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Preface

There are various methods used in transferring messages through radio waves. With miscellaneous communication modes that are suitable for use under different conditions, varying in speed of transmission, modulation or data protocol.

And many of them are used by radio amateurs to connect worldwide on short waves, connections over satellite relays or message downloads from local packet-radio BBS on very short waves. The book you are about to read is about image transmission.

The most common method to transfer images is television broadcasting (*Fast-Scan Television*). An analog FSTV broadcast can be produced in amateur conditions too. Both picture and sound transmitted on amateur bands can be received via a regular TV set or by a satellite tuner in the case of frequency modulation. These connections are held only on ultrashort or microwave bands, because the signal needs a large bandwidth and thus the signal can be transported only through relatively small distances.

However the issue of this book is *image transmission on short waves*.

The most popular narrow-band mode for image transmission is SSTV – *Slow-scan Television*. Unlike the classic TV it can broadcast only static images with lower resolution.

An SSTV image is converted to an audio signal, which can then be transmitted over a voice channel by a communication transceiver on shortwave bands. With an expansion of radio broadcast digitalization, digital SSTV was also developed and uses advanced technologies like data compression, error correction codes and discrete multi-tone modulations for relatively fast narrow-band data transfer.

Another option for shortwave image transmission is *radiofax*, the predecessor of what is now commonly known as office fax. Radiofax is mostly used by meteorological stations for the broadcast of synoptic maps and satellite images. Or by press

agencies for the broadcast of news (and photographs in the past) on longwave and shortwave bands. Synoptic maps should be transferred in high quality, so image transmission takes about 10 minutes or more on average. Despite the pervasiveness of Internet technology, this broadcast method is still widely used.

For a long time the integral part of our hamshacks has been the personal computer. An essential part of a PC; the sound card inputs signals into the PC. And then specialized software converts the signal to data and vice versa. The data that is of interest in this book will be that of transmitted images.

I hope this book will spur those who are interested in these fascinating modes of communication to get immediately active in the field.

In Žďár nad Sázavou, April 11, 2013

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