

TABLE OF CONTENTS

INTRODUCTION.....	4
SHORT SUMMARY.....	6
PART 1: A LOT ABOUT AND AROUND SAMUEL MORSE	7
CHAPTER 1: SAMUEL MORSE, ABOUT THE MAN.....	7
1.1. HIS YOUTH.....	7
1.2. THE PAINTER - A CHRONOLOGICAL OVERVIEW	8
1.3. A LOOK AT SOME OF MORSE’S FAMOUS PAINTINGS	13
1.4. THE INVENTION OF HIS ‘MORSE TELEGRAPH’ - A CHRONOLOGICAL OVERVIEW	17
1.5. HIS PATENTS.....	24
1.5.1. Overview	24
1.6. “WHAT HATH GOD WROUGHT”	30
1.6.1. The meaning: interpretations from the literature	30
1.6.2. The context	30
1.6.3. The Bible	31
1.6.4. The paper tape.....	31
1.7. SAMUEL MORSE AND LOUIS DAGUERRE	33
1.8. HIS RELIGIOUS AND POLITICAL VIEWS	36
1.9. SOME REMARKABLE EVENTS	38
1.10. A BIT ON HIS FAMILY LIFE, LATER YEARS AND DEATH	39
1.11. RECOGNITION, HONOURS AND AWARDS	41
1.12. SOME PERSONAL CLOSING REMARKS.....	43
Chapter 2: ABOUT Alfred VAIL.....	54
2.1. ABOUT HIS LIFE (1807-1859).....	54
2.2. HIS OWN INVENTIONS	55
2.3. AGREEMENT BETWEEN SAMUEL MORSE AND ALFRED VAIL (23 September 1837).....	56
2.4. SAMUEL MORSE VERSUS ALFRED VAIL	59
2.4.1. Did S. Morse invent the telegraph?	59
2.4.2. Did S. Morse improve his first prototype?.....	59
2.4.3. Did S. Morse invent the Morse code?	59
2.4.4. Did S. Morse invent the Morse key?.....	60
2.4.5. Disputes in the press after Morse’s death!	61
2.4.6. My conclusion	61
Chapter 3: SHORT DESCRIPTION OF THE EARLIEST APPARATUS.....	62
3.1. MORSE’S FIRST MODEL (1837).....	62
3.2. THE PATENT MODEL (1840)	64

3.3.	VAIL'S SECOND MODEL (1844).....	65
3.4.	THE THIRD MODEL (1846).....	67
3.5.	THE MODEL FROM 1849?	69
3.6	THE FIRST "KEYS"	69

PART 2: MORSE & RELATED CODES..... 70

Chapter 1. DETAILS AND EVOLUTION OF THE MORSE CODE 70

1.1.	THE DIFFERENT MORSE CODES.....	70
1.1.1.	Some observations about those different codes.....	70
1.1.2.	The numerical code of 1832	72
1.1.3.	The first Alphabetical Code (1837/1838).....	73
1.1.4.	The American Morse code (about 1844)	76
1.2.	THE GERKE CODE AND THE INTERNATIONAL CODE	79
1.2.1.	The Gerke code	79
1.2.2.	The International Morse code	80
1.2.3.	More code comparison tables	81
1.2.4.	About the extended International code	83
1.3.	MORE ABOUT CODES	86
1.3.1.	A Hundred Years of SOS.....	86
1.3.2.	Morse code for non-Latin alphabets	88
1)	Japanese.....	88
2)	Chinese.....	89
3)	Greek.....	90
4)	Russian	91
5)	Cyrillic.....	92
6)	Arabic	92
7)	Hebrew.....	93
1.3.3.	SEMAPHORE > signaling Morse codewith flags	94
1.3.4.	Some brief (interesting?) facts.....	96
1)	A bit of etymology.....	96
2)	Morse's second death.....	96
3)	Morse and Colt.....	96
4)	Morse versus SMS... ..	96
5)	Can I send Morse code with my smartphone?	96
6)	How to convert text into Morse code and vice versa?	97
7)	Records.....	97
8)	Morse over IP.....	97
9)	Carrier pigeon versus Morse code	97
10)	Morse code via snail mail;o)	97

11) Sending Morse code by knocking	98
12) Who coined the term 'bug'	98
13) Morse code as "Intangible Cultural Heritage"	98
14) Sending coded timing.....	99
15) How to practice Morse code with a spoon?	99
16) Why is a 'radio amateur' called a HAM?.....	99
17) A help for disabled	100
18) Ditti Morse code; what's that	100
19) A book in Morse code	100
20) Dead Head.....	101
21) The end of the Pony Express.....	102
22) Miscellaneous	102
Chapter 2: OTHER CODES	103
2.1. INTRODUCTION	103
2.2. THE OPTIC-MECHANIC TELEGRAPH FROM CLAUDE CHAPPE (1793)	104
2.3. CODES FROM SOME -MORE OR LESS FAMILIAR- OLD SYSTEMS.....	108
2.3.1. A note on very early electricity.....	108
2.3.2. Baron Pavel Schilling von Cannstadt (1832)	109
2.3.3. Gauss & Weber (1832/33)	110
2.3.4. Steinheil (1836/1837)	111
2.3.5. Bain (1843).....	112
2.3.6. Henley (1848).....	114
2.3.7. Other, less important, codes	115
2.3.8. Display at the receiver	118
2.4. THE CODES FROM William Cooke(1806-1879) & Prof. Charles Wheatstone (1802-1875)	120
2.4.1. The five needle telegraph	120
2.4.2. The two needle telegraph.....	122
2.4.3. The single needle telegraph.....	123
2.5. SOME OTHER CODES IN THE WORLD OF TELEGRAPHY	125
2.5.1. Baudot.....	125
2.5.2. MURRAY	126
2.5.3. EUROPEAN TELEX CODE and AMERICAN TELETYPE.....	127
2.6. MARITIME SIGNAL FLAGS.....	128
2.6.1. Alphabet and figures.....	128
2.6.2. Special meanings of individual flags	129
2.6.3. Naval special flags and pennants	130
2.7. DOCUMENTATION	131
2.7.1. Telegraph Codes of the World	131
2.7.2. The Mc ELROY poster (the details will follow)	139

2.8.	HOW DID THEY LEARN THE MORSE CODE	149
2.8.1.	Old tools.....	149
1)	Learner sets.....	149
2)	The Omnigraph	150
3)	The Instructograph	152
4)	Some other	152
2.8.2.	More tools that could help	153
1)	Learning with the aid of a record player.....	153
2)	Signal Disks.....	156
3)	Old instruction booklets	157
4)	Tools to memorize the code and 'decoder charts'	159
5)	Learning in a classroom	160
6)	Talking about OKi....., a personal note.....	162
7)	At the Scouts.....	164
8)	Miscellaneous illustrations	165
2.8.3.	How to learn it today	166
2.9.	ABOUT THE EFFICIENCY OF THE MORSE CODE	168
2.9.1.	Letter frequency	168
2.9.2.	Timing of the signals in the American code.....	169
2.9.3.	Comparison with the International code.....	170
2.9.4.	On practical efficiency and... Paris	172
2.9.5.	A late confession by Samuel Morse "himself"	173
2.9.6.	Some conclusions.....	174
2.10.	COMMENTS FROM COLLECTORS / HAMs	175

PART 3: MORSE APPARATUS	182
Chapter 1: ELEMENTARY WORKING PRINCIPLES.....	182
1.1. THE BASIC CONNECTION (The 'European' way).....	182
1.2. SET UP BETWEEN TWO STATIONS	183
Chapter 2: Apparatus using the Morse code.....	184
2.1. AMERICAN REGISTERS	184
2.1.1. The earliest models.....	184
1) From Samuel Morse/Alfred Vail (1837).....	184
2) A Tillotson	187
3) A Chester.....	188
4) And this special design is from Frederick Pearce.....	188
2.1.2. Later models	189
1) One from Bunnell.....	189
2) Phelps.....	189

3) Bunnell	189
4) Greeley	189
2.2. EUROPEAN MORSE RECEIVERS (a lot)	190
2.2.1. From Belgium	190
2.2.2. Embossers 1) to 6) are weight driven!	191
2.2.3. Ink writers	199
2.2.4. Automatic start/stop function.	207
2.2.5. Portable and army telegraphs	208
2.2.6. Demo and toy telegraphs	218
2.3. SOUNDERS AND KEY ON BOARDS (KOBs)	220
2.3.1. Sounders	220
2.3.2. Key On Board	224
2.3.3. UK "Baseboards"	226
2.3.4. Repeaters	227
1) A classic repeater	227
2) A more complex British model	228
2.4. EXAMPLES OF MY KEYS	229
2.4.1. Introduction	229
2.4.2. The beginning: Morse & Vail	230
2.4.3. Double tappers (or pedal keys)	230
2.4.4. 'Camelbacks'	231
2.4.5. Dual-lever keys ('reverse polarity keys')	234
2.4.6. Two remarkable keys	236
2.4.7. Special (G)PO keys.	237
2.4.8. Keys from Breguet	241
2.4.9. Keys from various countries.	242
2.4.10. The 'Belgian' Victor key	251
2.4.11. Miscellaneous keys	253
2.4.12. Marconi (replica) keys	254
2.4.13. Some toy keys	255
2.4.14. Very special keys	257
2.4.15. Addendum: "Key & Telegraph"	260
2.5. OTHER SYSTEMS WORKING WITH THE MORSE CODE	263
2.5.1. Typical old British apparatus	263
1) Single needle telegraphs	263
2) Bright's Bells	264
3) The double plate sounder	264
2.5.2. Professor Wheatstone's high-speed automatic system	265
1) The perforator	265

2)	The transmitter	266
3)	The receiver	266
2.5.3.	Mirror galvanometer	267
2.5.4.	Undulators / Siphon recorders	269
2.5.5.	The Aldis lamp.....	271
2.5.6.	Heliograph.....	272
2.5.7.	Transmission via the earth.....	273
2.5.8.	Early alarm systems	274
2.5.9.	Early wireless Morse from Guglielmo Marconi	275
1)	the 10-inch induction coil	275
2)	the replica 'grasshopper' Morse key'	275
3)	the 'guillotine' Morse keys.....	275
4)	the "coherer" (an original one).....	276
5)	the coherer receiver (a working replica made for me, with my original coherer)	276
6)	magnetic detector.....	277
7)	multiple tuner	277
8)	My coherers from Telefunken, Ducretet and Bing	278
9)	Other Marconi items.....	279
2.6.	TELEGRAPHS USING COMPLETELY DIFFERENT TECHNOLOGIES	280
2.6.1.	ABC telegraphs (also called 'dial'-telegraphs and 'pointer' telegraphs.....	280
1)	SIEMENS & HALSKE	280
2)	BREGUET	280
3)	DIGNEY	282
4)	LIPPENS	283
5)	WHEATSTONE	283
6)	BENEVOLO (not complete)	284
7)	HAGENDORF	284
2.6.2.	Printing telegraphs.....	285
1)	The three generations of HUGHES from my collection	285
2)	BAUDOT	287
3)	WRIGHT & NIGRON.....	288
4)	FERNDRUCKER AG (1898)	288
5)	"STOCK TICKERS" (stock exchange telegraph	288
6)	EXTEL.....	290
7)	STELJES.....	291
2.7.	LIST OF EARLY INVENTORS (1835-1885)	292
2.7.1.	In Europe.....	292
2.7.2.	In the U.S.....	293

PART 4: MISCELLANEOUS	294
1.1. BELGIAN APPARATUS IN USE	294
1.2. SKETCHES AT THE "CENTRAL TELEGRAPH OFFICE", GENERAL POST OFFICE, LONDON.....	295
1.3. A CONSIDERATION ABOUT THE RADIO AMATEURS (HAMs)	297
1.4. IDDY UMPTY	298
1.5. MORSE; YOU SAID MORSE?	300
1.6. A GUIDED TOUR OF LOCUST GROVE, ERSTWHILE HOME TO THE MORSE FAMILY	304
1.7. TELEGRAPHY AND WOMEN IN DAYS GONE BY	305
1.8. SOME TALES OF THE TELEGRAPH.....	305
1.9. TED McELROY, THE CHAMPION	308
1.10. RELAX! > Illustrations: all related to Morse and morse	309
1.10.1. Some stamps.....	309
1.10.2. Some 'chromos' (trading cards).....	314
1.10.3. Some letter covers	316
1.10.4. Some old photographs with Morse telegraphs	318
1.10.5. Phone cards	323
1.10.6. Miscellaneous	324
1.10.7. Questions	325
1.10.8. Humor	326
BIBLIOGRAPHY.....	332
WEBOGRAPHY	339
THANK YOU	342
TABLE OF CONTENTS	343