RRG 80

RANDOM RECORD GENERATOR FOR 705-7080 SORT SYSTEMS

January 24, 1963

RRG 80 (RANDOM RECORD GENERATOR)

1. Purpose

Random Record Generator is used to create tape files which meet the format specifications upon which IBM Applied Programming's 705 III programs and programming systems are based. See IBM 705 Data Processing System Bulletin "Tape Format Specifications for IBM Programs and Programming Systems for IBM 705 III Data Processing System", form J28-6015-2 for a complete description of these specifications.

2. Operation

Random Record Generator creates files of unit or blocked, fixed or variable length records; unit records of fixed length may or may not be a multiple of 5 in length, and may or may not end in a record mark.

A header label may be written with or without a following tapemark, or may be omitted. A trailer label for end of file or end of reel is always included. It is possible to cause an end of reel trailer to be written before physical end of reel is encountered.

Serial or Random control words are placed as the first portion of each data record. Serial control words are numerically sequenced (+) by a specified amount, with stepdowns (+) by a set amount after a designated number of blocks, after which sequencing continues as before. Random control words may include all characters acceptable to the 705 III except group marks and record marks. In blocked fixed length record files the control word field may be replaced by blanks or nines padding.

Multiple files can be produced on one tape.

RRG 80 provides for the checking of card reading and tape output.

3. Limitations

1. Header label, if written, is always a unit record of the initial form 1***b 5000 followed by blanks to total 80 positions.

2. Maximum control word length is 99 positions. At most the 40 low order position of the first serial control word can be specified on the control card.

3. Limitations (cont.)

3. Minimum data record length = control word length +10.
Maximum data record length=6000

4. Maximum block length (tape record length) = 8000.

5. A separate control card is used for each file produced. In the situation where either a "false" or a "forced" end of reel trailer is written, that file is considered terminated, and any continuation of it must be produced by the next control card.

6. Multifile tape control cards must follow each other without interruption by cards specifying another output tape.

4. Control Card Layout

Column		
1-6		Program Identification or blanks
7-10		Output tape number
11		F - fixed length V - variable
12-15	$xxxx^{+}$	Data record length (if fixed) Maximum data record length (if variable) Note: cannot exceed 6000.
16-19	$xxxx^{+}$	Block length (if fixed) = no. of records per block times data record length. Maximum block length (if variable) Note: cannot exceed 8000.
20	$\overset{+}{x}$ or $\overline{x}$	1 - Record length divisible by 5, record ends in record mark. Mandatory for all variable length records and all blocked records. Optional for unit fixed length records. 0- Record length not necessarily divisible by 5, no ending record mark. Optional for unit fixed length records only. + - Tape header label. - - No tape header label.
21-22	xx^{+}	Control word length Note: Minimum record length is control word length +10.

23-27	xxxxx+	Number of data records generated.
28		b - Blank padding (blocked fixed length only) (for control word field) 9 - Nines padding (blocked fixed length only) (for control word field) N- No padding
29		R - Random control word S - Serial control word
30-32	xxx+	+ - Increment of each serial control word - - Decrement of each serial control word blank if random control word.
33-35	xxx+	Number of blocks in sequence (for fixed length records) blank if random control word
36-38	xxx±	+ - Stepdown amount between sequenced blocks - - Stepup amount between sequenced blocks blank if random control word.
39-78		Serial control word - If c.w.l. $\leq$ 40 positions, punch the first control word, beginning in column 39. If c.w.l. $>$ 40 positions, punch the 40 low order positions. Zeros are inserted into the high order positions by RRG 80.
39-50		Random control word - Punch alphabetic and/or numeric characters, preferably non-zero. Control cards which specify identical c.w.l. and have identical information in these columns will produce identical control words.
79		R - End of Reel trailer label b - End of file trailer label
80		A - Header label with no tape mark following. b - Header label, if any, is followed by tape mark.

5. Operating Instructions

A. Switches

Check indicators AUTOMATIC
Alteration switches OFF

5. Operating Instructions (cont.)

B. Loading procedure

a. Cards

Put cards in Card RDR in the following order:

1.	Card loader card	1 card
2.	RRG 80 program card	126 cards
3.	RRG 80 transfer card	1 card (RRG 80 999)
4.	Control card or cards	
5.	Blank card	1 card

b. Tape

Go card to tape off line with cards in the following order:

1. Tape loader card
2. RRG 80 program deck
3. RRG 80 transfer card (RRG 80 999)

Put control cards followed by a blank card in card RDR and Ready it. Autoload the tape.

c. Tape loader card

This card is enclosed with the package. Card image tape as generated above should be placed on drive 0210 and auto-loaded. If it is to be placed on any other drive, the card should be repunched so that columns 2, 3, 4, and 5 of the card contain the drive address desired.

d. Card loader card

Repunch the card above replacing columns 2-5 with '0100'.

e, Output tapes

These should be specified by the operator on the control card or cards as shown in section 4 on control card layout.

6. Programmed stops

19999 - End of Job

6. Programmed Stops (cont.)

20101 - Error indication while attempting to read control card. Correct card if necessary, reload it, and press START; or simply press START to read and process next control card.

20200 - End of reel indication while writing header or tapemark
20201 - following header. Press START to rewind tape and attempt to write header and tapemark again.

20202 - Persistent error while attempting to write end of reel trailer
20204 - or end of file trailer, or preceding or following tapemarks. TR to 3045 to read next control card; or reload this and all previous cards which specify this output tape, change tapes if desired, and TR to 3004.

20206 - Persistent error while attempting to write tape record. Reload all cards which specify the present output tape, change tape, and TR to 3004.

20207 - End of reel indication while writing tape record. Press START to write end of reel trailer label and read next control card.

00111 - Inconsistent information on control card. Correct control card and TR to 3004 and START.

7. Comment

This program is not a diagnostic program. It is a service aid program for those installations that desire to run a Sort program with their own input file or files. This program should not be placed on a diagnostic system tape as it has its own unique loading procedure.

RRG 80 Control Card Layout

Prog. Ident.	Prog. Output Tape#	F or V	Length or Max. L +	Block length or Max.B.L. +	+ Label -No Label 1(÷5, ≠) 0 Not	Control Word Length +	No. of Rec. +	Padding b 9 N	R/S Control Word	C.W. Incr. ±	Blocks in seq. +	Step-down Factor ±	Serial First Control word	R or b	A or b
1-6	7-10	11	12-15	16-19	20	21-22	23-27	28	29	30-32	33-35	36-38	39-78	79	80

Blank if Random c.w.

or Random. c.w. Any digits

39-50

Note: Columns 15, 19, 20, 22, 27 must be signed in all cases

Columns 32, 35, 38 must be signed when serial control word.

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20210Y0080000F9B0604000569004+9+60+30908618099UN0099000879089510009JJ21130004100004
RRG 80001&71860 6ABCDEF0&4G00001&1060006004E000000000000-      0&    0AC000C&¤   SRT80
RRG 80002&77860  80000RANDOM RECORDS RANDOM RECORDS ¤ AFNKV019001142      000SRT80
RRG 80003&8382510005¤      CTRL CARD ERR¤                                   SRT80
RRG 80004300060201U0T7&G5Y200UI7064T7&G567&G562 0973/0413089201O0Y2000I7064SRT80
RRG 8000530606082 094&Y34L708943/04L310423100300021B02420000300008&8/7420X9SRT80
RRG 80006312060L31T413139732/08&8S0420X8L31W9#&YY4*6WY413184#6TX9*6WY4A0000SRT80
RRG 80007318060U2019.3ST4H&7S2R&345071A9H&7S23000107lI4U32109&8W6H&865B0 -6SRT80
RRG 80008324060U7914/&XQ9P&720N32691324982 1442 18L3Y34820/04&8/8L33V4H2 18SRT80
RRG 80009330060P2 144&Y42L3T2413349H2 18P&X24F2 1882 141383482 14T4ID0T6DE5SRT80
RRG 800103360606 6DE5820/04&8/8L36S9U41609&7/0T5FB5T5&D065&D0T6ED0T6DF566DF5SRT80
RRG 80011342060T5&H08&XW47TZ/47JZS4U34669RZ868&8K8@3409B001280000G&758N3619SRT80
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RRG 80017378060T6DE513579T6DF513569T4HD564HD5T6DF0T4HE064HE014144T4HD564HD5SRT80
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gs[illegible]ns/g0015472.png

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RRG 80034480060P& Y6@4Z 914409G&7201476 9H&GM214209 8&0X5700 0A6749A6949A5144SRT80

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RRG 80039510060F&1E38&1E3420C4L641415049#&UT4*4ZY414974B0000H&270G20317425ZSRT80

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RRG 80086T91005   0&                                                      SRT80
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RRG 80087J92005    0&                                                            SRT80
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RRG 80090&01060A&00800000000000000 0000000000000000000000000000000000000SRT80
RRG 80091&070050-                                                                SRT80
RRG 80092&11203                                                                  SRT80
RRG 80093&28056AT915AJ9250000000000 SCW TEST FAILS. FILE NOT GENERATED¤          SRT80
RRG 80094&34060A50941*** 5000                                                    SRT80
RRG 80095&40026                        ¤                                         SRT80
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RRG 80098&55060F                                                                 SRT80
RRG 80099&61020                ¤                                                 SRT80
RRG 80100&63317   TTC-RRG80¤                                                     SRT80
RRG 80101&65327   TTC-EOR LABEL-RRG80¤                                           SRT80
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RRG 80108482510U42291B049                                                        SRT80
RRG 80109B04515/B0V914209B514U                                                   SRT80
RRG 80110&68322 TTC-EOF LABEL-RRG80¤                                             SRT80
RRG 8011175700583164                                                             SRT80
RRG 80112316505#6TX9                                                             SRT80
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RRG 80114607104B119                                                              SRT80
RRG 80115610604B134                                                              SRT80
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RRG 80118634604B149 SRT80

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RRG 80123597006A&7K7A SRT80

RRG 80124614006A&7K7A SRT80

RRG 80125B195358&7K77J9K4155498&7K77T9J4H&27615474 SRT80

RRG 80126&78530---------- SRT80

RRG 80999 00B00 1B00-2B00&3B0 04B0 5B0&/0B0&-4U0002.30-43000213004 SRT80