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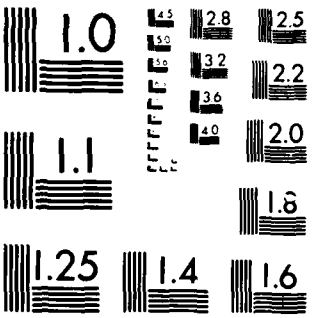

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FOREIGN TECHNOLOGY DIVISION

COMPUTERS AND DATA TRANSMISSION EQUIPMENT, ALPHANUMERIC CODES

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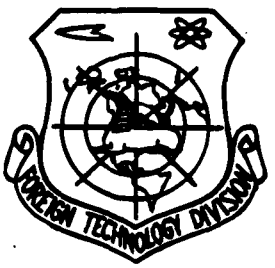

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EDITED TRANSLATION

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PREPARED BY:

TRANSLATION DIVISION
FOREIGN TECHNOLOGY DIVISION
WP-AFB, OHIO.

U. S. BOARD ON GEOGRAPHIC NAMES TRANSLITERATION SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	*А а*	A, a	Р р	*Р р*	R, r
Б б	*Б б*	B, b	С с	*С с*	S, s
В в	*В в*	V, v	Т т	*Т т*	T, t
Г г	*Г г*	G, g	У у	*У у*	U, u
Д д	*Д д*	D, d	Ф ф	*Ф ф*	F, f
Е е	*Е е*	Ye, ye; E, e*	Х х	*Х х*	Kh, kh
Ж ж	*Ж ж*	Zh, zh	Ц ц	*Ц ц*	Ts, ts
З з	*З з*	Z, z	Ч ч	*Ч ч*	Ch, ch
И и	*И и*	I, i	Ш ш	*Ш ш*	Sh, sh
Й й	*Й й*	Y, y	Щ щ	*Щ щ*	Shch, shch
К к	*К к*	K, k	Ъ ъ	*Ъ ъ*	"
Л л	*Л л*	L, l	Ы ы	*Ы ы*	Y, y
М м	*М м*	M, m	Ь ь	*Ь ь*	'
Н н	*Н н*	N, n	Э э	*Э э*	E, e
О о	*О о*	O, o	Ю ю	*Ю ю*	Yu, yu
П п	*П п*	P, p	Я я	*Я я*	Ya, ya

*ye initially, after vowels, and after ъ, ь; e elsewhere.
When written as ë in Russian, transliterate as yë or ë.

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English	Russian	English	Russian	English
sin	sin	sh	sinh	arc sh	$\sinh^{-1}$
cos	cos	ch	cosh	arc ch	$\cosh^{-1}$
tg	tan	th	tanh	arc th	$\tanh^{-1}$
ctg	cot	cth	coth	arc cth	$\coth^{-1}$
sec	sec	sch	sech	arc sch	sech^{-1}
cosec	csc	csch	csch	arc csch	csch^{-1}

Russian	English
rot	curl
lg	log

GRAPHICS DISCLAIMER

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COMPUTERS AND DATA TRANSMISSION EQUIPMENT. ALPHANUMERIC CODES

GOST
13052-67
Group E60
In effect since 1-1-1968

1. This standard is extended to a binary seven-element code (symbols and their code designations), which is intended for the representation of information at the inputs and outputs of the data transmission equipment, electronic computers, and input/output units.

2. Coding must correspond to the data in Table 1. The use of abbreviated sets of symbols is permitted upon approval by the Committee of Standards, Measures, and Measuring Instruments of the USSR Council of Ministers.

Explanations for Table 1 are given in Attachment 1.

3. An 8-th check element, whose value is equal to the modulo 2 sum of all seven information elements of the code combination (parity check), must be added to each code combination in order to detect errors in information.

4. In case of consecutive transmission, the elements of code combinations must be transmitted in the following sequence:

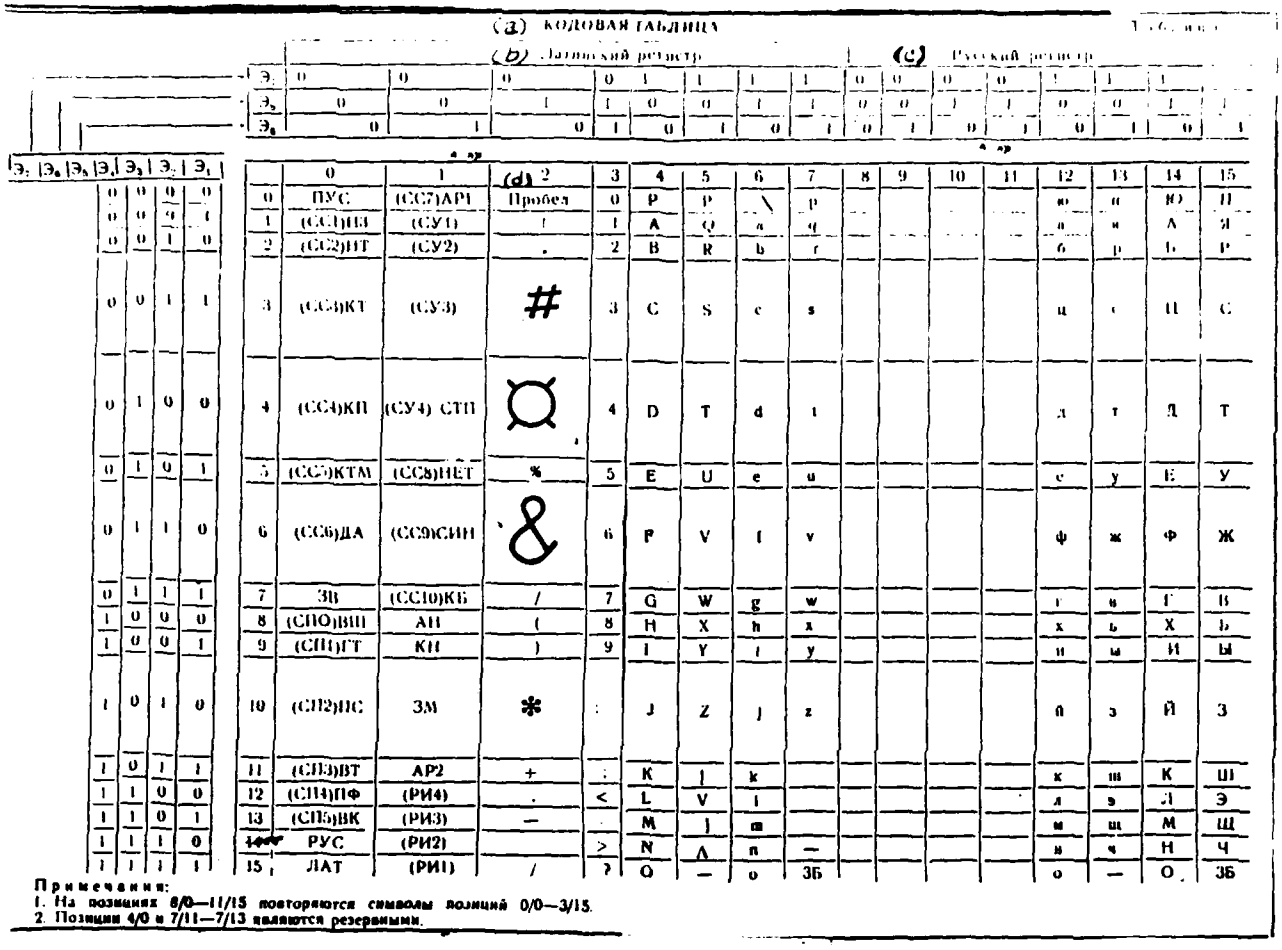
$Э_1; Э_2; Э_3; Э_4; Э_5; Э_6; Э_7; Э_8.$

5. The designations of service characters and their nomenclature must correspond to those indicated in Table 2.

The definitions of service characters are given in Attachment 2.

Notation. By service characters is implied the symbols that are necessary for controlling the transmission equipment and for processing of data.

6. The nomenclature of graphic symbols of the code table and their designations must correspond to those given in Table 3.



(a) КОДОВАЯ ТАБЛИЦА

(b) Латинский регистр

(c) Русский регистр

Э4	Э3	Э2	Э1	0	1	(d) 2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	0	0	0	0	ПУС	(СС7)АР1	Пробел	0	P	p	\	p					ю	о	Ю	П
0	0	0	1	1	(СС1)НЗ	(СУ1)	!	1	A	Q	a	q					а	н	А	Я
0	0	1	0	2	(СС2)НТ	(СУ2)	"	2	B	R	b	r					б	р	Б	Р
0	0	1	1	3	(СС3)КТ	(СУ3)	#	3	C	S	c	s					ц	с	Ц	С
0	1	0	0	4	(СС4)КП	(СУ4) СТП	¤	4	D	T	d	t					д	т	Д	Т
0	1	0	1	5	(СС5)КТМ	(СС8)НЕТ	%	5	E	U	e	u					е	у	Е	У
0	1	1	0	6	(СС6)ДА	(СС9)СИН	&	6	F	V	f	v					ф	ж	Ф	Ж
0	1	1	1	7	ЗВ	(СС10)КБ	'	7	G	W	g	w					г	в	Г	В
1	0	0	0	8	(СП0)ВШ	АН	(	8	H	X	h	x					х	ь	Х	Ь
1	0	0	1	9	(СП1)ГТ	КН	)	9	I	Y	i	y					и	ы	И	Ы
1	0	1	0	10	(СП2)ПС	ЗМ	*	:	J	Z	j	z					й	з	Й	З
1	0	1	1	11	(СП3)ВТ	АР2	+	;	K	[	k						к	ш	К	Ш
1	1	0	0	12	(СП4)ПФ	(РИ4)	,	<	L	V	l						л	э	Л	Э
1	1	0	1	13	(СП5)ВК	(РИ3)	–	=	M	]	m						м	щ	М	Щ
1	1	1	0	14	РУС	(РИ2)	.	>	N	Λ	n	—					н	ч	Н	Ч
1	1	1	1	15	ЛАТ	(РИ1)	/	?	O	—	o	ЗБ					о	—	О	ЗБ

Примечания:
1. На позициях 8/0—11/15 повторяются символы позиций 0/0—3/15.
2. Позиции 4/0 и 7/11—7/13 являются резервными.

KEY: (a) Code Table (b) Latin register (c) Russian register
(d) Space

REMARKS:

1. Symbols of positions 0/0-3/15 are repeated at positions 8/0-11/15.
2. 4/0 and 7/11-7/13 are reserve positions.

Table 1

(a) Позиции в кодовой таблице	(b) Русские обозначения	(c) Международные обозначения	(d) Наименования символов
0/0	ПУС	NUL	Пусто
0/1	НЗ	SOH	Начало заголовка
0/2	НТ	STX	Начало текста
0/3	КТ	ETX	Конец текста
0/4	КП	EOT	Конец передачи
0/5	КТМ	ENQ	Кто там?
0/6	ДА	ACK	Подтверждение
0/7	ЗВ	BEL	Звонок
0/8	ВШ	BS	Возврат на шаг
0/9	ГТ	HT	Горизонтальная табуляция
0/10	ПС	LF	Перевод строки
0/11	ВТ	VT	Вертикальная табуляция
0/12	ПФ	FF	Перевод формата
0/13	ВК	CR	Возврат каретки
0/14	РУС	SO	Русский регистр
0/15	ЛАТ	SI	Латинский регистр
1/0	АР1	DLE	Авторегистр 1
1/1	(СУ1)	DC_1	Символы управления
1/2	(СУ2)	DC_2	
1/3	(СУ3)	DC_3	
1/4	(СУ4) СТП	DC_4	Стоп
1/5	НЕТ	NAK	Отрицание
1/6	СИН	SYN	Синхронизация
1/7	КБ	ETB	Конец блока
1/8	АН	CAN	Аннулирование
1/9	КН	EM	Конец носителя
1/10	ЗМ	SUB	Замена
1/11	АР2	ESC	Авторегистр 2
1/12	(РИ4)	IS_4	Разделители информации
1/13	(РИ3)	IS_3	
1/14	(РИ2)	IS_2	
1/15	(РИ1)	IS_1	
7/15: 15/15	ЗБ	DEL	Забой
	СС	TC	Обобщенные обозначения
	СП	FE	
	СУ	DC	
	РИ	IS	

KEY: (a) Positions in code table (b) Russian designations (c) International designations (d) Nomenclature of the characters:

Empty - Start of heading - Start of text - End of text - End of transmission - Enquiry - Acknowledge - Bell - Back space - Horizontal tabulation - Line feed - Vertical tabulation - Form feed - Carriage return - Russian register - Latin register - Autoregister I - Control characters - Stop - Negative acknowledge Synchronization - End of text block - Cancel - End of medium - Substitute - Autoregister 2 - Information separators - Erase - Generalized designations

(a) Позиции символов в кодовой таблице	(b) Наименования символов	(c) Символы
2/0	Пробел	
2/1	Восклицательный знак	!
2/2	Кавычки (после символа ВШ— диакритический знак)	"
2/3	Номер	#
2/4	Знак денежной единицы	¤
2/5	Проценты	%
2/6	Коммерческое «И»	&
2/7	Апостроф (после символа «ВШ» — диакритический знак)	'
2/8	Круглая скобка левая	(
2/9	Круглая скобка правая	)
2/10	Звездочка	*
2/11	Плюс	+
2/12	Запятая	,
2/13	Минус	-
2/14	Точка	.
2/15	Дробная черта	/
3/0	Цифры	0
3/1		1
3/2		2
3/3		3
3/4		4
3/5		5
3/6		6
3/7		7
3/8		8
3/9		9
3/10	Двоеточие	:
3/11	Точка с запятой	;
3/12	Меньше	<
3/13	Равно	=
3/14	Больше	>
3/15	Вопросительный знак	?
4/0	Резервная позиция	

KEY: (a) Symbol positions in the code table (b) Symbol nomenclature (c) Symbols
2/0 - Space 2/1 - Exclamation sign 2/2 - Quotation marks (after symbol ВШ is a diacritic sign) 2/3 - Number 2/4 - Monetary unit symbol 2/5 - Percent 2/6 - Commercial "И" 2/7 - Apostrophe (after symbol "ВШ" is a diacritical sign) 2/8 - Left parenthesis 2/9 - Right parenthesis 2/10 - Asterisk 2/11 - Plus 2/12 - Comma 2/13 - Minus 2/14 - Period 2/15 - Fraction stroke 3/0 through 3/9 - Digits 3/10 - Colon 3/11 - semicolon

3/12 - Less than 3/13 - Equal 3/14 - Greater than 3/15 - Question mark 4/0 - Reserve position

(Continuation of Table 3)

4/1		A
4/2		B
4/3		C
4/4		D
4/5		E
4/6		F
4/7		G
4/8		H
4/9		I
4/10	Латинские прописные буквы	J
4/11		K
4/12		L
4/13		M
4/14		N
4/15		O
5/0		P
5/1		Q
5/2		R
5/3		S
5/4		T
5/5		U
5/6		V
5/7	Латинские прописные буквы	W
5/8		X
5/9		Y
5/10		Z
5/11	Квадратная скоба левая	[
5/12	Стрелка вниз (после символа «ВШ» — диакритический знак)	v
5/13	Квадратная скоба правая	]
5/14	Стрелка вверх (после символа «ВШ» — диакритический знак)	^
5/15	Подчеркивание	_
6/0	Диакритический знак	\
6/1		a
6/2		b
6/3		c
6/4		d
6/5		e
6/6		f
6/7		g
6/8		h
6/9		i
6/10		j
6/11		k
6/12		l
6/13		m
6/14	Латинские строчные буквы	n
6/15		o
7/0		p
7/1		q
7/2		r
7/3		s
7/4		t
7/5		u
7/6		v
7/7		w
7/8		x
7/9		y
7/10		z
7/11—7/13	Резервные позиции	
7/14	Черта сверху	—
8/0—11/15	Символы позиций 2/0—3/15	

4/1 through 5/10 - Latin capital letters 5/11 - Left bracket 5/12 - Arrow down (after symbol "ВШ" is a diacritical sign) 5/13 - Right bracket 5/14 - Arrow up (after symbol "ВШ" - diacritical sign) 5/15 - Underline 5/16 - Dicritical sign 6/1 through 7/10 - Latin lower-case letters 7/11—7/13 - Reserve positions 7/14 - Overbar 8/0—11/15 - Symbols of positions 2/0—3/15

(Continuation of Table 1

12/0		ю
12/1		а
12/2		б
12/3		ц
12/4		д
12/5		е
12/6		ф
12/7		г
12/8		х
12/9		и
12/10		й
12/11		к
12/12		л
12/13		м
12/14		н
12/15	Русские строчные буквы	о
13/0		п
13/1		я
13/2		р
13/3		с
13/4		т
13/5		у
13/6		ж
13/7		в
13/8		ь
13/9		ы
13/10		з
13/11		ш
13/12		э
13/13		щ
13/14		ч
13/15	Подчеркивание	_
14/0		Ю
14/1		А
14/2		Б
14/3		Ц
14/4		Д
14/5		Е
14/6	Русские прописные буквы	Ф
14/7		Г
14/8		Х
14/9		И
14/10		Й
14/11		К
14/12		Л
14/14		Н
14/15		О
15/0		П
15/1		Я
15/2		Р
15/3		С
15/4		Т
15/5		У
15/6	Русские прописные буквы	Ж
15/7		В
15/8		Ь
15/9		Ы
15/10		З
15/11		Ш
15/12		Э
15/13		Щ
15/14		Ч

Примечание. Под графическими символами понимают такие, которые могут быть отпечатаны.

12/0 through 13/14 - Russian lower-case letters 13/15 - Underlining 14/0 through 15/14 - Russian capital letters

Note. The graphic symbols signify those characters that can be printed.

Attachment 1

Table 1 is a two-register code table. It consists of 16 columns and 16 lines and has 256 code positions, on which all symbols of a code are arranged. The columns and lines of the table are numbered by decimal digits from 0 to 15.

The code position is identified by a fractional number, whose numerator is an ordinal number of the column, while the denominator - by an ordinal number of the line.

One symbol and its code combination correspond to each code position. The symbol is entered into its code position of the table in the form of its representation for graphic symbols or in the form of its conditional designation for service characters.

The first four code elements of a code combination are represented next to the ordinal number of the line and the remaining three - over the ordinal number of the column of a corresponding code position.

Example. Symbol "+" (plus) occupies position 2/11 in the code table. The code combination of this symbol is determined as follows:

column 2	line 11
010	1011

The value of the 8th check element is 0 (parity check). The complete code combination, together with the check element, will assume the form 00101011.

Attachment 2

Definitions of Service Characters

Designations	Nomenclature	Definition
СС	Communication symbol (generalized)	Service character for controlling data transmission equipment
СП	Print symbol (generalized)	Service character for controlling printing devices, which determines the arrangement of information on the input and output carriers
СУ	Control symbol (generalized)	Service character for controlling additional communication or data-processing equipment, and which switches on or switches off this equipment most often

(Continuation)

РЗ	Information separator (generalized)	Service character for controlling information separation in accordance with its logical content
АР1	Autoregister 1	Communication character, which changes the values of a limited number of code combinations following it. It is used exclusively for providing additional functions of data transmission control. The AP1 sequence can have only graphic symbols and communication characters
АР2	Autoregister 2	Service character, which can be used to expand a set of standard symbols of a code. It is a nonlocking register symbol, which changes the value of one combination following it. The exact value of the combination following AP2 requires preliminary agreement between the correspondents. When necessary, the symbol following AP2 can expand the AP2 sequence. AP2 sequences are used basically for obtaining additional control functions, which, along with other possibilities, can ensure the obtaining of graphic symbols or sets of graphic symbols outside the standard code. Such control functions should not be used as additional communication characters. "Empty", "Erase", and 10 communication symbols should not be used in the AP2 sequences. If these symbols do appear in an AP2 sequence in the process of transmission they must retain their standard values and should not be considered when decoding this sequence.
ВК	Carriage return	Print character, which causes the return of print position to the beginning of the line at the same line.
ВТ	Vertical tabulation	Print character, which controls shifting of the print position to the next position in the predetermined sequence of lines.
ВШ	Back space	Print character, which causes shifting of the print position one space back along the line.
ГТ	Horizontal tabulation	Print character, which controls shifting of the print position to the next one in a predetermined sequence of positions along the line.
ДА	Acknowledg	Communication character, which is transmitted from the receiving station to the transmitting one as an acknowledging response.
ЗБ	Erase	Service character, whose main function is to exclude erroneous or undesirable symbols

		on a punched tape by erasing them. The "Erase" character can be introduced into a flow of information or be excluded from it without having an effect on the content of information. The "Erase" character can be used to fill a carrier or time; however, in this case, the addition or exclusion of this character can affect the arrangement of information and control of the equipment.
ЗВ	Bell	Service character, which is used to attract attention of service personnel. When necessary, it can also be used to control the signal of malfunction or for other purposes of servicing.
ЗМ	Substitute	Service character, which is used to replace a symbol, which has been identified as invalid or erroneous.
КБ	End of text block	Communication character, which indicates the end of block, when data are divided into such blocks for purposes of transmission.
КН	End of medium	Service character, which can be used to designate the physical end of a carrier or the end of usable or desirable part of information recorded on the carrier. The location of this character does not have to correspond to the physical end of the carrier.
КП	End of transmission	Communication character, which indicates the end of transmission of one or more texts
КТ	End of text	Communication character, which indicates the end of text
КТМ	Inquiry	Communication character, which is used to request a response from a remote station. The response can contain the name of the station or information on the state of the station. In case of a switchable network, the first use of character KTM should mean request for a response concerning the name of the station. Upon agreement between the correspondents, subsequent uses of this character can include or exclude the functions of identification of the station.
НЕТ	Negative acknowledge	Communication character, which is transmitted from the receiving station as negative response to the transmitting station.
НЗ	Start of heading	Communication character, which is used as the first symbol of the heading of the communication
НТ	Start of text	Communication character, which signifies the end of heading and beginning of text

(Continuation)

ПС	Line feed	Print character, which controls shifting of the print position to the next line (without returning to the beginning of the line)
ПУС	Empty	Service character, whose only function is filling the carrier or time. The "Empty" character is introduced into the data flow or is excluded from it without affecting the content of information. However, this symbol can affect the arrangement of information and control of the equipment.
ПФ	Form feed	Print character, which controls shifting of the print position to a predetermined initial line of the next format (form)
(РИ4) (РИ3) (РИ2) (РИ1)	Information separators	Information separator is introduced at the end of the information part, to which it pertains. In accordance with the designation indices the information separators are ranked on the basis of the magnitude of their effect. РИ1 pertains to the shortest parts of information, while РИ4 - to the longest. A part of information with РИ having a large index can include (and if it does then it includes completely) a different number (none, one, or more) parts with РИ with a smaller index. For example, the part of information РИ3 cannot contain any part of РИ4, but it can contain any number of parts of РИ2 and РИ1.
СИН	Synchronization	Communication symbol, which is used in synchronous systems in the absence of transmission of any other symbol and ensures establishing and maintaining of synchronism between terminal units
АН	Cancel	Service character, which indicates that the information pertaining to it is erroneous or it should be cancelled
(СУ1) (СУ2) (СУ3)	Control characters	Control characters used to control auxiliary units connected to the data-processing or communication equipment
(СУ4)	Stop	Control character used to stop or turn off the auxilaiary units
ЛАТ	Latin register	Service character, which shifts the communication and data-processing equipment to the Latin register
РУС	Russian register	Service character, which shifts the communication and data-processing equipment to the Russian register

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