

## CATS 1990 Household Travel Survey Data Base Documentation

Three data files comprise the CATS Household Travel Survey (HHTS) database: a Household File, a Person File and a Trip File. Each file can be related to the others through several of the variables identified below. This file structure is becoming more prevalent for data base design and is modeled after the structure of the personal computer (PC) version of the National Personal Transportation Survey (NPTS).

Presented below is a variable by variable description of each of the data files. Included with this description is a suggested variable naming scheme, the size (length) of each variable and its location in the data base. All the variables in the public release version of the data base are in a numeric format.

### Household File (HHFILE)

The household file contains the household level data represented by the HHTS. The filename is HHFILE.TXT. It contains 19,314 records, representing the 19,314 households that returned completed surveys.

1. County Code Number (CNTYID--3 characters)

This field distinguishes the county or survey containment area where the household is located. Counties are identified by the Federal Information Processing Standard (FIPS) county code system. For areas below the county level, e.g. Chicago's Central Business District, a CATS developed coding system was used. Presented below are the definitions and codes for this variable:

County or Containment Area	Code
CBD	(999)*
Chicago minus CBD	(990)*
DuPage	(43)
Kane	(89)
Kendall	(93)
Lake	(97)
McHenry	(111)
Suburban Cook	(31)*
Will	(197)

\* Codes 999, 990 and 31 make up Cook County

## 2. Household Identification Number (HHID--5 characters)

Each household surveyed was assigned an identification number. The numbers were unique to each household unit within each survey area, but not across the nine areas. The identification number plus the county code number (CNTYID) form a number unique to each household. The first

identification number assigned in each area surveyed was 01001. The original survey questionnaires were serialized during the mailing and distribution phase of the survey. Since every distributed survey was not returned for processing, the household file contains information for those households that returned a survey which could be edited and coded. The resulting household file is sorted in order by CNTYID and HHID. For example, CNTYID = 031 HHID = 01001 would uniquely identify the first household record in the data base from Cook County. To ensure the confidentiality of the respondents, CATS has destroyed all links between the unique household identification number and the name and address of the survey respondent.

3. Total Persons (PERSONS--2 characters)

This value represents the total number of people in the household. It includes all people regardless of their trip-making, age or employment status.

4. Persons 14 and Over (OVER14--1 character)

Travel information was sought for individuals who were 14 years old or older. This field contains a count of these individuals for each household.

5. Persons Under 14 (UNDER14--1 character)

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In this field the total number of people in the household who are less than 14 years old is presented. The survey collected no personal or travel data for individuals less than 14 years old.

6. Number of Automobiles Owned (AUTOS--1 character)

The number of automobiles a household reported owning or keeping at home for use by its members is recorded in this field. This value plus the VANPICK value must be combined to arrive at the number of private vehicles available as reported by the Census Bureau in the 1990 Census of Population and Housing. After adding the two variables it is possible to make direct comparisons to the Census.

7. Number of Vans and Pickups Owned (VANPICK--1 character)

This is the number of vans and pick-ups of 1-ton or less capacity a household reported owning or keeping at home for personal use by its members. Combining this value with the number of automobiles (AUTOS) produces a value that in definitional terms is identical to the 1990 census measure of private vehicle availability.

8. Number of Motorcycles Owned (MCYCLE--1 character)

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This field contains the number of motorcycles a household reported owning or keeping at home for use by its members.

9. Number of Bicycles Owned (BICYCLE--1 character)

This is the number of bicycles a household reported owning or keeping at home for use by its members.

10. Number of Other Vehicles Owned (OTHVEH--1 character)

Shown in this field is a count of the "other" vehicles owned or kept at home for use by its members. To allow households to report any vehicles not captured by the modes specified above, an open-end category was included on the original questionnaire. Presented here is a count of those vehicles. For a detailed listing of these vehicles contact CATS Information Services Division.

11. Household Income Cohort (HINC--1 character)

This field contains a coded value that corresponds to a specific cohort identifying the annual household income. The coded values for this field are listed below.

Income	Code
Less than \$15,000	(1)
\$15,000 to \$24,999	(2)

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\$25,000 to \$39,999	(3)
\$40,000 to \$59,999	(4)
\$60,000 to \$74,999	(5)
\$75,000 to \$99,999	(6)
More than \$100,000	(7)
Unknown/Not Reported	(0)

12. CATS Geographic Home Reference Code (HOMECODE--8 characters)

This field contains the zone where the household is located. Household locations are coded to a quarter-section geography using CATS standard 8-digit coding scheme. For a complete explanation of this coding scheme refer to CATS Traffic Analysis Zone Structure for the 1990 Census Transportation Planning Package, CATS Working Paper 94-01.

13. Survey Geography Range/Township Code (RNGTWP--4 characters)

The survey range and township where the household is located is coded in this field. Range and township values represent a location relative to the principal meridian and base line

affecting northeastern Illinois. The principal meridian and base line form the basis for the Government Survey System (GSS) originally created as a system for describing land that was acquired by the United States following the

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American Revolution. For a more complete description of this system refer to CATS Working Paper 94-01 referenced above.

14. CBD CAAS/CUTD Zone Number (CBDCODE--3 characters)

In the mid 1970's a unique zone system was developed for the Chicago Business District (CBD) and its environs. These zones were formed under the Central Area Access Study (CAAS) of the Chicago Urban Transportation District (CUTD) which was bounded by North Avenue on the north, Ashland Avenue on the west, Cermak Road on the south, and Lake Michigan on the east. These zones represent a level of geography that can be as small as a city block within the downtown area. In the 1988 survey of Chicago CBD residents these zone numbers were used to code the home locations of all sampled households and all trip ends falling within the CUTD boundaries. Although this field will be blank for all households outside the CBD, households inside the CBD do have CAAS/CUTD codes in the (CBDCODE) field in addition to the CATS geographic home reference codes in the HOMECODE field. Appendix A contains a map of these zones.

15. Home Location Latitude (HOMELAT--7 characters)

This field contains the latitude coordinate for the center of the quarter-section zone (in the HOMECODE field) where

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the household is located. It is important to note that in terms of latitude and longitude coding, HOMECODE quarter-section latitudes were used for CBD households.

16. Home Location Longitude (HOMELONG--8 characters)

This field contains the longitude coordinate for the center of the quarter-section zone in the HOMECODE field where the household is located. Pairing this code with the HOMELAT code produces the complete latitude/longitude for the quarter-section zone where the household is located.

17. Weight (WGT--7 characters)

This is the adjustment factor that must be applied to the record to make it reflect the characteristics of the population. Population totals are the product of the Decennial Census Counts. The factors in this field were developed after performing an adjustment to correct for potential bias in the sample. This factor or weight is the same across all three files in the data base.



## Person File (PERFILE)

The Person File is the personal information on the individuals in the household over 14 years of age regardless of whether they traveled during the survey day. As will be

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seen, two of the variables are the same as those in the Household File (HHFILE). This facilitates the linking of the data files.

### 1. County Code Number (CNTYID--3 characters)

This distinguishes the county or survey containment area where the household is located. It is coded the same and is in fact, the same CNTYID variable that is on the HHFILE. Along with HHID and PERID, it is one of the variables that links information between the household, person and trip files.

### 2. Household Identification Number (HHID--6 characters)

As with the CNTYID variable, this is one of the linking variables. It is the same as the HHID in the HHFILE. Combining HHID with the CNTYID and PERID forms a unique number that will link the person data in the PERFILE to the household data in the HHFILE, and trip data in TRIPFILE.

### 3. Person Number (PERID--1 character)

Each member of the household who was 14 years old or older was assigned a number. A number was assigned for every person, regardless of whether or not the individual reported making trips. Within each household these numbers are in

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sequential order starting with the number 1. The oldest person in the household is coded (1). The next oldest person is coded (2) and so on by year of birth in descending order.

### 4. Relationship Code (REL--2 characters)

This is an encoded number representing the person's relationship to person number 1 in the household. Person number 1 was identified by the respondents as the oldest person in the household. Although there are 32 relationship codes, the 5 most used codes include; Self (1), Spouse (2), Son (3), Daughter (4) and Friend/Roommate (5). The remaining 27 are:

Brother	(6)	Sister-in-law	(20)
Sister	(7)	Niece	(21)
Employee	(8)	Nephew-in-law	(22)
Unknown	(9)	Brother-in-law	(23)
Nephew	(10)	Mother-in-law	(24)
Fiance	(11)	Housekeeper/Babysitter	(25)

Daughter-in-law	(12)	Step-Daughter	(26)
Grandson	(13)	Father-in-law	(27)
Granddaughter	(14)	Mother	(28)
Grandnephew-in-law	(15)	Great Grandson	(29)
Grandniece	(16)	Cousin	(30)
Great Grandnephew	(17)	Step-Son	(31)
Son-in-law	(18)	Niece-in-law	(32)
Grandson-in-law	(19)		

#### 5. Birth Year (BIRTH--4 characters-CCYY)

This is the year the individual was born.

#### 6. Age (AGE--3 characters)

This value corresponds to the age of the individual in the year the survey was administered. To identify the specific year when the survey was conducted look at the travel date (TRAVDATE), item 19 below.

#### 7. Gender (SEX--1 character)

The gender or sex of the individual is coded in this field with a male as (1) and a female as (2).

#### 8. School Enrollment Status (INSCHOOL--1 character)

This is an encoded variable that identifies an individual's school enrollment status. An individual can be a full-time student (1), part-time student (2), not in school (3) or not reported (0).

9. Employment Indicator (WORKER--1 character)

Since the respondents could identify their employment status as Employed Full-Time, Employed Part-Time, Homemaker,

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Student, Unemployed, Retired, Other or a combination of these choices, within the limits of the editing logic (Refer to the explanations of editing logic in employment status categories below) an unconditional variable was needed. This is a coded variable that identifies whether the individual was employed or not. It does not concern itself with the full or part-time status of the individual. If the individual is employed the code is a (1), if not employed the code is a (0).

10. Full-Time Employment Status (FULLTIME--1 character)

This, as well as the 6 following status variables, are yes/no variables with yes (1) and no (0). Under the logic of the survey it is acceptable for a person to be employed and not have any work or work related trips. A person may be employed full-time in combination with any of the other

employment status categories, except unemployed.

11. Part-Time Employment Status (PARTTIME--1 character)

This is a yes (1)/ no (0) variable. Just as with the full-time employment status an individual may be a part-time worker without any work trips. Also, a person may be employed part-time in combination with any of the other employment status categories, except unemployed.

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12. Homemaker Status (HOMEMKR--1 character)

This is a yes (1)/ no (0) variable. A homemaker may not report having made any work or work related trips unless the "Employed Full-Time" or "Employed Part-Time" boxes are also checked. It is possible for an individual to be considered a homemaker in combination with any of the other status codes.

13. Student Status (STUDENT--1 character)

This is a yes (1)/ no (0) variable and follows the same logic as homemaker. One note is that to be a student one had to be enrolled in school (item 8 above).

14. Unemployed Status (UNEMPL)

This too was yes (1)/ no (0) variable. However, it is worth a note that any individual who reported being unemployed could in no case be considered to be a full or part-time worker. It was unacceptable for a person to be unemployed and to have reported making a work or work-related trip. A person could, however, be unemployed and a homemaker, a student, retired and/or other at the same time.

15. Retired Status (RETIRED--1 character)

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This yes (1)/ no (0) variable follows the same logic as homemaker.

16. Other Personal Status (OTHSTAT--1 character)

This field is the final field that attempts to classify employment status. In the original questionnaire this was an opened ended question. If the respondent filled in this field, it is coded as a (1). A (0) indicates the field was left blank. For a detailed listing of the responses in this field contact CATS Information Services Division.

17. Occupational Classification (OCCUP--2 characters)

This encoded variable represents the respondent's

occupation. Fifteen occupation codes were assigned and shown below. Because the survey collected household rather than work-place data, the HHTS questionnaire did not ask for information on the respondents' industry which is commonly collected on activity based surveys. The codes listed below are comparable to the occupation code classification used by the Census.

Classification	Code
Professional, Technical and Kindred Workers	(0)
Farmers and Farm Managers	(1)
Managers, Officials and Proprietors	(2)

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Clerical and Kindred Workers	(3)
Sales Workers	(4)
Craftsmen, Foreman and Kindred Workers also Armed Forces	(5)
Operatives and Kindred Workers	(6)
Private Household Workers	(7)
Service Workers Except Private Household	(8)
Laborers and Farm Workers	(9)
Housewives and Unpaid Workers	(10)
Students	(11)
Unemployed	(12)
Retired or Permanently Incapacitated for Employment	(13)

Occupation Unknown or Not

Elsewhere Classified

(14)

18. Number of Trips Made (TOTTRIPS--2 characters)

This is the total number of trips the individual made on the survey reference day. Trip-making was allowed to start no earlier than 4:00 AM on the reference day and to end no later than 4:00 am the following morning. Fields with a zero indicate that no trips were made. If no trips were made the survey questionnaire also captured the reason for not

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traveling. A detailed listing of these reasons is available by contacting CATS Information Services Division.

19. Travel Date (TRAVDATE--6 characters)

This is the date for which the respondents reported their travel. In addition to the travel date, there were three alternate dates (all Thursdays) on which to report travel. The format for this variable is DDMMYY where D=Day, M=Month, and Y=Year.

20. Trips Start at Home Indicator (TRIPSTRT--1 character)



This variable is a quick way to identify where the individual's first trip of the day began. It is coded with a (0) if no travel was made, (1) if the trip began at home, and (2) if travel began elsewhere. It can be used as a check when analyzing the first trip of the day which may or may not start in the same zone as the home.

#### 21. Weight (WGT--7 characters)

This is the expansion factor applied to the household's survey data to make it reflect the characteristics of the population. This weight is the same across all three files, the HHFILE, the PERFILE, and the TRIPFILE.

#### Trip File (TRIPFILE)

##### 1. County Code Number (CNTYID--3 characters)

This distinguishes the county or survey containment area where the household is located. It is identical to the CNTYID variable associated with the HHFILE and PERFILE. It is one of the linking variables across the 3 file database.

##### 2. Household Identification Number (HHID-6 characters)

As with the CNTYID variable, this is one of the linking variables. It is the same as the HHID in the HHFILE. Combining this number with the CNTYID and PERID forms a unique number that will link the person data in the PERFILE to the household data in the HHFILE.

### 3. Person Number (PERID--1 character)

This is the same person number that was assigned to each person in the household who is 14 years old or older. It corresponds directly to the PERID on the PERFILE. By adding this to the HHID and CNTYID it is possible to link the TRIPFILE to the PERFILE and HHFILE.

### 4. Trip Number (TRIPID)

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This is a sequentially assigned number for each trip the individual made. It includes walk links to and from rail transit modes, trips made for the sole purpose of changing to a different mode and all one-way trip movements linking one activity to another.

### 5. Trip Start Time (STARTIME--4 characters)

This is the starting time of the trip. It is coded in military or 2400 hour time.

6. Trip End Time (ENDTIME--4 characters)

This is the ending time of trip. It too is coded in military or 2400 hour time.

7. Elapsed Travel Time (TRTIME--3 characters)

Coded in minutes, this is the amount of time the trip took to complete.

8. Type of Transportation (MODE--1 character)

This is an encoded field that identifies the type or mode of transportation used for the trip. Listed below are the coded values and the modes. For the "Other" mode a detailed

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listing of the modes specified by the respondents is available by contacting CATS Information Services Division.

Mode of Travel	Code
Walk Only	(1)
Driver of Auto, Van, or Truck	(2)
Passenger in Auto, Van, or Truck	(3)
School Bus	(4)
Pace Bus	(5)
Metra Rail	(6)

CTA Bus	(7)
CTA Rapid Transit	(8)
Taxi	(9)
Other	(0)

9. Auto Occupancy for Private Vehicle Trips (VEHOCC--1 character)

This is the number of people, including the driver, in the passenger vehicle when a trip by auto, van or truck was reported (Modes 2 and 3).

10. Blocks Walked to Bus and Rail Modes (BLOCTO--2 characters)

This field contains the distance in blocks, when the individual walked to a transit mode. Transit modes are

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considered to be either Pace bus, Metra rail, CTA bus or rapid transit (Modes 5,6,7,8).

11. Blocks Walked from Bus and Rail Modes (BLOCFROM--2 characters)

This is the distance in blocks walked from a transit mode to the destination. It covers the same modes as BLOCTO.

12. Trip Origin Activity (PURFROM--2 characters)

All trips have a beginning and an end or an origin and a destination. The activity or business conducted at the end points is commonly referred to as the purpose. This field contains an encoded number that identifies the purpose or activity the individual was engaging in when they began their trip. This concept is best understood with an example. If you were traveling from the store to home the origin is the store and the destination is home. Put another way, the origin activity is shopping while the destination activity is return home. The codes for the origin activity or PURFROM are shown below. For activities that could not be captured by the specific fields, an "Other" category was included on the questionnaire. For a detailed listing of the "Other" category contact CATS Information Services Division.

Purpose	Code
Work	(1)
Work Related	(2)
School	(3)
Shopping	(4)
Eat Meal	(5)
Banking	(6)
Recreational	(7)
Pick Up/ Drop Off Passengers	(8)
Change Type of Transportation	(9)

Return Home	(10)
Other	(0)

### 13. Trip Destination Activity (PURTO--2 characters)

The traditional trip purpose is what the HHTS calls the destination activity. It is actually the reason or purpose the individual went to the destination. Its coding is identical to the PURFROM listed above.

### 14. CATS Geographic Reference Code for the Trip Origin (ORGCODE--8 characters)

This field contains the geographic location where the trip began. These origin locations are coded in a two tiered fashion. First, trips that originate in the 7 counties of Northeastern Illinois are coded to a quarter-section geography using CATS standard 8-digit coding scheme. For a

complete explanation of this scheme refer to CATS Traffic Analysis Zone Structure for the 1990 Census Transportation Planning Package, CATS Working Paper 94-01. For trips with origins outside the 7 county region, a coding scheme beginning with 99 to signal out of region followed by a 2-digit FIPS state code and the 4-digit Census city code was implemented. FIPS state and Census city codes can be sourced

to the Department of Commerce, Bureau of the Census publication, PHC80-R5, Geographic Coding Scheme. For the states immediately adjacent to northern Illinois (including Minnesota, Wisconsin, Missouri, Indiana, Iowa and Michigan) the exact city code, regardless of its size, was used. For the remainder of the locations the origin was coded to the closest city with a population of 25,000 or more.

15. CBD CAAS/CUTD Zone for CBD Survey Households with a Trip Origin in the CBD (ORGCBD--3 characters)

This field pertains only to those Chicago CBD Survey trips originating in Chicago's Central Area. In addition to the CATS geographic Reference Code, trips originating in the CBD are also geocoded using the CAAS/CUTD zone coding scheme. This is explained in detail under variable 14 of the HHFILE.

16. Latitude of Trip Origin (ORGLAT--7 characters)

This field contains the latitude coordinate for the center of the origin zone (ORGCODE) where the trip began. It is important to note that in terms of latitude coding, quarter-section latitudes were used for CBD households with trip origins in the Chicago Central Area.

17. Longitude of Trip Origin (ORGLONG--8 characters)

This field contains the longitude coordinate for the center of the origin zone (ORGCODE) where the trip began or originated. Pairing this code with the ORGLAT code produces the complete latitude/longitude for the quarter-section zone depicting the trip's origin.

18. CATS Geographic Reference Code for the Trip Destination  
(DESTCODE--8 characters)

This field follows the same coding structure as the ORGCODE variable discussed as variable 15 above. The only difference is that this field applies to the trip destination.

19. CBD CAAS/CUTD Zone Number for Trips with a Destination  
in the CBD (DESTCBD--3 characters)

This field follows the same coding structure as the ORGCBD variable discussed as variable 16 above. The only difference is that this field applies to the trip destination.

20. Latitude of Trip Destination (DESTLAT--7 characters)



This field follows the same variable logic as the ORGLAT variable discussed in variable 17 above. The only difference is that this field applies to the trip destination.

21. Longitude of Trips Destination (DESTLONG--8 characters)

This field follows the same logic as ORGLONG variable discussed in variable 18 above. The only difference is that this field applies to the trip destination.

22. Trip Length in Miles (AIRMILE--8 characters)

Trip lengths for the survey were calculated using the latitude/longitude for the center of the zonal pair in question. The length is in 100ths of miles and represents the airline distance from the center of the origin zone to the center of the destination zone.

23. Trip Speed (SPEED--6 characters)

This is a calculated variable which uses the airline distance and travel time. It is carried out to the hundredth decimal place. Since it uses an airline distance and reported travel time, care must be given to interpreting

this value.

24. Another Trip Indicator (MORE--1 character)

This variable indicates whether or not the individual reported making another trip after the trip in question. It is used as a trip linking variable for a specific individual.

25. Weight (WGT--4 characters)

This is the factor applied to the household's survey data to make it reflect the characteristics of the population. This weight is the same across all the files, the HHFILE, the PERFILE, and the TRIPFILE.

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