

A BRC PUBLICATION • SPECIAL SECTIONS ON HOBBY HISTORY, DIRECTORIES, LOGS, OTR STATISTICS, BLANK TAPE, EQUIPMENT & MORE!



BY BOB BURNHAM



TM

A Technical Guide to Collecting Old Time Radio Programs

By Bob Burnham
A BRC PUBLICATION

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Old time radio recordings, services and supplies

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Two examples of workhorse reel decks for old time radio. LEFT-Sony TC-765/ABOVE-Teac X-10



ABOVE-Patch bays for old time radio. TOP-Broadcast type using 1/4 inch phone plugs. /BOTTOM-Home made type using phono plugs.

"TECHNICAL GUIDE" CONCEPT, DESIGN & LAYOUT - Bob Burnham

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What Life saves!!!

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A TECHNICAL GUIDE is dedicated to the many old time radio enthusiasts across the U.S. and Canada who have made the hobby a pleasure to be a part of... and to those who have tried but failed to make a good recording. At least they tried. Now they will succeed!

The History of Collecting and Trading Old-time Radio

A PREFACE BY JOE WEBB

This great hobby is older than most people think. I was surprised to learn that it existed even in the 1940's and 1950's. Of course, it wasn't in the form it is now. The major growth in the hobby began after 1970, and it has remained basically the same from 1977 or so until today.

In the 1940's and 1950's there were some engineers, actors and others who had disk recordings made of shows for their own reference. Recording studios would dub off the air when necessary. East coast actors had to hire recording studios to record their shows for reference. West coast actors usually only had to ask.

Home disks enjoyed limited popularity and some loyal radio fans saved some programs in this manner. The proliferation of consumer reel-to-reel tape recorders also made it easier to save favorite programs.

In the mid 1960's, the radio-listening crowd were reaching their 30's; economically able to afford recording equipment, and old enough to feel nostalgic for earlier days. It was also at that time radio stations began clearing their attics and basements of space-consuming transcription disks. It was then that these nostalgic folk saved disks from burial in landfills.

Many felt they were the only ones who remembered or cared about the programs. They feverishly contacted other radio stations and found more disks. Somehow, contacts were made, and people made some trades. Others were not fortunate enough to find disks, and had to rely on others for programs, sometimes paying \$25.00 an hour -- and remember, those are mid - 1960 dollars! Buying groups were formed, which created even more contacts for trading. Every program was valuable because it was assumed that no more would be discovered.

Eventually, some very low circulation [old time radio] publications came out... such as 1968's Stand By... On the Air by Bob Vito, or the early 1970's efforts of George Jennings, with Epilogue. The most important event was the beginning of Hello, Again, by Jay Hickerson. Still going strong in 1984, Hello, Again gave the hobby a vehicle for collectors to learn about each other and develop close trading relationships.

It was natural to want to meet each other, so a group calling itself SAVE [the Society of American Vintage Recording Enthusiasts] held conventions in Connecticut from 1971 to 1975. Due to poor attendance and other problems in 1975, a convention in 1976 was put very much in doubt. Jay Hickerson and some other collectors decided that having no convention was unacceptable, so they put one on in Meriden, Connecticut on October 31, 1976, and it grew from there. Only 96 people attended. By 1982, the annual convention had tripled in size-- the attendees had become more loyal and closely knit.

In the mid 1970's, [OTR] clubs were being formed, notably in Buffalo, Milwaukee, Los Angeles and Chicago, among others. Most of these clubs are still in existence today, and represent excellent ways of keeping the hobby alive.

Rebroadcasting of old shows has always stimulated interest in old time radio. On a personal note, in 1973 when WRVR in New York began broadcasting the Shadow, I began to develop an interest in OTR. This phenomenon described developed the hobby's small but loyal group of new collectors who were not old enough to have experienced radio's golden and silver ages.

The other media of attracting collectors has been through dealers. Whether they be records, cassettes, or reel to reel, for most people, dealers have been the first contact with the OTR hobby. Many dealers were also collectors and very supportive of the hobby. Customers were referred to other collectors and publications -- and the hobby prospered from these contacts.

Today, collectors have difficulty choosing how to start collecting, since there are so many shows to choose from. Though they are only a tiny percentage of the shows ever broadcast, today's hobbyist is in a position that would have been envied by those who started the hobby.

THE FUTURE -- The demographics which helped bring about our hobby in the first place no longer exists. In fact, early television nostalgia is developing, which should be followed by a longing for the 1960's. Many of the collectors who joined the ranks of the hobbyists have since lost interest or moved into video collecting. There is a strong central core of collectors, however, who have collected for over ten years, and few of them have changed hobbies. Those who have developed strong personal contacts have remained. In order for the hobby to "keep up its numbers," [of collectors] a significant recruitment of those born after 1958 or so will be necessary. Whether or not this will happen has yet to be determined.

WHAT TO LISTEN TO -- Joe's personal guide to old time radio's finest moments --

<u>The Golden Age (1938-1950)</u>	<u>The Silver Age (1950-1962)</u>
Comedy - Jack Benny [esp. 1944-1950] Fred Allen Great Gildersleeve [Peary] Amos 'n Andy [late 1940's]	Jack Benny Phil Harris-Alice Faye [not 1953] Bob & Ray [esp. 1959 CBS series]
Anthology - The Whistler	Escape - Suspense [especially those produced by Anton M. Leader]
Serials - Perry Mason	
Horror - Murder at Midnight	
Detective/Mystery - Box 13 Casey, Crime Photographer The Shadow [Bill Johnstone episodes, only]	Nightbeat Johnny Dollar [esp. those w/Bob Bailey] Philip Marlowe Richard Diamond Dragnet I Was a Communist for the FBI
Western -	Gunsmoke Have Gun Will Travel
Juvenile - Space Patrol	
Sci-Fi -	Dimension X X Minus One

A NOTE FROM JOE WEBB on the above choices

Some people will argue with what I carefully left out, on purpose! Remember, I'm looking at this as one who has only heard "radio" since 1974, when I started collecting. I don't have the hinderance or benefit of having heard these when I was "little." During "radio" I just wasn't around!

A NOTE FROM BOB BURNHAM on the above choices

For the most part, I'm in agreement with most of Joe's selections, but remember too, I wasn't around back then either. Actually, I suppose I could have caught a Johnny Dollar show maybe, but what pre-schooler listens to that sort of stuff anyway, especially when there were cartoons to watch on a black and white TV set!

It might also be interesting to note than Joe and I actually "grew up" in the hobby together. Joe and I have shared common interests in the hobby for about ten years now. Through our college years to the present, we've traded many reels -- Joe credits his first trade in the hobby as one with me. Honestly, I don't remember, although I confess as being the one who wrote to Joe first about the possibility of trading. Since then, the projects we've shared related to the hobby have been numerous. Perhaps the best known "project" was our work on Collector's Corner/National Radio Trader, and more recently, The Golden Years of Radio & TV. The ultimate project is the one you're reading. Although I take the blame for the basic concept of A Technical Guide, I had anticipated Joe's involvement from the start.

Trading old radio tapes of course, is the original basis for many long lasting relationships between collectors. The negotiating, sending catalogs and lists back and forth, writing letters and the many phone calls bring about many long lasting friendships. Collectors who are also dealers can exchange many amusing stories, even swap mailing lists, distribute each others products, etc. More often than not, however, these business arrangements, mutual "sharing" of customers, perhaps shared projects all started out with a simple, innocent trade. Had I known ten years ago writing to this guy who advertised in The Nostalgia Journal [now "The Comics Journal"] would many years later would be publishing a magazine with me, then a decade later, be contributing to a book I'm writing, I wouldn't have believed it. Yet the first trade between Webb and myself had notable influence on both of our OTR careers -- a positive influence. Trading, while it may not be a major source of programs for some collectors, can form the basis for many other OTR activities -- Buying groups, for example, which are built mostly on already existing trade relationships!

By Bob Burnham

1. Introduction

The hobby of collecting tapes of old time radio programs certainly has to be one of the most unique hobbies being practiced today. It is unique, to be sure--perhaps outsiders would even consider it a bit obscure. It is a type of entertainment whose element is a product of one of the mass medias, which, because of an advancing technology, was nearly lost. Radio broadcasting of the thirties, forties, fifties and even early sixties is of course, the product to which we're referring. It has been called the "golden" age of radio, although most of us simply call it "old time radio," or just "O. T. R." In this book, it's referred to as all of the above.

Our hobby relates to the listening of and/or preserving and collecting recordings of these early broadcasts. There are some in our hobby that like to deal primarily with the original "disks" or master tapes that the programs were originally preserved on. Most of us, however, find that combining the modern technology of either (or both) cassette or reel tapes with the "nostalgia" of the past a more convenient and economical alternative. We have the choice of either buying the programs already recorded on tape by an O. T. R. "dealer," or recording them ourselves either from rebroadcasts, from other tapes, or even from the original "disk" if we come across any.

The science of using the tape recorder to handle these programs is one of the major concerns of this book, although it isn't the only thing you'll be reading about.

Tape recorders are, of course, extremely complex electronic devices. They may appear relatively tame from the outside, but the research that went into the design of its insides make it nothing short of being a minor miracle.

What is unfortunate, however, is that so many of us take these magnetic wizards for granted. We push the buttons, set and forget. This combined with the rather obsolete and obscure tape format most of us using reel tape have adopted (four track mono), brings with it a variety of inherent problems.

This book, it is hoped, will provide a working knowledge for collectors involved in trading and other aspects of the hobby--actually educate those who have no other source of such knowledge--in the art of making old time radio recordings with perfection. You may be able to find other books on tape recording techniques in general, but none will be focused on old time radio as this one is. In addition, there are other topics related to our hobby which are covered here to make this as thorough a "course" in old time radio as possible. Tape recording, however, is the "meat" of the hobby, since our collections are all preserved on tape, for the most part. It is logical then, to make the "meat" of an O. T. R. "handbook" tape recording and the other technical aspects. This is not an indication that the technical stuff is the only important thing to learn about O. T. R.--there are many other areas which are also extremely important (also included within)--it is probably a correct assumption, however, that operating a tape deck properly is one of the "key" items of importance to building a respectable collection and having a successful trading "career."

One of the major "wants" of all collectors is good sound quality. This cannot be achieved if the proper combination of elements in tape recording are not present. These are reasonably good equipment, properly maintained equipment, reasonable quality recording tape and proper recording techniques. The last thing mentioned is of course, related to the operator. If the operator is ignorant of the correct manner in which to operate his equipment, no matter how good the equipment, tape or any other aspect can produce quality old time radio. Some collectors are unsatisfied with the recordings they produce. Perhaps this dissatisfaction is the result of lack of knowledge about their equipment or how to get the most of it with old time radio. Anyone who goes through this book, will gain all this information plus learn what it takes to get the most out of old time radio hobbying. The thing the collector will "gain" amounts to simply greater enjoyment of the hobby.

Although one of the goals of this book is to help stamp out bad sounding O. T. R. recordings, another perhaps more important goal is simply to help the collector simply get more pleasure out of his collection. These reasons, plus the need in general, for a definitive, one source "how to" book prompted the writing of this work. There are always newcomers to the hobby who will be faced with the questions all of us have had to seek out answers to the hard way. Those questions, it is hoped, will all be dealt with here. And if any are left out, well, there's always the possibility of a second volume of "A Technical Guide." Read on!

2. Collectors Have a Choice...Cassette or Reel to Reel?

The audio cassette of today is an incredible medium. It is convenient, compact, and with today's equipment provides excellent results. In fact, moderately priced cassette decks of today provide far superior sound quality to even the finest consumer reel to reel equipment operating at 3-3/4. Perhaps this point can be argued, and certainly there are some areas in which cassettes can be improved--although not very much. If you arrange side by side, a \$250 cassette deck using a "Metal" tape, next to a \$400 reel deck operating at 3-3/4 inches per second using Scotch 206, Maxell UD, or any reel tape of your choosing... then record exactly the same thing on both machines [ANYTHING...music, radio programs, test tones], almost without question, the cassette deck will far outperform the reel deck. You will be able to record higher frequencies at a higher recording level on the cassette deck, and you will be able to do it without distortion. If the cassette deck has Dolby, or a more advanced form of noise reduction, that's another point in its favor. Of course, reel decks can ALSO have noise reduction circuitry and use the newer "extra efficiency" reel tape, but now you're no longer talking about a \$400 reel deck!

The old time radio collector still has a choice between storing his collection on reel or cassette tapes. Both have their virtues, but let's look at their specifics--

CASSETTE TAPE ADVANTAGES

1. Compact and convenient.
2. Easy to label, organize and store
3. Very wide selection of tape varieties to choose from.
4. Low PER TAPE cost.
5. Inexpensive PER TAPE to mail.
6. Extremely high quality and generally very reliable.
7. Wide selection of equipment .
8. Low cost for equipment.
9. Can be played in the car.
10. Widely used by everyone--nearly anyone has a cassette player on which to play your tapes.

CASSETTE TAPE DISADVANTAGES

1. Large cassette collections can get very cluttered.
2. High PER HOUR tape cost.
3. Limited recording lengths.
4. Longer lengths, especially lower quality tapes more prone to jamming.
5. Drop outs in tapes more apparent due to slower speed [on low cost tape].
6. Very inconvenient to edit or repair through splicing.

As you may note, both the cassette and reel formats have their own particular advantages. What it boils down to is this: If you plan to build a program collection of any size at all [perhaps over 100 shows], it is strongly recommended you adopt the reel to reel format. Predictably, once you start building your collection up, you undoubtedly will discover other shows you like which you also feel you'd like to have. You enjoy a show so much, you wish to obtain all the episodes which exist of a particular series. Unfortunately, when a series such as Suspense, involves over 900 broadcasts, you realize it would require at least 450 C-60 cassettes! The same collection on 4 track, 1800' reels recorded at 3-3/4 inches per second would require somewhere around 75 reels. If you purchased the programs on cassette, at \$7.00 per cassette, the cost would be...\$3150.00!!! If you purchased the 75 reels at \$14.00 per reel, the cost would be \$1050.00, still a lot of money, but we're talking about a lot of listening!

What you lose if you go the reel route over cassette is maybe a little loss in convenience... maybe a larger cash outlay for the equipment in the beginning, but in return, you save yourself a large amount of money on tape, and you save a large amount of shelf space in the long run. And the convenience of cassette can still be enjoyed simply by recording your reel recordings onto a handful of cassettes for enjoyment in the car, or anywhere you can take a portable cassette player.

REEL TO REEL TAPE ADVANTAGES

1. Longer recording lengths
2. Plenty of room on boxes for labelling
3. Very low per hour cost, depending on speed and tracks used [4 track mono for old time radio is very economical].
4. Reasonably high quality, especially at higher speeds.
5. Ability to store large number of hours in a relatively small space [4 track mono].
6. Moderate to low PER TAPE cost.
7. Ability to record left and right channels separately [4 track mono] on some machines.
8. Ability to "double speed" duplicate, and "double track."
9. Convenient to edit or repair through splicing the tape.
10. Extremely reliable jam free format.

REEL TO REEL TAPE DISADVANTAGES

1. Take more time to load tapes on machines.
2. Individual tapes somewhat bulky.
3. Limited selection of equipment still being manufactured [for consumer use-4 track format].
4. Very expensive for "workhorse" grade decks.
5. Limited selection of "reasonably priced" reel tape available.
6. Equipment very heavy and bulky.
7. Costlier to operate [consumes more energy].

We should also mention blank tape costs are lower for reel than for cassette. Even if you use the "bulk" cassettes, you'll be paying in the neighborhood of 70¢ per C-60 cassette, not including a box or a label. A reel of "used" Government surplus Ampex 641 is priced at around \$1.50 per reel in 1800' lengths. If you record in the usual old time radio format [4 track mono at 3-3/4 inches per second], you can typically fit six hours of programming on one tape. To record this same amount on "bulk" cassettes at the price given, the cost for blank tapes would be \$4.20. Of course, you can buy the drugstore "special" cassettes at "three for \$1.00," and spend only \$2.00 on cassettes [for six hours], but when you find the tapes jam a few days after you record them, plus consider how terrible they sound, the "three for \$1.00" special isn't such a bargain after all, now is it?

3. Tape Recording Formats

We've already discussed the two basic choices you have to pick from in building your collection. Of equal concern is how you use the format you've chosen to its best advantage. If you have chosen cassette, you have many limitations. There are some cassette decks which will operate at two speeds, but the speed you will want is the standard, slower speed. This speed, in "inches-per-second" is 1-7/8. The higher speed comes in handy if you have another machine with the higher speed, because it allows you to duplicate a cassette at high speed. The lower speed, however, is the common one -- the one everyone has. If you buy cassettes already recorded, they will be recorded at the lower speed. If you manage to find someone to trade cassettes with, chances are your trading friend will use only the lower speed because the majority of the cassette decks sold are designed as one-speed machines. You probably have a stereo cassette deck. If it is an inexpensive portable, it's a good idea to refrain from using it for anything but playback because it will not give you very good results. If it is a stereo cassette deck, it is undoubtedly equipped with Dolby noise reduction of some form. You should use "DOLBY B" on all recordings in both record and playback mode. If it has a more advanced form of Dolby or other noise reduction, you should use the "more advanced" noise reduction only if the cassette being recorded is going to be played back on equipment which has the same feature[s].

"Dolby B" is very common -- used in all commercially produced cassette tapes -- and playable on non-Dolby equipment. If you cassette player in your car does not have Dolby, your tapes recorded with Dolby will sound just a bit brighter.

JVC, by the way, has a noise reduction system called ANRS [Automatic Noise Reduction System]. This system works basically the same as Dolby B, and is fully compatible. When recording old time radio, Dolby is very beneficial because it prevents additional hiss from being added in the recording/playback process, however, it does NOT remove already existing hiss.

The cassette format itself, was unleashed on the public in the 1960's by Norelco. At that point, it was intended primarily for dictation purposes and not for serious recording -- certainly not for music and its use for old time radio would have been highly questionable, as well.

Open reel in the four track form for home use, was enjoying a great deal of popularity for the "serious" music recordist into the 1960's and 1970's. Many different models were available by such manufacturers as Sony, Concord, Roberts, Lafayette, Tandberg, Allied, and others. Most of these companies are no longer in the reel equipment business -- some are no longer in business, period. However, these brands, along with Teac were the major ones used by old time radio collectors in the earlier days and even today.

The cassette format slowly evolved into a more respectable medium. In a very short time, it replaced the inexpensive reel-to-reel tape recorders that would accept only three inch reels. For many years, however, reel to reel still enjoyed popularity as the "state-of-art" home recording medium, and manufacturers produced [primarily in the four track format], a wide variety of models to meet demands. Sony, for example, had a full color brochure describing 10 or 12 of its models.

In more recent years, the cassette has found a place of its own in the hearts of recording audiophiles everywhere. With the advent of Dolby, the tape hiss problem was suppressed. More advanced head designs and electronics further improved the cassette medium. The tape cassette itself was improved -- both the tape as well as the housing, or "shell." "Metal" formulation using pure iron particles [rather than iron oxide], gave cassette the only thing reel previously had over cassette in terms of sound quality... recording "head room," [the highest possible level a recording can be made at without distortion -- especially noticeable at high frequencies]. Because of all these improvements, the cassette medium finally has overwhelmingly become accepted by the consumer as the new home recording medium.

The popularity of cassettes virtually devoured many of the existing lower-priced reel tape decks, and brought the once popular "8 TRACK" cartridges into a state of obscurity. Manufacturers of reel equipment eventually dropped production of some or all of their reel decks -- Sony's line dropped down to three models, one of which was a semi-professional model with only two track recording ability. Teac, however, continued to produce a variety of models, and still does today, however, some of their limitations make them less than desirable for four track mono use -- necessary for old time radio recording in its most popular form.

4. Tracking Schemes

With cassette, there are four tracks to work with, if you have a stereo cassette deck to work with. You have a left and right track for side one and a left and right track for side two. Because of compatibility restrictions imposed by Norelco, holder of the cassette patent, cassette decks are not and never were designed to operate in the four track mono mode. By four track mono, it is meant that four totally different programs are recorded on four different tracks. In other words, you would not want to listen to both the left and right tracks at the same time because two different programs would be playing at the same time. Recording in this format on cassette is possible only if you record both the left and right tracks simultaneously...and feed each track from a different source. This, however, is not recommended because of the danger of channel leakage, or crosstalk between the two tracks. It is also impossible to record on any cassette deck first the left channel then go back and record the right channel without erasing what you have just recorded on the left channel. Why would anyone want to do this in the first place? For mono, it saves on tape costs and storage space by 50%. And this is exactly what is done in the 4 track mono reel format. Because of the physical spacing on the tape itself, plus the less cramped designs of the heads, the channel leakage problem is minimized. For all practical purposes, with well maintained and properly connected equipment which is designed properly, the channel leakage problem with four track reel, is virtually non-existent. A brief discussion of tracking and a little history on the reel format may be helpful to provide a more thorough understanding of what this "tracking" business is all about and how it concerns us old time radio enthusiasts.

Open reel was the first method used to record on magnetic tape. The tape itself, consists of essentially three layers, sometimes four. The basic three are the backing of the tape, which is a clear layer of polyester "film," the binder, which provides a base for the oxide layer to be imbedded in. The oxide layer contains microscopic particles of iron oxide, which when appropriately magnetized by a recording head, can preserve information. I say information because the concept can be applied to not only audio, but also video and computer systems equally as well.

The first open reel equipment manufactured was FULL TRACK MONO. This means the tape could be recorded and played in one direction only. If you "turned the tape over" to play, you would hear the first side backwards. Or if you tried to record on the "second side" you would in the process, erase the first side! The single "track" in this format uses the entire width of the tape. This format is still in use today in professional situations. "All news" AM stations make use of this format as well as other stations operating in mono who haven't upgraded their facilities. The FULL TRACK format is easily edited through splicing and such editing does not interfere with material on adjacent sides or tracks.

Another format is TWO TRACK STEREO which is similar to TWO TRACK MONO in only one respect: That is that the two tracks occupy approximately the same amount of space on the tape. TWO TRACK STEREO is actually fully compatible with FULL TRACK MONO, in that a two track stereo tape can be played with no problems on a full track mono machine [and vice versa]. With two track stereo, you have two tracks [left and right] going in exactly the same direction at the same time. The left track occupies a little less than 50% of the width of the tape, and the right track occupies a little less than 50% of the opposite half of the tape. As with FULL TRACK, you record and playback in only one direction. There is only one "side" to the tape, and as with FULL TRACK again, if you even tried to play the "second side," you would hear the first side backwards.

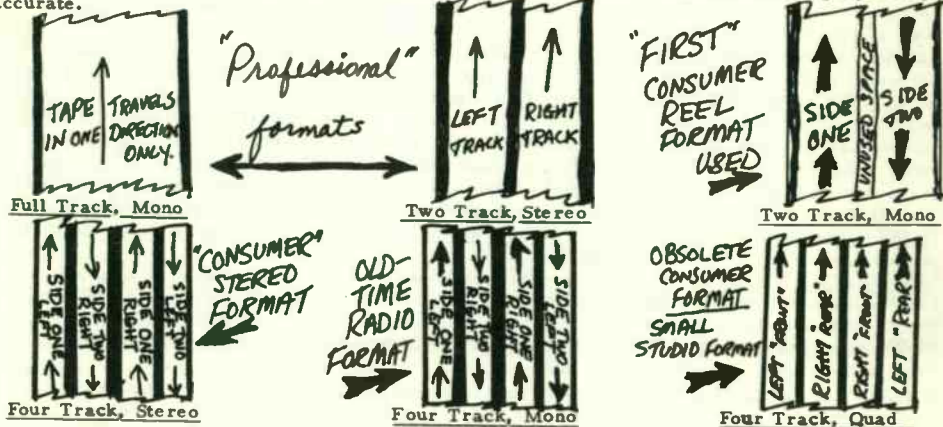
TWO TRACK STEREO is considered the "professional" format. It is used by nearly all radio stations, certain recording studios, and even has been adopted for home use on a limited basis. This format has somewhat superior signal-to-noise ratio [hiss and noise versus wanted sound] over the FOUR TRACK STEREO format which we will discuss shortly. Two track stereo can be edited by splicing without interfering with adjacent recordings, which is another of its big advantages over the four track stereo format, however, because it has only one "side" -- can be recorded in one direction only -- it uses 50% more recording tape [and logically, is also 50% more costly to build a collection of tapes in this format.].

TWO TRACK MONO, on the other hand, is more economical in terms of tape efficiency compared to **TWO TRACK STEREO**, however, it is not compatible with the two "professional" formats, and logically, it is impossible to record in stereo in the **TWO TRACK MONO** format. With **TWO TRACK MONO**, you do indeed, have two tracks, as in **TWO TRACK STEREO**, however, that is where the similarities between the two formats ends. **TWO TRACK MONO** means that there are again two tracks--one which goes in one direction [side 1], and another which goes in the opposite direction [side 2], hence you have a two-sided tape. This was for many years, the "consumer" format; if you had at one time, a small portable reel recorder that played only three or five inch reels, **TWO TRACK MONO** was undoubtedly the format it used. It was also used on a limited basis in the professional fields, but because of the editing and compatibility problem [with full track], was not as widely used as **FULL** track on a professional level. If you cut and spliced something on "side one" for editing purposes, you would also in the process, cut into whatever was recorded on the opposite side at that same point on the tape. Of course, one way of getting around that was to leave the second side blank, but if you were going to do that, there was no point in having **TWO TRACK MONO** over **FULL TRACK MONO**. In addition, generally speaking, the wider the track, the better the performance, particularly in the area of signal-to-noise ratio. Also slight flaws in the tape itself are not as noticeable with the wider tracks.

With the development of stereo equipment, an economical means to record stereo for home use was developed, and a unique tracking arrangement was established as a standard. This was the **FOUR TRACK STEREO** format, which basically is the same as **FOUR TRACK MONO** in the way the tracks are arranged on the tape. The difference is in how they are listened to. With **FOUR TRACK STEREO**, you have a left and right channel which you listen to simultaneously. You record and play both tracks at the same time. With **FOUR TRACK MONO**, the format with which we as radio collectors are most concerned, the left track is listened to and then the right track is listened to at a different listening session. If both tracks are listened to at the same time, two **DIFFERENT** programs are playing at the same time, which really isn't much fun. Generally speaking [again--we do speak generally at frequent intervals!], the **FOUR TRACK MONO** tapes are recording in four passes of the tape if you're preparing four track "masters." You would first record side one, left channel; then record side two, left channel. After that, as logic would tell you, you'd go back to the first side and record the right channel, then go back and record the second side, right channel. Some tape deck models do not allow this recording sequence, however, because they were intended primarily for **FOUR TRACK STEREO** use. It is still possible, however, to record **FOUR TRACK MONO** on machines which were intended primarily for **FOUR TRACK STEREO**. You must record both the left and right tracks of each side at the same time. Some purists would argue that this "double-tracking" technique will impose channel leakage or crosstalk. It is again emphasized, however, that **IF A MACHINE IS PROPERLY MAINTAINED AND CONNECTED**, as well as being designed properly, in the first place, that "double tracking" will **NOT** cause noticeable channel leakage with most modern equipment. This does not necessarily apply to cassettes, however, but no one in their right mind would want to record **FOUR TRACK MONO** on cassette, anyway!

REEL TO REEL TRACKING CONFIGURATIONS

Arrows show direction of tape travel. Drawings are approximate and may not be graphically accurate.



One final reel format which should be mentioned is Four Track, Quad. The reason it should be mentioned is you may run across an excellent price on a used Quad [4 channel] reel tape deck and wonder if it is compatible with our old time radio format -- Four Track Mono. Happily, the answer to that question is yes.

With Four Track, Quad, there's four channels [tracks] all going in the SAME direction, however, you have the option of recording or playing back any combination of tracks. The "tracks" are generally labeled "LEFT-FRONT, RIGHT-FRONT, LEFT-REAR, RIGHT-REAR," and you'll find four VU meters. The trick is to use only the "FRONT" tracks, if you're playing or recording old time radio in the four track mono mode. If you try playing back the rear channels, you'll hear the opposite side backwards -- the same as trying to play the second "side" of a FULL TRACK MONO or TWO TRACK STEREO recording. On a four track QUAD deck, when you come to the end of the first side, simply turn the tape over, and continue to record only on the FRONT channels. In this way, you'll end up with a FULLY COMPATIBLE Four Track Mono recording. Don't use the REAR channels at all and you won't run into problems as long as your tape deck is operating properly.

With a cassette deck, my recommendation is simple. Assuming it's a stereo deck, buy a "Y" adapter and connect the left and right inputs together, and feed both channels from a single source. If you're recording from a Four Track Mono reel recording and have another cassette deck, feed the left channel of the REEL deck into BOTH channels of one cassette deck, then feed the right channel of the REEL deck into BOTH CHANNELS of THE OTHER cassette deck. In this way, you can record two cassettes at a time, and you'll spend only three hours recording a six hour, 1800' reel onto cassette. If you have cassette decks that will run at a higher speed [3-3/4 inches per second], run your reel tape deck at a higher speed [7-1/2 inches per second if your master's normal playing speed is 3-3/4]. Do this, and you can record six hours on cassette in 1-1/2 hours, although you'll go pretty crazy when programs end and you have to flip cassettes. If you want perfect reproduction and the full benefit of Dolby noise reduction at "regular" cassette speed, don't use this latter method.

5. The Compatibility Problem - What Professionally Recorded Masters Can I Play?

You may be lucky enough to come upon some professionally recorded studio masters. If you are, and you are limited to playing them back on your FOUR TRACK equipment, you should keep a few things in mind. The first thing is when in doubt, play back only the left channel, unless the right channel sounds better. A look at the Tracking Configurations drawn on the previous page and reviewing the preceding explanations of tracking may help you to better understand what's going on. With the exception of TWO TRACK STEREO, you will be able to play back ANY of the tracking configurations described on your FOUR TRACK machine. If you play back a TWO TRACK STEREO recording, you will be able to accurately play back only the left channel. The right channel will be greatly reduced and sound very hissy. The reason for this is the "gap" on your 4 track head will actually be playing back a center space that is unused on the tape in the TWO TRACK STEREO mode. This space separates the left and right channels for TWO TRACK STEREO machines so the channels do not interfere with one another and so channel "separation" can be maximized. It also simplifies designing of the tape heads. Your best bet in dealing with TWO TRACK STEREO masters, is to BORROW rent or purchase a TWO TRACK STEREO machine. Either that or have someone transfer the tapes for you professionally.

The studio masters you are most likely to come across will be either FULL TRACK MONO or TWO TRACK MONO. Playing the full track recording is simple enough. In theory, playing either or both your left or right channels should produce equal results, however because of differences in equipment used to master the tape, slight head misalignments, etc. One channel is likely to sound a little brighter than the other. You should record from the brighter sounding channel. You should NOT mix the channels together because this will probably cause a loss of high frequencies due to phasing, which we won't deal with.

If your studio master is two track mono, use only the left channel to play back [do the same with full track if both left and right tracks sound the same]. Your two track mono tape, of course, has TWO SIDES, unless one was left blank.

How do you know if a recording is FULL TRACK or TWO TRACK MONO? Listen to the right channel. If you hear the SECOND SIDE BACKWARDS, then it's TWO TRACK MONO. If you hear the same thing that's on the left channel, it's full track. Also to prove it's truly FULL TRACK, [and not someone trying to imitate FULL TRACK by recording the same thing on the left and right tracks of a four track deck] -- try this simple test: FAST FORWARD the tape to the end, then turn it over, as if to play the second side. Start the machine up. If you eventually hear the end of the FIRST SIDE BACKWARDS, then you have an authentic FULL TRACK recording. If someone offers you FULL TRACK masters, at least you have this method to check up on them -- if they copied FULL TRACK masters with a FOUR TRACK machine doing the recording, at least you'll know they lied to you about THAT.

6. Double Speeding and Double Tracking

The term "Double Speeding" was probably invented by old time radio collectors. It implies "high speed duplicating," and in essence, that's what it is. It's possible with both reel and cassette, although it's more commonly practiced with reel to reel decks.

One of the many advantages of reel over MOST cassette decks is the ability to select speeds at which we record. The higher the speed, the better the recording quality, but the poorer the tape efficiency. The common speeds are 1-7/8 [the regular cassette speed and slowest reel speed generally available], 3-3/4, 7-1/2, 15 and 30. These speeds are measured in inches-per-second, meaning, for example, that for every SECOND you want to record, 3-3/4 inches must pass by the record head. The common and most widely used speed for old time radio is 3-3/4. Although 7-1/2 would yield better results, a compromise for quality versus tape economy and storage space must be made. And because most of us don't have access to WAREHOUSE storage space needed for the hundred of thousands of shows we might want at 7-1/2 i. p. s., we've all inherited the lower speed and four track mono format from other collectors. The 7-1/2 inches per second speed is the "common" professional speed among broadcasters and studios alike. For editing purposes, it's easier to work with and it is indeed better sounding. 15 and 30 inches per second, are used primarily by major recording studios involved in making records and these are the speeds the multi-tracking equipment [eight and sixteen track] using inch wide tape make use of. They spend a few hundred dollars on a SINGLE reel of tape--obviously, we old time radio people aren't multi-billionaires with warehouses to store tape, so scratch the inch wide tape, and the 15 and 30 i. p. s. speeds. As old time radio collectors, we can make limited use of the 7-1/2 speed for transferring electrical transcriptions [original disks] to tape as "master" copies, and because tape is easier to edit at that speed, we can splice out disk skips, and other noise a little more easily. But for our main masters for "preserving" the shows, 3-3/4 is the standard. A slower speed should NOT be used because of the compatibility problem, the much poorer sound quality [on-reel] and other problems which can creep in which we'll deal with later.

Since 3-3/4 IS the standard, we can also observe the "broadcast" standard, 7-1/2, is exactly "double" our OTR standard. Of course, when you play back a 3-3/4 tape at 7-1/2, you get what sounds like a bunch of mice acting out your radio program. Useless to listen to, true, but when you run TWO reel decks at this higher speed, with one of them recording what the other is playing you get something else, indeed. What you get is a technique called "Double Speeding" --or duplicating a reel TWICE as fast as recording at normal speed. If you record [duplicate] a six hour, 1800' reel in this manner, track by track in the manner already described, it will take you only three hours, not including the time it takes to flip tapes, change tracks or whatever you need to do. There are a few purists who frown on the "Double Speed" technique, however, with reasonable quality recording tape, used on a properly adjusted [for the tape used] tape deck, you should experience excellent results. In fact, if you compared the sound quality of a tape duplicated at "normal" speed to that of one duplicated "Double Speed," you will very likely find they sound IDENTICAL. If there is any difference, that difference will be probably very slight, and will be caused by differences in your machines bias and/or eq for the type of tape used. Most reel decks have switches on the front panel for adjusting bias and eq [equalization] for the type of tape used. A little experimentation on your part will determine which settings are optimum for "Double Speeding." The bias switch will affect only the tape deck doing the recording. The "eq" switch may effect only the recording deck, but it may also affect the playback deck. You should only need to switch these switches out of their usual position if you're unsatisfied with your "Double Speed" recordings.

"Double Tracking" is a somewhat more questionable practice already discussed in brief. It involves recording both the left and right channels in duplicating a four track mono recording, simultaneously. Certain reel decks do not permit recording of the left and right channels separately [the Teac "X" series is an example], so "Double Tracking" is the only way to do it on these machines. The Sony decks, the earlier Teacs [including the popular "A-2300SX"], DO allow track by track recording, however.

Is it wise to "Double Track?" My response to that question is perhaps it is an acceptable practice if your recording set-up passes the following tests:

1. Engage recording mode on both the left and right channels of your "recording" deck.
2. Select a 4 track mono reel -- mount and play on your "playback" deck which is connected in the usual way -- directly to your recording deck [left output into left input, right output into right input].
3. Turn the output of one channel of your playback deck all the way down, while turning the output of the opposite channel all the way up. If you have no way of turning the outputs of individual channels down on your playback deck, select or make a recording using ONE channel only of the deck and proceed.
4. Level the meters on the recording deck so they're higher than normally set... let them "peak" into the "red" quite frequently.

5. Turn the input gain on the recording deck of the channel not being fed with audio ALL the way up. You will be then recording only tape hiss/deck electronics noise on this channel.
6. Record at least five minutes of material, rewind and playback the channel you recorded only the hiss/noise on. Turn your monitor amplifier all the way up [preferably with headphones]. If you can make out any of what's going on in the opposite channel, proceed to the next step. If not, you have an excellent set up and it should be safe for you to BOTH "Double Speed" AND "Double Track."
7. If you can hear what's going on in the opposite track in your "blank" track, try first turning down the OUTPUT and/or disconnecting the output patch cord on the "recorded" track. If that eliminates the channel leakage, you still have an excellent system and you can "Double Track" without fear of imposing channel leakage. If the leakage is there still, you should think twice about using the "Double Tracking" technique, except for non-critical recordings you make for yourself.

If all you hear is "swishes" or modulation noise, then that's probably okay. The sounds that are most likely to bleed through are the higher frequencies, at about 4000 hertz and above. Fortunately, there isn't a lot of high frequencies in our old radio programs. If you hear definite and distinct voices, then you should be concerned to the point of not making recordings for anyone which are "Double Tracked" -- although you may spend twice as much time making tapes for your trades than what you normally would want to.

If you haven't had your tape deck serviced for some time and/or it's more than a couple years old, you should have it checked. Make sure your service technician checks head alignment [and condition of heads], and channel separation. Have him see that all specs are up to your manufacturers specs.

7. Maintaining Equipment

You should first refer to your tape deck owner's manual. If it states anything contrary to what is stated here, observe what your manufacturer has recommended. These recommendations are somewhat generalized.

The first thing you should try to avoid, especially with heavy, bulky reel to reel tape decks, is moving the equipment around more than absolutely necessary. Banging around tape decks can jar tape heads out of alignment, as well as disturb other critical components. Reel decks, for the most part, are not designed to be portable, and not only that, you're risking breaking off or bending a switch, a tape guide, or something else on the outside, and adding scratches, on top of that.

You should not store/operate your equipment in areas exposed to direct sunlight, high humidity, or extremes in temperature. Of course, at certain times of the year, this may be unavoidable, but on the average, you should protect your "babies" from the elements.

The tape heads are the "heart" of any recording system. They are costly to replace, and should be treated with great respect, as their performance can have more effect on the overall performance of your tape recorder than any other component.

Tape heads contain one or more "gaps", which through electromagnetism, transfer audio energy into precisely reproduced magnetic energy. It magnetizes the "poles" of the moving iron oxide particles on the tape into specific patterns. When the iron oxide particles are unmagnetized, or magnetized in random patterns, the tape is said to be blank.

For each channel your tape deck can record, there must be a separate "gap" on the record and play heads. Your FOUR TRACK deck has two gaps because it can record two channels at the same time. A FOUR TRACK QUAD deck has four gaps, because it can record FOUR channels at the same time. Any FULL TRACK, or TWO TRACK MONO tape recorder will have only one gap per head.

Depending on the quality of tape you use, the design of the actual tape deck, and the hours per week you use it, your tape heads will accumulate residue. This is also true of the capstan and pinch roller and any tape guides your machine has. If you have an older tape deck that uses pressure pads to hold tape against the heads, the pads will in time, need to be cleaned and replaced eventually as they wear.

There is no definite length of time between head cleaning intervals. Is once a week enough? Probably, but it all depends on how many hours you use the machine. If you're using good quality tape, once every 100 hours is probably enough, unless you notice accumulations before then. An "inspection mirror" such as those used by dentists, is a handy tool for checking out the condition of your tape heads, but use care that it DOES NOT come into direct contact with the head, and that it's made out of a non-magnetic material, such as stainless steel. You should take care to keep all metallic items AWAY from the tape heads as much as possible.

Demagnetizing heads is a questionable practice, because some heads will demagnetize themselves while in operation. You should consult your owner's manual and/or equipment manufacturer if you are concerned or unsure. If you do demagnetize your heads, the frequency need not be more than once every 100 hours, unless your owner's manual advises otherwise.

You can do more harm than good to your equipment if you do not demagnetize properly.

1. Use a demagnetizer with a plastic or rubber tip.
2. Do not turn on or off the demagnetizer [or unplug it], until it is at least three feet away from the deck.
3. Keep your recorded tapes away while demagnetizing.
4. Keep the demagnetizer as far away from the VU meters as possible.
5. Bring the demagnetizer very slowly up to each head and tape guide [you do not need to demagnetize the erase head].
6. Pull the demagnetizer VERY SLOWLY away from each item demagnetized.

The demagnetizer need not touch any of the items demagnetized. If it comes within one millimeter of the surface of each head [except erase], tape guide, capstan, etc. that should be sufficient!!

You should have your tape decks checked out once every two years by a professional technician. Have him check head and tape guide alignment, speed, wow and flutter, channel separation, signal to noise ratio, and frequency response. The latter two specifications will slowly deteriorate on your deck as the heads wear. If your heads are made of ferrite, or another advanced "hard" metal design, they will last longer. Some heads will outlast the rest of the tape deck. Others will require replacement every two or three years depending on use. You can examine head wear yourself by looking at it and running your fingernail up and down the surface. If it catches on edges of the "groove" the tape has worn in it, your head probably needs to be replaced if you are to obtain maximum performance from the machine.

Using quality reel [or cassette] tape that does not squeal and has minimal splices in it will prolong the life of your tape heads. Also a regular head cleaning routine will help prolong their life.

Head cleaning solutions come in wide and varied forms. Nortronic and Teac make excellent cleaning solutions which are non-flammable and contain no alcohol. The most common cleaning solution, however, is pure Isopropyl Alcohol. The purer the solution, the better. Rubbing alcohol is not recommended [although it contains mostly Isopropyl Alcohol], because it contains certain lubricants and other impurities that may harm the adhesives that hold the head gap material together. The alcohol you want is normally sold in drug stores as preparations for injections. It costs more than rubbing alcohol, but you should be able to find it cheaper than commercially sold head cleaner.

It is also recommended that you minimize the amount of alcohol used on rubber pinch rollers. If the pinch roller isn't dirty, don't clean it. The alcohol has been known to deteriorate rubber on some pinch rollers. There are specific pinch roller cleaners made, however, they are somewhat costly, but perhaps worthwhile. A bottle should last you years! An alternate method is to clean the rubber with a "dry" "Q-TIP," although if your pinch roller is really heavily encrusted, that may not suffice.

It is important that your tape deck is in good mechanical working order. Most of the mechanical adjustments should be done by a professional. If any of the solenoids operating the "brakes" on your machine are malfunctioning, for example, your tape deck may wind the reels too tight or too loose, causing damage to the tape, if stored for any length of time. One problem could be that the tape "skews" off the pinch roller without warning, causing the bulk of your recording to be off speed, if recorded at all.

Also important is that your machine is correctly adjusted internally, for maximum performance with the type of tape you use. If you use only Ampex 641, or only Scotch 177, bring a reel in with the deck when you have it serviced. Have your technician "peak" the bias and equalization for the specific tape you're using. In this way, you're guaranteed of the finest old time radio recordings possible.

8. How to Record Old Time Radio Properly

Now that your tape deck is in top working order, the only thing between it and a first class recording, is the operator. If you're a veteran collector, you already have some ideas of your own on how to set your levels, ride gain if [and only if] necessary, and what to do before and after programs start on the tape. First some brief comments on tape etiquette. If there are any "glitches," "clicks," "rumbles," "static," or other noise at the very beginning of your master, it is a good practice to FAST FORWARD to a point where they all end. Don't duplicate the sloppy work of others. Second, FAST FORWARD the blank tape you're recording on several feet. NEVER record on the first six inches of a reel. The ends

of a reel tape are the areas most likely to get crinkled in repeated threadings, and may eventually break off. Give your fellow collector a break. Besides, there's almost always five to ten minutes excess tape at the END of each side anyway. If you feel real energetic, you can always add three feet of leader tape on each end, but I really don't think that's necessary, and a good two or three minutes of "dead" tape at the beginning should be adequate.

The next thing to do is set the levels. This is important. Adjust so the meters peak at 100% ["0" VU] -- perhaps an occasional peak into the red, but never so the needles are "pegged" at +3 VU!! Adjust meters according to your manufacturer's instructions, but adjust them so they're leveled as high as possible without overmodulating [saturating], or DISTORTING the tape. Play your master for several minutes to find your highest peak, if necessary. If you record your own masters, hopefully, all your levels will be constant. If not, you'll have to adjust accordingly as you copy various tapes. If you record at too low a level, your recorded tape will have a poorer signal-to-noise ratio [wanted sound vs. tape hiss]. Use care in making the adjustments. After you're certain the levels are correctly adjusted, you may THEN start to record. If you've found you've adjusted the levels too high, go back and start the recording again. Nothing is MORE ANNOYING than seeing meters suddenly blast into the red at the beginning of a tape, then see them very abruptly drop down to a more normal level. Don't be guilty of this bad practice. The extra seconds you spend starting over will be greatly appreciated by your fellow collector! Not only that, it doesn't do your reputation much good if you send out sloppily recorded tapes.

Also coming under the category of tape etiquette is "Which tape deck to start first -- the one doing the recording, or the one doing the playing?" The answer is START FIRST the one doing the playing, then start the recording deck. This takes a little practice so you don't clip off the beginning of programs, but makes a much more professional sounding recording. And if you DO clip off the opening of a show, have the courtesy to go back and try again. At the end of the last program on a reel, it is preferable to turn down the level of your recording deck so you don't duplicate the sound of your master's hiss, you stopping and fast forwarding the playback deck, and the rest of the noise that goes with turning a master over. If you're in a hurry though, sloppy recording at the end of a side is more excusable than at the beginning, because your trading friend will have shut off and fast forwarded [or rewind] the tape when the program ends anyway. And if he's that picky, he can always record a blank spot at the end himself.

If you're assembling masters track by track, show by show, you should turn the input level of your recording deck ALL THE WAY DOWN between shows, and make the space between shows a constant number of seconds -- 20 or 30 seconds should be enough. Don't make spaces last for several minutes. It gets very annoying when listening, to have to fast forward the tape, and it also makes the reel run long if the shows are a full half hour each. Riding the gain should be done very discreetly. If you make level adjustments during a recording, make them VERY GRADUALLY. Don't make any sudden level changes that would be noticeable. If you're recording on a cassette deck with a peak limiter, you should set your peak levels with the limiter OFF, then you may make the recording with the limiter on, although you may still obtain best results with the limiter off. Some limiters are not as well designed as others and they are "frequency conscious." They may "chop" and "thump" all the lower frequencies off, but then allow higher frequencies which are most likely to over-saturate the tape pass through. Use your own ears to judge whether or not you should use the limiter, if you have one.

There are other gain riding devices available -- however, most of the ones that would give respectable performance are in the professional class, out of the price range of most collectors. The biggest flaw of all "automatic level" circuits, is they don't know the difference between noise level and desirable sound. During pauses, they bring up the "hiss level" of whatever they're recording. Very annoying. This is true of all inexpensive cassette recorders with automatic level controls. Again, don't use 'em for old time radio!

If you have a three head reel or cassette deck, it is very convenient for you to monitor your recording as it's being recorded. You have a switch with a "monitor" and a "tape" position. With the switch in the "monitor" position, you hear the audio that's going into the tape deck. In the "tape" mode, you hear a split second after it's recorded, what you've recorded as it comes off the play head. The VU meters also are connected to this monitor switch, and you can compare the level you're putting into the tape to the level that's coming off the tape. If the tape is poor or has drop outs, OR your heads are dirty, the loss in signal is immediately apparent, IF you pay attention to the recording as it's being made, and don't walk off into the next room.

If you have only a two headed deck, certain compromises in head design had to be made, and the performance will be less than what could be achieved with the same electronics, but with separate record and play heads. However, you saved a bit of money in buying the deck, and you can still get very satisfactory results from a recorder of this nature. You should be even more aware, however, of the quality of the tape you use and keeping your machine clean. It's also a good idea to check your recordings after they're made, since you can't check them AS they're being made with only two tape heads.

The final word on making OTR recordings properly, is to be aware of what you're doing-- Don't get so wound up in QUANTITY of old time radio that you forget about QUALITY. I attach no value to 1000 reels of muffled garble, but I attach a great deal of value to 10 reels of clear, crisp old time radio with perfect levels and speed. I think most collectors would feel the same way.

9. Improving Your Collection - A. SOUND QUALITY

Every collector is interested in achieving certain goals, not only in obtaining the programs he or she likes best, but obtaining the best copies of those shows. Over a period of time, a collector may end up with eight or ten copies of the exact same show. One copy might have a little bit of distortion, another might have commercials missing, but otherwise be perfect, still another might be the best copy, but have a layer of tape hiss and be a little off speed. The best solution to a problem like this is to THROW OUT, erase or BURN any copies of a show with distortion or is missing parts, especially if you have a better copy! Problems like hiss, or speed errors can be corrected, and there's always the possibility you'll run into a copy of the show that IS perfect, without the hiss, or the announcer sounding "mousey." Because of the hundreds of collectors and old time radio dealers across the country, there's no real way to eliminate the less-than-perfect copies from going around. Some people just don't take as much care in recording radio shows. It also depends on who you buy from or trade with. Some of the big dealers have connections into private disk collections, and inside tips on where to get the best sounding radio shows. Their reputation is built on their sound quality and although their price may not be the lowest, they may have the most loyal customer and the most business. They may be the "first" to offer new shows as they're found and their pet customers will return again and again. Price, however, does not necessarily dictate quality, as many shows are discovered by lesser-known collectors and dealers. So there is really no sure-fire way for a beginner in old time radio to find dealers or traders who have the best sound until he develops a wide enough circle of friends in OTR and can hear "through the grapevine" that John Smith has disk copies of Gunsmoke and he should buy or try to trade with him. The other alternative is the "trial and error" method in buying a small number of programs from a variety of dealers, and using them to judge the sound quality of each. Even that isn't an very accurate method, because some dealers or collectors might have only fair sound on the reels the beginner decides to sample, but the rest of his collection is the best in the country. . . although it is unlikely that a major dealer such as this, would sell ANYTHING very much below standard, because his standards are so high on everything else.

Besides looking for the best copies of every show a old time radio fan could want, perhaps a much simpler method would be to improve the quality of his existing collection.

The most common way to improve the sound of an old time radio show is through use of an equalizer. Equalizers come in many shapes, sizes and price ranges. The most common ten band stereo equalizer used by old time radio collectors falls in the \$150.00 price range. This type of equalizer falls under the category of being a "GRAPHIC" equalizer. It's controls roughly resemble a "graph," and consist of ten fixed frequencies at which the equalizer can boost or cut a given number of decibels. Decibels in very general terms, are measurements of the relative loudness of sound--with an equalizer, the relative loudness of the sound at a specific frequency.

Another type of equalizer is a "PARAMETRIC" equalizer. With this variety, there are no "fixed" frequencies you have to pick from to boost or cut. There are controls which allow you to zero in on two or three specific frequencies of your choice, and other controls which boost or cut each frequency the same as with "GRAPHIC" equalizers. The advantage of the "PARAMETRIC" is you can select ANY specific frequency with it's range, and do what you want with it. A disadvantage is you can only do it to a limited number of frequencies at one time. The advantage of the "GRAPHIC" equalizer is you can manipulate many different frequencies at a time [some models have 15 bands], the cost is considerably lower, and they're easier to operate and simpler to understand. For these reasons, our discussion on equalizers will be limited to the GRAPHIC type.

Equalizers themselves, are easy to understand. They're very sophisticated tone controls. They're like the bass and treble controls on your receiver, except they're more precision. The bass and treble controls probably affect several different frequencies or bands at one time each time they are adjusted. The bass may boost deep low bass, mid bass, and upper bass

all with the rotation of one knob. An equalizer will divide these bands up on three different controls...only they aren't labeled "deep bass," "mid-bass," etc. Instead, the specific bands or frequencies on which they have an effect are shown...perhaps 30 hertz, 60 hertz and 125 hertz. A hertz, while sounding like something painful, is actually a unit of frequency equal to one cycle per second. If you were sending straight tones through an equalizer at 60 hertz, the wave form would be swinging back and forth 60 times a second. If you moved the control on the equalizer up or down, the output of the equalizer would cut or boost the level of that tone, by however much you adjusted the control.

Equalizers have "midrange" and "treble" controls, too...typically around 250, 500, 1000 [or 1 K], 2000, 3000, 4000, 8000 and 16000. The equalizer will cut or boost any of these as already described. They will process complex waveforms, like music. They'll shape the sound to compensate for poor room acoustics. This is what equalizers for home use were actually intended for -- to act as sophisticated tone-shapers. As old time radio collectors, however, our primary use for them is as sophisticated filters, and to a lesser extent, as tone shapers. For this reason, and because the programs we want to equalize are mono, anyway, it is advisable to take the following steps in hooking it up, assuming it's a stereo model:

1. Connect the output of one channel of your playback deck to the input of the left channel of the equalizer.
2. Connect the output of the left channel of the equalizer, to the input of the right channel of the equalizer.
3. Connect the output of the right channel of the equalizer to the input of the tape deck on which you're recording.

By taking these steps, you'll double the effect of the equalizer's controls. A 10 decibel cut in any frequency, will actually be a 20 decibel cut because you're feeding the signal through the equalizer twice.

This is of considerable help in reducing tape hiss, getting rid of rumble and has a positive effect on the midrange frequencies as well.

With an equalizer, the best way to tell if you're "doing it right," is to listen to what you're doing. At times, it may be difficult to decide which setting sounds best. Try one setting which gives the program the best clarity, then leave the equalizer and go back and listen to what you've done another day. You may find what you thought sounded good one day could be improved in still another way. It takes a little practice to get the "feel" of equalizing. There are, however, some general guidelines which may be helpful in getting you started if you're a newcomer to equalizing. To get you started on the right foot, if you've NEVER laid your hands on an equalizer, you should FIRST analyze what you're equalizing. Old time radio programs, right? Let's examine what makes up old time radio shows in terms of specific sounds -- and how they got to you from an era of the past...

SOUND QUALITY ANALYSIS

Old time radio comes to us largely through storage on transcription disks. Some of the later shows were preserved on tape--either recorded at the source of the broadcast, or by individual radio stations off "network lines." How the radio shows were stored, and under what conditions they were stored has a lot to do with how the sound quality of the program will be that gets traded around today. The best sounding programs were recorded probably on disks recorded by the originating source [the network, syndicator, etc.], at the time the actors, sound effects people and announcers created the show. They were recorded on professional, rather bulky recording equipment. If the show is newer, perhaps it was mastered on a full track reel to reel deck [again, a professional model, running at 7-1/2 i. p. s.]. If it was recorded by the originating source, the sound quality will be much better than if it was recorded by a station taping off the network line [or cutting a disk]. Network feeds add a peculiar "hollow" sound to the show, and have very limited high frequency response. Even modern network lines leave something to be desired in terms of sound quality. It has only been in more recent years satellite transmission has made high fidelity possible in sending signals around the country. National Public Radio was a pioneer in this area.

Old time radio happened far before satellite transmission was general practice, and because of this, the sound quality of some of the shows is not as good as what it could have been. Another method used to preserve shows was through home disk recordings, wire recordings, and in the 1950's and 1960's, home tape recording. If the show was saved on a wire recording, it's almost a sure guarantee that the sound quality is pretty terrible, and \$1000 of signal processing equipment won't even put much life into it. Home disk recordings are probably almost as bad, plus home disks had short recording lengths, and a single half hour show might be split up on three or four disks [with portions missing while disks were changed].

The home taping method, probably has the best chance of having reasonable sound quality, however, because the earlier tape machines [and recording techniques] were so primitive, there's also likely to be severe uncorrectable problems with the recording.

In all of the above "home" methods, a crystal or ceramic microphone was probably used [poor quality]--placed near a radio [prone to local interference and static]--and any room noise would also become part of the recording. Sounds pretty bad, huh? Well, believe it or not, there are some shows that WERE preserved by this method and if it weren't for a very primitive recording such as this, these shows would NOT EXIST AT ALL TODAY. There are some shows broadcast in the 1960's that are reasonable sound quality, that WERE taped off the air--however, it appears the recordist was advanced enough to connect his tape recorder directly to the radio. The actual radio broadcasts, however, are STILL not as good as the originating source disks or tapes, because the broadcast station from which the recording was made, probably was fed from a "network line."

Network lines, by the way, are nothing more than equalized telephone lines. Today, there are more advanced methods of improving the sound of telephone lines [through the use of "Comrex" units which compress wide frequency response into the narrow range of long distance lines], however, even these don't compare to satellite transmission. Consider the quality of CBS Mystery Theater while it was on, being fed over the same lines used for CBS radio network news. Mystery Theater sounded muffled and hollow, although it was reasonably clear at the same time. If CBS had sent around tape recordings of the shows, or used a more modern advanced means to send the show around rather than their news lines, we would have much better quality on those shows.

Assuming our favorite radio shows ARE preserved on disks recorded at the source of the show on professional equipment, the only thing we have left working against us is time... All those years the show sat around unplayed on disks, it could have been shuffled around, set stacked in some dingy attic, closet, basement or who knows where. It may have been stashed with a bunch of other disks with no protective cover, stored in extremes of heat or humidity, handled carelessly by studio technicians, janitors or anyone else who attached no value to it. As a result, the disk may have suffered injuries that may be impossible to completely remove. Those scratches, and maybe some of the hiss you hear today on some of the shows were the result of this aging process. There are some expensive pieces of signal processing equipment made today which can minimize the effect of this noise, but it is in most cases, nearly impossible to completely eliminate much of this.

Assuming the disk is perfectly clean, how then can the sound quality be lost? At the very earliest stage, it can be lost by the person playing the disk today, who is transferring it to tape. Unfortunately, there are people who have made major disk finds who have done terrible jobs in transferring the disks to tape. They rigged up a crude "disk player" [to play 16 inch disks] out of low cost portable phonographs--which were already full of distortion--attempted a crude connection to the phonograph's speaker, and recorded what came out. The styli used was improper, the equipment had hum, rumble and distortion, and the resulting recording was quite poor. An improper styli is the first mistake. A modern one [for LP, for example], is too narrow and will ride on the very bottom of the groove, picking up noise from dirt and dust particles ground into the disk, and create a very noisy recording. A 78 styli, however, is also the wrong type, because it's too wide and will track the top edge of the groove, picking up all the noise from the outside surface. Any surface scratches that may be present will REALLY stand out, in this case. More on disk dubbing later.

Assuming a proper job was done transferring the disk to tape, and the sound quality is fantastic, how THEN can the sound worsen before it gets to you? By three basic ways... Poor equipment [or poorly maintained equipment], poor or sloppy recording techniques, and the third way... which actually falls under the category of the second mentioned... improper recording levels [either too high or too low]. You can usually determine just what went wrong in a recording by listening to the flaws it has. Some may be corrected, some may not. Let's first discuss the things you want to keep in an old time radio program recording.

Since radio programs consist largely of speaking parts, you will be especially concerned about the frequency range in which the human voice falls. In addition, there are sound effects, musical openings and closings, perhaps musical selections during the show. Unless you collect big band programs, or Frank Sinatra or Bing Crosby or another largely musical show, you probably will not be overly concerned if you sacrifice a few decibels of high frequency content to get rid of some unwanted tape hiss. In almost all cases, you won't want much or anything above about 5-6000 hertz. If you had a perfect recording, all you would hear in this range that would come out of a human mouth would basically be saliva in the mouth, and maybe some "s" sounds, although those also fall into frequency ranges below those mentioned. To improve the clarity and crispness of the speaking [and make the

musical sections brighter] a boost at 4000 hertz will help. At 2000 hertz, a boost will improve the clarity of the show still further as has already been discussed. The 1000 hertz control may also be boosted on some shows, although some will sound best if it is left "flat" . . . in the center position [no cut OR boost]. At 500 and 250 hertz, I've found a very slight cut will improve the clarity of the show, but use your own ears to judge. You should use the controls sparingly so they don't make the musical openings, etc. sound "odd." The 100-125 hertz range is probably the bottom range of the human voice. Depending on the quality of the show, you may want to either leave this one flat, or boost it a little, if it improves the music, or you like a little "bassy" sound. Use this one sparingly, however, because too much boost can easily make the show muddy or muffled especially after it gets a few generations from you. At 60 hertz and below, there is usually no voice content, and maybe a slight amount of musical content. So depending on the frequency response of your original tape, and if it has any problems with hum or rumble, you can either leave this control flat, or cut it as much as is possible. 30 hertz should ALWAYS be cut as much as possible with most shows because there's nothing here but tape noise.

Tape noise doesn't really fall much in the 30 hertz range unless there's been a bulk eraser used somewhere along the line -- and a not-too-thorough erasing job was done. In any case, my philosophy has always been "If there's nothing there to HEAR, you might as well attenuate fully to guard against some sub-sonic garbage that could creep in."

So far, we've talked about using an equalizer to improve the clarity and crispness of a show. The comments made can be applied to almost any show, and some improvement may be realized. The equalizer, however, can be used to filter out unwanted things. More generalized comments can also be applied in regards to equalizers used as filters.

Almost every radio show you will ever encounter will contain hiss. Hiss is something almost unavoidable with tape recorders. As has already been mentioned, there are hiss suppressing circuits such as Dolby which may be used, but they do nothing to remove the already existing hiss on an old time radio recording.

Reel to reel equipment, unfortunately, does not yield the best signal-to-noise ratio operating at 3-3/4 i. p. s., especially when noise suppressing circuits are not common features on reel decks most collectors use. Furthermore, the use of economy recording tape and low recording levels tends to compound the problem. These are all good things to know, but doesn't help you much when trying to clean up your tapes.

Hiss falls largely in the 8000 hertz and above range. It is normal practice for me to fully cut [attenuate] the 16,000 hertz control. I can guarantee you there's nothing in this range but hiss with at least 98,999% of all old time radio recordings. At 8000 hertz, there may be some musical content, but usually not. More often than not, I cut this frequency also, by as many decibels as possible. If there IS some musical content you want to save, you can leave it flat, or cut it by a smaller amount. You'll have to decide how much hiss you want to keep in versus how much high frequency musical content you want. Hiss may also be present in the 4000 hertz range, however, this control will also affect the "brightness" and clarity, as already mentioned. Your ears are the best judge. Decide for yourself what sounds best. If you have a really clean recording, there shouldn't be much if any hiss at 4000 hertz. Hum, buzz, and rumble are mostly low frequency problems. Hum is almost always the result of a poorly operating tape deck, or one that is improperly connected. It also can be induced in the disk copying stage [This is also true of hiss]. Hum usually results from audio wiring picking up stray fields from house AC wiring. This can happen inside a tape deck with a poorly designed power supply. It's the household line frequency bleeding in and modulating the tape. It's always a standard 60 hertz [in the U.S.], and you can conveniently remove or at least attenuate it with you equalizer's 60 hertz control. In some shows, this may remove some of the bass content of the music, but if it's bad enough to have hum to begin with, it's nothing to be concerned with losing. Rumble was caused in transferring the disk to tape and is mechanical vibrations of the disk player's motor picked up by the cartridge. It is more easily removed and less offending to the ear than hum. Buzz in the background was probably picked up by the connecting cables between two tape decks. They may be defective, one plug might have been partially out of the socket, or any number of things. Buzz also can be induced when operating tape recorders near a television set which is on. Buzz is hum with additional high frequency content. It is impossible to remove without greatly affecting the quality of the recording in all aspects.

Muffled sound or "bassy" sound, is usually caused by excessive generations of tape, dirty, worn, or out-of-alignment tape heads, or otherwise improperly operating equipment. Anything that prevents proper tape-to-head contact in either play or record mode, will cause muffled sound. If you have a tape that's 20 generations from the source, this will also be pretty muffled. Every time you copy a tape, you lose a tiny amount of "wanted" sound in exchange for tape hiss. The better the tape you use and the better your equipment [and its proper alignment for the type of tape], the less detectible will your "source" tape be from your "copy" tape.

Muffled sound can be improved by the methods already described: Boost at 2000 and 4000 hertz, perhaps cut at 250 and 500 hertz, and cut or leave everything else flat in most cases. Distorted sound is one of those problems that can't be helped at all, in most cases. It might not be too severe and may be at a tolerable level. It might just have a "harsh" sound--sort of raspy. Distortion may only appear at a certain segment of the audio spectrum--most notably, the high frequencies, can have a "squashed" sound to them. One way of correcting this--or at least making it less annoying to the ears--is to attenuate all the frequencies which ARE distorted, with an equalizer. In a heavily distorted recording, all frequencies are affected and there is no hope at all for the recording. If your meters are "pegged" in "the red", chances are whoever made your tape was at fault for the distortion. The distortion "occurred" when your tape was being made. If your meters are averaging a pretty "normal" level, your trader's friend's tape perhaps was over-modulated and HIS meters playing back his master are "in the red", and whoever made the tape for him was at fault. If his masters are okay, then someone ahead of him was at fault. It is also possible that the ORIGINAL DISK or ORIGINAL master tape had distortion, so that every copy ever made from that original would have that same distortion, plus whatever tape hiss or other noise gets added along the way. Distortion depending on the severity, can never be completely removed from a recording.

The most common problem with any old time radio recording is tape hiss. If everyone would record at a higher average recording level, use better tape, and record at a faster speed and/or use Dolby or other noise reduction, the hiss problem would be nearly non-existent. However, because of the sheer VOLUMES of old time radio programming available, the average collector is concerned with economy. He can't afford to spend \$6-10 for each reel of blank tape, so he uses a lower cost tape. He can't afford a reel deck with Dolby or an external Dolby unit for his existing equipment. Besides, no one else uses Dolby on reel recordings, so what's the point of having it in the first place? Perhaps if he re-copies his entire collection using Dolby, at least he'll have the benefit of Dolby encoded masters, but in re-copying, he's actually adding another generation of tape hiss onto his collection. Also in playing back a Dolby encoded tape, it must be played back on a deck which is so-equipped with Dolby in order to gain the benefits of that particular system. Obviously, there is no simple solution.

The second most common problem with old time radio recordings is muffled sound. If you receive a radio program that's muddy... difficult to understand... "bassy"... you have a muffled radio show. We've already discussed this defect in some detail. We might conclude by saying that if you get a whole reel or group of cassettes with this problem, you shouldn't have to put up with them at all. Return them to your source! If there's only one or two shows on a reel that are like that out of a group, then it PROBABLY isn't the fault of your trader or dealer you bought them from. If you are concerned about those particular programs you might send your source a note asking him if his masters are of the same quality, and if not, if you could have a better copy.

It makes sense to check with other sources if you're unsatisfied with the sound quality of any particular show you have. Some collectors like myself, however, like to "tinker" with sound and using an equalizer can in fact, improve the sound of ANY radio show.

9. Improving Your Collection

B. GETTING ORGANIZED

One of the most time-consuming activities with radio show collecting is getting your collection organized and KEEPING it that way. There are a great many different ways to do it, and depending on the size of your collection and the amount of free time you have, plus whether your collection is on reel or cassette will determine the format of organization you choose.

The simplest way to get started is to just start numbering your reels or cassettes as you obtain them. If you are a beginning collector, the sooner you start your system, the better off you'll be. As soon as you get a reel or cassette, prepare a 3 X 5" index card with the title of the show at the top, then indicate the reel or cassette number. On that card, you can list the episode titles, dates, stars and any other information you feel is of importance. Then as you build your collection, you can organize your "card catalog" in any order you wish. Group them alphabetically, if you wish, in categories of mystery, comedy, variety, music, etc. The order of the cards will not be in the same order as your reels, however, that should be of no concern, as you'll want to add more numbers in the future, and as long as the card system allows you to quickly locate any reel of your choice, plus allows you to group them in whatever order you wish, the system is flawless. If you have a micro-computer, it is possible to put your entire collection into your computer, then have your computer print out listings of every show you have featuring a certain star, OR, every show you have broadcast in a certain year, OR, something more useful like an alphabetical listing or by category.

Whether you use a box of index cards, or an expensive computer, the results will be the same when you decide to print up your own catalog. Your reels or cassettes will be listed in an organized manner so that others can easily find any programs of their choosing without having to shuffle through endless pages and pages of random listings.

Another method of organizing your collection was probably pioneered by collector, David Siegel of Croton-on-Hudson, New York. Dave has probably one of the largest collections in the country. His method consists of organizing strictly by show in alphabetical order. Then there are various "sub-categories" among the collection [groups of reels featuring certain stars, for example]. Then each group of reels of the same show has its own set of numbers [Suspense reels 1 through 76, or Mercury Theater reels 1 through 8, for example]. If you have a large collection with no already-established numbering system, this method might prove to be the easiest and quickest way to get your collection organized without using index cards. In the method, you can actually store your tapes in the exact same order they're listed. The advantage of the other system is you can more easily keep tabs on the size of your collection [if that's important to you], if you don't skip numbers. Sometimes, however, you feel the need to skip numbers to enable you to group all tapes of a certain series in a certain spot on your shelves. There's no problem with this, however, as long as you don't assign the same reel number to two different reels.

Preparing a catalog, or listing of your collection is part of getting organized. If you plan on doing much trading, or if you plan to sell programs, a catalog is an essential tool. It is probably the most time consuming part of radio show collecting--if you have a large collection it is also very expensive to get it copied or printed.

If you have followed either one of the above methods of getting your collection in order, you have taken the first step toward preparing a catalog. Rex Bills of Golden Age Radio, of Portland, Oregon, published one of the first truly "organized" old time radio catalogs many years ago. His catalog is organized by category [Mystery, Science Fiction, Drama, Comedy, etc.], then indexed by show alphabetically in the back. Programs are listed with corresponding page numbers on which the programs are listed. This is of great help in organizing reels of "mixed" programs. It's probably the best way to organize a catalog, however, if you have organized your collection in the "David Siegel" manner as described, you need only list your tapes in the order in which they appear in your collection. In doing so, you'll have a well-organized listing, making any show easy to find. The "mixed" reels can be listed at the end, if you wish, and even indexed separately.

In addition to being neatly organized, your catalog should have each page **NUMBERED**, and your name and address should appear on each page. This is especially true if you don't staple the pages together. It's very easy for people you send your listings out to, to mix them up with, and confuse them with listings of others. Keep this in mind, and after you get into the habit, it will become automatic for you to type your name and address at the top of each page before you start typing in the programs.

The method you choose to copy or print your catalog is up to you, however, a few factors should be considered before you start. If you are starting out with a small collection, but expect it to grow much larger and you expect to do a lot of trading, it is unwise to print your catalog on a ditto or mimeograph machine. With ditto, the print quality is poorest and the "spirit masters" have only a limited number of copies they can print before they're worn out. Mimeograph, while better print quality, generally requires heavier [and more costly] paper--especially if you expect to print both sides of a sheet. This can cost you more in postage when you mail out the catalogs. In addition, many mimeo machines are very messy and inconvenient to operate. Both types of machines, while economical per copy, do not offer reduction of page size, which in actuality, make them more expensive to prepare catalogs on than other methods.

High quality office copiers -- those which copy on plain paper and on both sides are a better choice for printing your catalog on. Visit some of your local print shops -- nearly all have several copy machines available and someone there to show you how to use them. In addition, they may have models which may be used to reduce the copy for you... or at least they'll have other equipment which can do this. This is highly desirable. In doing this, you can reduce the size of your typed page to a size small enough to fit **TWO** sides on one side of a sheet of paper... making it possible for you to fit four pages of your typewritten copy on one sheet of paper copied on both sides. This will make assembling your catalog a little trickier, but will save you money in copying charges... as well as postage in mailing.

One of the other advantages of using the "high quality copier" method is you can type on plain typing paper. It is desirable, however, to use a good quality typewriter with a new ribbon--preferably one equipped with a "film" ribbon to assure clearest reproduction. It is especially important if you plan on having copy reduced.

You may also see copy machines in libraries, post offices and other more "public places." Do NOT waste your time with these machines. They're poorly maintained, lower quality machines using long rolls of paper inside that cannot be printed on two sides. Furthermore, the cost for use of these coin-operated machines will be high -- as much as 10-25¢ per copy. A print shop will generally charge you only about 5¢ a copy for use of their copiers and the quality will be infinitely better.

The final method of printing a catalog is the best method if you plan to do a LOT of trading or get into selling the programs. This method is the professional "offset," or "lithographic" offset method. This method is not very economical if you're not going to have very many printed, but for longer press runs, past perhaps 200 copies, it starts getting cheaper than the previously described method. The more copies you print, usually the cheaper it is per copy. This method in preparation is not much different from the above, except your printer does all the "dirty work" of operating the printing equipment. Your originals can be on regular typing paper--again, preferably typed on a high quality typewriter with a "film" ribbon. Having your copy reduced as already described, is recommended for economy -- and you should be able to find a printer who will not charge extra for reduction. You may have to work with him a little to make certain all the pages are assembled in the right order on the right sides, but that should be no problem. Your printer also [for a fee] can collate your catalog if you don't have time to put it together, yourself.

Thus far, we've discussed various methods for producing a PRINTED catalog to mail to others. It is possible, however, to have a thoroughly organized collection which you can thoroughly enjoy, and NOT have ANY printed catalog and yet still trade with others...and certainly, build the collection whether or not you trade.

Some collectors use the "index card" method for organization, described earlier, although others will use a 3-ring, loose-leaf binder with dividers for various categories of shows. This is, in effect, their "catalog," of which only one copy exists which meets their needs quite nicely. If this method is used, without having a "printed" copy made, you'll find yourself writing a lot more letters, making a few phone calls perhaps, just TELLING people what you have [since you don't have a listing you can send], and seeing if they're interested. Ultimately, you may find yourself running to the copy machine in the end, anyway, even if it's only to copy a few pages out of your "loose-leaf binder" catalog. There are, however, other methods of acquiring programs other than trading, which will be described shortly.

10. Building Your Collection -- Adding New Programs/Upgrading Old Programs

Taping rebroadcasts is perhaps the least expensive method of obtaining programs, if you have a lot of time to do it, and the programs being broadcast are high enough quality to begin with [with no deletions of original commercials and/or interruptions for "modern" commercials]. This is the method used by many collectors used to start their collections, especially the "younger" collectors under age 30. This method, however, is soon abandoned due to the limitations of station's time devoted to old time radio, amount of time involved in taping off-the air and quality of reception/interference occasionally encountered. The volume [quantity] of a given series is often limited by the person hosting the show you're taping from, or by the company syndicating the programs to the station. Those syndicated shows, by the way, are often -- usually -- heavily edited, and sometimes of poor quality, compared to what's available to collectors.

Purchasing programs from various dealers is another method of building your collection. There are many sellers of old time radio shows scattered across the country. It is wise to make your first order from them small to see if their sound quality and service is to your liking. The "purchase" method is a good one to quickly build your collection, although it can become somewhat expensive, depending on whom you're dealing with.

Trading is perhaps the most widely practiced method of collecting. The major advantage of this method is it's an inexpensive collecting method. Another advantage is that trading as mentioned earlier, can form the basis of many long lasting relationships. It can establish connections to other groups of collectors who may have the shows you seek. Trading can establish lifetime friendships with individuals who otherwise would never have known the other guy existed. A major disadvantage is that trading can be highly time consuming as it requires a certain amount of corresponding -- if arrangements are made by phone, it can become costly, also. It's also time-consuming finding good, reliable trading friends who have what you want, and vice versa. You may also become frustrated from time to time by the sound quality being less than what you'd like.

But as already stated, once you do find that collector/trader with interests common to yours, you've found a lifetime friend.

Traders can be found by subscribing to such publications as HELLO, AGAIN [see listing at the end of this book]. In addition, some of the club publications contain trading ads. You'll find a list of clubs also at the end of this book, as well as our own Collector's Directory.

Renting old time radio programs is another low-cost collection-building method. Sound quality here, depends on whom you're dealing with. Some of the OTR clubs offer rental libraries which are provided as a service to members. There are also dealers who have their own rental libraries exclusively, or in addition to selling tapes. There may be a membership charge to receive the service, however, if you have the time to copy the tapes, you may be able to save some dollars by using this method.

Buying Group Participation is one of the most unique methods of building a quality collection of radio programs. A pioneer in this area was collector/dealer, Ron Barnett, of Alexandria, Virginia, who founded a very successful group several years ago which remains active, today. Buying groups have certain disadvantages, however, IF the right group of collectors are in the group, these disadvantages can be minimized, and the advantages will far outweigh the disadvantages.

A BUYING GROUP is just as its name implies -- a group that buys radio programs!

Buying groups which are most successful consist of a group of collectors/traders all of whom have known one another for a certain length of time and/or are known individuals of a reliable nature. One individual is appointed or appoints himself as "coordinator" of group activities and is responsible for receiving a pre-determined share of money from each group member. This money is then pooled and an order is placed from a known reliable dealer for programs of a pre-determined nature.

In operating the group, it is important that certain goals be set, and categories of programs determined to be purchased be agreed upon by the members. It is also important that a few basic "rules," or guidelines be established.

The "coordinator" of the group then receives the reels ordered, checks them for sound quality, then distributes them to one of the group members. A pre-determined routing order should be established so that when one member is through with the reels he forwards them onto another member. After the second member is through with the reels, he forwards them onto a third member, and so on. As already mentioned, a certain time limit should be imposed on how long each member may take to copy tapes for himself. It is also important that the group not get too large because the larger it gets, the longer reels will take to get around to each member. If a group stays at a small size--perhaps four or five members--one box of reels should only take a few months to travel around to all members. If the group is larger, such as with 10 or more members, it is wise to divided up into two or more separate boxes and sent on separate routing paths. In this way, no single member needs to wait too long for a shipment of reels if purchases are made on a regular basis.

The frequency of purchases are up to the group members--depending on the amount of money pooled, the material the group wishes to acquire. Groups which are most successful make purchases on a regular basis--orders can be of a smaller size--and smaller boxes can get circulated. The group may however, wish to send around larger quantities of reels. If this is the case, a larger dollar amount needs to be collected, or a larger number of collectors be in the group...the former is preferable.

In addition to pooling money, some of the members can contribute reels from their own collection as "payment." If this is done, the material contributed should be programs the group is interested in in the first place and be of quality acceptable to the group. It should also be managed by the coordinator so that the group will still be making regular purchases in addition to the "contributed" reels. In this way, the person contributing the reels will continue to benefit from the group.

Starting a buying group is easy if you've been collecting old time radio for a while and already have some established trading friends you can invite to participate. If you're the coordinator, self appointed or not, you're the one who should establish a clear line of communication among all members. This probably should take the form of some sort of newsletter that is mailed to each member on a regular basis. If you wish, you can include the cost of copying the newsletter as part of the annual "dues" each member pays. The newsletter should contain basic information such as what programs have been purchased, which have been received and when they're being put into "circulation." You can put other information in there, too, such as rules, what you're doing with reels after everyone copies them, personal information on members, reels being contributed, questions, answers, you name it.

The point is that that common, clear line of communication be there so that members are not left in the dark regarding what is being done with the money that they send in. If you're a beginner to old time radio, it may be wise for you to become good friends through trading or other means with a collector who is already in a buying group. Through his recommendation, you may be able to work your way into an already existing group. Buying groups are by necessity, close knit groups, however. They are not widely publicized and people find out about them through word of mouth. Once you're in one, however, you have made the first step toward getting the best material becoming available, at the lowest price--if and only if the group is run by and contains reputable individuals.

In building your collection, it is wise to look for the best sounding programs possible. They're more pleasant to listen to, and they'll have higher trading value. When you obtain duplicate copies of certain programs, you should decide with your "own ears" which copy sounds best, then completely ELIMINATE the poorer sounding program from your collection by either physically throwing the tape out, or ERASING and re-using the tape for something else. Don't keep it around if it's bad sounding and you have a better copy. If you do, in a matter of a few short years, you'll find yourself overwhelmed by countless "junk" tapes of odds and ends that do nothing more than take up space. Why keep it around if it isn't going to be an "active" part of your collection?

As you add more programs, it is wise to keep your cataloging system updated and not let it get behind. Even if you don't listen to each show as soon as you get it, you should make some attempt to keep them listed somewhere, otherwise you'll find yourself getting behind quite easily and being stuck "wading" through dozens of tapes and spending hours at a time at your typewriter. Try to stay "on top" of your collection as much as possible. By doing this, you make the cataloging part of collecting less of a "chore" by doing a little of it at a time.

11. Tape Recorders- New or Used Equipment for Old Time Radio -- Features You Need

If you're only interested in working with cassettes, you have a much simpler task in purchasing equipment. Cassette decks are widely available in a variety of price ranges with a variety of features. With old time radio, your main concern should be with signal to noise ratio and reliability. Dolby is a standard feature on nearly all cassette decks. JVC has its own noise reduction system called A.N.R.S. [automatic noise reduction system], which is every bit as good and fully compatible with standard "Dolby B" recordings. There are also more advanced forms of Dolby as well as other noise reduction systems. Dolby B should be sufficient for old time radio, and is perhaps most desirable because it is most compatible, and a feature which these days, doesn't add dollars onto the price of the tape recorder. Because reliability is a major concern, with cassette decks, you should look for models with "hard heads." Some sort of ferrite or glass material should be part of the head construction. It is also desirable to purchase a deck with solenoid operation and full logic. This feature minimizes mechanical parts which are most likely to break down or wear out. This feature also adds dollars to the price, although not so much these days as what the situation was just a few years ago. You will also encounter certain more advanced cassette decks which have more than one motor. This feature again is desirable because it minimizes mechanical parts, and simplifies the arrangement of belts in the deck. Some decks have features like "direct drive." These are good features, but the added cost may not be worth it for old time radio. Dual capstan minimizes wow and flutter, but if you use quality cassettes, it's a feature you really don't need.

With cassette, you should stick with strictly NEW equipment only. The new equipment is not that much more expensive than used equipment, and because of advanced technology, a new cassette deck with only basic features, will do a FAR better recording job than a five-year-old cassette deck loaded with features. Cassette decks are mass-marketed items, and mass-produced, and because of this, their cost stays down.

Any name brand cassette deck with the above characteristics should work well for old time radio. Features you do NOT need for old time radio are elaborate auto searching systems, elaborate metering displays, and metal tape capability. The latter feature, however, is very common in many models and does not generally add to the cost of the deck.

Getting the best reel equipment for old time radio is not nearly as simple as cassette. Because our "standard" is four track mono, you want a machine with this capability, and

the vast majority of these machines were designed primarily for four track stereo use--specifically for recording music. We've dealt with this problem somewhat in earlier chapters. If you intend to assemble your own masters, track by track, you want a machine that can record first on the left track then go back and record on the right track without erasing what you've already done on the left track. This feature was common in reel machines of the past, but now is becoming harder to find. For this reason, your best bet may be to look for a used machine that hasn't seen too many hours of use--or at least has been taken care of.

Brands used in the earlier days of old time radio when more reel equipment was available for home use included Sony, Akai, Teac and a few others. These companies are still manufacturing reel equipment, however, their lines have been reduced considerably, with the exception of Teac, however, the Teac line no longer has the "four track mono" ability as described. If you are only interested in listening, or duplicating your reels strictly "as is," a brand new Teac may fill your needs quite nicely. Pioneer also makes some lower priced reel decks which some collectors are happy with. If you are looking for used equipment, look particularly, for Teac models such as "2300," "2300-S," or "2300-SX." If the first number is a "3" rather than a "2", the deck will have the capability of recording on the larger 10-1/2 inch reels. If there's an "R" at the end of the model number, the deck will have auto-reverse--a feature you probably won't need, but the deck may be a good value anyway. When you buy a used Teac, be prepared to take it immediately into the shop for a thorough tune up and a possible head change. One of the major disadvantages of Teacs is the heads have a limited life. The solenoids also tend to wear out, and relays that control the solenoids get sluggish, too. Despite these drawbacks, the earlier Teac models mentioned are good "workhorse" decks for old time radio. They feature three-motor design, with full logic and handle the tape well, if and only if they're in proper working order.

Another "used machine" brand is Sony. The model TC-280, and TC-353SD were their basic economy models and used by many collectors. The 280 featured very durable heads that outlasted the rest of the machine. The 353 was the same deck as the 280, except it featured separate record and play heads [which were NOT very durable]. Both decks are single motor designs, and entirely mechanical in operation. Because of this, they were prone to early failure when used as "workhorse" machines. Performance when they were working was excellent, however, for the reasons stated, you should avoid buying one of these decks today, unless the price is extremely low. They also have a design flaw which causes the tape to skew off the pinch roller, causing the deck to slip into "fast wind" mode during record or play mode.

The TC-377 and its predecessors are much better decks. They are also single motor decks, and not nearly as reliable as the Teacs, however, they do feature separate record and play heads which are ferrite and somewhat better mechanical design. These Sonys are characterized by their slanted front panel and reversible base, allowing their use in either horizontal or vertical position.

If you run across a used Sony TC-765, the price is likely to be high, but the deck is worth it, as it is perhaps the ultimate old time radio workhorse reel deck. It is a semi-pro deck with dual capstan, ferrite heads [record and play are separate, of course], three motors and a logic/tape handling system superior to the Teac. Another model in limited production was the Sony TC-880 which was perhaps the finest home reel deck ever manufactured. Compared to the 765, its performance for old time radio will not be noticeably better. The deck was more than anything else, just a "flashy" version of the 765. Another model the TC-766, is a TWO TRACK version, and is for the most part, not usable as an old time radio deck.

In short, if you're looking for a "workhorse" reel deck--highly reliable, and able to handle the hundreds of hours you're going to put through it, look for these features:

1. Three motor design. It minimizes mechanical parts and excessive belts and pulleys which are most likely to wear out.
2. Solenoid operation. Full logic to operate the solenoids. Logic means the machine's ability to go from one function to another without having to first go to stop mode--and/or built in features that prevent going from one mode to another without first hitting stop. By doing this, it minimize the chances of you snapping or stretching the tape when going from a fast wind mode to play or record mode [or vice versa].
3. Separate record and play heads--to play back your tape as its being recorded to monitor sound quality. This feature should be standard if the above features are.
4. Four track MONO ability, if you plan to assemble your own masters track by track.

The less useful features are mike/line mixing, variable output, dual capstan (generally), tape counters and headphone jacks. The headphone jacks, more often than not, have too low of an output level to be very useful, and allow only four track stereo listening... and who can handle one program going into one ear, and a different program going into the other ear at the same time for more than a few seconds!?

Tape counters are mechanical in design, usually, being fed by a pulley off either the supply or take up reel. The belt that is used is very loose to minimize the effect of dragging down the operation of the rest of the machine. This also contributes to the inaccuracy of the tape counter. The main thing that makes tape counters inaccurate, however, is that they VARY IN SPEED as the tape winds from the center to the outside of the reel [also true with cassette decks]. Tape counters on most machines, therefore, do not "count" anything in particular. They are merely random scales assigned by the manufacturer to approximate tape position. The number "positions" on a tape will vary from machine to machine (even of the same model!). They do not count feet, minutes, or anything else. Certain more advanced decks, however, may have digital readouts which do indeed, count minutes, but for the typical deck, tape counters are just arbitrary guides for help in locating approximate sections on tapes. They are NOT standardized, and for this reason, you are well advised to ignore tape counters!

12. Connecting Tape Recorders -- a few tips

The manner in which you connect your tape decks together can have a negative effect on the tapes you send to your fellow collectors. The simplest and most direct connections are usually the best ones. If you are duplicating only one program at a time, such as on cassette -- or track by track through an equalizer [on reel], you are least likely to run into problems. Your audio wiring should always be kept away from televisions, computers, and certain AC or power supply wiring which can impose hum or buzz into the recordings you make. If you are using a stereo equalizer, it is wise to only feed one signal source through it at a time. Do not try to duplicate a four track reel through a stereo equalizer with separate programs going into the left and right channels of the equalizer. Feed only ONE program at a time through such an equalizer, or you're inviting channel leakage [cross-talk]. Similarly, if you have a receiver or amplifier with "dubbing" ability for two or more tape decks, DO NOT use this feature if you're duplicating four track reels ["double tracking" as already discussed]. It is best to connect your playback deck's outputs directly to your recording deck's inputs. If you're using a patch bay, it should be carefully wired and tested to assure hum free performance [meaning proper grounding procedures and high quality connections and cables throughout], free of "ground loops" and related difficulties that can be encountered with patch bays. If you're unfamiliar with audio wiring techniques, you should not attempt to use a patch bay.

If you're buying new audio cables, it is best to use cables with a foil shielding. If the cables are going to be subject to a lot of flexing and re-connecting, a braided wire shielding, while not as good as foil, will be more durable. The cables supplied with your tape deck and the ones you're most likely to encounter at your local Radio Shack will most likely contain a spiral wire shielding... This should be acceptable under most conditions, however, if your set-up is at all prone to interference -- if you're near a radio station, or you have a nearby CB or ham operator to contend with -- that interference has a greater chance of bleeding into your system if you use the "stock" cables. The foil shielded cable is also best for routing near AC lines, if you must.

Some collectors have also experienced good results by adding their own "foil" shielding to "stock" cables. The "dual" stereo cables are simply cut apart, and each is individually wrapped with household aluminum foil. For best results, one end of the foil should be somehow attached to the grounding screw of your tape deck with a small piece of wire. The foil shield used in this manner, or more ideally, as part of the cable design itself, will ELIMINATE the chance of channel leakage through the cables, during "double tracking." If you "manufacture" or solder together your own connecting cables, it is also best to use plugs on each end with a metal screw-on cap, rather than plastic... again, for maximum shielding!

13. Recording Tapes for Old Time Radio Collecting

In this chapter, specific brands are recommended. This does not imply that there are not other brands on the market which will perform equally as well or better. The types mentioned, however, are at the time of publication of this book, the most popular types used in old time radio and are the best suited types, for the money, for old time radio. No endorsement of The Ampex Corporation, or 3-M Corporation is made or implied.

The type of recording tape used by collectors varies somewhat, depending on the collector's attitude about quality, the amount of money he can spare and to a lesser extent, the size of his collection. For reel to reel collectors, the choices of collectors are largely made from the product lines of the Ampex Corporation, and 3-M ["Scotch"], two of the largest tape manufacturers in the country. Some collectors also use CBS/Columbia Magnetics tape. There are many different "grades" of tape these companies produce. For the old time radio collector, the "standard" low noise/high output line is generally acceptable. If the tape is a brand name, such as Scotch, even their "bottom of the line" tape should prove very satisfactory for old time radio use. There are, however, certain recording tape manufacturers who cater primarily to the music recordist, rather than the radio show collector. Such brands such as Maxell, TDK, Memorex and others do not offer a "standard" line of reel tape, and their lowest priced tape is much better quality than you'll need. You'll also find the price to be much higher than you'd care to pay, especially when you'll be needing larger quantities. This is why collectors rely heavily on Ampex and 3-M products--their "standard" lines are readily available.

Several years ago, the most popular reel tape used was probably the familiar green-boxed "Shamrock" tape--a reject tape from Ampex [# "041"]. This tape was also sold in plain white boxes, also as "Shannon," and "Emerald." Radio Shack sold it [and still does] as "Concertape," but it all came from Ampex factories. They came from a variety of production runs--often "ends" of long pancakes were spliced together and rolled onto a seven inch reel and sold as "Shamrock." Other reels were simply rejected for a variety of reasons--some not so serious--perhaps the tape's high end response dropped by a couple decibels [which wouldn't concern those of us using it for old time radio. Some of the problems, however, were serious -- the oxide layer might be half missing, the "binder" flaking off and/or lubricant insufficient, slitting inferior, etc. To make things more complicated, the reject tape ranged in quality depending on the production line it was pulled from... If it was Ampex 407, it was their top of the line tape, complete with backcoating and very high quality. If it was from a run of Ampex 641, it was their "standard" line, still very satisfactory for old time radio, if you don't mind a splice. There were also a number of other poorer grades which could be identified by appearance. The high value of Shamrock, however, could only be realized if you were able to purchase it "pre-sorted", and obtain only the best grades, or visit a store that sold it and pick out only the best grades your self! Otherwise, you had a 50-50 chance of getting great tape and horrible tape if you bought it blindly. Today, the rising cost of "Shamrock" has pretty much put it out of reach of collectors who are interested in economy tape. Consequently, decreased demand for the tape has made it much more difficult to obtain from suppliers who previously carried it. The more recent availability, however, of the U.S. Government surplus "used" Ampex 641 came to the rescue of old time radio collectors. Its much more consistent quality, compared to "Shamrock" make it an excellent value for less-critical collectors. In larger quantities, the cost of the tape is actually "LOWER" than what Shamrock could previously be obtained for--certainly much lower in cost than "pre-sorted" Shamrock, sold by some dealers.

In the 1960's, Ampex 641 was introduced as their "top of the line" reel tape. It was sold in a variety of packages, even with different numbers, but it was all the same tape. In the stores, it was sold in a silver box with red lettering proclaiming "High Frequency" diagonally across the box. This package continued through the seventies. Brand new, the tape could be purchased for about \$4.00 a reel at the retail level. Today, the same tape can be purchased bulk [without a box] for about \$1.50 a reel, used. Because the tape is used, however, and because it is sold and shipped without boxes, the reels the tape comes on tend to be quite scratched and marked up, however, this is a small sacrifice to make for such a major savings. You can buy the white boxes for the tapes for about 30¢ each.

The big question that still remains, however, is whether or not using "used" Ampex 641 is a good idea or not. Let's compare the pros and cons of the tape---

COMPARISONS OF OLD TIME RADIO'S MOST POPULAR REEL TAPE -PRO/CON

WHAT'S GOOD ABOUT AMPEX 641 USED

Cost is very low
Available in most needed lengths
Performance very good usually
Widely available from a variety of sources [by mail order]
Accepted in trade by most old time radio collectors
Reliable--stores well for long periods of time [Polyester]
Satisfaction Guaranteed policy offered by most "used" tape suppliers. Most will offer replacement or refund if defective reels of tape are discovered.

WHAT'S BAD ABOUT AMPEX 641 USED

Reels supplied with the tape often scratched and/or marked up
Price of tape usually does not include box-- box must be ordered separately at added cost.
Reels shipped in "fast wind" mode, making "tape pack" irregular, and prone to edge damage to tape [causing drop outs on left tracks].
An occasional reel will have a "crinkled" spot in the tape causing drop outs on all four tracks
An occasional reel will contain a splice, which can in time, stretch out, and adhesive can leave deposits on your tape heads.

One question which is not considered in the above comparisons is the percentage of good reels versus bad reels. You may be reassured to know that percentage is extremely low. One source for used 641, Audio Tapes, Inc., makes an effort to "screen out" the defective reels, and based on discussions with a number of different collectors who buy reels from this source, their "pre-sorting" is apparently quite effective. Although there's no way to determine exact figures, a ballpark guess of bad vs. good tape is only about 1% of all tape sold by Audio Tapes has a defect [Ampex 641/used]. Some of the problems involve the plastic reels coming apart, however, new plastic reels can be purchased separately, if you're picky about having CLEAN reels, or you DO encounter a bad one with this problem, you can correct it yourself. Most collectors I've talked with choose to throw the reel out in the trash. If only 1% of the reels are bad, the amount saved by purchasing "used" tape more than compensates for one out of 100 reels you can give to your local garbage collector. On the other hand, if you don't mind the trouble and expense of mailing an occasional bad reel back to the supplier, you can get a free replacement.

Occasionally, you may encounter a source for used tape, that offers an unusually low price. You should be suspicious of these sources and ask to examine samples before buying any. You can easily confirm whether or not a tape is "authentic" Ampex 641 by a visual examination.

1. The tape should have a characteristic "light brown" oxide layer and backing.
2. The tape should be polyester. There are two tests for this:
 - A. Hold a reel up to a light. If the light shines through, DO NOT buy it. It is Acetate, which is prone to many problems including being affected by atmosphere, having oxide/binder falling off, and breaking very easily.
 - B. Cut a piece of the tape off the end of the reel and stretch it. If it snaps clean like paper, DO NOT buy it. It is Acetate. If it stretches, it is polyester.Many years ago, Scotch manufactured tape with an Acetate backing which had a similar appearance to Ampex 641. The tests above will determine if that's what you have.
 - C. If the edges of the tape appear irregular or tend to curl when a few feet of tape are rolled off the end of a reel, it is probably Acetate or damaged 1200' tape.
3. The tape should pass the stretch test to confirm it is "authentic" Ampex 641. When you stretch the tape, the oxide particles should NOT fall off. If they do, the tape may still be usable, and perform in an acceptable manner, but you should be hesitant in purchasing it unless the price is reasonable.

Tape of this nature is an off-brand imitation and is not recommended for long-term storage of important portions of your collection you wish to preserve.

You may also encounter a tape that is pink in color [both oxide and backing]. This tape is Scotch 150. It will perform similar to Ampex 641, although slightly noisier. This tape has not been manufactured by 3-M for many years. The reason it was discontinued supposedly, is because it has been said to be very abrasive to recording heads. You may also find it sheds oxide a little more than Ampex 641. For general purpose use, however, providing the tape you acquire has no physical damage, you should find it to be of acceptable quality. You would be wise to refrain from using Scotch 150 for reels you intend to replay many times. The tape is polyester, like Ampex 641, but apparently is not as durable.

Ultimately, the final answer to whether or not the "used" tape is a smart buy or not, what it boils down to is this: If you can tolerate negative aspects of the tape already described, overall, the tape is an excellent value. It's a far better investment than what Shamrock used to be, although Shamrock was "new" tape [but it was reject tape!]. Some collectors, however, prefer using new tape for whatever reason. New tape, of course, is usually consistently high quality -- even if it is a "standard" output tape. "New" Ampex 641 is still available, however, an advanced version of the tape was developed called 642. It is claimed to have higher output [consequently, LOWER noise, compared to 641] although the difference between it and 541 is not a major one. The cost of 642 is slightly higher than 641, however, the added expense is worth it for more critical recordings. This tape is probably a good choice if you're interested in preserving some low generation programs of especially high quality. The more advanced Ampex line, 407 "mastering," and 456 "Grand-master" is excellent tape, but intended primarily for music and an unnecessary expense. 407 and 456 falls into the same category as Maxell "UD" ... great tape, but save it for music. As mentioned, some collectors have found CBS/Columbia Magnetics reel tape to be to their liking. It is available exclusively from M & K Recordings. It is similar in both appearance and performance to Ampex 641. It appears to have a slight oxide-shed problem, but it seems to hold up very well when stored for long periods of time. It is a very good value -- more expensive than "used" Ampex 641, however, it is much cheaper than either Ampex or 3-M products. It's a good compromise, with only a slight sacrifice in quality. The 3-M/Scotch line tends to be somewhat expensive, however, the product quality is always dependably high.

Their standard "low noise" tape is 177 and 176 [sold in stores as "211" and "212"]... 177 is the 1800' version, and is excellent for mastering, general purpose old time radio recording, etc. Same goes for 176, which is 1200'. Some sources sell this tape in a "custom wound" package, meaning your tape supplier has purchased the tape at lower cost in large "pancake" form, and wound it for you onto stock seven inch reels. You can save a fair amount of money by ordering the tape in this fashion. The "factory" package is wound by the tape manufacturer onto one of their reels, and packed in one of their boxes, rather than a plain box.

The more advanced Scotch lines include #207, #209 and 227. These are their top of line grades, probably not necessary for old time radio. One slight advantage of these tapes is their use of a dull finish black backcoating. Backcoating minimizes "print through," which occasionally is a problem with old time radio programs. If you hear a faint echo before or after words on a show, it was probably caused by print through. This is usually caused by storing a recording for a long period in a "fast wind" mode. If you normally play your tapes all the way through [both sides] without rewinding, you have little to worry about. If you do store your tapes in "fast wind" mode, it would be a good practice to run the tape through fast forward then rewind before playing it. This is true of ANY tape which has been left unplayed for a year or more.

The higher cost of the cheapest backcoated Scotch tape may be more that you'd care to pay, and because of this, it may be wise to keep the above practices in mind to avoid print through.

Print through is caused by layers of tape in a tape pack, magnetizing, or "bleeding through" to nearby layers. It is not usually a major problem. Another preventative measure that can be taken to avoid print through is to make certain your reels are not over-modulated.

The best tape to use for cassette collectors is the widely available "bulk" cassette. Certain mail order tape suppliers are involved in what has become known as "custom winding" cassettes -- buying the shells and the tape and winding appropriate lengths themselves. By doing this, they are able to provide a product of high quality at a suspiciously low price!! What is so surprising about these tapes is their high quality. You can always buy drugstore "cheapies," K-Mart cassettes or a similar off brand tape locally. This however, is a big mistake. Don't buy the "three for a dollar" cassettes in the plastic bag. The tape inside them is extremely poor -- very low output and very HIGH in noise, although some of them may actually say "low noise" -- don't believe them. The K-Mart, Recoton, Certron, Sentry, etc. etc. cheapies are a waste of money! Not only the tape inside them is poor, but the shells are almost without fail, very flimsy. They're sloppily assembled, prone to jamming and breakage -- even the C-60's.

The 'bulk' cassettes, on the other hand, are generally assembled with very high quality materials. The shells are usually a product of Magnetic Media, a very reputable manufacturer also involved in making tape that goes inside. This tape is fine for old time radio -- the output level is very good, noise level is low and they overall have a very nice clear sound. Most suppliers of "custom wound" cassettes offer this as their "voice quality" tape. Expect to pay about 70¢ or less for a C-60 of this quality. The only thing you sacrifice with this tape is

high end response. The high frequencies don't record too well. If you try to record music with a lot of cymbals, for instance, the cymbals will sound "squashed" and the sound will be raspy, unless you record at a very low recording level. For general purpose old time radio recordings, however, a bottom of the line "bulk" cassette is fine, but ask for samples before you purchase any large quantities.

Usually, I recommend [and use myself] a "middle of the road" cassette which may cost 15¢ more per tape, however, they're a little easier to work with in terms of leveling, especially if your radio shows have some musical content and indeed DO have some limited high frequencies. You can record at a HIGHER recording level on these cassettes, with less danger of tape saturation [over-modulation]. The higher recording level, means of course, a higher [better] signal to noise ratio... LESS HISS, and more old time radio to enjoy.

Middle of the road cassettes may contain tape manufactured by major companies such as Ampex, Capitol, Scotch, Agfa, TDK or even Maxell. Maxell, by the way, makes a "bulk" cassette, which is quite reasonable in price.

Premium brand name cassettes sold in stores, such as TDK, Maxell, Memorex, etc. like reel to reel, are usually over-priced and more than what you'll ever need for old time radio. They are excellent for music -- "Metal" oxide cassettes actually exceed the quality of most reel to reel tape, however, they are not needed. They come in a nice attractive package with pre-applied labels. This is one thing you do NOT get when you order "bulk" cassettes by mail. "Bulk" cassettes are supplied WITHOUT labels and WITHOUT boxes. You order the labels and boxes separately from the same source. At the most, this will add another 30¢ per tape--much less if you order in quantity. Also on the tapes, you should order as many cassettes at a time as you can possibly use. The price-per-tape drops accordingly, as the quantity you order increases. Prices drop at pre-determined levels.

There are also premium mastering "bulk" cassettes produced, including some excellent "high bias" grades. If you do a lot of music recording on cassette, definitely check into the quality of these. Rather than paying \$4-5 a cassette or more for a name brand tape, you can get similar quality by buying the bulk tape for music... You could pay \$2 or less per tape for the "top of the line" bulk cassette. These tapes, as you might imagine, are entirely unnecessary for old time radio, but are very fine products for other purposes.

Occasionally on some bulk cassettes, you may run into a bad batch. The problems noted, however, may not be severe enough for you to return the tape [suppliers generally guarantee their products and have a refund or replacement policy]. Problems to be on the look out for are drop outs -- especially at the beginning or end of a side -- wavering sound and/or weak output in the left channel and bad splicing of the leader tape to the tape. Some of these problems are related to the tape being mis-matched to the shell. Others are manufacturing defects. If the drop-outs only occur at the beginning or end of the cassette, just make sure you don't do any recording there! You may be relieved to know, however, that the percentage of "bad" cassettes is pretty low to the point of being almost insignificant. If you use a lot of cassettes, however, [at the "bulk" price, most people can afford to] be aware that those occasional rejects will pop up from time to time.

A list of sources for recording tape is included near the end of this book. All are highly recommended. They generally provide prompt service by mail. Some will also accept orders by phone and payment by Visa or Mastercard, in addition to the usual check or money order.

14. Your Monitoring System

A few words are in order about the equipment through which you play your old time radio tapes--specifically, the amplifier/receiver and speakers and/or headphones you use. But first, we should establish that old time radio listening can be divided into two categories:

1. CASUAL listening, or listening for enjoyment and 2., CRITICAL listening, or listening for defects, tonal balance and overall fidelity. If you're listening casually, you're listening for the program content, whether it be comedy, drama or mystery. If you're listening with a critical ear you are either evaluating the program for sound rating, or you're equalizing the program. We'll be most concerned with the latter listening mode.

If you just want to enjoy the show, it's permissible to hear it through almost anything that will clearly reproduce the show. You can listen on a portable with a two inch speaker, if you're so inclined. Some of the early model reel tape decks came complete with their own built in amplifier and speaker system. For casual listening, these are fine. I myself, do most of my "casual" listening through a home-made mono amplifier containing two I. C. chips. My "monitor" speaker is an old bookshelf model equipped with a single five inch full range speaker. For "critical" listening, I use a Kenwood integrated amplifier and a pair of Sennheiser headphones.

Anytime you are equalizing a radio program, it is extremely important you listen to it through a device which will reproduce the program with as little coloration as possible. You want to monitor the show so you will hear EXACTLY what is going on the tape as accurately as possible. You want to hear through a system which can be so-adjusted so response is absolutely flat--no boost [or cut] in bass or treble. Bass and treble controls should be set in the center. If there's a "tone defeat" switch, use it and you'll by-pass bass and treble entirely. If you already have a reasonable quality stereo receiver or amplifier, it is probably very adequate for critical listening of old time radio. Power output is of no concern. You now may wonder if your speakers are adequate. The answer is NO. No speakers are really advisable for equalizing old time radio through. The reason is the equalization is not very standardized--one model may have a very bright sound, another, may be bassy but have a very crisp sound at the same time. Still another system may have a "punchy" midrange. On top of this, the acoustics of the room in which you have your speakers, plus where you place them can have a major effect on the equalization. How far away YOU are from the speakers has an effect on equalization!! For this reason, ALL old time radio equalizing should be done with headphones. Use a high quality set of headphones. Do NOT use the set that came with your Sony Walkman! 'Personal portable' headphones are great for casual listening, while on the go, or sitting home, but don't use 'em to equalize! These type of headphones tend to sound overly shrill, brassy, or just plain too bright. They're really not accurate, except maybe with the unit they're specifically designed for, and even then, their quality may be questionable.

By "high quality" headphones, I'm not saying spend \$150 for a set. You should use headphones in the \$50-75 range. Use a light weight pair that feels comfortable to you, and you feel are accurate. There are many different brands manufactured. "Open air" type are most desirable, although the "sealed" type are perhaps more accurate at reproducing bass. With old time radio, however, you're not as concerned with bass -- certainly not the deeper bass. Furthermore, the more advanced open air types are as accurate as you'll probably ever need in reproducing bass. And the big advantage is comfort which you won't find with headphones that seal themselves against your head!

The brand already mentioned is highly recommended. Sennheiser headphones are the most widely used by collectors, broadcasters and studio professionals. The most popular models have fully replaceable cushions, cords, headbands and drivers. They're extremely durable, although they appear somewhat fragile--they're not, believe me!

The most popular model in the Sennheiser line is the HD-414. They have one cheaper model which I would NOT recommend [HD-400]. On this model, the cord is NOT replaceable, and they are quite inefficient--the require a large amount of amplifier power to get very much volume out of them. If you've never purchased a "good" set of headphones before, the HD-414 would be a good set to start out with. Another model, the HD-424, is slightly more expensive, however, they have improved bass response and larger ear cushions. Personally, I feel the latter is more comfortable, although some prefer the HD-414. The 424 also has a padded headband, which the 414 does not. Either model is very adequate for old time radio equalizing. You'll notice the added bass response on the 424 when listening to music, but when listening to radio shows, the difference is not very significant. Visit a local stereo shop and try on a variety of brands and models--determine which one sounds the most "accurate" to you. By accurate, I mean which one sounds the flattest--NOT which one has the widest frequency response, or which one has the brightest sound or most bass, but which one sounds the most realistic, or accurate. If possible, bring in a cassette of an old time radio show and ask to have it played through various sets. Pick a radio show that has definite flaws, such as tape hiss, or low pitched rumble. These flaws should be clearly detectable on the headphones--yet not overly pronounced, unless the show is so bad to begin with, that the flaws show definite meter movement on the tape deck.

Have the headphones turned up [in volume] to as loud of a level as you feel you'd ever want to use them at. At this level, there should be no distortion, rattle, buzz or popping on modulation peaks. If the sound seems to get a bit harsh or "raspy," that's another sign that these headphones may not be the best choice.

You may ultimately, end up buying a set of Sennheisers, but if you find another brand you feel perform as well or better which are lower in price than the Sennheisers, don't hesitate to buy them. But you shouldn't buy anything cheaper than the price range already mentioned.

The impedance of the headphones [measurement in ohms] shouldn't be anything to be overly concerned with. If your amplifier or receiver has at least 10 watts of power per channel, you should be able to sufficiently drive any set of headphones you'll likely to come across. Generally speaking, the higher the impedance of the headphones, the greater the amount of amplifier power will be needed to drive them to the same listening level. If you have a very low power amplifier, and especially if you're going to use the headphone jack furnished on

your tape deck, you would do best looking for a set of 8 ohm headphones. However, many of the higher quality headphones are not available with only 8 ohms--most of the "cheapie" headphones are 8 ohms. The better grades of headphones may range anywhere from 300 to 6000 ohms. A major advantage of the higher impedance models--they're less prone to driver burn-out due to overloads. The added resistance puts a lighter "load" on your amplifier--less power is drawn from the amplifier and less heat is generated.

Our discussion on headphones has centered on dynamic types--those containing drivers with an electromagnetic arrangement attached to a diaphragm. The materials used to hold these elements together and the material the diaphragm is made of determine the sound characteristics of the headphones. There are other varieties of headphones manufactured, however, but their use in old time radio is limited, if not a mistake entirely. At one extreme, there are electrostatic headphones--these are quite costly, and must be operated in conjunction with a bulky power supply. They are excellent in virtually all areas of performance, however entirely unnecessary for old time radio. Some of the best dynamics can rival some electrostatic headphones.

The "cheapie" headphones you can buy for either your "Walkman" or your low grade stereo can take two forms: [both basically dynamic] The "ultimate" cheapie that sometimes sells for as low as \$6 a set, contains two PM [permanent magnetic] speakers, similar to those used in low cost portable radios. These headphones have very hollow, poor sound, although they have the ability to play rather loudly, because they contain loudspeakers, quite literally. Don't waste your time or money on them. The other type is of a more advanced design, but are also not recommended. The "Walkman" style headsets are designed for low power, casual listening, and you'll find them prone to distortion, buzzing or clicking on some modulation peaks when used with your HOME system.

At the opposite end of the quality spectrum are the communication style headphones--usually mono, and with a carbon element, rather than either of the two types mentioned. These are designed for strictly voice work, where quality is not as important as intelligibility and low cost. Response of these may be only from 300 hertz to 3000 hertz--adequate, perhaps, for telephone operators, but not for you! With this type of range, the radio show would be understandable, but the musical bridges would sound horrible, and you'd miss many of the resonant qualities present in many of the radio actor's voices. Not only that, if you were interested in filtering out tape hiss, with these headphones, you wouldn't be able to hear it to begin with! Obviously, don't waste your time with these headphones either. Stick with the good quality stereo headphones. Recommended brands include Sennheiser, Stanton, AKG, Koss and Audio Technica, although there are a variety of other good brands to choose from. Again, the Sennheisers are probably the most durable, lightweight open air headphones made, but be sure to consider others before making a final decision.

15. Tape Editing -- Professionally or Electronically -- How to get the best results...

The art of editing tape recordings was part of tape recording from the very birth of the medium. With open reel tapes being the original and first recording format, the ease of manually "splicing out" unwanted portions of recordings made this practice widespread among both home recordists and professionals in the fifties and sixties. Today, the "cut and splice" manner of editing is not as popular among home recordists, however, due to improved tape equipment transports, making "electronic editing" more common among home users.

Electronic editing is merely quick finger action on the pause control of your tape deck. It involves playing back a recording on one machine while recording it on another, and merely stopping the machine doing the recording during segments which are unwanted, the starting it up again when the undesirable section ends and the wanted section starts. This manner of editing produces very good results on nearly all cassette decks which have pause controls. The tape is moving at a slow speed with cassettes, and the pinch roller only has to move a short distance to stop and start the tape when the pause control is pressed. For these reasons, edits done on cassette decks electronically are usually not detectable. With reel to reel equipment, however, the tape is usually moving at twice or four times the speed, the pinch roller on a reel deck has a much further distance to travel to start the tape, plus the reels themselves are much heavier than the small spools inside a cassette. For these reasons, electronic editing on reel decks is not as easily accomplished. There can be annoying "gliches" in the recording at the point the edit is made. Certain more advanced decks, however, can accomplish electronic editing with reasonable results usually. Reel

decks having solenoid operation, three motors and in excellent mechanical working order have the best chance of being good performers in this area. In addition, the machine should be of a fairly recent model. Older Ampex equipment originally designed for professional use cannot be used satisfactorily for electronic editing. This is because much of the transport design contains heavier parts and the solenoids--particularly the one moving the pinch roller into place--tend to be slower in reacting. This fraction of a second it takes for the machine to get going can create not only "glitches" or clicks in the recording but also a "wow" in speed as the machine tries to get itself going to normal recording speed.

The "professional" method to edit tapes involves a splicing block and a roll of splicing tape. Depending on what you're planning to edit, you may or may not need to resort to use of a splicing block. For casual "non-critical" editing, such as removing commercials from your tapes of CBS Mystery Theater, the "electronic" editing method should be satisfactory. The disadvantage, of course, is you add another generation of tape on and another layer of hiss, which may or may NOT be noticeable.

The "professional" method, however, also adds another layer of hiss, if you do it properly. The big advantage, however, is that this method is much more precision a method. You can delete microseconds of material, if you wish. If you're interested in removing things like disk pops, skipping disks [repeating words, etc.], this is definitely the best method to use.

The basic tools you'll need are the already mentioned splicing block, a roll of 7/32" acetate splicing tape [3M's #41 is recommended], a white or yellow grease pencil/china marker, and finally, a good quality reel of tape--1 mil., or thicker--NON-backcoated. The splicing tape doesn't stick too well to backcoated tapes. Also, make sure your splicing tape is acetate rather than polyester. The latter will tend to stretch too easily, which can ruin your splice. You should make sure the splicing tape is 7/32" wide, too, not the actual tape width [1/4"]. This slightly narrower splicing tape will be easier to properly apply to the tape, and it's edges won't stick out on the splice. This will give a cleaner sound to the splice as it can pass through the tape guides of your machine without snagging, and slide across your heads more smoothly. The splicing block will tend to be expensive. The most popular model is the EDITall, invented by Mr. Tall. It's a precision ground aluminum block with the edges of the groove the tape sits in curved inward slightly. This helps hold the tape in place during the operation. If you use the EDITall, you'll need some new, sharp, unmagnetized razor blades. Demagnetize the blades as you would your tape heads, with a demagnetizer. Another splicing block is made by the Nagy Company. It is slightly more expensive, but handier to use because a self-sharpening blade is attached. As mentioned, these blocks are expensive. They are designed for professional use. They range in price from \$15-25. It also makes sense before you start to use them to fasten them down to your work table with screws, or use some double sided foam tape. If your deck can be operated on its back, you can attach the block directly to the machine itself. Splicing blocks can be purchased from some of the tape suppliers listed at the end of this book.

There are also certain splicing "machines" made which use a wider width of splicing tape, usually have an arm with a two-position "switch" ["splice and trim"] and spring loaded clamps that hold the tape down. The price on one of these devices may actually be lower than the cost of a splicing block, but stay away from these contraptions!! The splices they produce are fair at best, plus they tend to get out of adjustment very easily and end up "trimming" more of the recording tape away than the actual excess splicing tape. It is also possible, as you will notice on older "Scotch" boxes, to make a splice with a pair of scissors. This method, however, is extremely cumbersome, and it is difficult to make a perfect splice using scissors.

A "perfect splice" is essential for a noiseless, professional sounding, undetectable edit. It takes a little practice, but with a little patience, anyone can use this method with a high success -- and make the splice itself in seconds -- but the actual editing process takes a little longer, and a little more practice to master.

HOW TO EDIT TAPES PROFESSIONALLY, WITH PRECISION

The method described here is used by all professional recording studios, advertising agencies and radio stations. Its application to old time radio is probably limited to producing/upgrading your masters, as well as removing disk skips [part of upgrading]. The first thing to realize is your editing copy [the one with the splices] should NOT become your final master copy. This is because when stored over a period of years, the glue on the splicing tape may dry out and the splice may come apart. Some cheaper splicing tapes may ooze when stored for a period of time. Most professional studios have a reel or two of tape designated as their "work tape." This is the reel they do all their editing on. When the desired results are obtained, the material is transferred over to a master tape, which is splice free. The same should be true for any of your editing projects. Keep one reel of tape strictly for editing/splicing. Just keep re-using it, after material is transferred. After a period of time, of course, that tape should be replaced after it gets a few hundred splices in it.

Another major concern with professional editing is the tape speed. The faster the tape speed, the more precision your work can be...also the better the sound quality, of course. You should edit at a speed no slower than 7-1/2 i. p. s. Editing at 3-3/4 is possible, but it is much easier at 7-1/2. There's also a larger margin for error at this speed. Remember that for every 7-1/2 inches of tape that passes the heads, 1 second of time has elapsed. This means that if you cut out about three inches of tape, you will have deleted less than half a second of material. If you're cutting out sentences or words of a "skipping" disk, that half a second can represent a whole word or vowel. With 3-3/4 speed, you're talking about half that amount of tape and it's easier to mistakenly chop off [or out] something you wanted to leave in, because eighths or fourths of an inch of tape can represent that one word or syllable you may want to either leave in or remove. Editing, by the way, at 15 i. p. s. makes it even easier to get precise with your work, and harder to make a mistake. Most machines used by collectors, however, do not operate faster than 7-1/2 i. p. s.

STEPS FOR EDITING TAPES

1. First, find the beginning of the material you want to appear immediately after the edit. In other words, the END of the unwanted material. Put your tape deck in "pause" mode, and/or defeat the "tape lifter" function of your deck so you can rock the reels back and forth and be able to monitor what you hear. Find where the EXACT spot is where you want to make the edit. Center it on your play head [third head from the left]. With your grease pencil, make a mark directly on the tape backing exactly in the center of your play head.
2. Now, rewind the tape to the very beginning of the unwanted section or the very end of the section you want which appears before the proposed splice. Make a mark with your grease pencil again, in the exact center of the play head as you did with the other section. If you are only editing out a short pop, or syllable, this second mark may be very close to your other mark. If this happens to be the case, you needn't rewind the tape as mentioned at the beginning of this step--just move the reels backward by hand.
3. Next, unspool enough of the tape so you can center the second mark you made in the splicing block. There will be an angled and a straight cutting slit in your block. The angled slit will produce a stronger splice. Pull the tape tight so there's no crinkles in it where it sits in the block. Hold it fairly tight, then take your razor blade and with one clean stroke, cut the tape where you made your mark.
4. Now unspool however much tape there is between the area you have cut and the other mark. You should now be unwinding from the supply reel side. When you find the other mark, insert the tape into the block from the opposite direction you inserted from the take-up reel side. Pull the other end you already cut out of the block. Position your second mark on the cutting slit. Take your razor blade and make the second cut. You now should throw away the piece of tape you've cut out of the reel.
5. Now insert both cut ends of the tape into each end of the splicing block. Butt the angled ends up flush against one another so there is NO SPACE between them, yet they do NOT overlap.
6. Take a small piece of splicing tape [about 1/2 inch]--try to avoid touching the sticky side as much as possible--carefully center it then lay it directly in the splicing block groove on the tape. Do this carefully to avoid moving the tape ends out of position. Make the splicing tape sit on the recording tape as straight as possible--the tape should not be crooked and in contact with the edges of the groove of the splicing block.
7. Using your fingertips, press the splicing tape firmly onto the recording tape while still positioned in the splicing block.
8. With a twisting motion, remove the recording tape from the block. Lay it oxide-layer-down, on a clean surface, and press out any remaining bubbles you see between the splicing tape and the recording tape.

If you have followed all these instructions carefully, you now should have a good strong splice. Whether or not the splice is in the exact spot you wanted it in is another matter--depending on how carefully you followed and understood steps 1 through 4.

The above technique can also be used to attach leader tape to the beginning and ends of reels. If you're attaching leader tape, it's of course, a much simpler process. Make the angled cuts at any random spot at the end of your reel and a length of leader, then follow steps 5 through 8.

Another word of warning is in order regarding the splicing tape. Use ONLY tape intended for splicing recording tape. Do NOT use cellophane tape, packing tape or masking tape. These tapes will only ruin your recording tape in time -- the glue will get old and gummy and run -- sticking layers and layers of recording tape together, contaminate and possibly damage your tape heads, and general, create a large mess. The splicing tape mentioned [3M #41] is preferable.

16. Disk Dubbing -- Transferring "E. T. 's" to Tape

The art of editing tape is one widely practiced in professional circles today. It is an old but still used technique, and likely will continue to be. If you have mastered the "professional" tape editing technique, then perhaps you are ready for something a little more advanced-- or perhaps more appropriately said, a little more obscure!

E. T. is an abbreviation for Electrical Transcription. If you walked into a record store and asked what their latest releases on "E. T. 's" were, they'd either look at you like you were from Mars, or perhaps refer you to their movie soundtrack section. If you've been part of old time radio for any length of time, however, you probably recognize the term. Basically, they're old records -- E. T. might also imply that they're a specific type -- a type which is of special importance to our hobby. An E. T., or "disk" is the medium through which old time radio was preserved before the hobby started. Like modern records you can buy in a store today, they have grooves and a hole in the middle, but past that, their similarity to today's records ends. A modern album today is twelve inches, very thin and actually somewhat flexible [!]. Not only that, they are microgroove recordings and contain stereophonic sound with extremely wide frequency response. In contrast, an "E. T." can be extremely fragile yet bulky and large. While there are some twelve inch disks, most are sixteen inch and some are seventeen or eighteen inches. You would think that their large size alone would make them unplayable on modern equipment, but there's much more involved!

If you are lucky enough to discover or gain access to some valuable OTR disks the first time you play them may actually be the first time that program was ever heard since its original broadcast. Perhaps of greater interest is the enormous trade value your finds will have, if you locate a popular series. These are the two good points of getting your hands on these unusual items. What you'll have to go through to get these recordings properly transferred to tape might make you wonder how the many thousands of shows ever made it to tape. But if you're the adventurous type, with a lot of time and patience [and a little money helps!], don't get discouraged. Disk dubbing isn't impossible -- just another art in itself -- only this art is one that's exclusive to our hobby, for the most part.

OTR disks, as mentioned are large in size. They can also be somewhat heavy -- weighing up to a pound each. This heavy weight alone implies that what they should be played on should be a heavy duty piece of equipment, and that assumption is correct. Part of the challenge of getting your disks onto tape is finding a transcription player. Actually, a transcription player largely resembles a modern turntable, with the exception of the large platter size, and an overall "industrial" appearance. The platters themselves are heavy [with, of course, a husky motor inside to turn it] and tone arms, which you may have to obtain separately, are lengthy. There also may be instances where you'll need to use a "record anchor" to avoid having extra heavy disks slip. They are, believe it or not, lead weights placed over the disk on the spindle weighing perhaps five pounds.

The big problem, of course, is finding a player in the first place. Most of your local radio stations have probably long ago gotten rid of such obsolete equipment. Perhaps if you can contact stations in small towns away from larger cities you may get a lead on an E. T. player. Also be sure to check as many antique and junk shops, as well as flea markets and auctions as possible. Just be on the look out for the large platter size and all steel construction. Also watch the pages of such publications as HELLO AGAIN. Occasionally, other old time radio collectors will have transcription tables for sale. A few transcription table brands are RCA, Gates and Rec-o-Cut, but there are others. If you're lucky, the one you find will have a tone arm attached. A sixteen or twelve inch tone arm should work nicely.

The next thing you'll need is the cartridge and styli. The cartridge, of course, refers to the device that converts mechanical energy into electrical energy. The styli, or "needle" converts the impressions in the record or "groove," into mechanical energy. Originally, E. T.'s were intended to be played with a steel styli. This is really not the type of needle you'll want to get involved with because they require changing after each playing, and also will be hard to obtain. Look for something a little more modern -- something that will tolerate extremely heavy tracking weights. In terms of a cartridge, if you can find it, the G. E. VK-II is a good all around choice. It is supplied with two styli. Pickering and Stanton also have some older models that can handle the heavier tracking weights and wider grooves. . . Proper size styli will have to be determined by a little experimentation, if you want perfect results. Size can vary from disk to disk, but as a general rule, try various styli ranging between 1 mil. to 3 mil. Regarding the shape of the styli tip, [conical, elliptical, etc.]. this again, can vary. Experimentation is the name of the game. Remember to keep spare styli on hand--extreme tracking weight makes their lives brief!

Tracking weight is a major concern when copying disks. It's major because it's extreme, and each play will degrade the quality of the disk. . . some of the later plastic disks are a little more durable, but much of what you may come across is likely to be fragile. Disks which are marked for syndication or "delayed broadcast" network disks are somewhat more rugged. The others were cut merely to keep a record [literally] of what was broadcast. They were never intended to be rebroadcast. They could be made of either acetate or bakelite bonded over a platter of either aluminum or glass. During the Second World War, glass was used because aluminum was a war priority metal. . Glass based disks are extreme-ly fragile. Don't pick them up by one edge, or they'll shatter. Slip your hand under it and give it support, or you'll soon find your valuable radio gem in a hundred pieces! When adjusting the tracking weight on your player, you'll be working with ounces, NOT grams. Some E. T.'s will be marked "not to exceed 2-1/2 ounces. . ."--use this as a guide and experiment. Weight is dependent on the age and "contruction" of the disk. Here's some general guidelines -

Typical E. T. Dubbing Situations [speed - either 33-1/3 or 78 r.p.m.]				
DISK	VINTAGE	STYLI SIZE	TRACKING WEIGHT	DISK COMPOSITION
Network	1930's, '40's	2.7 mil.	2-1/2 ounces	Bakelite [hard rubber] Acetate [over aluminum] Acetate [over glass]
A. F. R. S. *	1930's, '40's	1.0 mil.	1/2 to 3/4 ounce	Vinyl
Syndicated	1950's	1.0 mil.	1/2 to 3/4 ounce	Vinyl
Network	1950's	1.0 mil.	1/2 to 3/4 ounce	Vinyl

The above information is given as a general guideline only. For a given disk, you may obtain better results with other arrangements. Experimentation is the key to disk dubbing successfully. It is suggested an assortment of coins be used to help with tracking weight. A quarter is approximately 1/4 of an ounce -- half dollars are 1/2 an ounce -- silver dollars weigh approximately an ounce. Pennies, nickels and dimes can also be used.

Before playing the disk, it will probably be necessary to wash it. Use mild soap and water. A commercially produced record cleaner may be used with caution on vinyl disks, but if the disk is made out of any of the other materials, it shouldn't. Solvents such as alcohol or paint thinner should never be used on disks.

Regarding aluminum disks, if it's solid aluminum, you might be well advised to let someone else dub it with more experience, if you're a newcomer to the art. They are very tricky. If you are ready for the challenge, keep in mind a wooden styli should be used to play it!

Once you've thoroughly washed the disk [keeping water away from the label if possible], carefully rinse and dry it, put it on the player and spray it with a thin film of water. Play the disk wet. Some furniture polish [without lemon] sprayed on may help to reduce noise.

Regarding taping the disks, there seems to be some disagreement about the best "format" to use. If you're interested in doing it with no compromise in quality, are interested in professional techniques all the way, and have a lot of spare time, the best way to copy disks may be as follows:

- [1] Plug your cartridge directly into the line or microphone inputs on your tape deck. . . which -ever gives best results. Do not equalize during the disk copying process.
- [2] Use a 1200' reel of tape and 7-1/2 i. p. s. speed. Use ONE reel per show. Do NOT record on the second side of the tape if you're using a four track machine.

- [3] A disk will contain only 15 or 16 minutes of programming, therefore, a half hour disk will require two disks. This means you'll have to attach the two program halves together. Use the knowledge you gained in the previous chapter on splicing to "mate" the two parts. At times, the first disk will end in the middle of a sentence. The challenge is to make the "mating" undetectable.
- [4] Edit any skips, popping or other noise after the "mastering" is completed. If the needle skips repeatedly, do not try to "re-cut" the groove with finger pressure. You'll only permanently damage the disk and your styli. If you must pick up and move the needle during the recording, be sure to edit your pick-ups out later.
- [5] AFTER dubbing and editing the recording, you will then be ready to equalize it while transferring it to a standard 4 track, 1800' reel, if you so desire. The previous chapters on equalizing and tape copying will apply here. Since your "transfer" master is recorded at 7-1/2 and you'll probably want to record your new "collection" master at 3-3/4, the "double speed" technique is not possible and highly recommended against, especially if you're first going to feed the signal through an equalizer.
- [6] There are a variety of pop suppressing and other very sophisticated signal processing devices which you may wish to use. This is the stage you should use them in, while equalizing the programs at the same time.

DISK DUBBING DO'S AND DON'T'S

DO examine disks carefully before dubbing. Be on the look out for areas where the disk base may be showing through. These areas should be well coated with water when playing as they will induce excessive wear on your styli. Also remember areas with obvious scars are those most likely to give you skipping problems. Be prepared.

DO make a master copy of the tape at 7-1/2 i. p. s. It is much easier to edit at this speed, and if you must "back-up" the tape, you will not cause un-needed wear as you would by replaying sections on a disk. Your "work" copy should be the tape, not the disk.

DO monitor the recording through each phase. Make notes as the disk is taping where problems you need to edit are.

DO edit if you must pick up the tone arm during the recording. Also edit the sections before and after the show when the needle is being set on the disk and picked up.

DO check both sides of the disk. While often the second side may be blank [back side], occasionally you'll find a rare gem that might be worth saving... announcers fooling around, a rare routine, X-rated odds and ends, etc.

DO be sure your tone arm is mounted in its proper position for proper tracking. If you are working with an "oddball" disk -- 17 or 18 inches in size, you will find it necessary to move the tone arm. Failure to do so could result in a ruined disk.

With the exception of the "Vitaphone" disk, you probably will never see an 18 inch disk.

17 inch disks were common in the early 1930's... most notably, are "Witches Tale" disks, which are of this larger size.

DON'T "back cue" a disk. This is a common practice in the broadcast industry, particularly when transferring 45 records to broadcast cartridges. NEVER try this on an E. T. You can very easily rip the coating from the disk, which cannot be repaired.

DON'T tamper with recording levels after the recording starts. Information already given on setting levels applies.

DON'T pick up glass disks by the edge. They'll shatter quite easily!

DON'T "stack" disks. Always store disks on their edges.

DON'T try to play disks on modern turntables. Their motors are too weak to run an E. T. at its proper speed... and your modern styli will be destroyed.

DON'T try to play a modern record on an E. T. player. You'll ruin your record.

DON'T attempt to dub any disk you don't think you're qualified to handle. Rather than lose the recording, have it done by someone with experience [see end of this book for information].

CUTTING CORNERS DUBBING DISKS

Some collectors may prefer not to go through the trouble of making a copy of the disk at 7-1/2 i. p. s., using splicing tape, using one track of tape [full track], etc. Some collectors may prefer equalizing, using the electronic edit method, "mating" program halves, all in one process. They may prefer making up their four track, 3-3/4 i. p. s. copy DIRECTLY from the disk. It is true, this method will 1) save time, 2) save a bit of money and 3) save a generation of tape and a layer of hiss. If the disk is one of the more durable types, you

have high quality tape equipment capable of a first rate electronic edit, and you use top quality recording tape, perhaps this method is an acceptable one. If your disks are loaded with problems, the only method that should be attempted is the "professional" one described. Remember in copying disks to tape, you are originating that show and your efforts will likely be duplicated for several generations of tape. The better of a job you do, the longer that show will last as copies of copies of copies are made, as the show is passed from trader to trader. While it is possible to make excellent copies of a disk by cutting corners, it is much easier to do a consistently first rate job using the professional method. Keep this in mind.

17. There's More to the Old-time Radio Hobby than the Listening...
Enhancing Your Enjoyment of Old time Radio

Old time radio collectors are a very unique breed of people. If you are new to the hobby, you will discover this soon if you become involved in the various activities enjoyed by collectors across the country.

There are a variety of publications being produced both privately/professionally by individuals involved in the hobby, as well as the many 'club' publications, which range from simple newsletters to more elaborate magazines. Many of these publications include lists of traders looking for certain shows, ads from dealers selling shows, books being written related to old time radio, special projects undertaken relating to radio, stars who were part of radio [interviews, etc.]. There are also letters from other collectors published, news and commentary about the hobby, new shows discovered, etc.

The clubs often have special "lending libraries" which contain reel and/or cassette collections which may be borrowed from by members of the club. There are also certain dealers involved in lending tapes on a commercial level.

The publications offer a medium for old time radio fanatics across the country to interact, exchange information, tapes and experiences. The oldest publication involved in this process is HELLO, AGAIN, published by collector, Jay Hickerson. Jay, along with collector/dealer Joe Webb, is also one of the central figures involved in organizing the annual Friends of Old-time Radio convention, held in New Jersey. Dozens of radio personalities of the past are present at each convention [held usually the last weekend of October], along with hundreds of collectors from coast to coast. Many many dealers are also present selling nearly everything imaginable relating to old time radio. Radio shows are re-created by original actors and actresses in front of the "Friends," and several "workshops" are presented, focusing on various aspects of the hobby, specific stars and shows, etc. The entire convention requires an entire weekend to present, and offers an excellent opportunity for trading friends who normally never would come into contact with one another a chance to meet and discuss their hobby, their collections, their favorite shows and stars and even see what the other guy actually looks like!!

Any serious old time radio fan should attend a convention at least once. Many collectors, however, having attended one convention, find themselves going back year after year!

Reading books related to old-time radio is yet another way to further enhance your collecting enjoyment. A variety of books on old time radio and related subjects are available by mail. The major source for books on old time radio is Nostalgia Warehouse, Inc. [see advertisement elsewhere in this book]. In addition, you may be able to locate certain books at your local library.

The primary "reference works" on old time radio programs are "TUNE IN YESTERDAY" by John Dunning and "THE BIG BROADCAST" by Frank Buxton and Bill Owen.

Both books attempt to provide descriptions of nearly every major show on radio [and quite a few minor ones, too.] and are very helpful in identifying casts of shows, years and networks they were on the air, etc. Lively commentary on some of the shows help to make the reading more interesting, too.

Over a period of time, many collectors decided they would like to assemble certain shows in chronological [dated] order. As a result, a few devoted hobbyists undertook research necessary to produce old time radio LOGS. A log is merely an all-inclusive listing of a series--providing a broadcast date, episode title, stars or other information on every broadcast made of a given series. Jay Hickerson was also a pioneer in this aspect of the hobby, being one of the first to compile a log of all Suspense broadcasts from its debut in 1942 to its demise in 1962. More recently, Jay authored a Jack Benny log. Copies of logs are available for a small charge. Jay also has listings of other collectors who have written logs and the shows logs are available on.

Putting together a series of shows in dated order while sometimes frustrating, can be very self satisfying and can increase the trading value of the shows. Logs are very helpful in assembling a collection. Many dealers, however, sell reels which have already been assembled in dated order, however, there are always other long runs of shows popping up that can be better organized in a chronological fashion.

Establishing good trading relationships also establishes long-lasting friendships. The culmination of that friendship is meeting them at the convention, already mentioned.

A variety of other projects related to old time radio can be undertaken to further enhance your enjoyment. A buying group can create a common bond among a small circle of collectors. The organizational activities can be challenging, yet very self-satisfying in operating a buying group [see Chapter 10 for more information on buying groups]. Many of the publications devoted to the hobby are always looking for letters to publish, as well as articles on certain topics.

Some collectors enjoy taking tapes of old time radio to various hospitals and nursing homes to entertain the elderly, or just about anyone willing to listen.

Many collectors in various parts of the country, involve themselves in rebroadcasting old time radio. If you are interested in this aspect of the hobby, and willing to volunteer your time and effort, contact some of your local non-commercial radio stations, if there are any in your area. Usually these can be found at certain colleges/universities and some high schools who have broadcast facilities. If you have special knowledge and/or broadcast ability, perhaps you can "host" an old time radio presentation. Some collectors, however, merely supply the shows and the station plays it. Certain shows are syndicated all over the country. Broadcast "rights" are supposedly held by such individuals as Charles Michelson on certain shows, and the collector interested in rebroadcasting old time radio should exercise caution in playing the shows. If the broadcasts are on non-commercial stations and you as a "host" are not profiting, legal risks, if any, are not major. Commercial stations are interested in making a profit by selling air time to advertisers. For this reason, and because of tighter programming to appeal to a mass audience, you may find it more difficult to convince a program director at a commercial station that old time radio is for his station. The station may already have access to one of the old time radio syndicator's service. He may buy their services, then sell air time to advertisers to insert during before or after the show is played. A profit is made by the station. While there is nothing stopping you as a collector from supplying shows to a commercial station for this very purpose, the risk of legal intervention by one of the syndicators is much greater if you should rebroadcast their shows. For these reasons, if you would like to rebroadcast old time radio, it is advisable to do so on a non-commercial outlet.

Selling tapes of old time radio can enhance your enjoyment if you are interested in mail-order marketing to a very specific and unique buying public. Here, the challenge is getting the right combination of programs listed and presented in an attractive package at a price that is competitive with prices of other dealers. There is also an emphasis on quality among most dealers, so you need to make certain not only your "masters" sound good, but your tape equipment can accurately duplicate them. Repeat customers will prove to be a major part of your business if your service is dependable and your tapes sound good. In addition, the profits from the orders you receive can help to finance building your collection -- obtaining those shows you otherwise would not be able to afford. IN FACT, it is for this reason many dealers started their old time radio selling business in the first place! [BELIEVE IT OR NOT!]

In your dealings with various radio program collectors across the country, you will undoubtedly discover OTR people come from all walks of life. They can range from ages 12 to 70, be employed in every imaginable profession from city dog catcher to corporate executive. You will discover a great many of the "veterans" of the hobby are professionals in one field or another, in addition to being old time radio collectors. A great number of collectors have been or are employed in one of the mass medias--some have been broadcasters, themselves, others simply remember radio growing up and saw a magazine ad for OTR [or heard a rebroadcast] and got involved in the hobby in that way. Whatever brought them into the hobby is not important. What is important is the very nature of most old time radio collectors. They are an unusual breed of people. They are careful with money--OTR collecting can easily become an expensive hobby. Some collectors can be very demanding and "picky" about certain

things--they are interested in reaching certain goals, and in doing so, they tend to be extremely "organized" and accurate in a "precision" sort of way. These collectors may only have moderate sized collections, but they know every show in their collection, they can date each one and tell you who was in it and what it was about. Other collectors are more casual in their dealings. They will trade with anyone who has something they don't that they want. Maybe their sound quality isn't always the best, but this type of collector seems to have EVERYTHING and whatever they don't have, either they don't want or they plan to eventually get. Their collections tend to be very large. Some collectors fall into a category that is a combination of the above. Others specialize in only a certain type of show--some collect only one show period, or only shows featuring certain individuals. Dealing with the wide and varied breed of old time radio collectors is part of the enjoyment of the hobby. If you buy from dealers, you will find they vary in policy, price and service. Their offerings can also be varied. One dealer may have a very extensive big band collection, while another may have 475 consecutive episodes of Nick Carter that no one else has. If you buy a large number of programs and you have varied interests, you may find yourself dealing with more than one source much of the time. Some of the "larger" dealers have extensive collections of everything imaginable, however, their price may be more than what you wish to pay. Other dealers are highly specialized. One dealer/collector offered only programs with a "holiday" theme--another features strictly shows featuring Fibber McGee and Molly. To an extent, dealers are like collectors in what they offer--this is because in nearly all cases, dealers ARE collectors. You will also find a great many shows which are common to ALL dealers [or nearly so]. The trick is to find the source who has the best sound quality at the best price.

Old time radio collectors generally tend to be a friendly bunch. Some are greedy or have ego problems, but the majority are interested in helping their fellow collector and the hobby in general in addition to building their own personal collection. Attending the annual F.O.R. convention can give you perspective into just what "breed" of people spend their free hours listening to their tape recorders. Some never seem to get around to listening to a lot of the shows they have--they're too busy copying tapes for others! The people involved in OTR will help you enjoy the hobby more. There will always be a very undesirable character in the hobby you'll run into from time to time, but talking about these type of people with your OTR friends is part of the hobby. It tends to be one of the more amusing parts of the hobby at times.

Listening, of course, is what old time radio is about. What this book has attempted to do is make the listening experience as enjoyable and as trouble-free an experience as possible. There are mistakes made by people in this hobby which are made primarily due to lack of knowledge. The knowledge in this book is the result of a decade of trial and error. It's meant to make life for the old time radio collector a little easier. It is also hoped that enough people will read these pages and the collecting hobby overall, will improve. If this happens, then the hours spent writing this will have been well spent and the goals of this book reached. If not, well at least an effort was made! Good listening and good taping!

18. The Log - The Serious OTR Collector's Essential Tool

INTRODUCTION - [By Bob Burnham]

This is sort of a "bonus" chapter, which was not originally planned for. Logs have already been mentioned in the previous chapter, and one individual was already named as being a log "pioneer." Another individual who has done extensive research on a variety of shows for logs, and issued many logs is Ray Stanich, of Brooklyn, New York. A third individual who has himself, done extensive research in this field is Terry Salomonson, of St. Charles, Missouri. Terry and I have known each other for quite a few years now, and in those years, Terry has certainly proven himself to be among the more "serious" collectors in the hobby. In addition to his work on logs, Terry has done numerous interviews with well known radio figures of the past, given workshops and talks in areas of his specialty, and hosts an old time radio show on a station in his area. He is perhaps best known as one of the leading authorities on Lone Ranger broadcast history, and has done extensive log research on this show.

Having convinced me that a chapter devoted to logs would be a vital ingredient in a book such as this, he volunteered to write this chapter. If you were to say the "Log Chapter" was an afterthought in producing this book, you would probably be correct. Suffice it to say, the information IS here, and is one LESS thing that people will say should have been included. I am pleased to welcome Terry Salomonson to the pages of "A Technical Guide" as guest author.

THE LOG — An Essential Tool for the Collector

© Copyright 1984

By Terry Salomonson

I wrote about logs some years ago [in the May 1979 issue of Collector's Corner], and when Bob Burnham told me about his book on collecting radio programs, I couldn't help but volunteer updating my earlier piece on the topic.

Collecting radio programs is perhaps one of the most entertaining and enjoyable hobbies that I know. Some of us, however, attach mild importance to the degree of seriousness that we go about it. We collect favorite memories of our listening past, or if we are younger, collect our newly "found" favorites of radio's past. Old or young alike, we collect for the same basic reason—for the sheer pleasure of listening to these golden moments of early broadcasting. And while there is nothing wrong with this form of collecting, others of us, myself included, are very serious about preserving these programs as completely and correctly as possible.

I started collecting years ago just for the fun of it. The main idea was so that I could enjoy these programs myself, and maybe also to play these broadcasts for my children when they were older, as there is very little being presented over the airwaves today that they can enjoy. But shortly after starting into this new hobby, I got very caught up in it and have since devoted much more time than I probably should have. Then again, don't we also spend a lot of time involved in a pursuit we love? But I guess my devotion is a little more than the "average collector," if there is such a person. With this background stated, I should get to the main point of this chapter--the log.

You may have a couple of good tape recorders, patch cables, headset or speakers, an amplifier, maybe an equalizer, plenty of blank tape, and have memorized the shortest distance to and from the post office. You might be a semi-serious or a very serious collector. But it just might be that you're still missing one of the basic tools: The Log. If you collect purely just for fun, then a log may not mean a lot to you, otherwise, how can you build a serious collection or collect a particular series if you don't know what programs were broadcast, when they were broadcast, or in what order they were aired? Also, in the case of a story or script that was repeated, who did it first, second, third and so on. A good example of this is "The Fourth Man," in the Escape series. This was broadcast three times, but the cast credits changed with each broadcast. Another in the same series was "A Shipment of Mute Fate," which was done four times, again with different cast credits.

For this reason, and for others, logs are important. Can you imagine trying to collect stamps or coins, not knowing what was printed or minted, how many, or when? That part is easy to say. The hard part is finding or authoring the logs...clearly, not an easy task.. Also, you must be aware that sometimes there is a lot of misinformation in logs. I have seen two logs on the Suspense series that were supposed to be put out by CBS, the network that aired the series, and they (the logs) didn't agree 100% with each other. Some logs are accurate with the information they contain, but they just don't contain all the information they should. A few titles may be left out here and there, and so on.

I recently completed a large portion of my research for a log on the Lone Ranger radio broadcasts. There were over 3,350 broadcasts and my log contains information on about 3,000 of these broadcasts. Only about 10% of the log remains to be worked on. The log contains titles of programs, dates of broadcast, broadcast numbers and transcription numbers. During my research, which has taken some five years on this particular program, I found misnumbering, skipped numbers, double listing of numbers with different titles and double listings of titles with different numbers, as well as titles listed in the wrong order of broadcast. All of this takes time to prove. There were special "mini-series" and sequences within the run of the show that were not clearly identified, etc. I feel that I have found and put together the most accurate Lone Ranger log so far, but I do realize that there are going to be some errors. There has recently been a Lone Ranger log circulating for sale that starts in the middle of 1940, and has a lot of errors within its pages. My log starts in January of 1933 with the first show, and the copyright listing errors have been eliminated. Hopefully, when I release this log, any errors noticed by people who see it will be passed along back to me with the correct information, so that I can update the log accurately.

Can we ever eliminate all the errors? Probably not, unless the program was a

short run like the 40 shows of Fort Laramie, or the 41 broadcasts of Frontier Gentleman. You may ask, "Why can't we get 100% accurate information?" Because most of what was done, when it was done, wasn't considered to be very important at the time, nor would it be, years later. This is according to the people that I have talked to over the years that were the producers, directors, announcers, actors, etc., who have repeated stated it to me in many different ways. So records that were kept, are very poor, in most cases, if any records were kept at all. The importance of the show was today only, while it was on the air, not tomorrow. That was, and is, a real shame. The only thing worse was all of the programs that were and sometimes still are destroyed, and in most cases, intentionally. One example is all of the Vic and Sade broadcasts that were destroyed. If it wasn't for the efforts of collectors, we wouldn't have the nine reels of Vic and Sade that we have today. And some of those can't be dated — NO LOGS !!

Commonly collected programs like Lux Radio Theater, Suspense, Fibber McGee & Molly, etc. have complete or fairly complete logs and dating. But as more and more of the lesser known programs are being discovered or released from larger collections, the need really arises for logs. I have 48 programs of The Blue Beetle. As of yet, I haven't found any dates or a listing of all of the programs that were broadcast [are there more than the 48 shows that I have?], or the exact order that they were aired. I think I know their broadcast order, but there may be less than 48 shows. How's that? The first few shows, maybe six or eight of them, now appear to have been half-hour programs and the balance of the run was divided into two-part shows that were 15 minutes each. I know that Frank Lovejoy did the first four shows, and another actor took over the role after that. Why? And who was the new voice of The Blue Beetle? I don't know much more information about the series, but I am still looking.

I authored a log on Manhattan Patrol which was first broadcast on June 10, 1932. Now someone might say, "Who cares?" There aren't any programs left or that are going around. And furthermore, who ever heard of the program? Well, they said, "Who cares?" about Vic and Sade and Fibber McGee and Molly and a few other programs a few years ago when there were few of these shows around. But now a lot of collectors have been putting their collections together in order of broadcast. But, they couldn't do a good or thorough job of it if someone hadn't put together a log to start with.

A couple of years ago someone wrote to me about my quest for a Jack Benny log. They asked the same question of why should I waste my time, "there just aren't that many Bennys going around." Word at that time was that most of the entire Jack Benny run was coming out, as it now has. There is now a fairly complete Benny log, but it still needs improvement. What about logs on Amos 'n Andy, or The Fred Allen Show?

So as more shows are uncovered and started around the collector's circuit, it sure is nice to have a log to tell you if the program you have is the first, fifth, or forty-fifth programs of the series or at least when it was broadcast. Does anyone have good airing dates for Favorite Story? Probably not, as it was syndicated around the country. I do have some dates, but I still need more.

It is hoped that the information in these logs will help everyone out to one degree or another in confirming dates and information you already have, adding information you didn't have, or correcting information you have that is wrong.

One good example of bad information I have seen in one collector's catalog was the listing of the I Love a Mystery series, "Bury Your Dead, Arizona." It was listed as complete in six 30 minute shows, when in fact it was aired in fifteen, 15-minute shows. Someone before this collector apparently cut all of the openings and closings off and put them together into a 30 minute format. When something like this gets out and is passed on from collector to collector and pyramids out around the country, it is very hard to stop and correct it. And this is when the mis-information starts.

In summary, logs help everyone. They help the beginner and even the older collector. I have run into a few people that have collected for several years who didn't know anything like a log existed. Logs like Manhattan Patrol are around in hopes that in the future, they will be of value if any of the broadcasts appear. After all, more and more programs are popping up all of the time.

I am currently working on a book of logs. I welcome any logs from anyone who may have unusual or seldom seen logs. I especially welcome any information dealing with corrections or more information for logs already circulating.

NOTE-- Terry Salomonson operates AUDIO CLASSICS. His address may be found in his ad which appears elsewhere in this book.

A BRC Publication...

DIRECTORY SECTION - A thorough list of all of the "vitals" of the hobby. [Pages 41-45]OLD TIME RADIO STATISTICS - Compiled by Joe Webb

Approximate number of collectors: 6,000

Approximate number of serious collectors: 1,500

[not included--occasional purchasers of records, etc.]

Most common [typical] collector: White, male, 30-45, Married, Some college

CLUB PUBLICATIONS

Listed are those containing a high percentage of radio material as opposed to those with mostly club-oriented news.

ILLUSTRATED PRESS [Old Time Radio Club--Buffalo, NY]

MILWAUKEE AREA OLD TIME RADIO NEWSLETTER

NARA NEWS [North American Radio Archives]

Addresses of each of these and other old time radio clubs may be found elsewhere in this book.

BASIC BOOKS ON OTR SHOWSThe Big Broadcast - by Frank Buxton & Bill Owen - The Viking Press [hard cover]1972
- Avon Books [out of print]

Tune in Yesterday - by John Dunning - Prentice - Hall 1976

OLD TIME RADIO PUBLICATIONS OF THE PAST

Stand By... On the Air

Epilogue

Stay Tuned

Hello, Again*

Radio in Depth

Radio Historian

National Radio Trader

Nostalgia Radio News

Airwaves

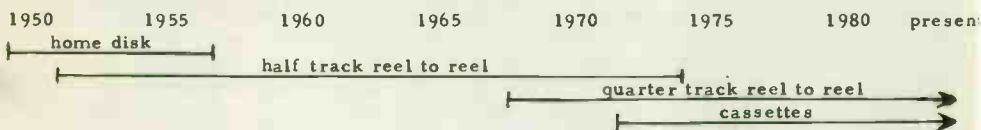
News and Reviews

Collector's Corner

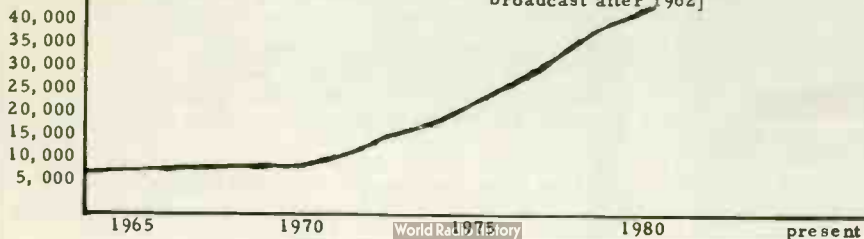
Radio Nostalgia

*still published; all others defunct.

Publications still being produced are listed elsewhere in this book.

RECORDING METHODS USED BY OTR COLLECTORS [By Popularity]

NOTE: Some collectors continue to use the half track reel format today and there is some renewed interest in this format. The reason for this is the ease and flexibility in "moving shows around" when putting dated collections together. Also there is no risk of channel leakage/cross talk with the half track format.

NUMBER OF SHOWS IN CIRCULATION [not including overseas shows and those broadcast after 1962]

DIRECTORY OF OLD TIME RADIO CLUBS

[Many have their own publications, lending libraries and literature collections]

- INDIANA RECORDING CLUB [William Davis], 1729 E. 77th, Indian, Ind. 46240
 [Tape Squeal]
 MILWAUKEE AREA RADIO ENTHUSIASTS [Ken Pabst], 4442 N. 77th St., Milwaukee,
 WI. 53218
 NORTH AMERICAN RADIO ARCHIVES [NARA], [Jackie Thompson], 3601 Lakewood Dr.,
 Cincinnati, Ohio 45248 [NARA NEWS]
 OLD TIME RADIO CLUB [Buffalo, NY], [Dick Olday], 100 Harvey Dr., Lancaster,
 NY 14086 [Illustrated Press]
 RADIO HISTORICAL ASSOCIATION OF COLORADO [John Lloyd], 2667 E. 99th Av.,
 Thornton, Colorado 80229 [Return With Us Now]
 SOCIETY TO PRESERVE & ENCOURAGE RADIO DRAMA, VARIETY & COMEDY
 [SPERDVAC], Box 1587, Hollywood, CA. 90028
 SOUTHERN TIER OLD TIME RADIO CLUB [Jerry Reed], Box 74-A, Endwell, NY 13760
- THE VINTAGE BROADCAST SOCIETY OF NEW YORK [Lewis Krieger], 3000 Bronx Park
 East, Bronx, New York 10467 [On the Air]

INDEPENDENTLY PRODUCED OLD TIME RADIO PUBLICATIONS

[These are the only ones being published at time this book was prepared]

- HELLO, AGAIN [Jay Hickerson], Box C, Orange, CT. 06477. \$6.00/year - bi-monthly.
- THE GOLDEN YEARS OF RADIO & TV [Ron & Linda Downey, Joe Webb, Bob Burnham],
 Rt. 3, Box 263-H, Waynesville, N.C. 28786. \$10.00/year - quarterly.
 RADIO DIGEST [Bob Burchett, Herb Brandenburg, George Wagner], Royal Promotions,
 4114 Montgomery Road, Cincinnati, Ohio 45208. \$12.50/year - bi-monthly.

BLANK RECORDING TAPE & SUPPLIES

- Audio Tapes, Inc. [Ron Barnett], P.O. Box 9584, Alexandria, VA. 22304.
 [703] 892-8722
 Burlington Audio Tapes, Inc. [Rudy Schwartz], 106 Mott Street, Oceanside, NY 11572.
 [516] 678-4414
 M & K Recordings, Inc. [Gary Kramer], P.O. Box 195, Mt. Morris, MI. 48458.
 [313] 687-7610
 Towertronics, Inc. [Don Andrews], P.O. Box 18870, 7451 Airport Freeway, Ft. Worth,
 TX. 76118 [817] 284-5196

GUIDE TO TAPE PRODUCT SOURCES - for addresses above

PRODUCT NEEDED	SUPPLIERS: Audio Tapes Burlington M & K Towertronics				
Literature available	flyers/price lists	price folder	flyers/price list	catalog	
Bulk cassettes			✓	✓	✓
Cassette duplicators			✓	✓	✓
Used Ampex 641 reel tape	✓		✓		
New Ampex reel tape		✓			✓
Used Scotch reel tape	✓				
New Scotch [3-M] reel tape		✓	✓		
CBS reel tape [New]			✓		
AGFA reel tape [New]		✓			
Cassette labels and accessories		✓	✓		✓
Empty reels, boxes, supplies	✓	✓	✓		
Maxell/TDK bulk cassettes					✓
High Bias cassettes			✓		✓

RECOMMENDED MAIL ORDER AUDIO EQUIPMENT SOURCES

Tape decks, equalizers, headphones, amplifiers and other items...

[New equipment only is available from these sources at discount prices. There are many other sources for equipment, however, the author has had the best service from these companies]

- INTERNATIONAL HI FI DISTRIBUTORS, INC., Moravia Center, Industrial Park,
 Baltimore, MD. 21206 [301] 488-9600 [9-9 daily -- 'til 5 PM Sunday]
 SOUND REPRODUCTION, INC., 7 Industrial Road, Fairfield, N.J. 07006 [201] 227-6720
 J & R MUSIC WORLD, 23 Park Row, NY, NY 10038 [800] 221-8180 (toll free)

TAPE EQUIPMENT

See text for information on cassette decks. Nearly any quality cassette deck manufactured within the last few years should give satisfactory results, for old time radio. Dolby and other more advanced forms of noise reduction are definite assets, as well as solenoid operation and full logic, as well multiple motors, separate record and play heads and "hard" heads. There are an endless array of models and manufacturers of cassette equipment. For old time radio, nearly any machine in the \$80 or over category will produce satisfactory results. Avoid used cassette equipment, regardless of condition. The cost of new machines is very low and generally competitive among various brands. Performance of new equipment especially when compared to what was considered "top-of-the-line", five years ago, is far superior, and price is LOWER for the features you can get today. You also will find it worthwhile to replace your old worn out cassette equipment rather than repair it. The cost of repairs is likely to be more than the cost of a new deck. Unless the machine is in the over \$250 price range and is only two or three years old, DON'T BOTHER repairing a cassette deck. Buy a new one!

Reel to reel equipment, on the other hand, is a different story. The number of relatively inexpensive reel models for home use is dwindling. It makes a lot more sense to maintain your old reel equipment. If it is of "workhorse" grade to begin with, it is well worth spending whatever it takes to keep it functioning well. Noted equipment below is considered by the author to be of "workhorse" quality, and receives the highest recommendation from the author, for use as an "old time radio" deck.

REEL TO REEL EQUIPMENT SURVEY -- Compiled by Andy Blatt

Common Brands for Old Time Radio

*Indicates of "workhorse" grade.

NEW EQUIPMENT CURRENTLY MANUFACTURED - [all four track models]

- SONY TC-399 [successor to TC-377]--3 ferrite heads, 3 speeds: 7-1/2, 3-3/4, 1-7/8.
Mechanical transport, 1 motor. RETAIL - \$500/DISCOUNT - \$300.00
- AKAI GX4000D [successor to 4000 DS-MKII]--3 heads, 2 speeds: 7-1/2, 3-3/4.
Mechanical transport. To change speeds, capstan sleeve must be installed.
1 motor. RETAIL - \$450/DISCOUNT - \$250 (approx.)
- TEAC [several models--successors to X-3, X-7, 2300 series]
X-300 -- 3 heads, 2 speeds: 7-1/2, 3-3/4. Mechanical button design. EE [extra efficiency]
tape capability. Cannot record left and right channels individually. 3 motors
RETAIL - \$600/DISCOUNT - \$350+
- X-700R* -- Similar features to above, except with feather touch buttons, full logic and
solenoid operation, auto reverse, dual capstan, pitch control, timer capabilities.
[A similar model with same features except auto reverse is no longer manufactured.]
RETAIL - \$1,000/DISCOUNT - \$599
- PIONEER RT-707* 4 heads, 2 speeds: 7-1/2, 3-3/4., Pitch control, auto reverse. [A model
previously available without auto reverse is no longer available.] Cannot record left
and right channels individually. 3 motors. Full logic and solenoid operation.
RETAIL - \$700/DISCOUNT - \$399+
- PIONEER RT-909* - Similar features to above, except with peak reading meters and 10-1/2
inch reel capability. RETAIL - \$900/DISCOUNT - \$500 +
- BOTH PIONEER MODELS ABOVE ARE RACK MOUNTABLE.

USED EQUIPMENT [Review text for general comments on equipment of the past]

- AKAI - The most widely available model is the 4000DS MK II, which is now discontinued in
favor of the GX-4000. The earlier 4000 series was produced for at least 10 years
after Roberts shifted operations to Japan and began operations as Akai. Repairs
are expensive and Akai doesn't stock certain major parts. The cost for a new
playback head for a 4000 DS, MK II is nearly \$50. Expect to pay \$100-200 for an
older 4000; less for a pre-Akai ROBERTS, which is tougher to acquire parts for.
- SONY - TC-280-2 ferrite heads, mechanical transport... see text... \$125-225
TC-353SD- 3 heads, single motor, same basic deck as above, other wise .. \$150-225
TC-377 - 3 ferrite heads, single motor, more advanced than above, but still all-
mechanical design. ... \$150-275.
TC-765* -3 ferrite heads, 3 motor, full logic and solenoid operation. 10-1/2 inch
reel capability, timer capability, dual capstan, \$400-700.
TC-880-2* Most of the above features plus improved performance in some areas.
In limited production for only a short time. \$500-750
TC-580* Auto reverse deck with solenoid operation (no logic), six heads, 3 speeds.
\$250-350

ALL AKAI & SONY MODELS IN USED SECTION ARE CAPABLE OF RECORDING LEFT &
RIGHT CHANNELS SEPARATELY. MANY OTHER SONY MODELS WERE MANUFACTURED.

A BRC Publication...

*"workhorse" quality.

PIONEER - RT-701*(same as 707, but without auto reverse)	\$275-325
RT-707*(description in new section)	\$325-375
TEAC - A2300*	\$200-225
A2300S*	\$225-275
A2300SX (same as 2300S, but with "cue" lever, improved performance especially at 3-3/4 speed, easier to read VU meters)*	\$225-275
A3300, 3300S, 3300SX*[10-1/2" reel capability]	\$275-375
X-3 (similar to X-300--without EE tape capability)	\$250-300
X-7*-(similar to X-700R, except no auto reverse or EE tape capability. The X-7R model had auto reverse)	\$300-375
X-10*-(similar to above, except 10-1/2" reel capability. X-10R model had auto reverse)	\$350-450

PROFESSIONAL MODELS MADE BY SUCH COMPANIES AS SCULLEY, AMPEX, IT, FOSTEX ARE ALSO AVAILABLE, HOWEVER, THEY ARE GENERALLY NOT EQUIPPED WITH 4 TRACK HEADS AND ALSO THE PRICE RANGE IS USUALLY IN THE \$500-2000+ PRICE RANGE.

OTHER BRANDS WHICH ARE NO LONGER MANUFACTURED

Parts may be difficult to obtain on these, and this should be taken into consideration before making a purchase.

CROWN

DOKORDER

REALISTIC [RADIO SHACK]

ALLIED

LAFAYETTE

WOLLENSAK

WEBCOR

ROBERTS

PRICES FOR THESE BRANDS CAN VARY GREATLY ANYWHERE FROM \$20 TO \$400 DEPENDING ON THE MODEL AND CONDITION. Most of the older equipment has the capability of recording left and right channels separately.

A FEW COMMENTS OF INTEREST ON TEAC

Earlier Teac models have the ability to record left and right channels separately. This includes the A2300 and 3300 series. You CANNOT record left and right channels separately on any of the "X" models or the current Teac line. Although the internal designs of the "X" and later models are much more advanced and performance especially with music is superior to earlier models, it is generally believed that the earlier models are more durable and rugged. Whether or not this is true is still questionable, although it's probably likely. In any case, in terms of appearance at least, the earlier models are more pleasing--with more satin metal and flat black front panels and wooden sides. The later models are mostly plain "plastic" colors, with a plastic cabinet of composition similar to a portable television.

A FEW COMMENTS ON PRICES LISTED ABOVE and WORKHORSE TAPE DECKS

The prices are approximations only to give you a general idea of what you can expect to pay for a given deck. A general rule of thumb is don't pay MORE than the price given in this book. The price can vary greatly, depending on the condition of the deck and your source. If you're buying a used deck from a store, see if they have a return policy. Otherwise, check the unit out thoroughly in all modes before making the purchase. If the machine is of "workhorse" quality, even if it has some problems, it is still probably worth buying if the price is at a reasonable level. Reel decks are difficult to find and a good technician can put a machine back in "like new" condition if it is a high enough quality deck to begin with. Any of the 2300, or 3300 Teac decks, for example, are well worth spending \$100+ on repairs. A deck of this quality can give you five years or more of reliable service (except for heads), then at the end of the five years they can be "tuned up" again. In short, "workhorse" decks will last a lifetime if they are properly maintained. The same can be said about certain top of the line cassette decks...but don't expect your \$100 Pioneer cassette machine to last forever, and don't waste your money trying to make it last forever!

THE ULTIMATE OLD TIME RADIO TAPE DECK OF THE FUTURE???

One of the problems we as collectors, have to deal with, especially with our reel equipment with no noise reduction features at all, is tape hiss, which is one of the negative aspects of standard "analog" tape recording. Each time a tape is copied, another layer of hiss is added. With the advent of the new digital tape equipment, all of our concerns we have with signal to noise ratios, distortion, hiss, etc. are on the way out. With digital equipment, there is absolutely NO LOSS in sound quality, even if you're 50 or 100 generations from the originating source. Our current reel and cassette formats will be here for many many more years, but the digital age is upon us! There already are a few collectors storing old time radio in this manner.

SPECIAL INTEREST ITEMS

THE JACK BENNY FAN CLUB [Laura Lee] The Jack Benny Times (published bi-monthly--October to May, monthly--June, July, August.), 1620 Old Town Dr., SE, Grand Rapids, MI. 49508.

AUDIO EQUIPMENT IN KIT FORM

Lowest cost, highest quality equalizer--SYMMETRIC model EQ-3
12 bands per channel, .02% distortion, 92 db. S/N ratio, solid walnut ends.
Highly recommended by the author. See cover story--RADIO-ELECTRONICS, May 1978.
Cost: \$100.00 post paid. Free catalog of audio kits available. SYMMETRIC SOUND SYSTEMS, 856G Lynn Rose Ct., Santa Rosa, CA. 95404. Phone- [707] 546-3895

Similar products available from: SEI, Inc., 641 Academy Drive, Northbrook, IL. 60062

Recommended source for amplifier, pre-amplifier, and computer-related kits: Formula International, Inc. 12603 Crenshaw, Hawthorne, CA. 90250...Phone- [213] 973-1921.

ANTIQUÉ RADIO RESTORATION

Publications related to the hobby, radio appraisal service, replacement tubes, publishers of Antique Radio Topics & The Classic Radio Newsletter. Catalog available. Puett Electronics, P.O. Box 28572, Dallas, TX 75228. Old time radio programs on cassettes also available from Puett Electronics.

DISK DUBBING EQUIPMENT & SUPPLIES

Boynyon Studios, Melody Pines Farm, Morris, New York 13808.

DISK DUBBING SERVICE

Jack W. Shugg, P.O. Box 81, Jerome Avenue Station, Bronx, NY 10468.
Phone- [212] 365-4703

Mr. Shugg is willing to copy any disks forwarded to him in exchange for a taped copy of the disk which he will keep for himself.

In addition to his expertise in the area of ET copying, he also hosts an old time radio show with collector, Max Schmidt, on WBAI-FM, New York. He also is a member of the board of directors of The Vintage Broadcast Society of New York.

AUDIO CONNECTORS, CABLES, ELECTRONIC SUPPLIES, TOOLS, ETC.

Also, replacement knobs, rubber "feet" and bumpers, custom cabinets, cable clamps, switches, small speakers, AC adapters, and many many other products.

Extremely fast service, 158 page catalog available. MOUSER ELECTRONICS, P.O. Box C, Lakeside, CA. 92040.

also McGee Radio & Electronics, 1901 McGee St., Kansas City, MO. 64108-1891

PACKING TAPE, SHIPPING SUPPLIES, OFFICE SUPPLIES

Lowest price you will find anywhere for tan and clear packing tape, and every imaginable product for getting your collection organized. A complete line of computer supplies are also carried by this fine company. Prompt reliable service. 248 page catalog available, as well as frequent monthly mailings. QUILL CORPORATION, 100 S. Schelter Road [P.O. Box 4700], Lincolnshire, IL. 60198-4700. Phones- [312] 634-4800 or [312]634-4850.

CUSTOM PRINTED BUSINESS FORMS, LETTERHEADS, ENVELOPES, OFFICE SUPPLIES

Rapid Forms, Inc., 501 Benigno Boulevard, Bellmawr, NJ 08031. [800] 257-8354

Streamliners, 5215 E. Simpson Ferry Road, Mechanicsburg, PA. 17055.[800] 233-1190

[NOTE- QUILL CORPORATION also offers custom imprinted products, although the two sources listed above specialize in these items]

NEARLY ALL PRODUCTS AND SERVICES ON THIS PAGE HAVE BEEN USED AND TESTED PERSONALLY BY THE AUTHOR AND ARE HIGHLY RECOMMENDED!

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TIPS & TID BITS More last minute helpful advice for the OTR collector

This section has been added to supplement the main text of the book. In editing the book, it was discovered this information was not included. Also, we have received some additional information from other individuals and there was not time to insert it into the main text. In an attempt to make this book as thorough and complete as possible, we have included this section.

Tape Recording Techniques

ON DOUBLE SPEEDING [see text pages 10, 11 for explanation] - In some situations, you may discover that double speeding will actually IMPROVE the sound quality of the programs being recorded. The degree to which the improvement is made is directly related to the tape equipment being used (and its internal bias and EQ adjustments) and the recording tape type being used. Actually, if the recording set up was perfect -- the equipment is precisely adjusted for the type of tape used -- and the playback and recording is perfectly linear, there should be in theory, little or no change in the sound quality when "double speeding." Given the many variables which exist with standard recording circuitry, however, this "perfectly linear" situation is difficult to achieve, especially with the many lower cost tapes being used by collectors of old time radio. And actually, if a certain low cost tape does, in fact, make an IMPROVEMENT in the radio show -- regardless of whether it's by design or chance -- then WHY NOT use this type of tape regularly!??

Recording Tape

ON MANUFACTURING - Most tapes use a polyester base. The longer the reel or cassette, the thinner the base must be to fit the necessary amount of tape on same size reels or inside a cassette shell. In the manufacturing process, in most situations, this "base" material is used in three foot rolls. This is the form the tape is in when the oxide layer is applied. The coating must be precisely applied, dried, then carefully wound on another spool. The next step is to calendar the tape. Calendaring fills the oxide coating with millions of microscopic peaks and valleys. Heat at approximately 190 degrees and pressure of approximately 100,000 pounds are applied to the tape in the calendaring process. This process is extremely important, as it improves the response of the tape at upper frequencies by about ten decibels. More importantly to radio collectors, however, is the fact that this process "bakes" the oxide layer in place, and minimizes head wear and oxide shedding on tape heads.

Next the tape rolls are "slit" into about 40 ribbons of tape. The outside edges of the roll fluctuate considerably in width and are discarded. The other "ribbons" are each wound on reels and "pancakes" for distribution to consumers. Each step of the manufacturing process is important and quality control is essential. Improper coating, slitting or calendaring (or lack of) can make a reel or cassette completely worthless.

ON USED AMPEX 641 [see text pages 25, 26 for explanation] - Many of the reels come on scratched reels. Most contain a round sticker saying "processed by KYBE corporation." There also maybe a sticky adhesive material on the reel. Collector, Charles Holmes of Charleston, S. C., recommends Radio Shack Cleaner-Degreaser for removal of debris from used 641 reels. This product will not stain the reels.

RECOMMENDED READING

- Tape Talk by Craig Stark (appears monthly in Stereo Review magazine)
- Audio Q & A by Larry Klein (appears monthly in Stereo Review magazine)
- Tape Guide by Herman Berstein (appears monthly in Audio magazine)

DIRECTORY OF OLD TIME RADIO PROGRAM COLLECTORS

Order of data listed: Name, address, phone*, collecting mode, collection size, years collecting, occupation*, age*, type of shows interested in, specific shows, other activities.

*this data not included for some listings.

This directory represents only a random sampling of collectors of all ages who come from all walks of life. It is in no way representative of the vast number (well over 1,000) of serious collectors across the U.S. and Canada, however, those provided below should provide several good contacts, and certainly, a starting point for beginning collectors. A more extensive list of collectors is available from Jay Hickerson, publisher of HELLO, AGAIN (see address under publications).

Compiled Spring/Summer 1984

NIAGARA FALLS, ONTARIO [Canada]

- Wm. McDougall, 7055 Brady St., Niagara Falls, Ontario L2J3P1 / [416] 354-7741 / reel / Over 10,000 pgms. / 5 / Broadcast engineer / 48 / All around good variety / Carlton E. Morse, soaps, Our Gal Sunday / old radios and records, etc.

CALIFORNIA

- Phil Evans, 701 Knotts St., Apt. G, Bakersfield, CA. 93305 / [805] 324-9187 / cassette / hundreds / 9 / Government Emp. / Mystery, comedy, music. / Amos & Andy, Abbott & Costello, The Lone Ranger, The Whistler, Harris & Faye / Collect video tapes of radio stars. Looking for the 3 I LOVE A MYSTERY films... VHS format.
- Don Bradley, P.O. Box 3175, Pomona, CA. 91769 / [714] 624-7258 / reel, cassette / 200 reels, 500 cassettes / 4 / Sports writer / 54 / Comedy, variety, sci fi, drama / Jack Benny, Gunsmoke, LLAM, Our Miss Brooks, Richard Diamond, Ozzie & Harriet, Big Bands, TV audio [Honeymooners, Perry Como].
- Steven Kelez, 1516 Parker Drive, Santa Rosa, CA. 95405. / [707] 528-8274 / reel / 1000 reels / 5 / artist / 37 / All, except for soaps or news / Shadow, I Love a Mystery, Lux Radio Theater, Mercury Theater, Escape / Owner of RADIO SHOWCASE.

ILLINOIS

- Frank Thomas, 1711 W. Barker, Peoria, IL. 61606 / [309] 673-6867 / reel / 1100 reels / 15 / Radio station mgr. / 33 / ALL / Produce weekly OTR show for radio.
- Ken Piletic, 705 S. Oltendorf Road, Streamwood, IL. 60103 / [312] 837-2088 / reel / 40,000 / 32 / IBM Service Support / 47 / Mystery, detective, comedy, news, documentary, Sci fi. / Looking for HALL OF FANTASY [already have currently circulating HOF's] / ORCAT's co-founder. Tune in ORCATS Net 7.238 MHz Sundays 0800, EST.

IOWA

- Steve Dolter, 577 West Locust, Dubuque, Iowa 52001. / [319] 556-1188 / reel / 200 reels / 3 / Truck driver / 28 / Comedy, mystery, drama / Fred Allen, Jack Benny, Suspense, I Love a Mystery / Interested in books about OTR or OTR performers.

KENTUCKY

- Julian Whetsell, 709 Bolton Av., Corbin, KY. 40701 / [606] 528-4892 / cassette, reel / 15 (years collecting) / Electronics parts sales / 53 / All types / Main interest in history, WWII, etc. / Collect radios and books on OTR. Buy, sell and trade parts for same.
- Bob Burchett, 10280 Gunpowder Rd., Florence, KY. 41042. / [606] 371-6401 / reel / 360 reels / Commercial artist / 50 / Like all types of radio shows / Lux Radio Theater / Managing Editor of the "Old Time Radio Digest."

MICHIGAN

- Laura Lee, 1620 Old Town Dr. SE, Grand Rapids, MI. 49508 / [616] 243-2180 / cassette / ? / 9 / "general insane idiot" (student) / 15 / comedy / mostly Jack Benny / Jack Benny Fan Club (president).
- Bob Burnham, P.O. Box 39522, Redford, MI. 48239-0522 / [313] 453-3765 / reel / "respectable" / 14 / printer, radio producer, musician / 28 / most types if in premium sound / Johnny Dollar, Suspense, Jack Benny, Gunsmoke... the more common stuff / specialize in tech columns related to OTR. Wrote the book you're reading. Write for Golden Years of Radio/TV, Illustrated Press, Radio Digest. Operate BRC Productions.
- James L. Snyder, 517 North Hamilton Street., Saginaw, MI. 48602 / [517] 752-4625 / reel / 16,000 shows / 14 / Teacher / 49 / All, except music/sports.

MINNESOTA

- Howie Butler, 2343 E. Larpenteur, Apt. 211, St Paul, Minnesota 55109. / [612] 770-2405 / reel / 250 reels / 6 / Computer operator / 45 / Mystery, comedy, adventure / Shadow, Spade, Gildersleeve, Fat Man, Thin Man, Mr. & Mrs. North, Jack Benny, Amos and Andy, Suspense / TV and Movie audio soundtracks on reel... photos of radio stars.

MISSISSIPPI

- Mickey Smith, 1411 Lawson St., Oxford, MS. 38655. / [601] 234-5335 / cassette / 400 cassettes / 10 / Professor / 46 / All types / Gildersleeve / SPECIAL INTEREST in anything connected with pharmacy/drugs.

A BRC Publication...

MISSOURI

- Terry Salomonson, P.O. Box 1135, St. Charles, MO. 63302. / [314] 441-9088 / reel, cassette / 30,000+ / 10 / Electronics engineer / 37 / All types / Suspense, Lux, Gildersleeve, Fibber McGee, Jack Benny, Green Hornet, Shadow, Sam Spade, Our Miss Brooks, etc. / Writer for Golden Years of Radio & TV, Have done many interviews with OTR stars. Writing a book on Lone Ranger (radio).

NEW JERSEY

- Leo H. Gawroniak, Box 248, Glen Gardner, N.J. 08826. / [201] 537-2057 / cassette & reel / 2 (years collecting) / Teacher / 40 / I'm interested in all radio shows / I collect everything / Member - Old Time Radio Club.
- Lee R. Munsick, 20 Harriet Dr., Whippany, N.J. 07981-1906 / [201] 386-1920 / cassette, reel / large / 35 / Museum director / 48 / Arthur Godfrey, big bands / '30s, '40s, early '50s films / ITEMS FOR TRADE OR SALE: Tapes, VHS/Beta VCR, films, mechanical music items, posters, etc.

NEW YORK

- Raymond Stanich, 173 Columbia Heights, Brooklyn, NY 11201 / reel / 4,000+ / 15 / Elect. engineer / 56 / Music, personalities, drama, comedy / Railroad Hour, Chicago Theater of the Air, Fred Allen, Richard Diamond, Baby Snooks, Bickersons, Ray Bradbury. / Co-authored book: "SOUND OF DETECTION-ELLERY QUEEN ON RADIO." Do research on old time radio. Issue logs.
- David S. Siegel, P.O. Box 610, Croton-on-Hudson, NY 10520. / [914] 962-3680 / reel / 45,000 hours / 15 / Supt. of Schools / 52 / Horror, supernatural, comedy, drama/Baby Snooks, Aldrich Family, Escape, Suspense, Lights Out, Lux Radio Theater, Witch's Tale, Inner Sanctum / Old radio magazines, books related to radio.
- Joe Webb, P.O. Box 268, Glen Cove, NY 11542. / reel / Market analyst / 28 / Mysteries, Detectives / Casey Crime Photographer, Rocky Jordan, Shadow, Nightbeat, mostly everything else / Former publisher, convention co-chairman.
- Andy Blatt, 42 Bowling Green, Staten Island, NY 10314. / reel / 7,000 shows / 8 / Radio announcer / 25 / Detectives, Sherlock Holmes, Sci-fi, some comedy. / Holmes, Suspense, Shadow, BBC, and ETC. / Broadcast OTR on college station. Member of convention committee.

OHIO

- D. Clayton, 4744 N. Edgewood Av., Cincinnati, Ohio 45232. / [513] 681-5306 / reel / 250 reels / 15 / Store mgr. / 52 / Comedy / Lum & Abner, I Love a Mystery / Member of Cincinnati Old Time Radio Club and Spervac.
- Don Dean, 18460 Schultz Road, Fredericktown, Ohio 43019. / [614] 694-2414. / reel, cassette / 400 - 1800' reels, 4 track; 150 cassettes / 21 / Commercial artist / 49 / Adventure, Mystery, Drama, Comedy, Music / I Love a Mystery, Lum & Abner, The Hermit's Cave, Grand Ole Opry & other live country music shows on old time radio. / Promoting the hobby by doing programs for civic groups, church groups, senior citizen's organizations, etc.
- Tom Monroe, 1426 Roycroft Av., Lakewood, Ohio 44107. / [216] 226-8189 / Cassette and reel / always growing / 4 / traffic / 41 / Mystery, adventure, sci-fi, westerns, drama, some comedy / Gunsmoke, The Lone Ranger, Suspense, Escape, Sgt. Preston, Witch's Tale, Nightbeat, Broadway is My Beat, Dangerous Assignment, Dragnet, etc.

PENNSYLVANIA

- J. C. Bray, 213 Main St., Green Lane, PA. 18054-0098. / cassette, reel / 10 / News, documentary programs of the 1930's and '40's.

SOUTH CAROLINA

- Charles E. Holmes, 1111 San Juan Drive, Charleston, S.C. 29407. / [803] 571-1729 / 14,000 pgms. / 14 / Comedy, adventure, horror, detectives, sci-fi, westerns, mystery, fantasy. No specific shows collected. No big bands or variety. No programs with crosstalk or under or over recorded. / Digital recording on video tape of disks and fine sounding radio programs.

UTAH

- William R. Lane, 236 W. 6th, Brigham City, Utah 84302. / 1-801-723-3319 / reel / 2600 hours / 5 / Hill Air Force Base / 60 / all types / Lum & Abner, Jack Benny, Lux Radio Theater. Will buy or trade.

VIRGINIA

- Philip W. Scott, 601 Four Mile Rd., Apt. 123, Alexandria, VA. 22305 / 1100 shows / 1 / Printer / 39 / Mystery, sci-fi, drama / NBC University Theater of the Air, Escape, Suspense, LLAM. Just got started.

WASHINGTON

- Misty Dawn Lane, 1177 Harrington Av., NE #202, Renton, WA. 98056 / reel / 3600 / 10 / Mystery, comedy, adventure, drama. / Suspense, Escape, The Whistler, Yours Truly Johnny Dollar, Our Miss Brooks.

CLASSIFIED ADVERTISING DEPARTMENT

NOSTALGIA WAREHOUSE offers a wide selection of old time radio on reel and cassette. Low prices, fine quality recordings. Hobby-related magazines and books are also available. Catalog - \$2.00. Nostalgia Warehouse, Inc., P. O. Box 268, Glen Cove, NY 11542.

Professional mastering, equalizing and editing services available for old time radio. Commercial copy writing, production and distribution services for radio spots also available. See our ad elsewhere for our other services. BRC Productions, P. O. Box 39522, Redford, MI. 48239-0522.

Always interested in Witch's Tale, Death Valley Days, Lights Out, South African, Canadian or B. B. C. radio programs. Contact Leo H. Gawroniak, Box 248, Glen Gardner, NJ 08826

VINTAGE BROADCASTS presents old time radio at old time prices. Best selection at lowest prices. Reels - \$8.00 each/Cassettes - \$4.50 each. Catalog \$2.00, or free with \$25 order. See our ad elsewhere for more offerings. Vintage Broadcasts, 42 Bowling Green, Staten Island, NY 10314.

RADIO SHOWCASE has been supplying cassette tapes for the hobby of old time radio collecting and listening for the past 6 years. During this time, Radio Showcase has come to stand for quality and dependable service. All tapes are checked for sound quality and guaranteed. We offer the fastest service of any dealer. All tapes are in stock and shipped within 48 hours. When new sound upgraded copies of shows in our catalog are found, we will re-record our customer's copy at NO CHARGE. Send today for our free ALL TIME 100 FAVORITES old radio list, and soon you'll be saying, "Old time radio never sounded better." **RADIO SHOWCASE, P. O. Box 4357, Santa Rosa, California 95402 (see display ad elsewhere).**

ADVERTISERS APPEARING ON FOLLOWING PAGES

Company	Person(s) Behind the Name	Product(s)
AM Treasures	Gary Dudash	OTR on reel/cassette
Radio Showcase	Steve Kelez	OTR on cassette
Golden Years of Radio & TV	Ron & Linda Downey	Nostalgic Magazines
Golden Age Radio	Rex Bills	OTR on reel/cassette
Radio Digest	Bob Burchett, George Wagner, Herb Brandenburg	Magazine for the hobby
Leo H. Gawroniak	Leo H. Gawroniak	OTR on cassette/reel
Hello Again, Radio	Bob Burchett	OTR on cassette
Audio Classics	Terry Salomonson	OTR on reel/cassette
BRC Productions	Bob Burnham	OTR on reel/cassette, selected publications, mastering services.
Vintage Broadcasts	Andy Blatt	OTR on reel/cassette
M & K Recording	Gary Kramer	Blank tape & supplies
Burlington Audio Tapes	Rudy Schwartz	Blank tape & supplies
Lloyd A. Scott, Jr.	Lloyd A. Scott, Jr.	Private collector

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ORIGINAL PUBLICATION OF THE TECHNICAL GUIDE- First Printing: July/Aug. 1984

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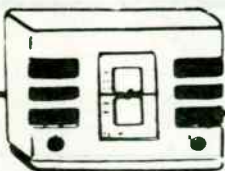
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DOING MY
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The Ebony Link 5/28/49

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JASON & THE GOLDEN FLEECE - Felicia

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Case 12/19/48 w/Karl Swenson

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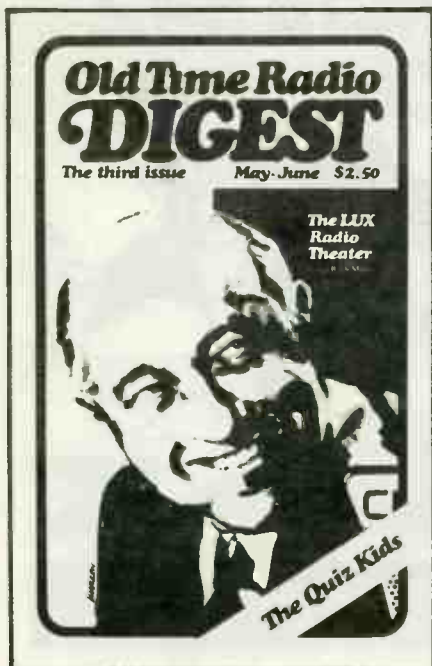
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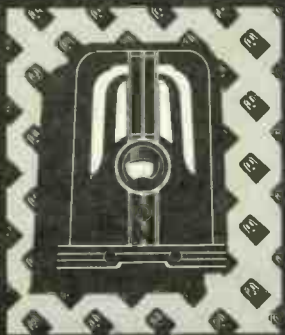
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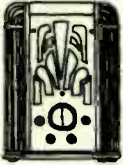
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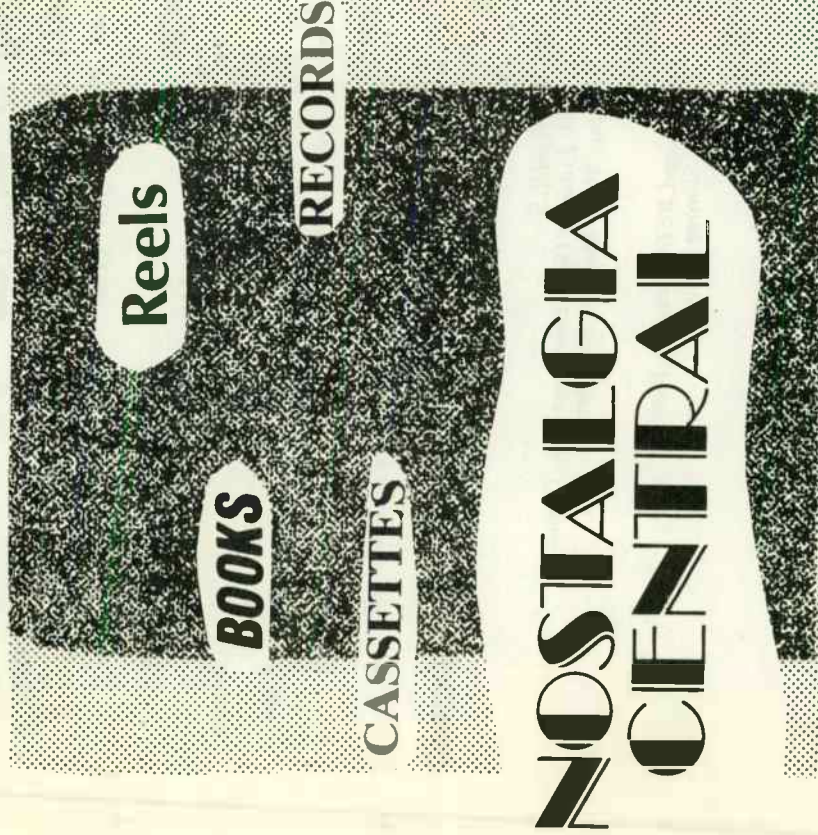
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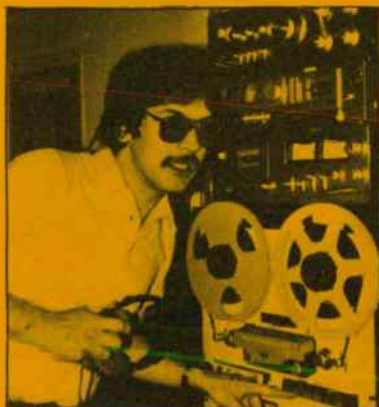
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A FEW WORDS FROM THE AUTHOR...



I have been thinking about writing this a long time. In fact, I have spent more time thinking about it, than actually doing it! It's a project I've long considered since Chuck Seeley wrote his OLD TIME RADIO COLLECTOR'S HANDBOOK nearly a decade ago. Mr. Seeley is to be commended, admittedly, a little belatedly, for his pioneering effort in the actual "writing up" of a course in how one goes about gathering vintage programs. While his efforts were good, the hobby as we know it, has changed a lot in ten years -- and there were also several areas Mr. Seeley did not cover perhaps as extensively as what has been done here. In addition, there are of course, always newcomers to old time radio show collecting who go through the same bewilderment that the more veteran collectors went through the hard way... learn by trial and error, and learn from others in bits and pieces. This, however, can take many years and can result in a lot of wasted time, tape, and

become downright frustrating. A Technical Guide, for the first time ever, answers every technical question related to the hobby that has been asked of me, and is designed as a single source reference book describing the proper or accepted procedures necessary to build a successful collection of programs, and make a lot of friends in the hobby along the way. In addition, since I've acquired a reputation in the hobby as having a more than usual amount of technical knowledge, I am frequently consulted by collectors with problems or recommendations for equipment. It was always frustrating for me, knowing that I had devoted a column to the topic in previous years, to have to keep repeating information over and over, or try to refer them to the April 1978 issue of Collector's Corner (or whatever). Now, I can refer those people to a single source, although there will always be new situations to deal with -- and my columns which appear in various publications will continue to deal with additional items that aren't covered in as much depth here.

I was a newcomer to old time radio myself, in about 1970. I don't remember the month, the time of year, or what I was doing in life at that point, but I do remember distinctly making it a point every Sunday, to tape rebroadcasts from a show heard on Detroit's WCAR [now WCXI, owned by Gene Autry, himself.]. The host, Warren Pierce, now on WJR - Detroit, used Gene Autry's "Back in the Saddle Again," as Pierce himself, would sing along with the recording. Many of the programs he played were just excerpts, but he always featured at least one or two "complete" old time radio shows. The "complete" shows were a big thing to me back in those days, because they were the ones I wanted to preserve on tape. My recording set up back then was pretty amateurish. A "Peerless" cassette recorder -- mine was the "deluxe" model with a tone control! -- along with the supplied microphone and a portable radio. The microphone probably had frequency response somewhat better than a telephone, which I eventually realized, and ended up also, wearing out the tape head in the cassette machine. Being somewhat of a do-it-yourselfer, I decided to fix the problem with the tape head, and managed to acquire a new one. Using logic and luck, I installed it, and of course, was amazed at the improvement! Remember too, that this was all happening sometime in 1970. The other problem I had was eliminating the microphone. Of course, I could buy a better microphone, but that still wouldn't eliminate room noise. In those days, "AUX. IN" jacks weren't too common--none of the early Panasonics had them. Eventually, I worked up my own arrangement with resistors, for feeding the audio directly into the microphone input from the radio earphone jack, and was able to obtain reasonably fair results with what I had to work with.

It wasn't until I obtained my first cassette deck [a Sony TC-122 with "Sonomatic" level control] that I started getting results I was happy with. By then, the rebroadcasts had ceased but at least I had tapes. My second cassette deck was a more advanced model... a Sony TC-129. Back then, it was considered a "feature" if a cassette deck had a Chromium Dioxide switch. My newest one did. Interestingly enough, this deck is still functioning today. I had two cassette decks, a rack of rebroadcasts and several Dave Goldin/Radio Yesteryear tapes, which I promptly organized as started to sell with my new BRC tape business. In early 1974, I started acquiring reel equipment and switched my entire collection to this format. In those earliest years, I established my earliest trading contacts - many of which I still keep in touch with, today... most notably, former collector, Jerry Chapman, of course, Joe Webb and Andy Blatt.

The hobby itself? It's unusual... it has its collection of "strange" people in it. But I can't think of one I'd like better and more deserving of my time in writing a book about it, than old time radio program collecting.

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