



## On-The-Spot Recordings Integral Part of Regular News Broadcasts at WOR

### Listeners Given Quicker Eye-Witness Coverage of Special News Happenings

Equipped with a transcription library valued at half a million dollars and a crack staff of on-the-spot reporters, WOR-New York has perfected the use of transcriptions in news broadcasts to what probably is its most mature development. This development, increased since the war, results in more authentic broadcasts and gives listeners quicker eye-witness coverage of news events.

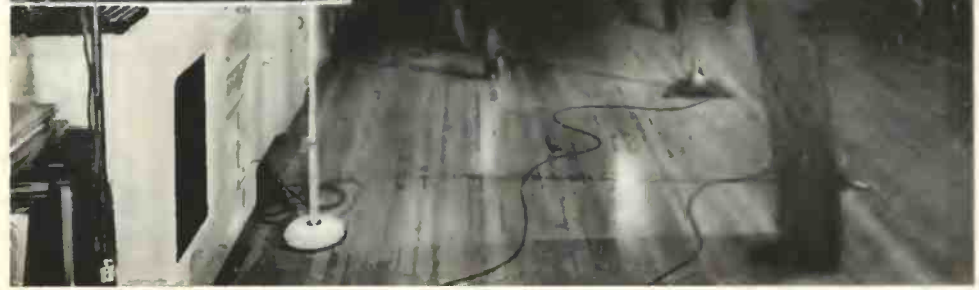


Larry Pickard, WOR writer, selects a disc from the station's huge file of on-the-spot recordings.

When a news story breaks, such as the search for the missing recluse, Langley Collyer, WOR reporters are sent to the scene wherever practicable to record descriptions of the event which are in turn inserted into regular news broadcasts. Reporter John Wingate, for example, was on hand when Collyer's body was discovered, described the event and raced his recordings back to the station so that WOR listeners might hear a complete story before the newspapers had hit the streets. During recent investigations of the House Committee on un-American Affairs WOR newscasts were supplemented with recordings of actual testimony given during the hearings.

The wedding of Princess Elizabeth furnishes another example of the way record-

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Don Plunkett, Chief Engineer of Mary Howard Recordings, adjusts one of the mikes in the spacious New York studio while an artist sits at the piano waiting patiently for Mary Howard's cue to begin. Inset: Recording's own, Mary Howard.

Photos by Murray Laden and Edward O'zern

## The War Gave Mary Howard Her Big Chance to Make Good in Recording; She Did — And How!

Before the War, many jobs in American industry were considered "man-sized" positions and therefore . . . for men only. But the War and its tremendous drain on manpower soon gave the female

a chance to "strut her stuff." And one such lady, who took full advantage of this opportunity to prove that it wasn't strictly a man's world after all, was Miss Mary Howard, daughter of a well-to-do New England family.

Mary Howard had a flair for good music and records particularly intrigued her. To satisfy her curiosity, she bought a recording machine and started on her own trial-and-error course in record cutting. Miss Howard's interest in recording steadily grew — and so did her recording equipment. And then . . .

Mary Howard came to New York in 1940 and immediately applied for an engineer's job at NBC. As girls weren't being hired for that sort of an assignment, Mary Howard had to be content with a secretary's position in the engineering department. Then, her big break came. NBC, losing man after man to the armed forces,

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*Tempus Fugit!*

### Student Radio Writers

Yes, time is flying! Only a few more weeks for you high school and college radio writers to enter one of the two big radio script writing contests. Entries for **SCHOLASTIC MAGAZINES' Script Writing Competition** (co-sponsored by Audio Devices) for high school students positively must be received before midnight, March 5, 1948. The 1948 National Script Contest, also co-sponsored by Audio Devices and conducted by the Association for Education by Radio, closes March 30. So you haven't much time to win one of the many valuable cash prizes. Act now! For complete contest details write: (for high school students) William D. Boutwell, **SCHOLASTIC MAGAZINES**, 220 East 42nd Street, N. Y. C. (for college students) Dr. S. P. Lawton, **AER Script Contest Chairman**, U. of Oklahoma, Norman, Okla.

# audio record

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Published monthly by Audio Devices, Inc., 444 Madison Avenue, New York City, in the interests of better sound recording. Mailed without cost to radio stations, recording studios, motion picture studios, colleges, vocational schools and recording enthusiasts throughout the United States and Canada.



Film actor Pat O'Brien, star of "The Damon Runyon Theatre," and the program's producer-director, Herbert H. Wood, take time out during a rehearsal of the new transcribed NBC Radio-Recording Division feature.

## Damon Runyon's Famous Tales To Be Dramatized by NBC in Series of 52 Recorded Shows

Pat O'Brien Star in Runyon Plays

Damon Runyon's internationally famous tales of Broadway will be dramatized in a series of 52 half-hour recorded programs as the result of an exclusive contract between the National Broadcasting Company's Radio-Recording Division and the Runyon Estate, according to C. Lloyd Egner, vice-president of the NBC Radio-Recording Division.

Film actor Pat O'Brien will be the star of the radio plays based on Runyon's stories. O'Brien, who will narrate each play as well as enact the role of "Broadway", will be supported in each program by a radio, stage or screen star.

Commenting on the plan, Egner stated, "We of NBC are proud to be associated with Pat O'Brien and the Damon Runyon Estate in the production of this series of half-hour dramatic programs 'The Damon Runyon'. We consider this a significant step forward in the development of syndicated recorded programming, and our decision to introduce this new dramatic feature culminates months of study and experimentation to produce something completely unique and entertaining in the recorded program field."

The series, which Egner described as the biggest and most expensive syndicated recorded program undertaken by the NBC Radio-Recording Division, will be offered on a syndicated basis for spot advertisers over local stations.

Scripts are being written by Tom Langan, veteran radio author and a Radio-Recording Division staff writer, under direction of Gordon Webber, Radio-Recording continuity chief. H. H. Wood, manager of the division's program department, is producing and directing the series. Special music is composed for "The Damon Runyon Theatre" by John Gart. Ed Herlihy will announce.

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ings are used to give listeners better programs. Highlights of the event, which took place too early in the morning for most American audiences, were transcribed, edited and re-broadcast at times more suitable for listeners. Such news coverage has the authenticity of newsreels plus the added advantage of speedy presentation.

Transcriptions also provide a backlog of events and personalities of the past, and the WOR transcription library has on file voices and opinions of almost every national and international leader of the past two decades. When major issues of the past, such as elections or international conferences recur, WOR can summon at a moment's notice, presidents, dictators, generals and a host of others to give their views on the same or similar problems.

Casual interviews with the unpublicized average citizen, as well as with the great and the famed, form a valuable index to public opinion. The reaction of the ordinary voter to national problems is naturally a consistent augury on political trends.

Few places are inaccessible to the radio reporter since the advent of the recorder and WOR has endeavored to make everyday folk the source as well as the consumer of news.

The use of the transcription in news broadcasting gives the listener better news service in spot coverage, a permanent reference of personalities and trends, and on authentic eye-witness account of events presented in a dramatic manner at a convenient time.

### ATTENTION

The Editors of Audio Record welcome contributions from its readers. Any news concerning your recorded programs or other recording activities, that you believe will be read with interest by recordists, can be used. Photographs, drawings, or graphs needed to illustrate your material will be appreciated also. Address all contributions to:—The Editor, Audio Record, 444 Madison Ave., New York 22, N. Y.



By C. J. LeBel, Vice President  
AUDIO DEVICES, Inc.

## DISTORTION PROBLEMS

### Introduction

With the rapid growth of FM radio, and its heavy dependence on records and transcriptions, it is time to reappraise our standards of recording quality. As has been found many times in many parts of the audio field, every time the frequency range

of a system is increased, other elements in the performance of the system must be improved also. A wide range system will show up excessive noise and unsuspected distortion in most amazing fashion.



C. J. LeBel

Whereas transcriptions were generally listened to (on the ordinary AM radio receiver) with an upper frequency limit of 4000 to 5000 cycles, on an FM receiver the usual upper frequency limit has been raised to 7000 to 10,000 cycles. Even a few minutes of listening under such conditions will show that pressings are often not as uniform in quality as their makers believe, for distortion varies from one to the next.

### Kinds of Distortion

We will disregard the most easily remedied form of distortion — undesired variation of response with frequency. It is so easy to correct with electrical networks that a recordist with an incorrect response curve has only himself to blame.

Harmonic distortion, of course, is the type which the recordist first thinks of when the word "distortion" is mentioned. It has been a much discussed fault, and certainly should be reduced to a minimum before we worry about more elusive forms. The unit to measure the "minimum" by is not easy to define, however. The rss distortion is a widely used index number, but a poor guide to how objectionable the ear will find the sound. Second harmonic distortion is much less annoying than third, and higher orders are almost intolerable in exceedingly small proportion. This anyone can establish for himself in a few experiments.

Many of us have found numerous cases where harmonic distortion figures provided no guide to the annoyance value. One example the writer recalls was an experimental recording on wax, which bloomed one

humid summer while awaiting processing. Another example was the distortion measurement being made on an early experimental lacquer formula. The sound was not quite right, so the pickup pressure was increased slightly. The 1000 cycle tone cleared up immediately — the improvement was rather great — but the distortion meter reading dropped only imperceptibly. As still another example, Roys has shown<sup>1</sup> that the audible distortion created by overpolishing a stamper is not reflected in harmonic readings made on the pressings produced by it.

Nevertheless it is quite certain that if the harmonic content is high, we need look no further to explain why listeners are dissatisfied.

If the harmonics are low in value, we may still dislike the sound. In that case the next step would be a measurement of the intermodulation distortion. Whereas harmonic measurement is made with a single input tone, intermodulation testing is a measurement of combination tones produced by injecting a pair of frequencies. This method was first made standard in the film recording field.

We have deliberately omitted any discussion of transient distortion for lack of space. It is a fault not to be ignored, but certainly the industry needs to go further in minimizing better known defects before it worries too much about transient effects.

#### Intermodulation Tests

Intermodulation distortion provides a good explanation of why some recording systems are clean sounding with a single instrument, but fuzz up hopelessly with a full orchestra. Each tone acquires such a multiplicity of sidebands that definition is lost.

The usual test method is to introduce a low frequency tone and a medium or high frequency. Amplitude of the two may be equal, or they may be in a 4:1 ratio. A commercial unit uses 40, 60 or 100 cycles, and 2000, 7000 or 12,000 cycles. Another commercial unit uses these or other tones. Roys' principal work has been done with 400 and 4000 cycles.

#### Intermodulation Results

There has been little published work on intermodulation results. Hilliard<sup>2,3</sup> has very briefly suggested amplifier repositioning.

On discs themselves, Roys' work<sup>1</sup> on the effect of overpolishing stampers is of great importance. No other data on disc system or processing characteristics has been published, but unpublished data on a number of the best systems presently in operation show low intermodulation as measured on the lacquer. This is not necessarily true of all systems, nor of all lacquers.

Unpublished measurements by a number of organizations on the effect of processing seem to indicate it as the worst source of trouble. If we are to turn out transcriptions of consistent top quality, some species of control should be adopted. Overpolishing



In the speech training class at Concordia Seminary (Lutheran Church), St. Louis, Mo., a future minister speaks from a make-believe rostrum while a second student records the voice. Such recordings are made at the beginning and again at the end of each academic year in order that instructors might accurately gauge the student's speech improvement.

## St. Louis Seminary Uses Recording Equipment To Better Student's Speech

### Discs Aid Future Ministers in Overcoming Various Speech Difficulties

The chief objectives in speech training at Concordia Seminary (Lutheran Church) in St. Louis, Mo., are to free the students from self-consciousness and performance-reflexes, to equip them for direct speech from rostrum and microphone, and to overcome bilingual patterns incurred through previous environment. Such was the recent explanation of R. R. Caemmerer, Director of Speech at the Missouri seminary.

When asked to explain just how recording equipment is used at Concordia, Mr. Caemmerer replied: "Each student makes a recording of selected readings, from three to five minutes in length, near the begin-

ning of each academic year. After an instructor has analyzed this recording privately with the student, pointing out special problems to be overcome, the student begins a series of clinical practice periods.

"In this speech clinic," Mr. Caemmerer said, "the student endeavors to remedy problems classified under bilingualism, vocal quality, reflection and interpretation, rate and phrasing. (The therapy is carried out largely by means of the wire recorder.)

"Then toward the end of each year the students make a recording, in pairs, of an extemporaneous conversation. This recording," Mr. Caemmerer added, "is analyzed with the students to point out gains achieved through the therapy or through a less self-conscious situation."

The speech director also explained that full length recordings are made of projects in radio evangelism and radio dramatics by the seminary's own radio station, KFUD, located on the St. Louis campus.

has been condemned for at least a generation, but it still continues.

#### Remedies

It has already been proposed that every master contain a few intermodulation test grooves. These could be used to check every pressing, and thereby the stamper wear. This proposal would certainly eliminate the accidental use of worn out stampers. It would not be a perfect check for overpolishing, as the processor would simply be more careful in the vicinity of the test grooves!

As a supplementary means, it has been suggested that a test pressing from each stamper be sectioned, polished, and meas-

ured under the microscope. There is a certain amount of change of groove radius due to compression of the metal of the stamper, but any excess amount would immediately indicate overpolishing. Certainly, some such means will have to be adopted to narrow the quality difference between the lacquer original and the pressing.

#### References

1. H. E. ROYS, *Intermodulation Distortion Analysis as Applied to Disc Recording and Reproducing Equipment*. Proc. I.R.E., vol. 35, no. 10, pp. 1149-1152, October 1947.
2. J. K. HILLIARD, *Intermodulation Tests for Comparison of Beam and Triode Tubes Used to Drive Loudspeakers*. Communications, vol. 26, no. 2, pp. 15-17, 54, February 1946.
3. J. K. HILLIARD, *Distortion Tests by the Intermodulation Method*. Proc. I.R.E., vol. 29, no. 12, pp. 614-620, December 1941.

## War Gave Mary Howard Chance to Make Good in Recording; She Did

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decided the comely secretary deserved a chance to cut a disc and be paid for doing it. Mary was a big leaguer from the start and in no time at all, the trade looked on her as a master recording engineer.

Her work at NBC gave Mary Howard ideas — big ideas of opening her own recording studio. And just to prove she wasn't day dreaming, Mary Howard invites you to visit her studio (Mary Howard Recordings) at 37 East 49th Street in New York any day you wish.

Since Miss Howard set up her own "shop", a little over two years ago, many of the biggest names in radio have used her facilities. Such outstanding personalities as Alex Templeton, Eddie Duchin, Ethel Waters, Fred Waring, and many others, have come to Mary Howard Recordings because they knew that this Howard woman, when it came to making recordings, was "perfection on parade."

Mary Howard Recordings functions primarily as a recording service and its operations, besides cutting instantaneous masters, includes line and air checks of all descriptions, studio recording and slidefilm work. In the last year Mary Howard Recordings released their own commercial records. The Herman Chittison Trio, Ethel Waters, Lucille Turner and Dale Belmont are a few of the artists who made recordings under the MHR label. And, like the thousands of other recording companies, Mary Howard Recordings is waiting patiently for the Petrillo ban to be lifted so they can 'get going' again.

Cutting equipment in Mary Howard Recordings, according to Chief Engineer Don Plunkett, Mary Howard's able assistant, consists of: Van Eps and Allied Cutting Lathes, Presto 1-D Heads driven by Langevin 101-A Amplifiers. "Our mixing equipment," Mr. Plunkett explained, "is interchangeable by means of patching. Our Preamps and Our Program Amps are Langevin. Re-recording equipment at MHR," Mr. Plunkett said, "consists of Allied Transcription Tables and Pickering Reproducing Equipment, which have served us most efficiently of all pickups we have tried. This combination Allied TT's and Pickering Pickups—we find the most flexible for composite recording."

Audio Record asked both Miss Howard and Mr. Plunkett what their particular techniques were—what they did to insure good recordings. To this query, Miss Howard replied: "We are of the opinion that a compact, consolidated recording and control room, combined adjacent to and visible to the studio is the best method of recording. With this setup a recording technician can actually 'ride gain' but what is more important can see what actual level is imposed on the disc. We feel," Miss



Pictured above is the official label of the 1948 National Convention and Show of the Institute of Radio Engineers which will be held in New York's Grand Central Palace and Hotel Commodore, March 22 through March 25. Audio Devices will display its products in Booth #233.

Howard continued, "that the term 'riding gain' is a poor description of the operation involved. The more dynamics achieved in a fidelity recording, even if the frequency response is limited, the more the sound originating in the studio will be approximated. We feel that too much emphasis can be put on the word 'fidelity' and that some of the pre-emphasized and over-emphasized high frequencies often result in a sound unpleasant to the ear, which after all is the final judge."

"Dynamic fidelity of course," Mr. Plun-

kett hastened to add, "is closely allied with surface noise and care must be taken with selection of styli and discs so that low level passages will not be marred by surface noise.

"And then too," the chief engineer went on, "recording quality must be checked constantly and the best check is immediate playback. This is, unfortunately, quite often ignored by many studios, or discouraged by companies as a waste of time."

"Yes, and," Miss Howard, eager to get back into the discussion added, "recording information about cutting characteristics, recording head designs, styli and quality of response equipment is easily obtained. These all enter into the final results. Unfortunately, the interest and ingenuity of the recordist has often been overlooked. Recording," she continued, "is not a dull craft at all if engaged in all its technical phases. There seems to be a prevalence in large organizations for specialization — cutting technicians, studio technicians, maintenance, etc. — which often results in poor recording because of lack of interest or information in all phases of the recording operation. If interest and enthusiasm were carried all the way through the recording organization, and management, perhaps time might be found to raise the general recording standards in America.

"We have tried," she concluded, "to incorporate these methods (?) in our operation and have had success . . . or some such thing."

From what Audio Record has been able to learn, that 'some such thing,' Miss Howard refers to, spells success all right . . . and with a capital 'S'.



**"The following program was transcribed from an earlier broadcast in order that you might hear it at this more convenient time"**