COMMUNICATIONS DATA SHEET 301

GLOSSARY OF TELECOMMUNICATIONS TERMS

Answer Back: A device which, when released by the receiving mechanism in response to an appropriate signal from the distant end, controls the transmitter and causes it to send back automatically the identity of the called station. This facility assures the calling operator that he is connected to the station desired.

Back Space Key: A control fitted to keyboard perforators and reperforating attachments to feed the punched tape backwards - usually so that mistyped characters can be erased by over-punching the all-mark (letters) combination.

Baud: The unit of telegraph speed. Telegraph signals are characterised by intervals of time duration equal to or greater than the shortest or elementary interval. Telegraph speed is, therefore, expressed as the inverse of the value of the elementary interval in seconds. A speed of one elementary interval per second is termed one baud.

Bias Distortion: Distortion in which all or some of the significant elements of a character have larger or shorter durations than the corresponding theoretical durations. Bias distortion is often caused by a maladjustment of some part of the system, such as a badly set relay.

Bit: Contraction of "binary digit" - the smallest unit of information in the Binary system.

Bit Rate: The speed at which bits are transmitted, expressed in bits per second.

Broadcast: A mode of operation where a number of teleprinter stations can receive messages simultaneously from a single transmitting source.

Cadence Speed: For teleprinters this is the telegraph speed in words per minute. Two teleprinters having the same telegraph baud speed do not necessarily have the same cadence speed. For a telegraph speed of 50 bauds, using 7-unit transmission, the cadence speed is 71.4 words per minute.
For a baud speed of 50 bauds, using 7½ unit transmission, the cadence speed is 66.6 words per minute (see Telegraph Speed).

Case: In telegraphy this term is often used synonymously with shift.

CCITT No. 2 Code: The internationally agreed 5-unit telegraph code.

CCITT No. 5 Code: The internationally agreed 8-unit telegraph code.

Characteristic Distortion: This is essentially repetitive and occurs in the form of a consistent distortion of one or more elements in a signal. It is sometimes caused by a badly set contact in a sending machine, or by transients as a result of modulation in a transmission channel.

Combination: A particular arrangement of code elements.

Compandor: A compandor is a combination of a compressor at one point in a communications path for reducing the volume range of signals, followed by an expandor for restoring the original volume. Usually the purpose of the compandor is to improve the ratio of the signal to noise entering in the path between the compressor and expandor.
Note The compandor is not restricted to the Telecommunications field.

Digital Data: Information represented by a code consisting of a sequence of discrete elements.

Double-Current System: A telegraph system in which signals are transmitted by reversing a current that is normally on the line during transmission.

Duplex System: A telegraph system which is arranged and equipped for operation in both directions simultaneously.

End-of-Line Indicator: A mechanism attached to the transmitter of a teleprinter, to provide a visual or aural indication when a specific number of keys have been depressed after the Carriage Return Key. This device is used as a warning to depress the Carriage Return Key in cases where there is no local record or only a tape record at the transmitting end and the receiving is a page machine.

Facsimile: A system for the transmission of images. The image is scanned at the transmitter, reconstructed at the receiving station and duplicated on to some form of paper.

Figure J: A teleprinter function which operates a pair of contacts to provide an external visual or audible alarm.

Figure Shift: One of the shifts into which the characters and functions of the five-unit code are grouped.

Fortuitous Distortion: Distortion resulting from causes subject to random laws - crosstalk, noise, dirty contacts etc.

Frequency Division Multiplexing (f.d.m.): A system where the transmission path is shared on a frequency basis by using a modulation system where a different sine wave carrier is required for each signal. The signals at the receiving point are separated by filtering.

Function: A teleprinter operation other than printing or perforating which requires the transmission of a particular code combination (e.g. Line Feed).

'Here Is' Key: Control for operation of local "Answer-Back Unit" to transmit identifying code name to distant station.

Keyboard Perforator: Machine which produces punched paper tape (without printer interpretation) from keyboard operation.

Letter Shift: One of the shifts into which the characters and functions of the five-unit code are grouped.

Local Record: A printed copy at transmitting station of message sent to line manually or automatically.

Margin: The maximum distortion which, when occurring on any or all of the signals applied to a telegraph receiver, is compatible with correct registration of all the symbols for which the receiver is designed.

Mark: One of the two kinds of elements in the international binary start-stop code, e.g. the first two elements in the combination for 'A' in the code are marks.

Modem: A contraction of "modulator - demodulator". The term may be used when the modulator and the demodulator are associated in the same signal-conversion equipment.

Off-Line: Term used to indicate that a teleprinter or set of equipment is not connected to a signalling circuit or line.

Orientation Device: An integral unit in most teleprinters to adjust the machine's operation so that the least distorted portion of each incoming unit (or baud) signal is sampled and fed to the decoding unit. This adjustment ensures that slight line distortion does not result in mis-selections.

Parity: The addition of non-information bits or elements to a code for error checking. Parity may be applied to characters, blocks or to any convenient element grouping.

Reperforator: An instrument which converts incoming electrical impulses of the telegraph code into equivalent perforations of a paper tape.

Run-Out Key: Operation of this control, which is fitted to certain teleprinters and reperforators causes the high speed repetition of the character associated with any other key held down at the same time.

Send-Receive Switch: A switch used in simplex systems for changing over from the sending to the receiving condition, and vice versa. On the teleprinter this switch is operated automatically, the tongue moving over to the send contact before the transmission of each character signal. The return to the receive contact may take place either directly after the transmission of the character signal, or be delayed.

Simplex System: A telegraph system which is arranged and equipped for operation in either direction, but not both directions simultaneously.

Space: One of the two kinds of elements in the international binary start-stop code, e.g. the last three elements of the combination for 'A' in the code are spaces.

Start Space: Usually positive battery which precedes a telegraph code combination. This signal releases the receive-cam in the local and distant teleprinters to ensure that both machines are in synchronism.

Stop Mark: Usually negative battery which arrests the receive cam of the local and distant teleprinters which then remain stationary to await the start space of the next character code.

Tape Low Alarm: A visual alarm system fitted to many punched-tape machines to give warning that the supply of unpunched tape is running low.

Tape Reader: Also known as automatic transmitter, this machine is designed to translate the coded perforations in punched paper tape into electrical signals at a steady, fixed speed.

Telegraph Distortion: A modulation (or restitution) suffers from telegraph distortion when the significant intervals have not all exactly their theoretical duration.

Telegraph Speed: The rate of transmission, either in characters or words per minute, or in bauds. For the purpose of calculation, a word is accepted as consisting of 5 letters and a space, or 6 characters.
In a 50 Baud 7½ unit transmission each character is of 150 millisecond and each word of 900 millisecond duration. Therefore in 1 minute $\frac{60}{0.9}$ i.e. 66 words can be transmitted.

Telex: The public teleprinter service operated by the Post Office & Telegraph authorities in most countries of the world.

Time Division Multiplexing (t.d.m.): A system for transmitting two or more independent signals over the same path by dividing the available time among the signals to form a composite train of pulses. Information may be transmitted by several forms of pulse modulation.

Torn Tape Relay: A system of message routing based on the removal of a punched tape from a reperforator at a communications centre and feeding into an automatic transmitter connected to another circuit.

'Who Are You' Signal: The code which when transmitted to a distant teleprinter causes the answer-back unit to automatically transmit back a station identification word or phrase usually known as the Answer-Back Code.