

# **Community Radio**

## **Technical Manual**


**This Manual Belongs To:**

**Radio.....**

.....

**Text and diagrams by: Martin Sims**

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## **National Community Radio Forum**

The National Community Radio Forum is a national membership-driven association of community radio stations and support service organisations. Radio station members are independent, non-profit community-based organisations, owned and run by diverse local communities who actively participate in the development of programming activities, for sustainable non-discriminatory local development.



## **Open Society Foundation for South Africa**

The Open Society Foundation for South Africa is committed to the values, institutions and practices of an open, non-racial and non-sexist, democratic, civil society. It will work for a vigorous and autonomous civil society in which the rule of law and divergent opinions are respected.



## **Communication Assistance Foundation**

The Communication Assistance Foundation aims to strengthen freedom of expression and media diversity in developing countries through support for free and independent media.



## About the Contributors

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# Introduction

Many people have initiated or are advocating technical training programmes for community radio. The starting point for many of these programmes is to teach basic electronics. This is not the approach of this manual.

We believe that the most important thing is basic operational training. Many people are able to make good tea or coffee, but most of us don't understand the resistive element that heats the water.

The same applies to the community radio studio. You can make good programmes by using broadcast equipment efficiently and creatively, but you don't have to understand the complex integrated circuits and resistors inside the mixing consoles. An understanding of what the equipment does and how to use it, and the confidence to experiment, is really all you need to start producing good quality sound.

The machines in a radio station rely on people to operate them, and so they can only be as good as the station's staff and volunteers. A community radio station is a complex environment, with many departments, all depending on each other. To make good radio, every department needs to focus on its individual task, while never losing sight of the station's overall mission.

The technical department is no exception. The station depends on the technical department to keep broadcasting sound. At the same time, if the technical department is to succeed in keeping the equipment working, there must be good governance and management, and all staff and volunteers must be committed to the mission of the station.

## Aim of the Manual

The National Community Radio Forum (NCRF) and Open Society Foundation for South Africa (OSF-SA) have developed this manual as a resource to help community radio staff and volunteers. It can be used as a reference for technicians as they go about their day-to-day work, cleaning the studios and doing repairs. It can be used to train new people in the programming department - the many producers, newsreaders, presenters and DJs who will operate the studios. It can be used if you need ideas about how to develop your studios further, especially in relation to new digital technologies. We've included prices and costs so that the manager can use the manual to budget for repairs and replacements.

The manual also aims to demystify studio equipment - to help you understand how to use your studios properly and to give you the confidence to experiment. We hope to expand your technical knowledge and vocabulary and - who knows? We might even attract some readers to want to learn more and take up a future in electronics.

The manual provides information about:

- The broadcast system
- Studios at a radio station, and how to link them
- The types of equipment you are likely to find in a community station
- What the equipment in the studios can do
- Commonly used technical language and concepts
- Basic maintenance, fault-finding and problem solving.

## **How To Use the manual**

The manual is divided into a number of sections. Each new section builds on the previous section to give you a more detailed picture of the radio station and how it works.

### **Different Parts of the Station**

The first four sections introduce the broadcast system and different parts of the station. We recommend that everyone who is involved in planning and developing a community radio station; or who is involved in the station on a day-to-day basis; or who has a regular broadcast slot, reads the first five sections.

### **Fault-finding, Maintenance and Budgeting**

Section 5 deals with studio maintenance and fault-finding. It is very important that everyone who uses or works with the studios should read this section. It is especially important for the manager and finance manager to read this section, because of the budgets and other financial information we've included, and because the manager is ultimately responsible for keeping the station on air.



### **A-Z**

The A-Z reference section will be of special use for technicians, but it will also be useful for others wanting more detailed information about the different pieces of equipment found in studios, and how they work. The A-Z will also help you understand many of the words and terms used by broadcasters, sound engineers, equipment suppliers and others involved in the broadcast industry.



### **Helpful Tips**

Throughout the manual, there are helpful tips for using and maintaining equipment. We use this symbol to highlight tips and other advice we think will be useful.



## Cross-references

We use this symbol when we refer you to the A-Z for more detailed information.

We use this symbol when we refer you to another part of the manual for more details.



## Warnings

We use this symbol to warn you about actions or other things that can damage or destroy your equipment, or in any other way harm you or your station's operations.

## Diagrams

There are many diagrams in the manual, to support the text.

## Blank Pages

There are a number of blank pages in the manual. We have left these open so that you can write notes and make your own additions to the text. Every station's studios will be different, and you may want to note where our text and your studios differ, or to jot down any other additional information.

## Adding to the File

We've used a file so that technicians can slot in their own notes and additional information as needed. As time goes by you will want to add information to the file, to make it more comprehensive and to keep it up to date.

## Prices and Costs

We've included prices of some of the key pieces of equipment needed for broadcast and production. Most radio equipment is imported and so prices are subject to changes in the exchange rate. We've calculated as follows:

1 \$ = R10

1 UK £ = R14

This was the exchange rate in about October / November 2001. When you are finding out about new equipment, and see prices quoted in foreign currencies, you must remember to check the exchange rate and work out the latest prices.

The prices provided serve as a guideline for community radio stations wanting to buy good or adequate equipment. Obviously more expensive or cheaper equipment is available, but it is not always necessary or appropriate to buy the most expensive equipment. Buying the cheapest equipment is also not a good idea, as it will wear out faster.

## Appendices

There are five appendices:

- A. A list of some of the abbreviations used in the text, and their meanings.
- B. This appendix explains the prefixes added to units to denote size.
- C. A directory of South African broadcast equipment suppliers.
- D. A list of useful Internet resources and Web addresses. The Internet was an important resource for us in writing the manual.
- E. A list of useful references, including books and resources we drew on to write the manual.