

# BASIC CONCEPTS OF MAGNETIC TAPE RECORDING

## Fundamental Theory And Design Considerations For Professional Audio Equipment

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### FOREWORD

This discussion is intended only as an introduction to magnetic tape recording, an attempt to explain the fundamental theory in the simplest possible terms. As in any such endeavor there will no doubt be areas which are over-simplified, and in these instances it is requested that you remember the basic objective stated above.

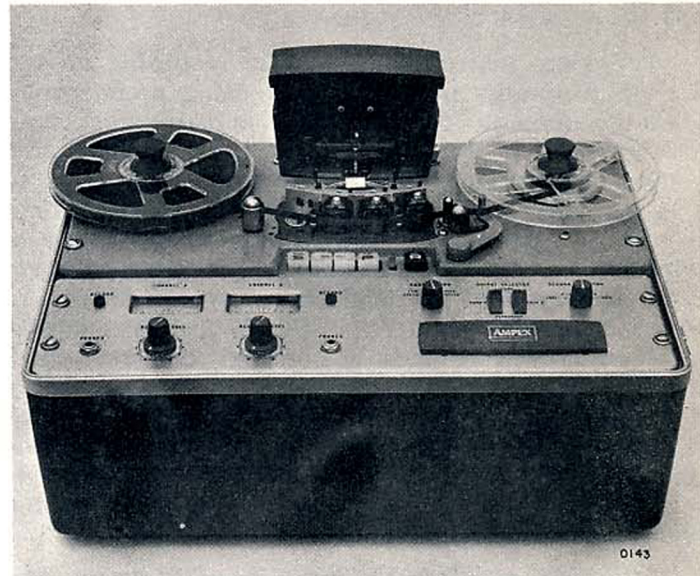
Information presented here was obtained from various sources by the Technical Publication Section of AMPEX PROFESSIONAL PRODUCTS Co., Audio Division. Included in the Appendix is a bibliography which lists the published works used. Other sources utilized were AMPEX Engineering Reports (not available for general distribution), and personal interviews with AMPEX engineering personnel.

### GENERAL

Let it be understood to start with that you are not going to be bored by the long, drawn out, discussion of the history of magnetic recording which is the seemingly inevitable preface to any attempts to explain the basic theory of this process. But it seems pertinent to point out that the first patent on a magnetic recording device was issued some 60 years ago, and it was originally anticipated that its main use would be in the telephone and telegraph industries. So magnetic sound is not a recent innovation.

It is also interesting to note that probably the first magnetic recorder to use tape (steel tape, that is)

instead of wire as the recording medium was developed for a motion picture application. About 1920 a British producer named Louis Blattner acquired patent rights to manufacture magnetic recording equipment for use in the entertainment field. His machine, the "Blattnerphone," supplied synchronous sound for some of the first talking pictures in England.



*Typical professional quality recorder/reproducer in portable case. Ampex Model PR-10-2 fits either a portable carrying case or will mount without modification in a normal 19-inch rack.*