ACG Address Coding Guide Tape

Description, Content, and Arrangement of the 1970 Address Coding Guide Tapes

The Address Coding Guide (ACG) tapes were created to serve two purposes in the 1970 Census of Population and Housing. The first is to assign the appropriate geographic codes to the mail-out/mail-back questionnaires so that the census returns could be aggregated to each geographic level required for tabulation and publication. The second purpose they serve is to provide a base for the construction of place-of-work coding guides to permit the tabulation of workers by place-of-employment in fairly fine geographic detail.

The Address Coding Guides generally cover the urbanized or built-up portions of the 145 largest standard metropolitan statistical areas. Each record describes a block side by street name, the first and last possible address along the block side, and the various associated geographic codes such as census tract, block, and municipality. The ACG's have gone through several revisions; however, this documentation only applies to the final version of the tapes.

The Address Coding Guide is a tool which can be used to code locally collected data to the same small areas, such as blocks or block sides. Codes may be added to the ACG which enable data to be coded to geographic units used locally by such agencies as metropolitan planning organizations, municipal planning agencies, health authorities, school departments, and urban transportation studies. It will also be used by the Bureau of the Census to facilitate special tabulations of census-collected data for these local geographic units.

Special technical conditions affecting the use of the ACG tapes.

1. Computer and type of tape unit on which file was prepared at Census Bureau: Univac 1107 or 1108 Computer, IV C Tape Unit.

2. Convertibility of magnetic tapes (IBM) for use on other computers:

Characteristics[1]	IBM Compatible Tape	
	7-Track Tape	9-Track Tape
Width	.5 inch	.5 inch
Reel Size	10.5 inch diameter; maximum 2400 foot length	10.5 inch diameter; maximum 2400 foot length
Recording Mode	NRZI (nonreturn to zero)	NRZI (nonreturn to zero)
Number of Recording Tracks	7 (6 data, 1 parity)	9 (8 data, 1 parity)
Density (characters or bytes per inch)	556/800	800
Language	Binary Coded Decimal (BCD)	Extended Binary Coded Decimal Interchange Code (EBCDIC)
Error Controls	Character - even parity Track - longitudinal redundancy check	Character (byte) - odd parity Block - Cyclical code check based on an 8-bit character which is computed from data characters during write operation and recorded at end of tape block as hardware function.
Recorded Tape Representation	One 6-bit character per tape frame	One 8-bit character (byte) per tape frame
Interblock Spacing	.75 inch	.6 inch (nominal)
Record Size	120 characters	120 characters
Block size	2040 characters per block	2040 characters per block

[1]All deviations from these characteristics will require the application of additional cost factors including programming and personal services.

File size.

Number of records vary according to extent of the street network within the urbanized or built-up area. For a listing of the number of records by each area see the section entitled, "Tape Costs for Final Address Coding Guides."

File format. (See illustrative printout on page 9).

1. Sequence of file: Street name (alphabetically) within postal finance code (a postal identification) within county within State.

2. Label formats: The following materials describes both the content of the file labels and the sequence of labels on the tapes.

Volume Header Label

Field	Name	Length	Description
1	Label Identifier	3	"VOL"
2	Label Number	1	"1"
3[1]	Tape Physical Number	6	Six alphanumeric characters assigned to identify the physical reel of tape; should agree with external visual identification. Must be six characters other than blank.
4	Accessibility	1	Space: unlimited access.
5	Reserved for Operating System	20	System creating tape may use this space.
6	Reserved for Future Standardization	6	Spaces
7	Owner Identification	14	Spaces
8	Reserved for Future Standardization	28	Spaces
9	Label Standard Level	1	Space: Label and data format on this volume require the agreement of interchange parties.

[1]Field content is variable and inserted by operators at the time of creation of the tape file.

First File Header Label

Field	Name	Length	Description
1	Label Identifier	3	"HDR"
2	Label Number	1	"1"
3	File Identifier	17	Eight characters, the first of which must be a letter with the remaining seven either letter or number, followed by nine spaces.
4	Set Identification	6	Alphanumeric unique name for set of files of which this file is part. Must be the same in all files of a multifile set. Must be present for single file set.
5	File Section Number	4	Must be numeric. On the first volume a file appears on, this will be "0001." This will be augmented by 1 for each additional volume on which a file appears.
6	File Sequence Number	4	Numeric. Denotes the sequence (i.e. 0001, 0002, etc.) of files within the volume or set of volumes. In all the labels of this type for a given file, this field will contain the same number.
7	Generation Number	4	Spaces
8	Generation Version Number	2	Spaces
9	Creation Date	6	A "space" followed by two numeric characters for the year, followed by three numeric characters for the day within the year. Example: Þ68229=August 16, 1968 (August 16 is 229th day of year 1968).
10	Expiration Date	6	Same format as Field 9. Will be entered as "Þ99365."
11	Accessibility	1	Space: unlimited access.

First File Header Label--Continued

Field	Name	Length	Description
12	Block Count	6	"000000"
13	System Code	13	Alphanumeric identification which census will supply for the Operating System that produces the file.
14	Reserved for Future Standardization	7	Spaces

Second File Header Label

Field	Name	Length	Description
1	Label Identifier	3	"HDR"
2	Label Number	1	"2"
3	Record Format	1	"F": Fixed length
4	Block Length (Physical Record)	5	"00960" (example only; some multiple of 120 between 720 and 2040).
5	Record Length	5	"00960" (example only; some multiple of 120, no larger-than block length in Field 4.
6	Recording Density	1	"1": 556 "2": 800
7	File Position	1	Identifies condition that caused creation of label. "0": if HDR and OPEN; if trailer and CLOSE; "1": if created because of EOV.
8	Job/Step ID	17	Spaces
9	Tape Recording	2	"ET": Even parity (7-track tape only). "ØØ": For 9-track tape
10	Printer Control	1	Space: No control characters.
11	Reserved for Operating System	43	Spaces

First End-of-File Label

Field	Name	Length	Description
1	Label Identifier	3	"EOF"
2	Label Number	1	"1"
3-11	Same as corresponding fields in HDR1		
12	Block Count	6	Numeric. Number of data blocks (exclusive of labels and tape marks) since the preceding HDR Label Group.
13-14	Same as corresponding fields in HDR1		

Second End-of-File Label

Field	Name	Length	Description
1	Label Identifier	3	"EOF"
2	Label Number	1	"2"
3-11	Same as corresponding fields in HDR2		

First End-of-Volume Label

Field	Name	Length	Description
1	Label Identifier	3	"EOV"
2	Label Number	1	"1"
3-11	Same as corresponding fields in HDR1 of current file		
12	Block Count	6	Numeric. Number of data blocks since the preceding HDR Label Group.
13-14	Same as corresponding fields in HDR1		

Second End-of-Volume Label

Field	Name	Length	Description
1	Label Identifier	3	"EOV"
2	Label Number	1	"2"
3-11	Same as corresponding fields in HDR2		

Address Coding Guide Tape

	Item		Characters[1]
1.	1970 State Code		1-2
2.	1970 County Code		3-5
3.	Minor Civil Division Code		6-8
4.	Place Code		9-12
	Blank		13
5.	ZIP Code		14-18
6.	1970 Tract Code	Basic=1st 4 digits Suffix=last 2 digits	19-24
7.	Street Direction		25-26
8.	Street Name		27-41
	Blank		42-43
9.	Street Code		44-48
10.	Address Range		49-60
11.	Block Number		61-63
	Blank		64-66
12.	Standard Metropolitan Statistical Area Code		67-70
13.	District Office Code (Census)		71-74
	Blank		75-81

[1]Logical record size of 120 characters.

Address Coding Guide Tape--Continued

	Item		Characters[1]
14.	Area Code		82-84
15.	Serial Number or Local Identifier		85-90
16.	Ward		91-92
17.	Annexation Code	0 = No 5 = Yes	93
	Blank		94
18.	Congressional District Code		95-96
	Blank		97-107
19.	Postal Data Code		108-114
20.	Serial Number		115-119
21.	Check Digit		120

[1]Logical record size of 120 characters.

Illustrative Printout of the Address Coding Guide Tape

Each line of this printout illustrates a city block face record on an Address Coding Guide (ACG) tape. The block face record is 120 characters in length and contains census codes for the larger geographic areas of which a particular block face is a part. On the ACG tape there are 17 block face records contained in one tape record (16 are shown in this example because the first block face record appeared on a preceding page).

USE IN CONJUNCTION WITH ACG DOCUMENTATION

1970 State	1970 County	M.C.D.	Place	Blank	ZIP Code	Tract	Street Dir.	Street Name	Blank	Street Code	Address Range		Block No.	Blank	SMSA	District Office	Blank	Area Code	Serial No. or Local Ident.	Ward	Blank	Comm. Dist.	Blank	Postal Data	Serial No.	Check Digit
18035005	1735		47302	0	0	4	S	LIBERTY ST		10480	1500	1598317		52800	566			01000	4048	0	30		10		1759070	40485
18035005	1735		47302	0	0	4	S	LIBERTY ST		10480	1600	1698318		52800	566			01000	4049	0	30		10		1759070	40493
18035005	1735		47302	0	0	4	S	LIBERTY ST		10480	1700	1798319		52800	566			01000	4050	0	30		10		1759070	40501
18035005	1735		47302	0	0	4	S	LIBERTY ST		10480	1800	1898320		52800	566			01000	4051	0	30		10		1759070	40519
18035005	1735		47302	0	0	16	S	LIBERTY ST		10480	1900	1998223		52800	566			01000	4052	0	30		10		1759070	40527
18035005	1735		47302	0	0	16	S	LIBERTY ST		10480	2100	2198218		52800	566			01000	4053	0	30		10		1759070	40535
18035005	1735		47302	0	0	16	S	LIBERTY ST		10480	2200	2298216		52800	566			01000	4054	0	30		10		1759070	40543
18035005	1735		47302	0	0	16	S	LIBERTY ST		10480	2700	2798211		52800	566			01000	4055	0	30		10		1759070	40550
18035005	1735		47302	0	0	16	S	LIBERTY ST		10480	2800	2898208		52800	566			01000	4056	0	30		10		1759070	40568
18035005	1735		47302	0	0	16	S	LIBERTY ST		10480	2900	2998203		52800	566			01000	4057	0	30		10		1759070	40576
18035005	1735		47302	0	0	7		LIGHT ST		10520	301	399124		52800	566			01000	4058	0	50		10		1759070	40584
18035005	1735		47302	0	0	7		LIGHT ST		10520	401	499113		52800	566			01000	4059	0	50		10		1759070	40592
18035005	1735		47302	0	0	7		LIGHT ST		10520	501	599112		52800	566			01000	4060	0	40		10		1759070	40600
18035005	1735		47302	0	0	7		LIGHT ST		10520	601	699112		52800	566			01000	4061	0	40		10		1759070	40618
18035005	1735		47302	0	0	7		LIGHT ST		10520	701	799101		52800	566			01000	4062	0	40		10		1759070	40626
18035005	1735		47302	0	0	7		LIGHT ST		10520	300	398201		52800	566			01000	4063	0	50		10		1759070	40634
BLOCK 243		STATUS CODE 40																								
18035005	1735		47302	0	0	7		LIGHT ST		10520	400	498210		52800	566			01000	4064	0	50		10		1759070	40642
18035005	1735		47302	0	0	7		LIGHT ST		10520	500	598211		52800	566			01000	4065	0	50		10		1759070	40659
18035005	1735		47302	0	0	7		LIGHT ST		10520	600	698220		52800	566			01000	4066	0	50		10		1759070	40667
18035005	1735		47302	0	0	7		LIGHT ST		10520	700	798221		52800	566			01000	4067	0	50		10		1759070	40675
18035005			47302	0	0	21		LILAC LA		10560	3601	3899902		52800	566			005	004068		0		10		1759070	40683
18035005			47302	0	0	21		LILAC LA		10560	3600	3898902		52800	566			005	004069		0		10		1759070	40691
18035005	1735		47302	0	0	2	N	LINCOLN ST		10596	101	199404		52800	566			01000	4070	0	60		10		1759070	40709
18035005	1735		47302	0	0	2	N	LINCOLN ST		10596	201	299313		52800	566			01000	4071	0	60		10		1759070	40717

Codes, Definitions, and Explanations

The elements of each record in copies of Address Coding Guides available from the Bureau are the following:

1970 State Code. A two-digit code, always numeric. The codes used are those defined in the Federal Information Processing Standard Publications (FIPSPUBS) Numbers 5 and 6[1] and are unique within the United States.

1970 County Code. A three-digit code, always numeric. The codes used are those defined in "FIPSPUB 6"[1] and are unique within States.

Minor Civil Division (MCD)/Census County Division (CCD) Code. A three-digit numeric code identifying a township or equivalent area, including census county divisions. The codes are assigned in alphabetical sequence within a county. Codes are not consecutive; gaps are provided for use in adding new units. The codes are unique within the county. This field will be blank if the delivery of an ACG precedes the insertion of the codes into the Bureau's ACG.

Place Code. A four-digit numeric code identifying "place" as this term is used by the Bureau of the Census. Assigned to places in alphabetical sequence within the State. Gaps are provided. The code is unique within the State. This field will be blank if the delivery of an ACG precedes the insertion of the codes into the Bureau's ACG.

ZIP Code. The five-digit numeric identification of the Post Office Department. The ZIP codes shown in the Address Coding Guides may differ from the Postal definitions, although infrequently, or two records for a single block side may be provided that are identical except for ZIP code (and serial number), to assure matching when two ZIP codes are used for a single block face or when the official ZIP code is not known.

1970 Tract Code. A six-digit numeric identification of a census tract as defined for the 1970 census. The first four digits identify the "basic" tract, while the final two identify a sub-division by two or more tracts of the original single tract (e.g. in 1960). There is an implied period or hyphen between the fourth and fifth digits. Bureau of the Census publications will eliminate the fifth and sixth digits if they are either zeros or blank. Tract codes are always unique within a county, usually unique within an SMSA, and, in a few instances, unique within a State.

Street Direction Code. A two-character alphabetic code preceding the street name to indicate direction, as in "N. Main." If the street is actually called "Main N.," the "N" will still precede "Main" in the layout.

Street Name. A fifteen-character field, alphabetic, numeric, or mixed for the street name and type, that is, St., Ave., Pl., etc. Street names that are longer than 15 characters have been truncated or abbreviated to fit the space available.

Street Code. A five-digit code, always numeric, which is the "census code" for the street name. It is unique within postal finance code. (See "Postal Data Code" below.)

Address Range. A twelve-character field, numeric with rare exceptions, the first six of which identify the lowest, and the last six the highest of a range of addresses on a block face. Both are odd or even, never mixed, except through error. An address range of 0 (zero) to 0 may appear for block sides that contain no addresses. The high and low addresses may be equal if there is only one address on a block side.

Block Number. A three-digit numeric identification of a "census block"; that is, a block as defined by the Bureau of the Census. The first digit is always 1 or greater. Block numbers are unique within census tracts. Blocks may never cross census tract boundaries but they frequently straddle other boundaries, such as city limits.

Standard Metropolitan Statistical Area (SMSA) Code. A four-digit numeric code identifying all records in each SMSA. An SMSA is a county or group of counties containing at least one city of 50,000 or more population, plus any adjacent counties which are metropolitan in character and economically and socially integrated with the central county or counties. In New England, the unit is a town rather than a county. One or more central cities are identified for each SMSA. SMSA boundaries may cross State lines. These codes are defined in "FIPSPUB 8."[1]

District Office Code. A four-digit code assigned to each decennial field office. The district office is the control center of the census enumeration.

Area Code. A "shorthand", three-digit, numeric code providing a temporary identification combining both MCD and place. Devised solely to permit recording data with three digits that would have required seven digits if the normal codes had been used. Unique within the county.

Serial Number or Local Identifier. This six-digit numeric field may contain any one of three identifiers. First, if local groups completed the "optional" field on the worksheets used in the preparation of the ACG's, those entries will appear in this field. Second, if the optional field was left blank, but the local agency that cooperated with the Bureau in the ACG preparation asked that the Bureau complete the field, then the entries in the field are those inserted by the Bureau. Third, in the absence of the first or second conditions described above, or if the Bureau is unable to complete the second alternative at the time an ACG copy is prepared, the entries in this field will duplicate those in the serial number field described below, except that this six-digit field will not contain the alphabetic characters used in the five-digit serial number field for numbers in excess of 99,999.

Ward Code. A two-digit code given to political subdivisions of a city which are used for voting and representation purposes.

Annexation Code. A one-digit numeric code which is zero or blank for all areas except those annexed to incorporate places since April 1, 1960. Code "5" identifies areas annexed to places with 2,000 or more inhabitants since 1960. Code "9" is used in some instances to identify ares annexed to smaller cities.

Congressional District. A two-digit identification of congressional districts. These numbers correspond to congressional districts designated in State legislation, except that zero is used to precede one-digit numbers and "01" is used to identify areas in which Members of Congress are elected at large, rather than by district.

Postal Data Code. A seven-digit code, the first two of which are a numeric State code and the last five of which are, or are derived from, a "postal finance number" or "post office" identification used by the Post Office Department. These codes are essential in relationship to the street codes for the reasons noted in the discussion of that item.

Serial Number. A five-digit, usually numeric, identifier of a single record in the Address Coding Guide for an SMSA. The serial number is unique within an SMSA. The number is useful in providing a minimum-length identifier of an individual record. Where serial numbers exceed 99,999, the first character will be alphabetic with "A" indicating a value of 10, "B," 11, and so forth. For example, record number "113,427" will be shown as "B3,427".

Check Digit. A one-digit suffix to the serial number described above, mathematically derived from the serial number, and used to detect errors in transcribing or punching serial numbers. A typical use of the serial number is to identify records that are to be changed. In this process the serial number, and its check digit, are introduced into the computer (with other data). The check digit is recomputed and compared to that supplied. In the absence of a match, the entire record is rejected for correction of the error. This system is virtually 100 percent accurate in the detection of errors of transposition or the dropping of a digit; at least 90 percent accurate for other errors. (Card punching equipment is also available that will compute check digits and "lock up" if the check digit keyed by the operator does not match the computed value.)

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[1]FIPSPUB 5, *States of the United States;* FIPSPUB 6, *Counties of the States of the United States;* and FIPSPUB 8, *Metropolitan Statistical Areas* are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402. Prices are 20 cents, 40 cents, and 20 cents respectively.

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