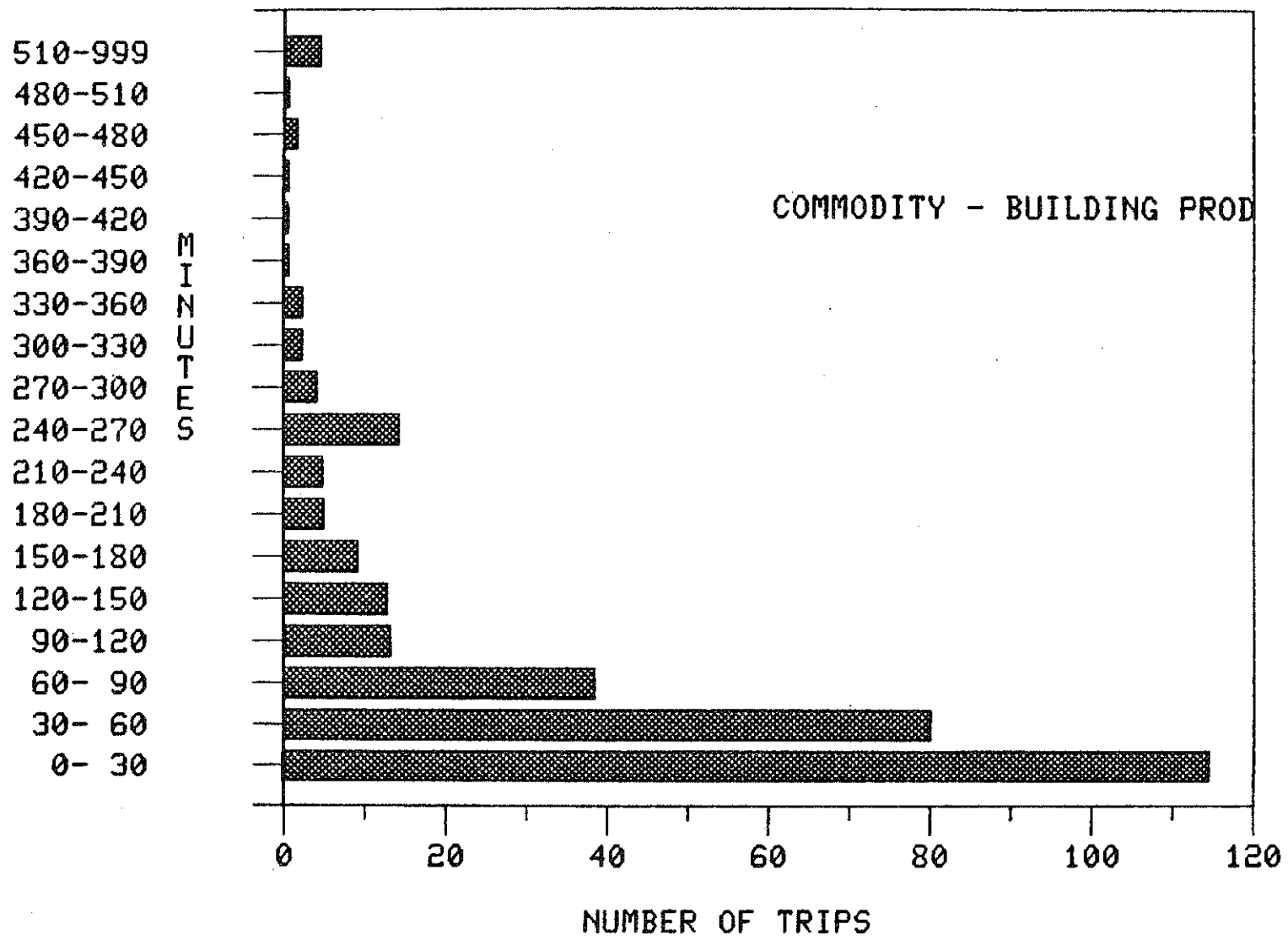
Marshall

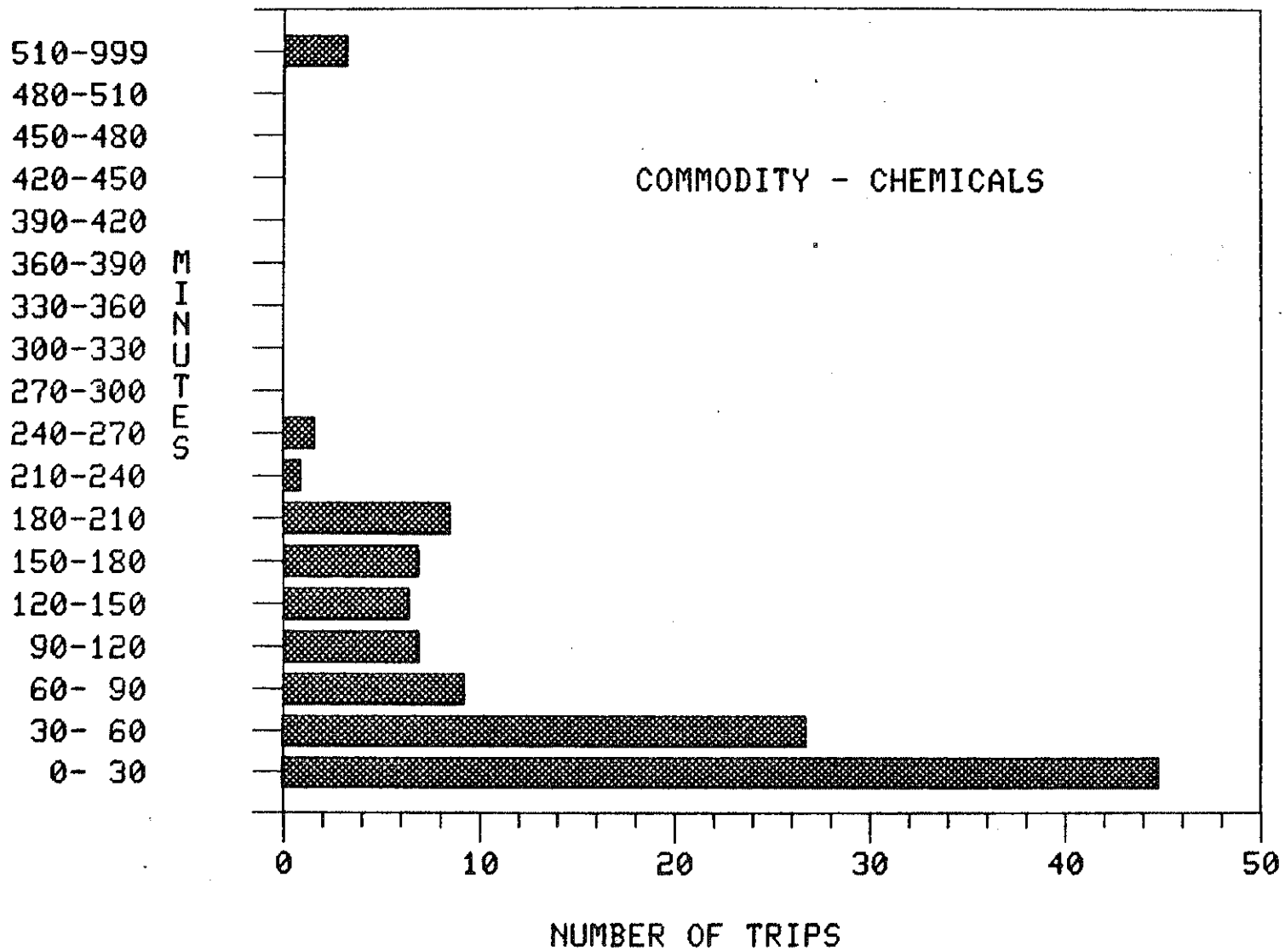
Paw Paw

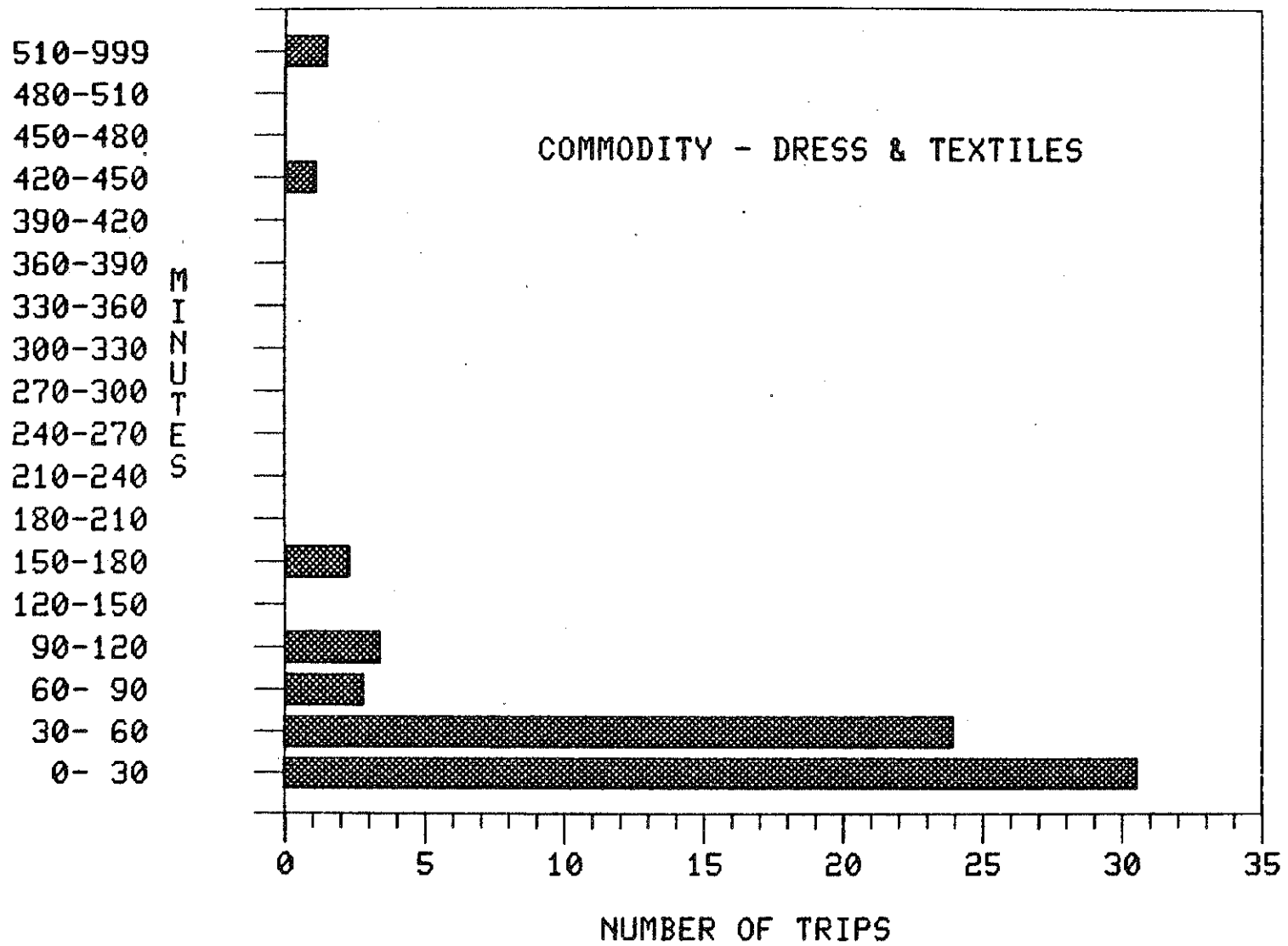
## 1975 MINOR O-D 'S

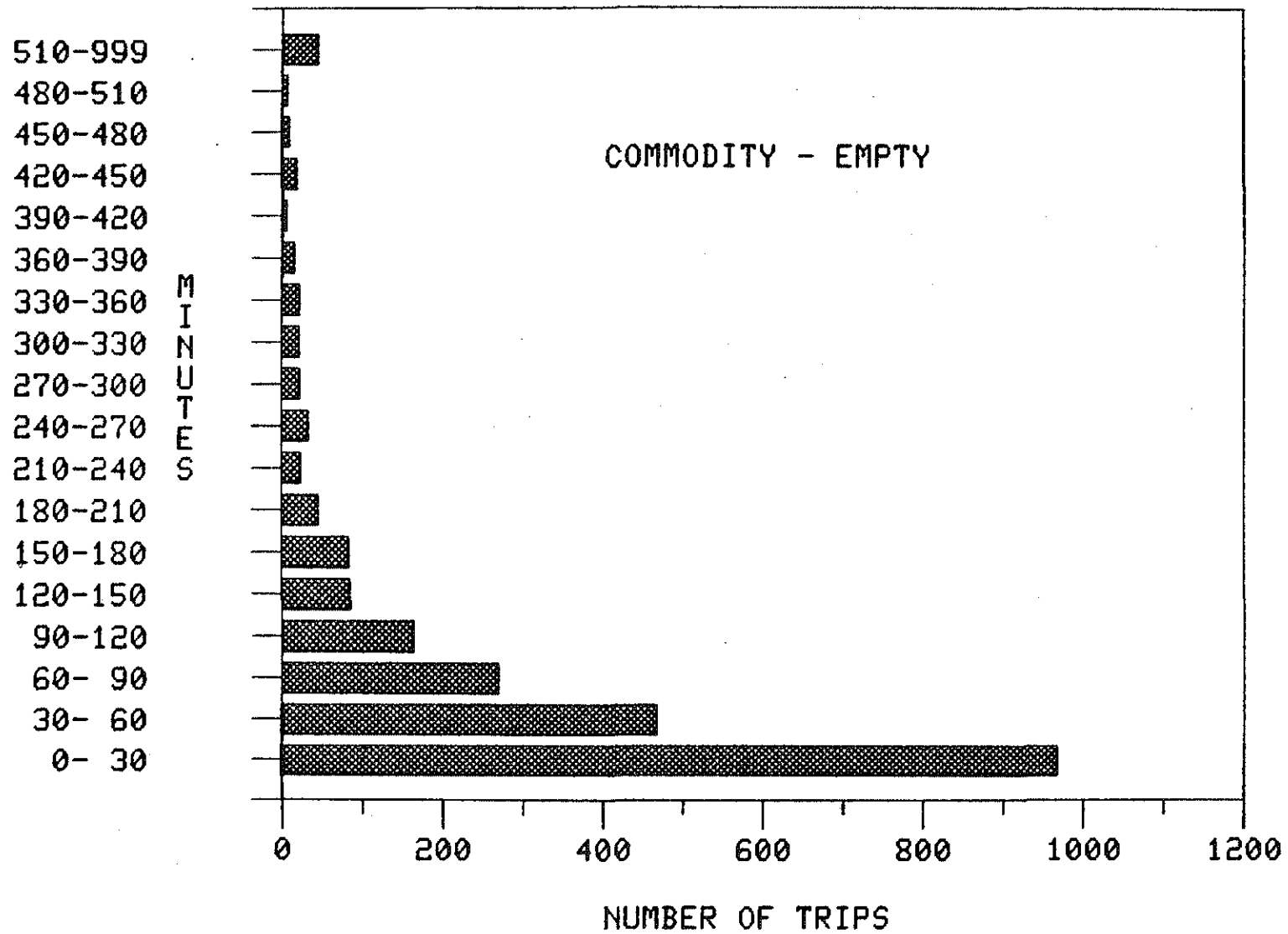
|                                     |         |         |           |                |
|-------------------------------------|---------|---------|-----------|----------------|
| A. AUTO                             | 239.99  | ( 3.4%) | TRIPS     |                |
| B. BUILDING                         | 327.89  | ( 4.6%) | TRIPS     |                |
| C. CHEMICALS                        | 119.33  | ( 1.7%) | TRIPS     |                |
| D. TEXTILES                         | 71.51   | ( 1.0%) | TRIPS     |                |
| E. EMPTY                            | 2489.64 | (34.3%) | TRIPS     |                |
| F. FOOD                             | 783.87  | (10.8%) | TRIPS     |                |
| G. GRAIN                            | 128.14  | ( 1.8%) | TRIPS     |                |
| H. FURNITURE                        | 124.92  | ( 1.8%) | TRIPS     |                |
| K. RECREATION EQ.                   | 5.58    | ( 0.1%) | TRIPS     |                |
| L. LIVESTOCK                        | 33.49   | ( 0.5%) | TRIPS     |                |
| M. MACHINERY                        | 318.84  | ( 4.4%) | TRIPS     |                |
| N. NURSERY STOCK                    | 25.32   | ( 0.4%) | TRIPS     |                |
| O. OTHER                            | 531.08  | ( 7.4%) | TRIPS     |                |
| P. PETROLEUM                        | 317.14  | ( 4.4%) | TRIPS     |                |
| R. RAW MATERIALS                    | 418.72  | ( 5.8%) | TRIPS     |                |
| S. METALS                           | 150.60  | ( 2.1%) | TRIPS     |                |
| T. TOBACCO, ETC.                    | 206.11  | ( 2.9%) | TRIPS     |                |
| U. UNKNOWN                          | 130.33  | ( 1.8%) | TRIPS     |                |
| W. PAPER                            | 158.21  | ( 2.2%) | TRIPS     |                |
| Z. SERV. VEHICLES                   | 688.36  | ( 9.5%) | TRIPS     |                |
| TOTAL NO. TRIPS WITH COMMODITY CODE |         |         |           | 7269.07( 4.6%) |
| TOTAL NO. ALL TRIPS                 |         |         | 158331.82 |                |

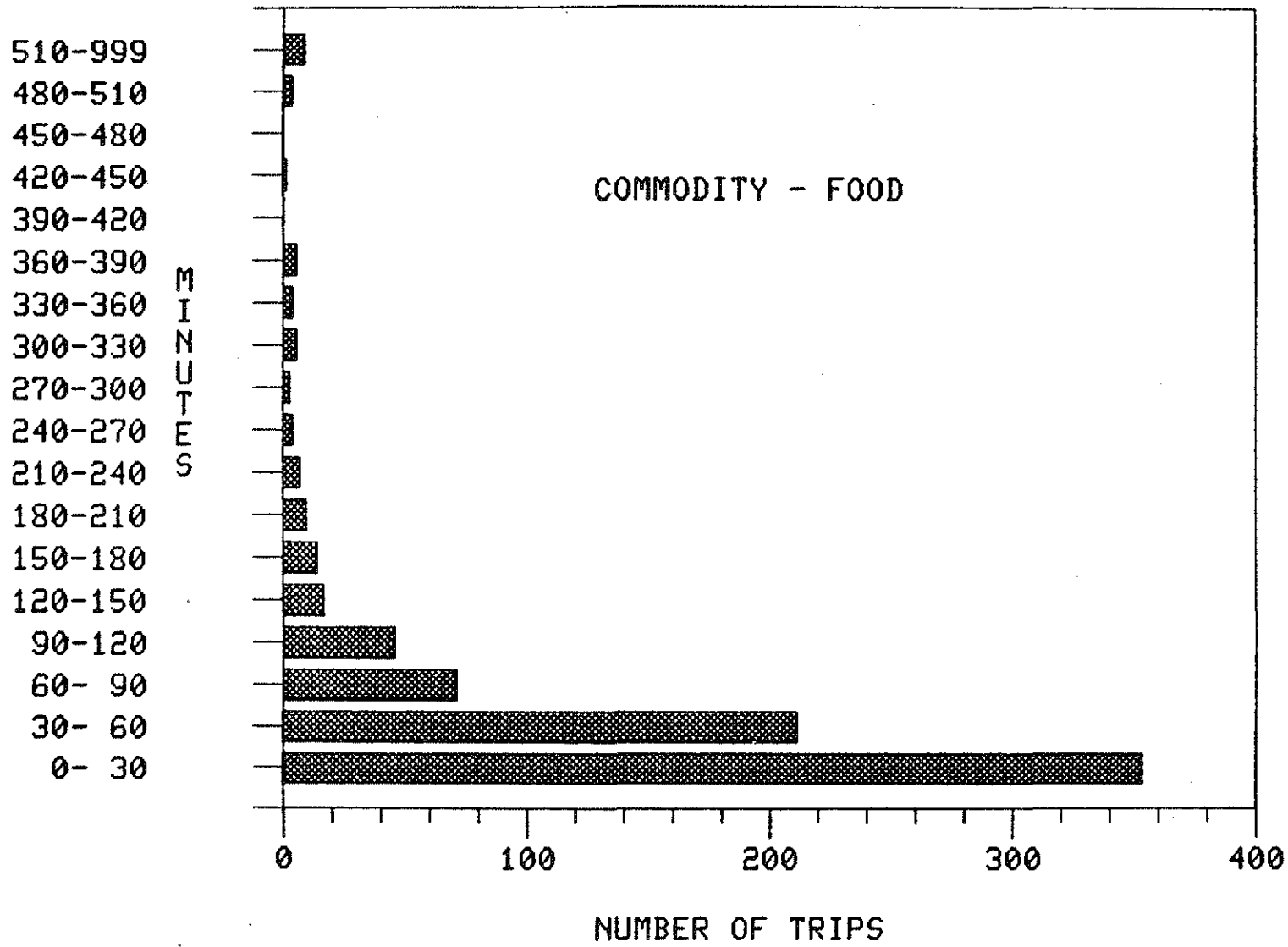










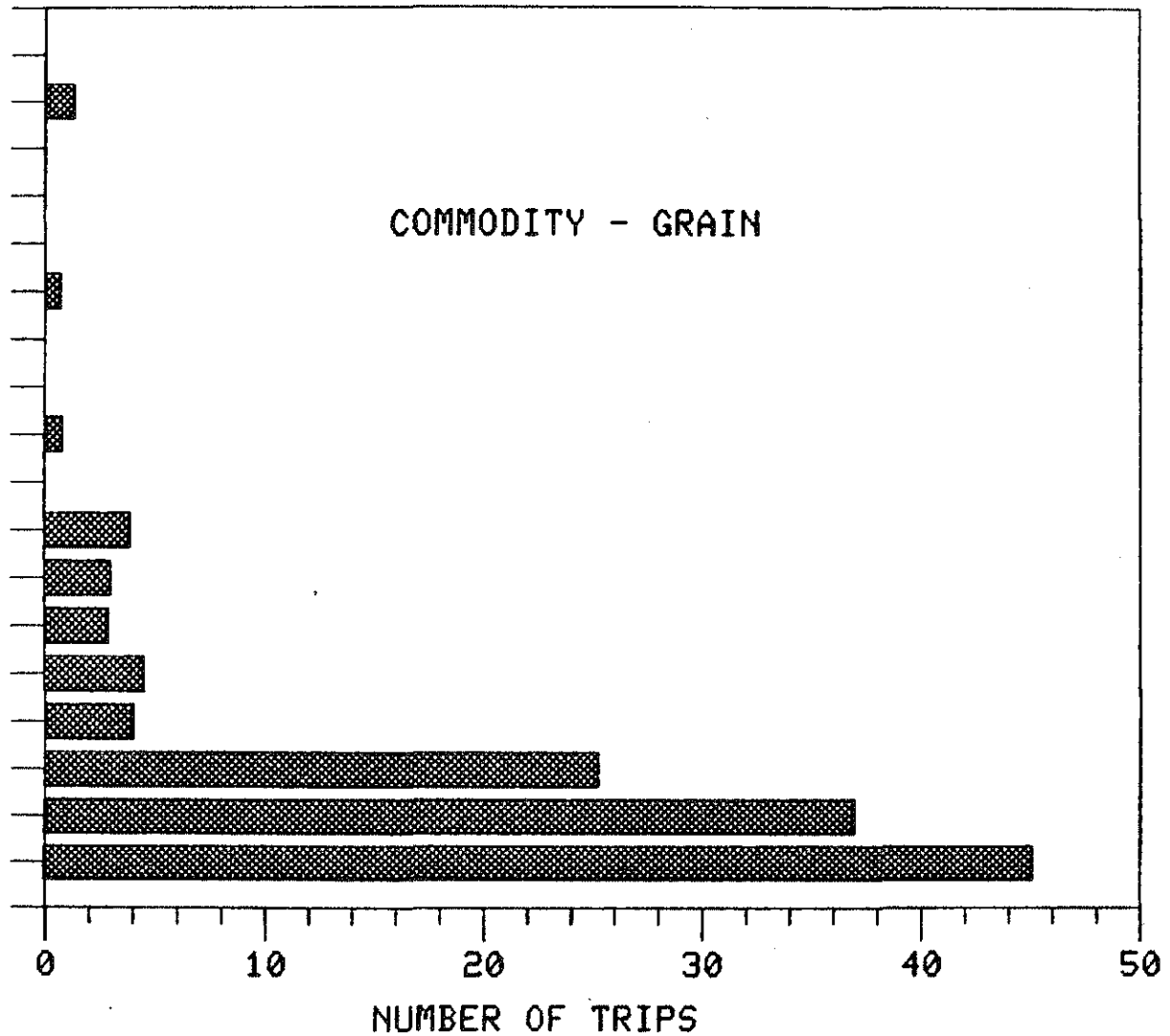


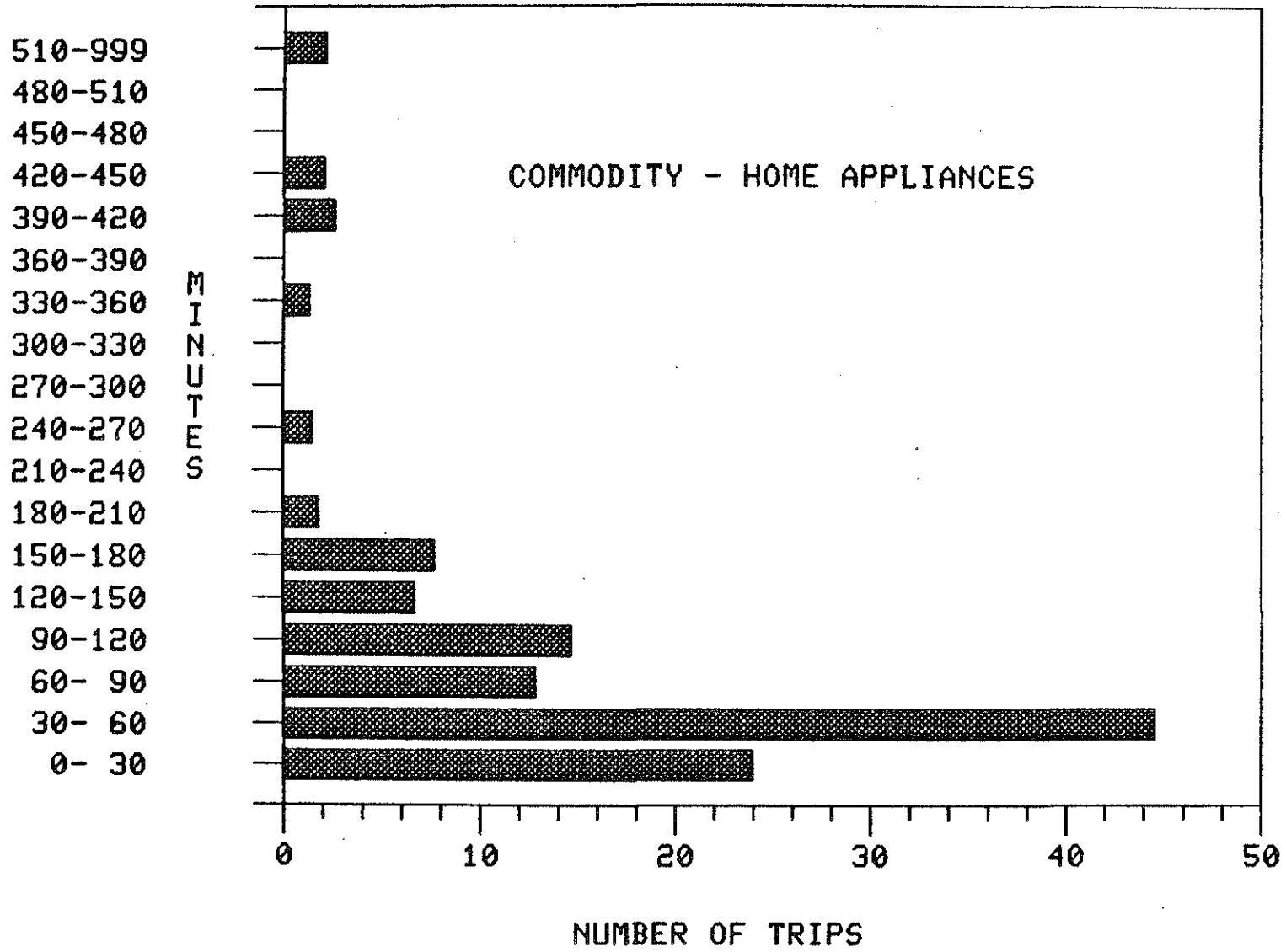


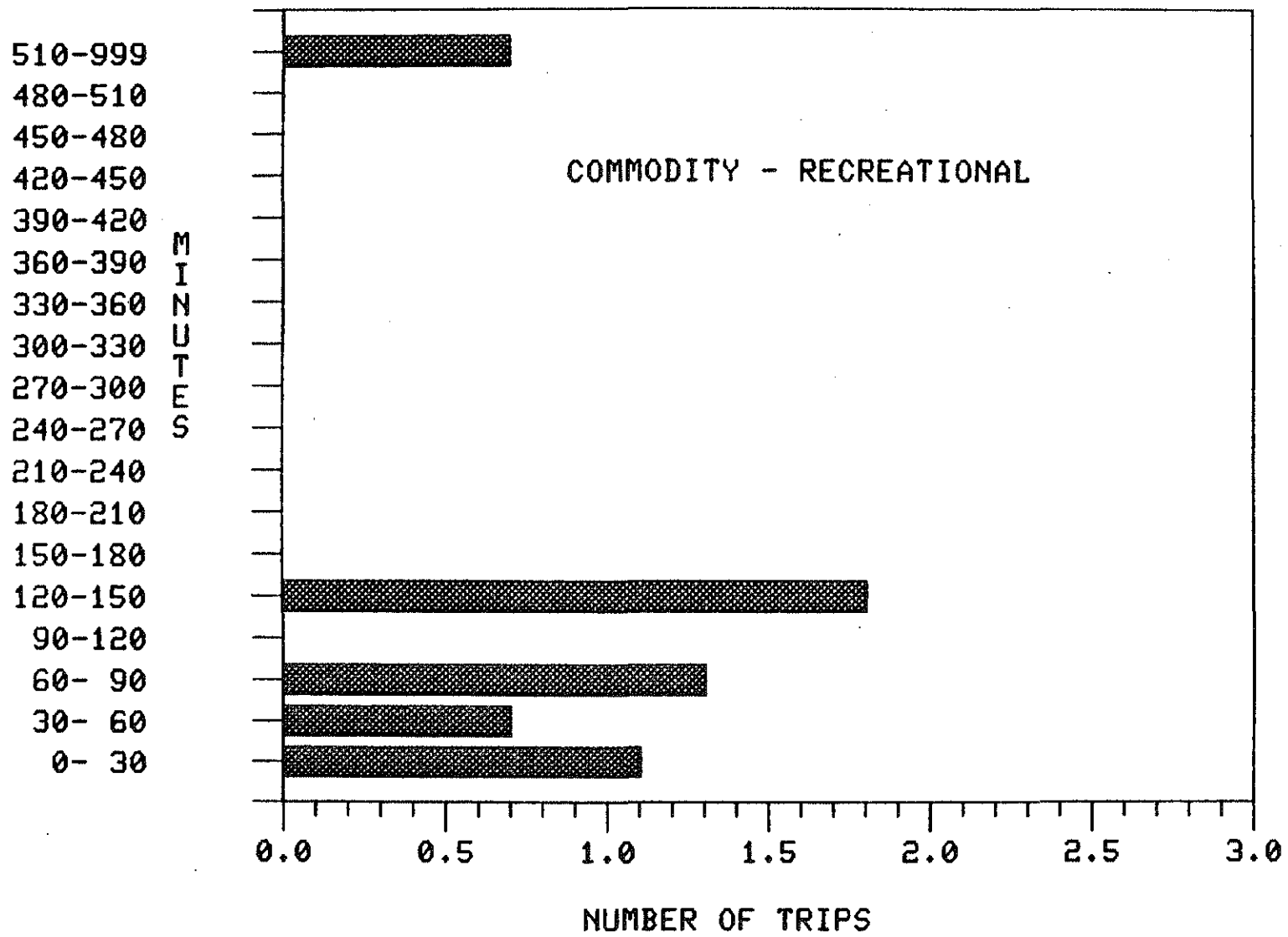
510-999  
 480-510  
 450-480  
 420-450  
 390-420  
 360-390  
 330-360  
 300-330  
 270-300  
 240-270  
 210-240  
 180-210  
 150-180  
 120-150  
 90-120  
 60- 90  
 30- 60  
 0- 30

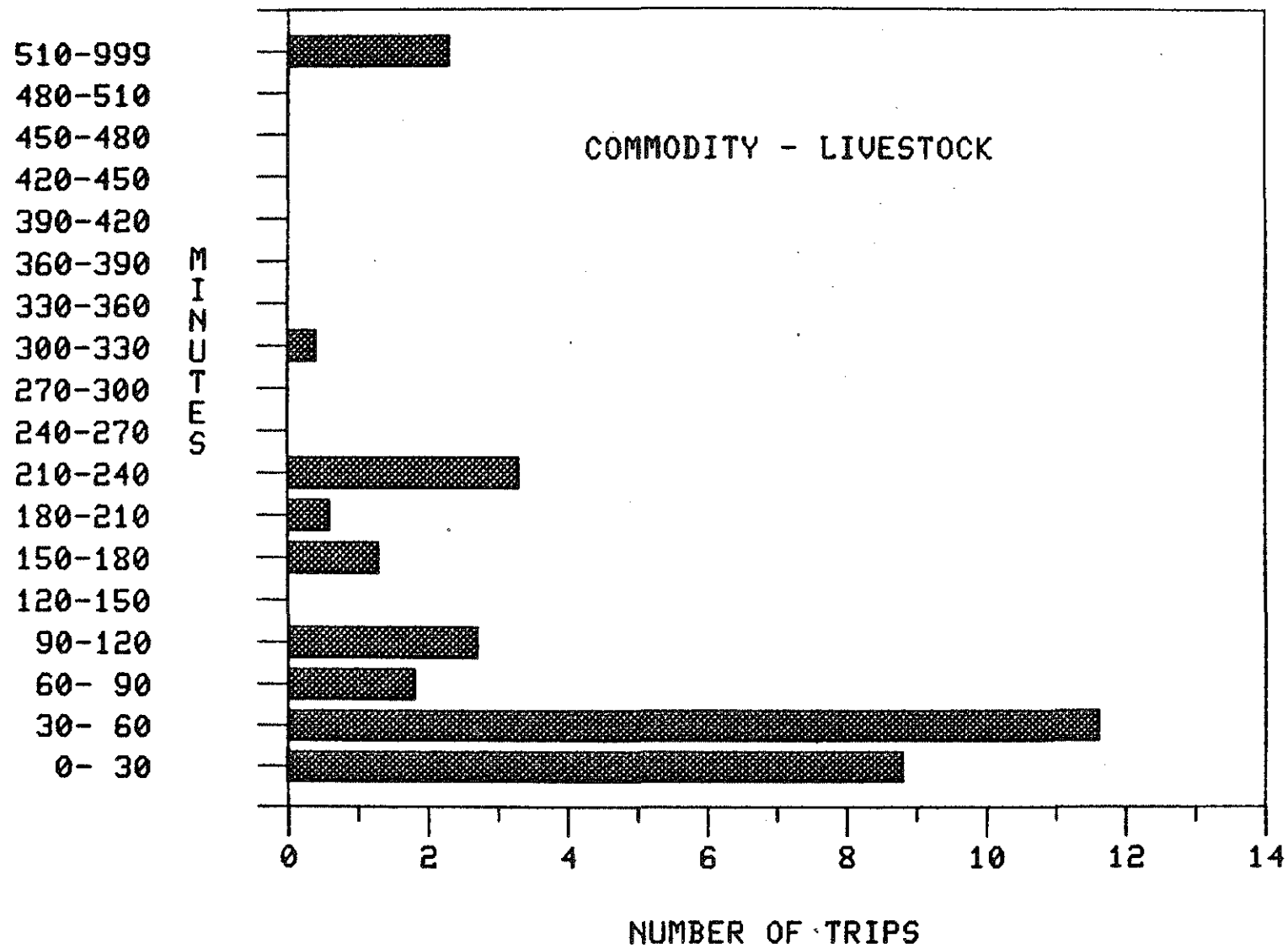
M I N U T E S

COMMODITY - GRAIN





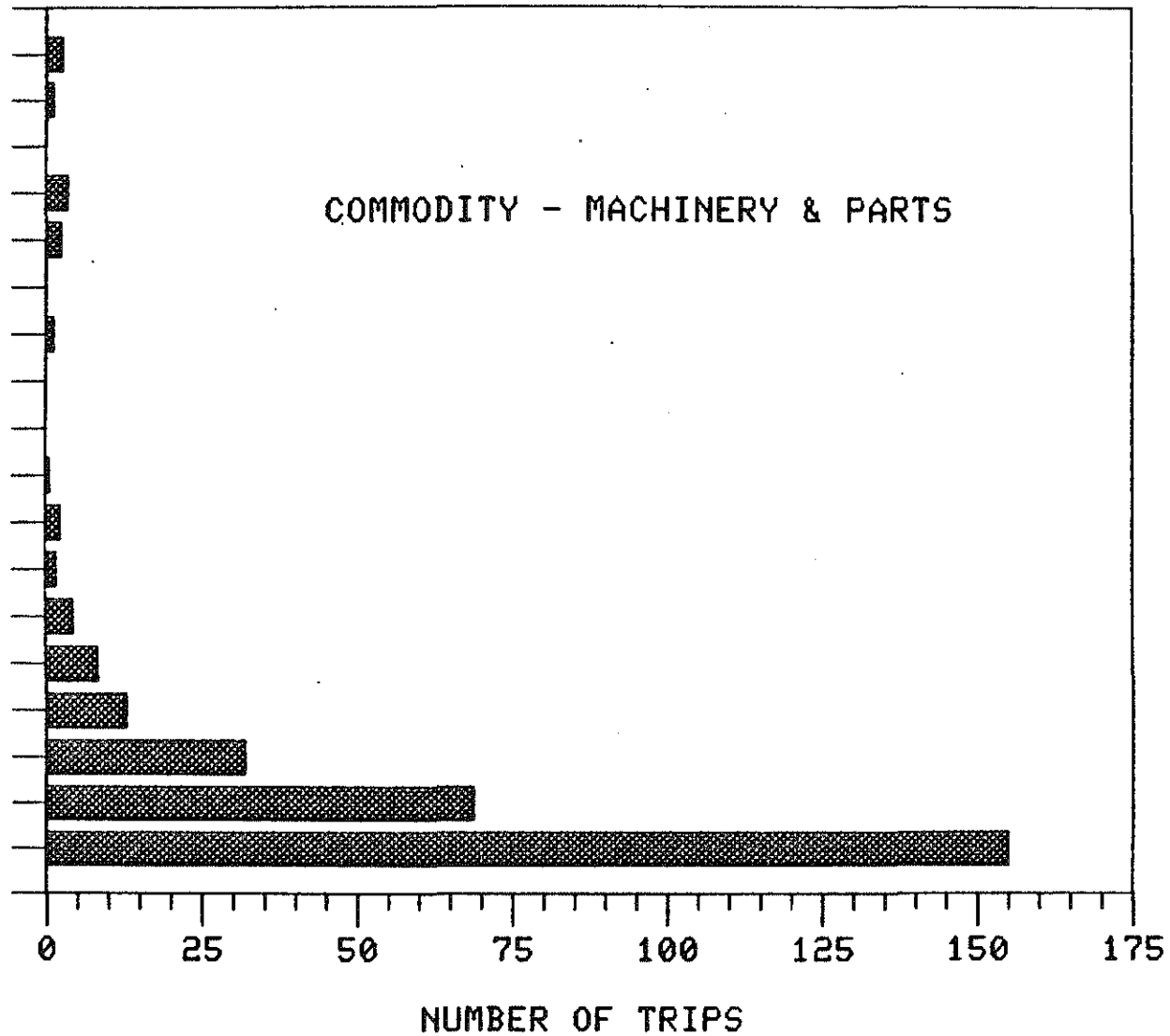


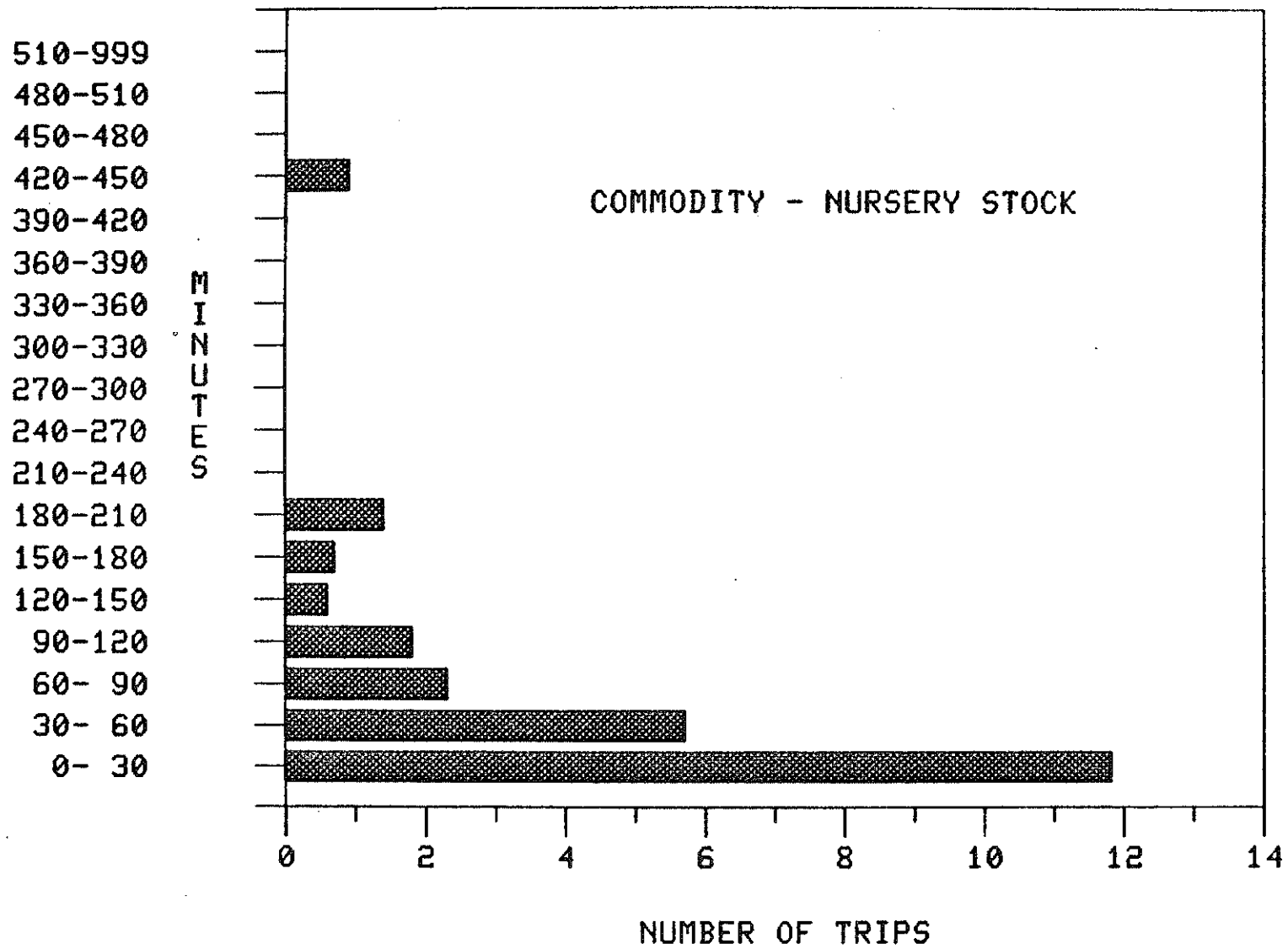


510-999  
480-510  
450-480  
420-450  
390-420  
360-390  
330-360  
300-330  
270-300  
240-270  
210-240  
180-210  
150-180  
120-150  
90-120  
60- 90  
30- 60  
0- 30

MINUTES

COMMODITY - MACHINERY & PARTS

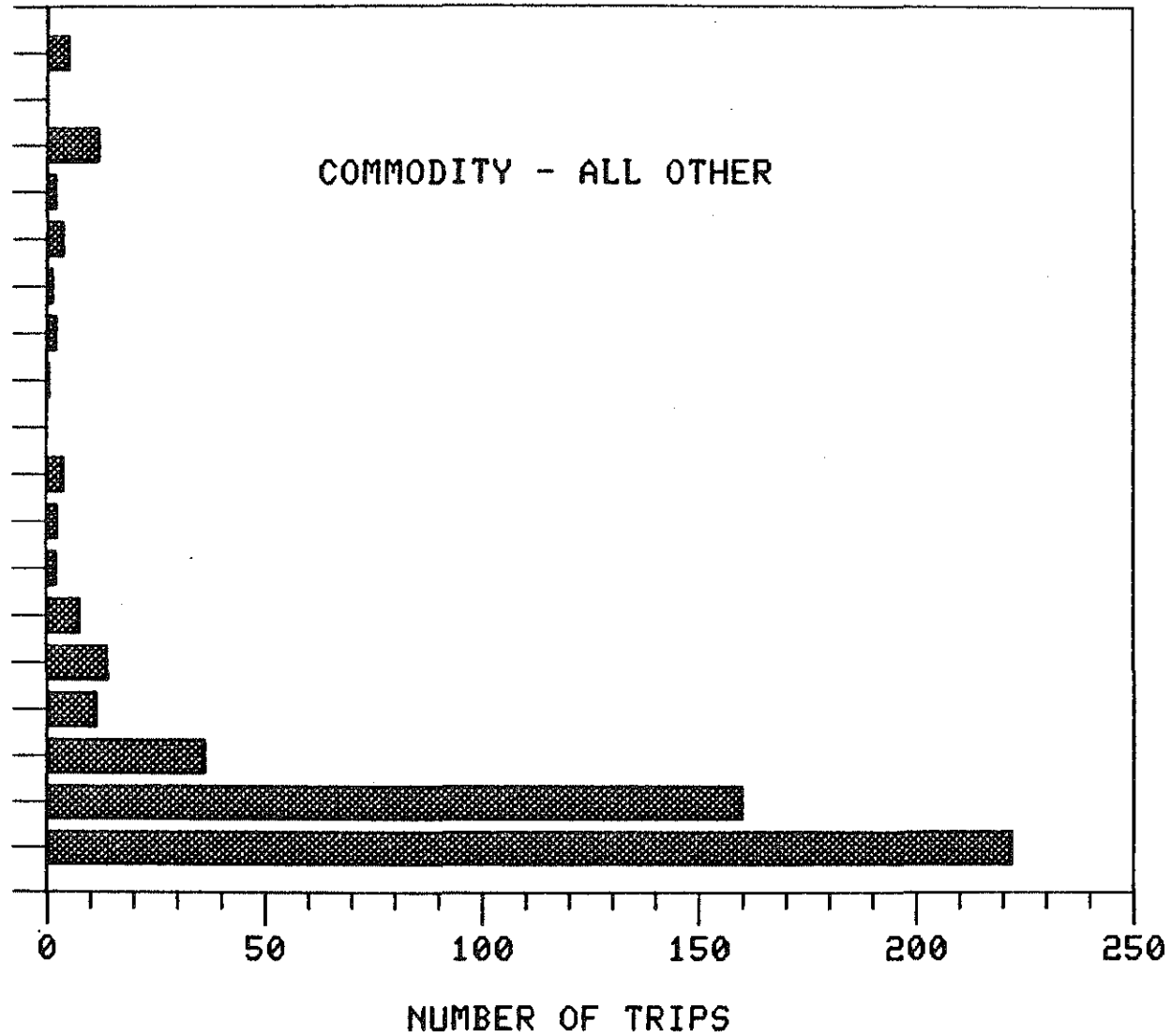


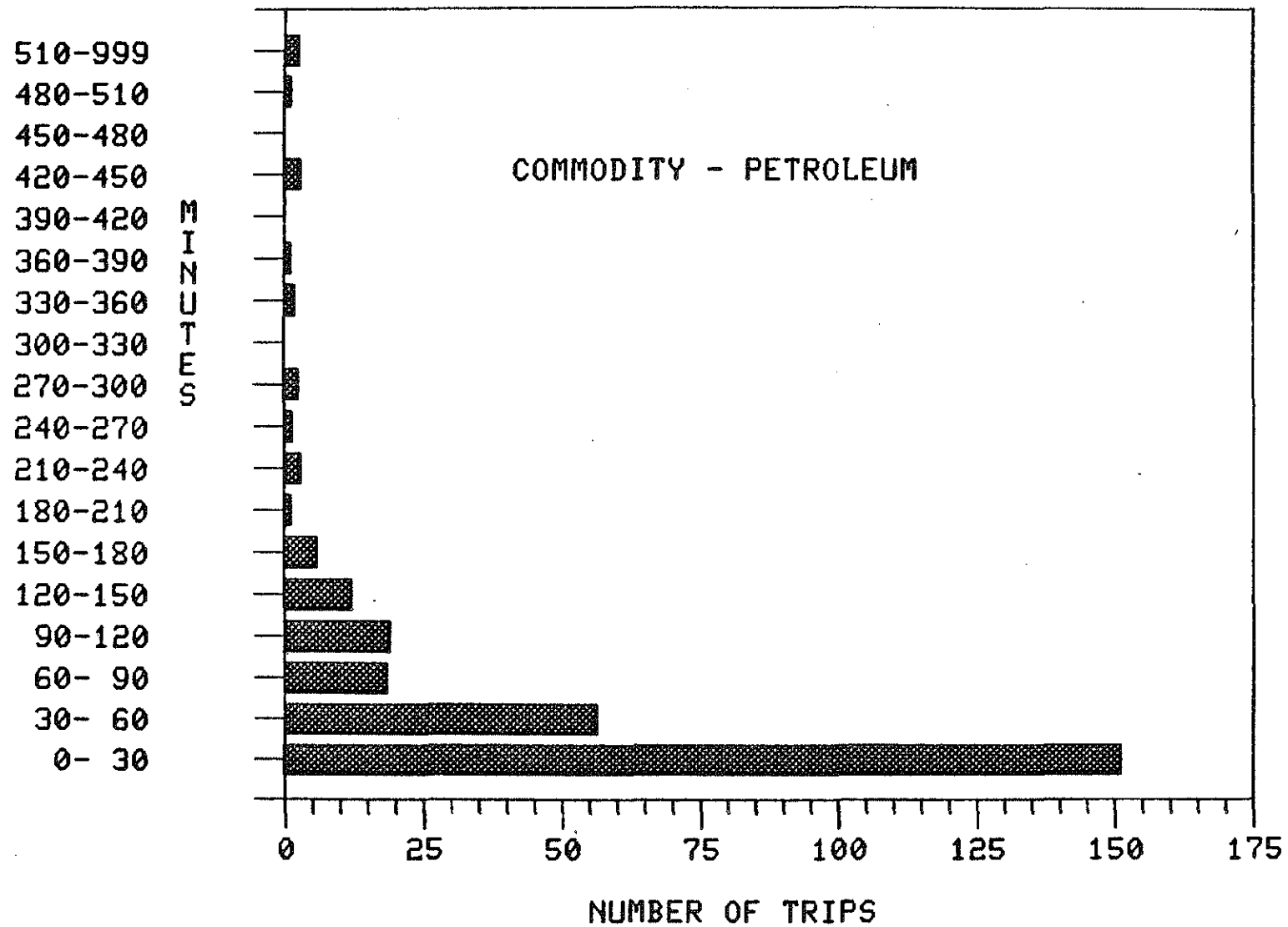


510-999  
 480-510  
 450-480  
 420-450  
 390-420  
 360-390  
 330-360  
 300-330  
 270-300  
 240-270  
 210-240  
 180-210  
 150-180  
 120-150  
 90-120  
 60- 90  
 30- 60  
 0- 30

M I N U T E S

COMMODITY - ALL OTHER



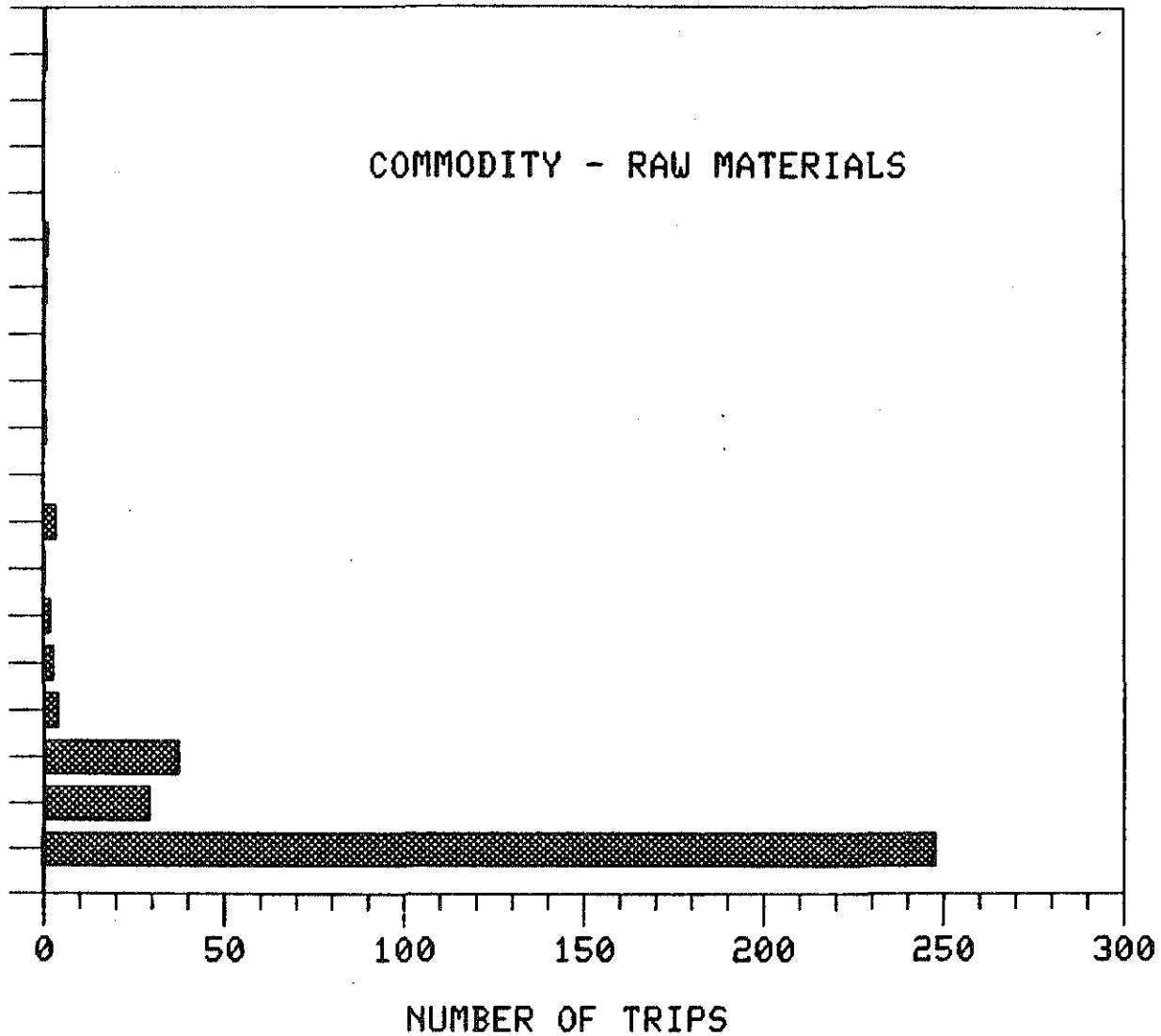


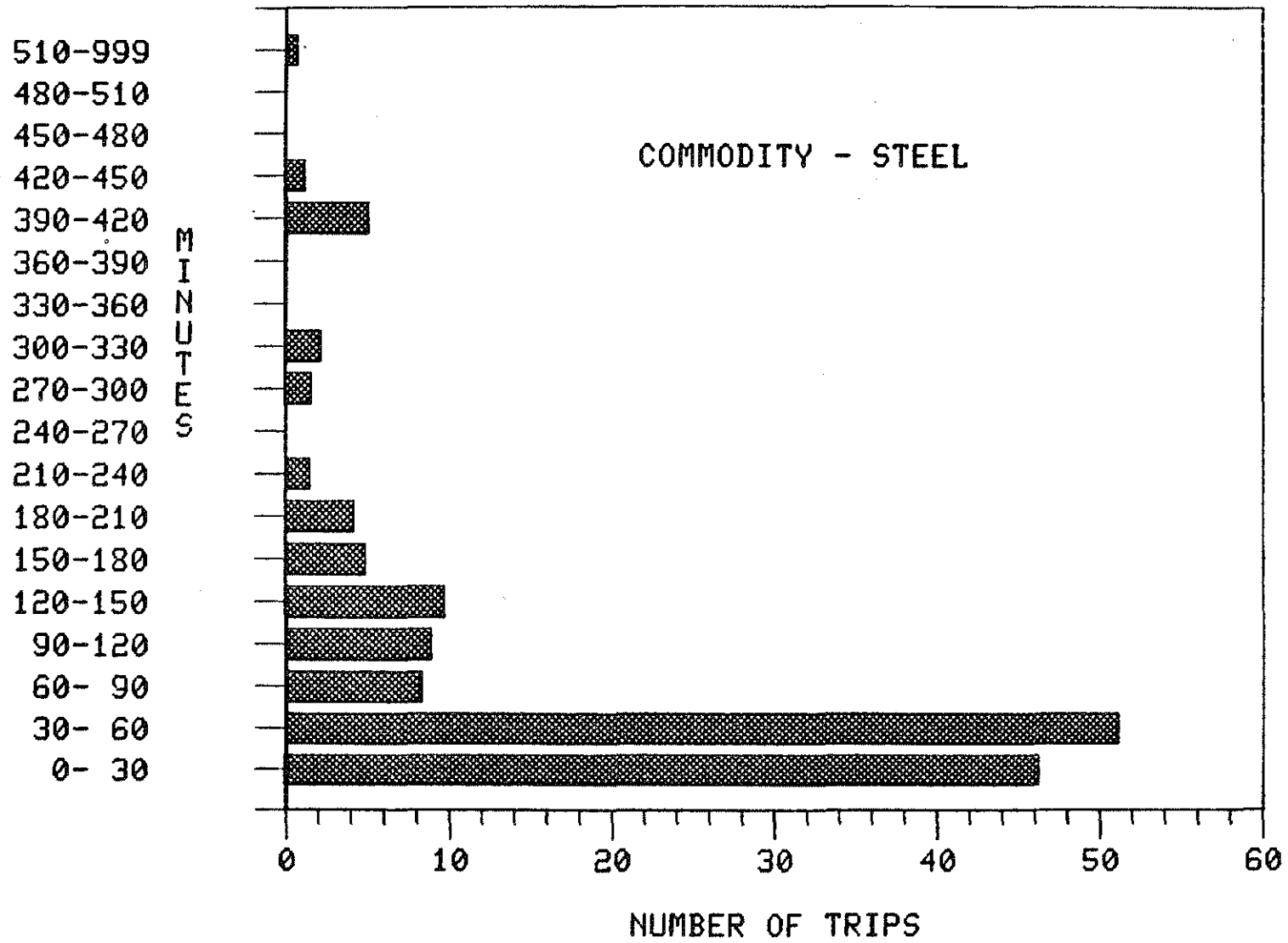


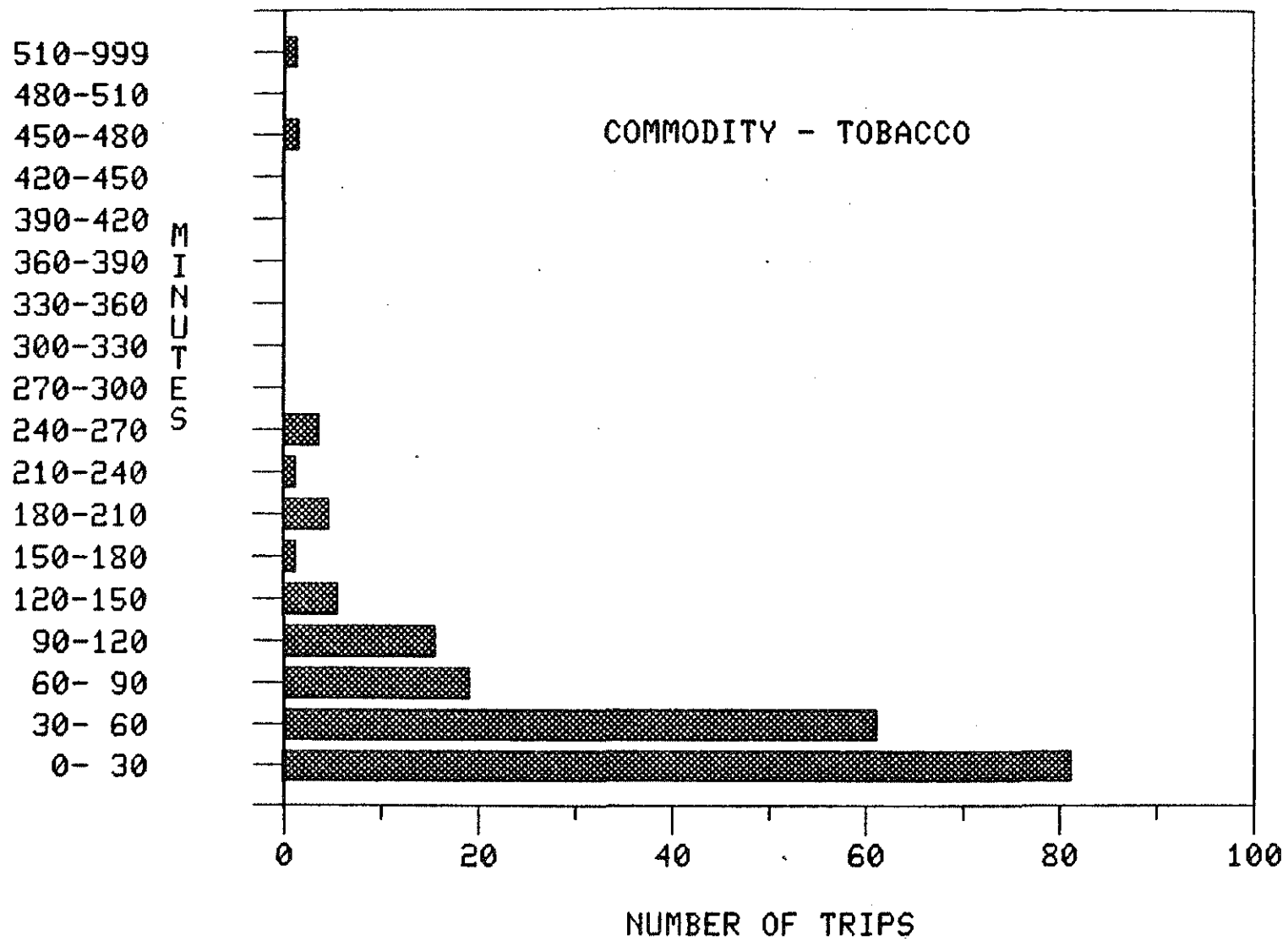
510-999  
480-510  
450-480  
420-450  
390-420  
360-390  
330-360  
300-330  
270-300  
240-270  
210-240  
180-210  
150-180  
120-150  
90-120  
60- 90  
30- 60  
0- 30

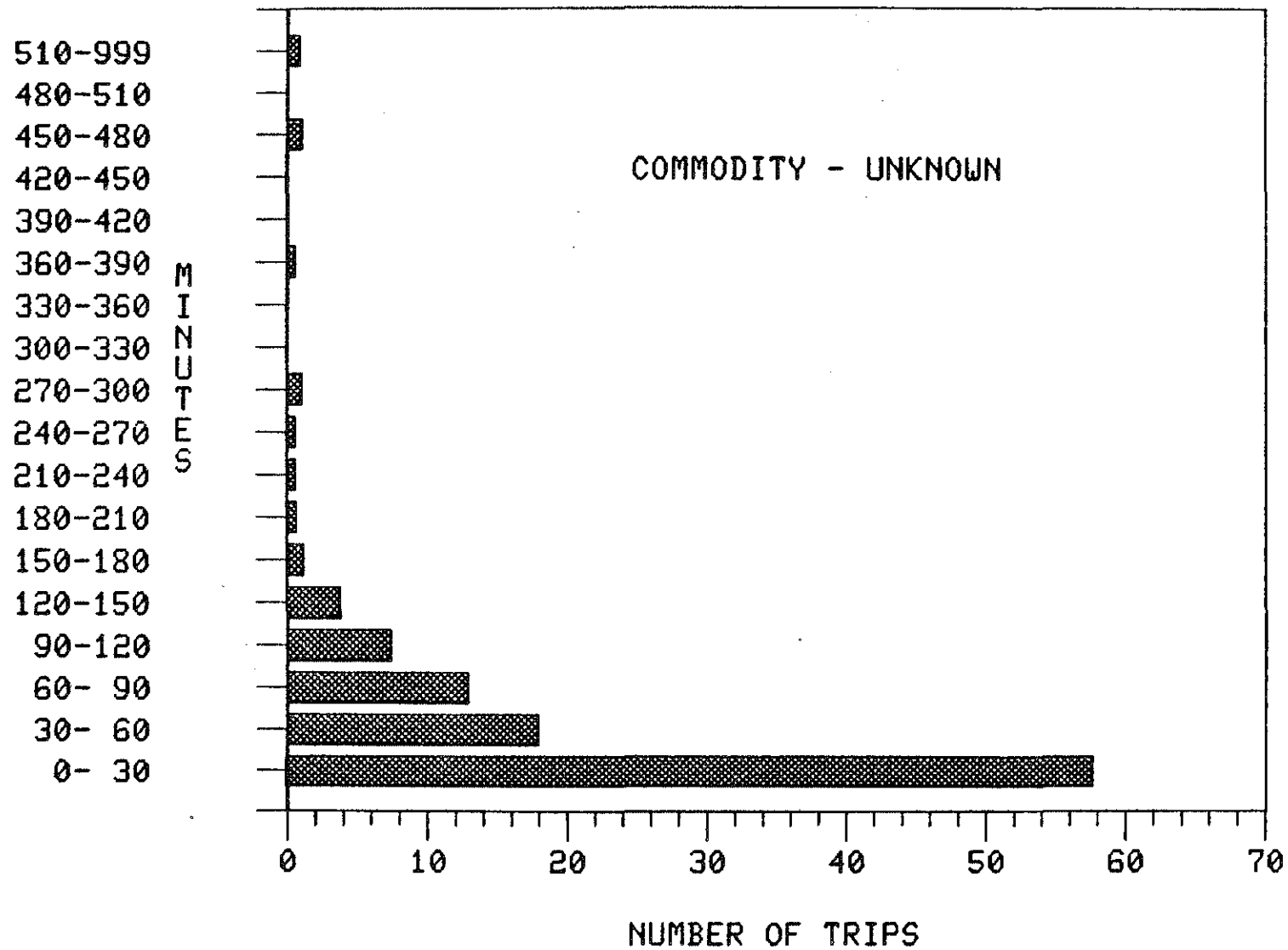
MINUTES

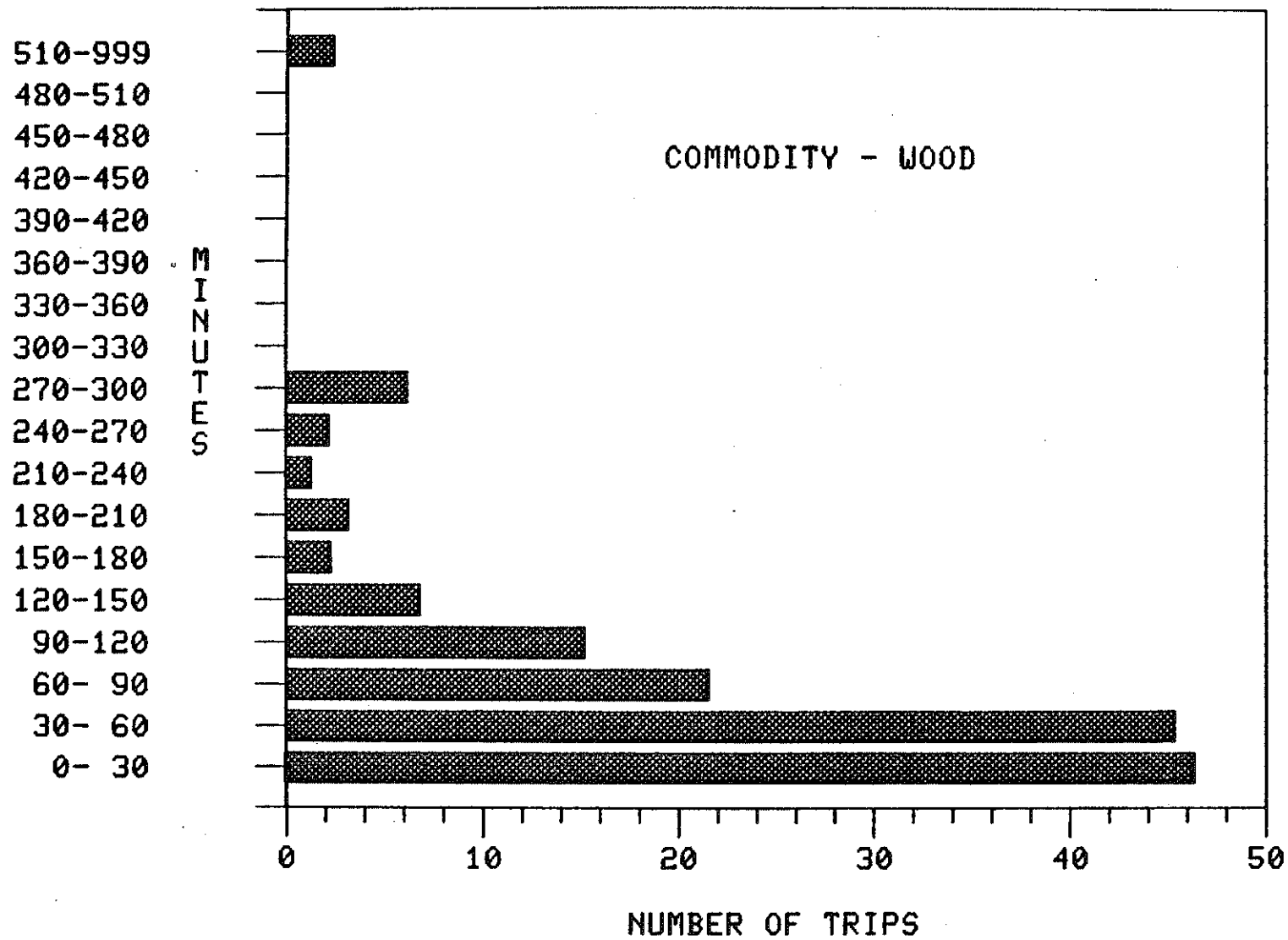
COMMODITY - RAW MATERIALS











510-999  
 480-510  
 450-480  
 420-450  
 390-420  
 360-390  
 330-360  
 300-330  
 270-300  
 240-270  
 210-240  
 180-210  
 150-180  
 120-150  
 90-120  
 60- 90  
 30- 60  
 0- 30

MINUTES

COMMODITY - SERVICE

