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HF61A Preamplifier, providing the most complete control & switching facilities, and the finest design, offered in a kit preamplifier, "... rivals the most expensive preamps ... is an example of high engineering skill which achieves fine performance with simple means and low cost." — Joseph Marshall, AUOIOCRAFT. HF61A Kit \$24.95, Wired \$37.95, HF61 (with Power Supply) Kit \$29.95. Wired \$44.95.

HF60 60-Watt Ultra Linear Power Amplifier, with Acro T0-330 Output Transformer, provides wide bandwidth, virtually absolute stability and flawless transient response. "... is one of the best-performing amplifiers extant, it is obviously an excellent buy."—AUDIOCRAFT Kit Report. Kit \$72.95. Wired \$99.95. Matching Cover E-2 \$4.50.

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12-4

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Dougloss Cross

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Ann Dougloss

Editorial Assistant

Leonard Feather

Jazz Music

Elli Zappert

Art Director

Max Richter

Photography

Mary Yiotis

Production Manager

Frederic R. Anderson

Circulation Manager

Contributors to This Issue

Kurt Herbert Adler Jean Bowen Arthur Cohn Douglass Cross Leonard Feather Shirley Fleming Bernard Gabriel Charles Graham Ralph Auf der Heide Julian Hirsch Gladden Houck Alfred Kaine Gary Kramer Ezra Laderman Marvin David Levy George Louis Mayer Louis Menashe David H. Miller Sara Given Rockey Robert Sherman Martial Singher Abraham Skulsky Milton Sleeper Harold Taplin

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105 East 35th Street at Park Avenue, New York 16

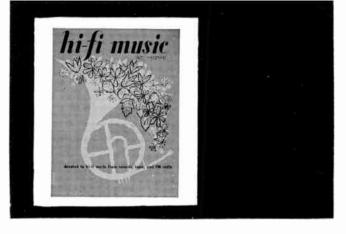
ADVERTISING

Charles Graham, 105 E. 35th Street, New York 16 Telephone MU 4-6789

Fletcher Udall, Hearst Bldg., San Francisco 3 Telephone Exbrook 2-5107

James Claar, 111 N. LaCienga Blvd., Beverly Hills Telephone Olympia 2-0837

THIS ISSUE: OVER SO,000 COPIES



COMPLETE GUIDE TO HI-FI REPRODUCTION FROM RECORDS, TAPE AND FM RADIO

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COVER The sounds of music have helped many of us survive a long, hard winter. The reassuring signs of spring were slow in making their appearance, but come May, nature joins with music to spread beauty across the land. So Elli Zappert planted flowers in a French horn to make a picture suited to this happy season.



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Hi-Fi Shows

Dates are now being set for some of the fall shows. The list below will be supplemented in future issues as fast as information is received.

CHICAGO: Parts Show, Hilton Hotel, May

Houston: Shamrock-Hilton Hotel, June

Chicago: Palmer House, Sept. 12-14. NEW YORK: Trade Show Bldg., Sept. 30-

Program Edition for WLOL-FM

With this issue, we start a Program Guide edition of HI-FI Music for Minneapolis-St. Paul station WLOL-FM. We are very pleased about this, for we have been hearing that this is the No. 1 station for good music in that area. If you can hear WLOL-FM at your home, and you are a subscriber to HI-FI Music, just let us and we'll send you the WLOL-FM edition, containing their day-by-day schedule, without extra charge if you ask us.

Stereo Listening

On May 22, J. Donald Harris of the USN Medical Research Laboratory will deliver an unusually interesting paper before the Audio Engineering Society entitled "Are Two Ears Better Than One". Time is 7:15, and the address, RCA Institutes, 350 W. 4th Street, New York. Mr. Harris will explain the factors which yield spectacular gains in stereo listening. An admission charge is made for the AES lectures.

Taped Off the Air

Thanks to several readers who taped Mr. Truman's speech on February 22nd, we have the words he added to the text released in advance to the press. He said:

"You know, that 5-cent postage stamp goes on that part of the mail that pays its own way. The objective in that is because it's a very painless way to subsidize the slick-paper magazines with their whiskey ads and cigarette ads - it's carry-



BACH ON LOCATION

At Zwolle, in Holland, in the 15th-century Gothic church of St. Michael is a splendid, four-manual organ, dating from 1720. It is the last organ built by Arp Schnitger, whose work is considered the culmination of the high baroque era of organ building. It was inevitable that so fine an organ should be visited by E. Power Biggs, who has traveled far and wide in search of the most appropriate instruments for his recordings of the great works for organ. Mr. Biggs' many albums of the music of Bach, Mozart and others, performed on centuriesold instruments-in many cases those the composers themselves once used-are among the most impressive achievements of the recording art. To these he now adds three preludes and fugues of Bach, recorded amid the majestic acoustics of St. Michael's.

BACH AT ZWOLLE: Prelude (Concertato) and Fugue in D Major ("The Great"): Prelude and Fugue in C Minor ("Arnstadt"); and Prelude and Fugue in E-flat Major ("St. Anne")-E. Power Biggs, organist. KL 5262



MR. K.'s **EXTRAS**

"Encore!" is the bracing cry that has roared from the throats of audiences in concert halls, opera houses and theaters for two centuries or more. Unfortunately, in modern times it seldom has any effect whatsoever on the conductor of a symphony orchestra. Unless, of course, the conductor happens to be Andre Kostelanetz, His concerts with the New York Philharmonic, which began in 1954, have enjoyed nothing but standing room and overflow audiences, and invariably arouse the most insistent calls of "encore!" Mr. K., on these occasions, breaks with present custom and responds with courtesy and brilliance. For this recording he has selected some of the most popular of the "encore" pieces played at the end of his Philharmonic concerts.

ENCORE!: Works of Wolf-Ferrari, Bach, Granados, Beethoven. Liadov, Walton and Mourant-Andre Kostelanetz conducting the New York Philharmonic. CL 1135 \$3.98



DOSSIER

This delightful collection offers a surprisingly accurate and complete description of the musical psyche of their chooser-the ubiquitous, multifaceted wit, intellectual and artist: Oscar Levant. He is, we can tell by them, a modern. He is, at times, fiery, at others, deep and tranquil. He knows his dance tempos. He knows the music of the outdoors and remembers the mood of the nursery. These Favorites underscore once more the appeal of the wry, kindly, softly sardonic personality that half hides, half advertises the talent and accomplishments that lie beneath.

LEVANT'S FAVORITES: Falla: Fire Dance; Miller's Dance Lecuona: Malagueña • Poulenc: Pastourelle; Mouvements perpetuels • Albeniz: Tango in D • Debussy: Golliwog's Cakewalk; Maid with the Flaxen Hair; Reflets dans l'eau; La Cathédrale engloutie: Clair de lune: La plus que lente (valse); The Little Shepherd-Oscar Levant, pianist. CL 1134 \$3.98



politely coaxing the world's most splendid instrument on to more and more exalted heights. Unlike some of his fellow helmsmen who "specialize," Maestro Ormandy can dive into the orchestral repertoire at any point from Bach to Bartok and achieve the same wonderful results. For which reason we like to keep him as busy as possible, recording as great a variety as possible. His latest recordings are evidence of his amazing versatility, and of his inalienable right to the title of "top man of the top orchestra."

SMETANA: The Moldau • WEBER: Invitation to the Dance . LISZT: Mephisto Waltz . BERLIOZ: Minuet of the Will o' the Wisps, Dance of the Sylphs and Rakoczy March-the Philadelphia Orchestra . Eugene Ormandy, conductor. ML 5261 \$3.98 **DELLO JOIO:** Variations, Chaconne and Finale • VINCENT: Symphony in D-the Philadelphia Orchestra, Eugene Ormandy, conductor. MI 5263 \$3.98



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Above: Enlargement of so-called "bargain" stylus. (Mognified photo)

Below: Enlargement of genuine G-E diamond stylus. (Magnified photo)



All G-E styli come to you in factorysealed boxes, clearly marked with the General Electric monogram. To make doubly sure, look for the "GE" on the bottom of the stylus assembly.



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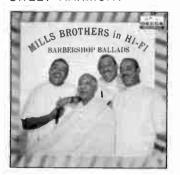
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DANCE HI-FI



Dance music for young and old alike. Werner Müller plays 'All The Things You Are,' 'Siboney,' 'Katharina,' 'Dinah.' Superb Hi-Fi! DL 8688†

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RECORDS, TAPE AND FM

Continued from page 4

ing them through the mail at a loss. That's what the 5-cent stamp is for."

What Mr. Truman doesn't know is that there are very few "slick-paper" magazines today, and their total circulation is very small indeed compared to the number that do not fall in that special group. If every slick-paper magazine sent through the mail paid double the present rate, it wouldn't make a dent in the deficit due to inefficient management of the Post Office Department, As for liquor and cigarette advertising, some slick-paper publications such as HI-FI Music carry none at

Fred Minter

Principal of the Adamston Junior High School at Mt. Clare, W. Va. sent this note with a renewal subscription order: "I have a Music Appreciation Club at school (147 enrolled) and several of our children look forward to your Magazine. Many thanks for the wonderful job you are doing. The best by far in the hi-fi business."

They Speak English in Russia

It's got to the point where radio listeners in the USA who want to hear correct English grammar and diction tune in Russian short-wave broadcasts. And that's a sad commentary on the quality-control exercised by the owners of American radio

Lectures on Hi-Fi

Altec Lansing has formed a Speakers Bureau, through which arrangements can be made for lectures and demonstrations before technical or semi-technical audiences. Information can be ob ained from H. S. Morris, Altec Lansing Speakers Bureau, 161 Sixth Avenue, New York 13.

Hi-Fi in England

If you are interested in keeping up with developments in the British Isles, we suggest that you subscribe to Hi-Fi News, an excellent monthly published at 99, Mortimer Street, London W. 1. Annual rate is \$4.00.

Bailey's Lucky Seven

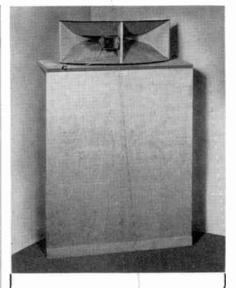
"Where did you get that picture on page 16 of the April issue?" Many jazz enthusiasts have inquired about it. If you have wondered, too: it was loaned to us by Riverside Records. They probably own the finest photographic history of jazz music and musicians in this Country.

Stereo FM in Boston

BQ-5

Bradford Herzog reminds us that eastern Massachusetts now boasts top-quality FM broadcast service, and probably the highest percentage of FM receiver ownership of any area in the U.S. A. Nor is it lagging in stereo FM. Stations WGBH and WBUR,

Continued on page 10



WHY A UTILITY SYSTEM RATHER THAN

A KIT

We are frequently asked why we don't sell KLIPSCHORN kits or drawings. But consider the utility model. The price is only \$475 (\$494 with optional new tweeter)—little more than the cost of the components - and yet it is identical with all other KLIPSCHORN systems as a reproducer of sound. With it you are assured of true Klipsch design, accurate Klipsch construction, and fastidious KLIPSCH standards of performance — backed by the personal responsibility of PAUL W. KLIPSCH.
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Write for descriptive literature and ask for our latest technical bulletins on 3 channel stereo from 2-track tape, adoption of a new tweeter, balancing networks.

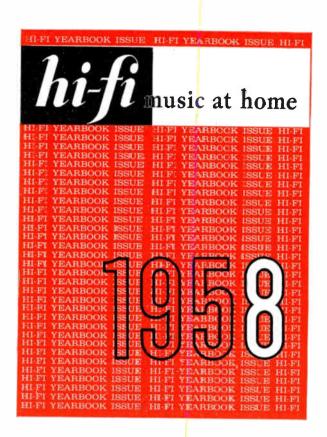
HOPE, ARKANSAS

1958 HI-FI YEARBOOK

a Special Issue of

HI-FI MUSIC

for Hi-Fi Enthusiasts and Music Listeners



Essential Information on Records, Tape, FM, and Hi-Fi Equipment and Installations

To accommodate special information and articles too long for regular magazine issues, HI-FI Music has added a special (extra) Hi-Fi Yearbook issue, the largest issue ever published by any magazine in this field.

This is not a reprint book nor an equipment catalog, but a collection of outstandingly important, exclusive feature articles prepared specifically for this Hi-Fi Yearbook issue. Some have required months of research.

In addition, this special issue contains a compilation

of reference data and industry statistics that have never been available before. Thus, this special issue of H1-F1 Music Magazine, now an annual publication, combines a wealth of fascinating reading with essential information that you will use constantly during the year ahead.

Printed as an ordinary book, it would contain at least 500 pages, and would cost \$6.50 or more per copy. Whether you are a music listener or a hi-fi enthusiast, you'll say: "I must have a copy."

PARTIAL CONTENTS OF THE HI-FI YEARBOOK ISSUE

EDITORIAL SECTION

The Importance of Music Listening

A fascinating study that explains what different types of music do for listeners—by Manly P. Hall **Evolution of Musical Instruments**

and Instrumental Music

Relating the invention and development of instruments to the works of composers from the 16th Century Renaissance period to the present day, with lists of records representing each period—by Shirley Fleming

16 Hi-Fi Plans for Hi-Fi Beginners

Descriptions and diagrams of installations ranging from a simple tuner or record-player and an amplifier and speaker, to a radio, record, and stereo tape system. Diograms show how units can be odded progressively.

Beware the Hi-Fi Hermeneuts

More and more advertising is being written by Hermeneuts (Greek for interpreter) whose ideas of hi-fi performance bear little resemblance to the facts. Here are simple rules by which the difference between phony and genuine hi-fi equipment can be recognized—by Milton

20 Fine Hi-Fi Installations

Illustrated with photographs and diagrams af installations that are as handsome in appearance as they are fine in performance

Index of Record & Tape Reviews & Ratings Listing all records and tapes that have been reviewed in HI-FI MUSIC Magazine since March 1955, each with the reviewer's ratings for the composition, performance, and audio quality

How to Plan a Stereo Installation Covering every step from an explanation of stereo tape reproduction to the details of a complete installation for playing tapes, records,

FM Broadcasting in 1943

and FM rodio—by Milton Sleeper

The complete text of Major Arinstrong's testimony before the Sanota Interstate Commarce Committee. It is a fascinating story of the radio broadcasting business.

Record and Tape Reviewers

Introducing the 28 members of HI-FI MUSIC's board of reviewers, each of whom is a specialist in one or more types of music

Stereoz Gepuine and Pseudo

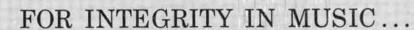
A complete report on the latest European Stereo Techniques, and "augmented sound" developments. First-hand information from an American recording engineer who has spent the past year abroad-by David Hall

Operation Cleanup
A plan for the hi-fi enthusiast who wants ta become popular with his wife!

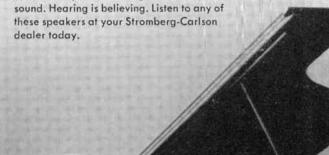
Index of Articles

Detailed, cross-indexed list of articles that have been published in HI-FI MUSIC Magazine since the first issue of March 1954.

Please find enclosed my remittonce for \$2,00 for the 1958 Hi-Fi Yeorbook issue \$6,00 1-year subscription to HI-FI MUSIC			
\$2.00 for the 1958 Hi-Fi Yeorbook issue			
Só.00 1-year subscription to HI-FI MUSIC			
(11 issues, including the Hi-Fi Yearbook issue)			
\$15.00 3-year subscription to HI-FI MUSIC			
(33 issues, including, 3 Hi-Fi Yeorbook issues)			
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Name			
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Some speakers are better than others. Three things make the difference — the manufacturer's conception, his ability to produce speakers that accurately reflect his intentions, and, most important, your personal preference. Stromberg-Carlson designs and makes its speakers so that they are accurate, crisp, and honest. They meet the highest musical standards in their ability to reproduce



RF-460 8"
Transducer

A great 8" speaker. Dollar for dollar, the best high fidelity music reproducer money can buy. Power handling capacity: Program material 18 watts peak. Frequency response: 45-14,000 cps. \$20.00.



A wide-range, single-cone, high-quality speaker. Diffusex principle for wide dispersion of high and middle frequencies. Curvilinear cone, Alnico V magnet. Power handling capacity: Program material more than 50 watts peak. Frequency response: 30-14,000 cps. \$35.00.



A dual-magnet, dual-cone caaxial speaker, the very essence of Stromberg-Carlson's conception of speaker design. Power handling capacity: Program material, Woafer—more than 50 watts peak, Tweeter—32 watts peak. Frequency response: Woofer—30 to 2,000 cps. Tweeter—1,500 to 15,000 cps. \$49.95.



RF-475 15" Coaxial Transducer

The largest Alnico V magnet in the industry. Every ounce is necessary to praduce superior transient response, for sharp, clear, low-frequency sound. Compression type tweeter, unusually clean throughout the range. Power handling capacity: Program material, Woofer—more than 100 watts peak. Tweeter—more than 32 watts peak. Frequency response: Woofer 30-1,500 cps. Tweeter—1,500 to 20,000 cps. \$179.95.

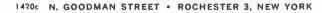


A dual-magnet, dual-cone coaxial speaker. Dollar for dollar, the finest 15" high fidelity speaker of all. Power handling capacity: Program material, Woofer—more than 100 watts peak. Tweeter—32 watts peak. Frequency response: Woofer 30-2,000 cps. Tweeter—1,500 to 15,000 cps. \$75.00.



STROMBERG-CARLSON

A DIVISION OF GENERAL DYNAMICS CORPORATION





RECORDS, TAPE AND FM

Continued from page 8

not content with transmitting music tapes, have carried such features as Halpern's 'Mr. Namreve's Descent' and James Noe's 'The Exiles'', recorded during actual performances.

It's Made in Norway

In the description of the Tandberg tape machine, which received the H1-F1 Music Commendation Seal Award No. 40, it was stated in error that these units, are made in Denmark. They are actually manufactured in Norway.

Any Time Everywhere?

An advertisement by Edward Petry & Company, radio station representations, shows automobiles crossing a huge suspension bridge, and bears the heading: "Any time is listening time, and radio goes everywhere." But who, at any time, can drive over a steel bridge anywhere, and hold AM broadcast signals? Only FM is unaffected by steel bridges and similar structures.

We're Not Entertained

Anent the editorial in this issue: we were heartbroken at hearing only that Maxwell House coffee can be bought for 79¢ a pound when we tuned in for our long-time friends the Great Gildersleeve and little Leroy. Of course, we're always glad to learn that an ex-AA is leading a useful life but, we'd like to know, is that NBC's idea of evening radio entertainment? It certainly is not ours!

Bert Cowlan

WBAI program manager has been appointed general manager of this New York station, succeeding Stephen Temmer. Bert Cowlan will be remembered as the announcer of Tallulah Bankhead's "Big Show", and the romantic lead opposite Marlene Dietrich in "Time for Love". Stephen Temmer will devote himself to his Gotham Audio Development Corporation. The post which Bert Cowlan now occupies was held by Douglass Cross, prior to his joining H1-F1 Music as Music Editor.

Record Clubs

This comment on the "Hi and the Fi" note about record clubs in our March issue, from A. S. Franklin, Goody Record Club: "Our Board of Selections endeavors to choose, each month, a new list of 25 to 50 new records which is added to an evergrowing list of now close to 1,000 albums. They choose the albums they consider to be the finest recordings of the particular works selected, regardless of the manufacturer. We hope you will make some mention of this in your next issue."

Sorry, but It's Not So!

An announcement from Transvision, Inc., Continued on page 12

Hi-Ji Music at Home

R406 ELSA LANCHESTER SONGS FOR A SHUTTERED PARLOR—A MUST encore to Elsa's smash hit first album "Songs For A Smoke Filled Room". Witty, sometimes only thinly veiled party songs with appropriate remarks by Charles Laughton

R606 VERLYE MILLS HARP WITH A BILLY MAY BEAT, Big band Billy May pile driver brass with Verlye Mills jazz harp.

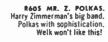




STEREOPHONIC HIFIRECORDS

R716 GEORGE WRIGHT GOES SOUTH PACIFIC—A new slant on the score from the famous Broadway musical. George Wright's million selling popularity scores another hit on the mighty five manual Wurlitzer Pipe Organ.

Guaranteed frequency response 16 to 20,000 C. P. S.







Rao1 QUARTERLODEONS. (Old Time Nickelodeons.) The unique sounds of Jim Hamilton's \$50,000 hobby in hifi!







Reaching the stratosphere in high fidelity realism a sound that's out of this world!



R806 TABOO—The fabulous, exotic sounds of Arthur Lyman's Hawaiian Village Group recorded in Henry J. Kaiser's aluminum dome structure, Honolulu, = 1 BEST SELLING ALBUM IN NATIONAL SALES CHARTS.







R702 GEORGE WRIGHT ENCORES AT THE MIGHTY WURLITZER PIPE ORGAN—All-time best selling theater pipe organ recording. Hear the might-iest Wurhizer of them all—5 manuals! Used as demonstration record by many leading Hiff manufacturers.

R1000 MIFF VARIETY—Includes most popular tracks from 14 best selling HIFIRECORD abbums. Sensational to show off your HiFF equipment plus a wide variety of musical entertainment.

AT RECORD SHOPS AND HIFI EQUIPMENT DEALERS EVERYWHERE



"The sound that named a company" RECORDINGS, INC. HIGH

7803 Sunset Boulevard, Hollywood 46, California



RECORDS, TAPE AND FM

Continued from page 10

of New Rochelle, N. Y., states that their "Dual-Amp stereophonic amplifier enables ordinary records, tape, or FM radio to give stereophonic reproduction." Also, "Existing equipment can be inexpensively converted to stereo, and ordinary records and tapes can be used for this purpose by simply replacing the amplifier with the Transvision 'Dual-Amp' and adding an inexpensive speaker."

Operation is described in this way: "The electrical impulse from an ordinary record-changer, or tape recorder, or radio is fed into the Transvision 'Dual Amp' Stereophonic Amplifier . . . The low frequencies are channeled through a section which amplifies and changes the tonal response as desired, and sends these impulses to a low-frequency speaker system. The higher frequencies are similarly treated by the other section of the 'Dual-Amp' and then sent into a high-frequency speaker system . . . The net result is a realism which duplicates that of special stereo records and tapes."

Sorry, but this system does not, and cannot duplicate reproduction from stereo records and tapes! This system apparently contains a frequency dividing network such as has been in use for monaural reproduction since 1952. No system can deliver stereo performance unless it operates from two separate channels. There is no way to get the "equivalent" of stereo from a monaural source!

FM Listens and Cadillac Cars

When Cadillac's advertising agency told WITH-FM that they had no proof of correlation between appreciation of good music and the higher income brackets, the Baltimore station sent letters to 2,000 listeners, to get first-hand information. Answers totalled 60%, a high figure for such a survey. Results: 90% have incomes over \$5,000; 67% over \$7,000; 40% over \$10,000. We don't know how this compares with the TV audience, but the question reminds us of a remark we heard the other day: "God loves the poor. He gave 'em television."

Custom Stereo Disc Cutting

Studios and equipment for cutting stereo discs with a Westrex 3A are now available at Radio Recorders, Hollywood, Calif. This is the first company to offer such facilities for custom recording.

Minter Stero Discs

Don't write off the Minter method of stereo cutting and playback. It has definite advantages, not the least of which is that Minter discs are completely compatible. A monaural pickup is used for both monaural and stereo, and the two channels are combined on monaural reproduction, for the Minter system employs lateral motion with no vertical component.

* audiofacts

You can record and interpret satellite signals

What are the satellites saying? From the limitless void of outer space, their radio voices are continuously sending out coded data on the conditions which they encounter — cosmic rays, meteorites, temperatures and other phenomena of great value to our understanding of the universe in which we live.

A tape recorder, an FM radio receiver and a little ingenuity are all you need to receive and record these radio signals from outer space — and perhaps make a valuable contribution to our satellite program.

Although official tracking and recording stations have been set up at many points around the globe, there aren't enough of them to cover every point on each orbit. And amateur recordings, from widely scattered locations throughout the country could very well pick up information available from no other source.

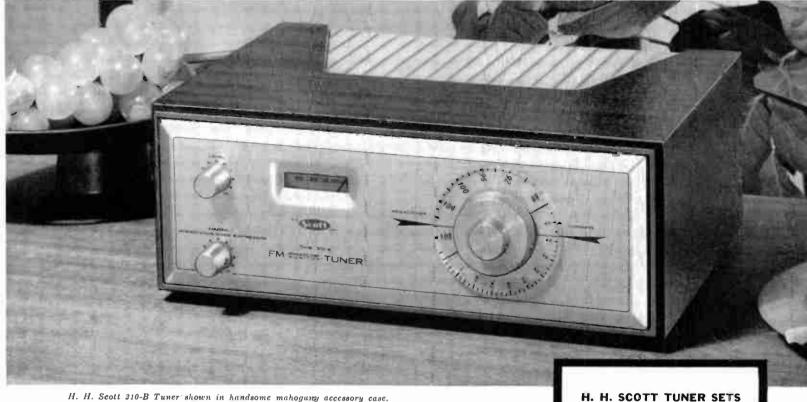
With a few simple modifications that anyone can make, you can adapt your home FM receiver or communications receiver to bring in the signals from the Explorer and Vanguard satellites. What's more, by recording them at a high tape speed and playing back at a lower speed, you can actually understand much of what the satellites are saying!

How to do this is fully explained in our new booklet, "You Can Record the Satellites." It tells you how to modify your equipment to receive, record and even interpret the satellite signals — and how to make your recordings available to the proper authorities in the satellite program. Ask your Audiotape dealer for a copy of this 12-page booklet. Or send 10 cents, to cover the cost of handling and mailing, to Dept. AM, Audio Devices, Inc., 444 Madison Ave., New York 22, N. Y.

* one of a series

Here are the Features That Make the H. H. Scott 310-B the

EST FM TUNER



H. H. Scott 310-B Tuner shown in handsome mahogung accessory case.

ONLY the 310-B was rated outstanding in all respects by a leading consumer testing organization.

ONLY the 310-B limits fully on random noise. This means true high fidelity FM performance on even the weakest signals.

ONLY the 310-B has 85db cross-modulation rejection. This means you can listen to weak stations even though strong signals are nearby.

ONLY the 310-B will maintain audio output voltage constant within ±1.5db, even though signal strength may vary from 1.5 microvolts to 1 million microvolts. This means you never have to re-adjust volume level.

ONLY the 310-B can perfectly separate a weak station from one in an adjacent channel that is up to 15db stronger.

ONLY the 310-B will stay tuned, without drift or "pull" when set to a weak signal adjacent to a very strong one. This feature is essential for good performance in crowded signal areas.

ONLY the 310-B will reject an unwanted signal or interference that is only 21/4db weaker than the desired signal. Strong interference can come from a TV receiver or another station on the same channel. The 310-B will reject this interference.

H. H. Scott Engineering Department STATEMENT OF GUARANTEE

All the statements regarding the performance of the 310-B tuner are backed up by laboratory measurements available for inspection at the H. H. Scott engineering department. The 310-B will outperform any tuner. It will work in the most difficult locations, where other tuners fail.

Paniel Ruon Rocklingh Certified: D. von Recklinghausen Chief Research Engineer

NEW DX RECORD!

The Apparatus Development Company, Manufacturers of the FM/Q FM Antenna reports the Scott consistently receives signals from a distance of 510 miles. This is the best record for any FM tuner in their files.

Additional Specifications:

Sensitivity 1.5 microvolts on 300 ohm input for 20db of quieting. Three IF stages; Three Stages of Limiting; Broadcast-type signal strength meter; Interstation Noise Suppressor; Multiplex output. Price \$189.95. Prices slightly higher west of Rockies.

Case extra.



mail coupon



H. H. Scott Inc. 111 Powdermill Road, Maynard, Mass Export : Telesco International Corp., 36 West 40th Street, New York City

RUSH me my free copy of your completely new catalog M-5

NAME		
ADDRESS		
CITY	STATE	



AFLP 1881 \$5.95



AFLP 1863 \$5.95



AFLP 1857 \$5.95



So many exciting new records in the Audio Fidelity catalog!
We just can't show them all
... please write for catalogs.



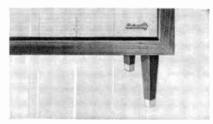
Dept. HM-5, 770 Eleventh Avenue, New York 19, N. Y.

*REG. APP. FOR

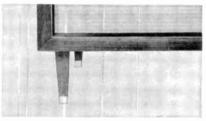
UNIVERSITY INTRODUCES A VERSATILE NEW LOWBOY...

The Debonaire





MODERN decor is accommodated by adjustment of the legs to this triangular position.



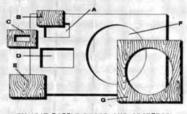
TRADITIONAL decor is accommodated when the legs are set "flat" in this position.

BRILLIANT NEW SYSTEMS AND ENCLOSURE

EN-1215 DEBONAIRE ENCLOSURE Designed for full-range reproduction, the EN-1215 DEBONAIRE enclosure employs the phase inversion principle to augment low frequency response. For versatility, it integrates direct radiation principles to permit using a wide variety of extended range speakers and 2- and 3-way Diffaxials. The versatile baffle board arrangements accommodate the many multispeaker systems that may be developed with P-S-E—University's Progressive Speaker Expansion plan. P-S-E enables you to start modestly with an extended range speaker for immediate listening satisfaction and build up at your own pace to any one of a number of magnificent sounding speaker systems.

MODEL S-3 DEBONAIRE-12 SYSTEM This system, employing the same 3-way system components so successfully used in the University SENIOR, now makes this highly popular combination available to music lovers in both corner (SENIOR) and lowboy (DEBONAIRE) form. The basic C-12W 12" woofer (less frequency limiter) is ideally suited to the EN-1215 enclosure, reproducing deep bass tones cleanly and efficiently. Mid-range is covered by the new, improved H-600 "reciprocating-flare" horn with T-30 driver; treble range by the UXT-5 Super Tweeter clear out to 17,500 cps. The N-3 Acoustic Baton 3-way network crosses over at 700 cps for mid-range, 5000 cps for treble. PRESENCE and BRILLIANCE balance controls provide optimum adjustment to room acoustics and personal taste.

MODEL S-4 DEBONAIRE-15 SYSTEM An excellent three-element system with a unique approach to mid-range reproduction is achieved in this version of the DEBONAIRE. A 2-way 15" Diffaxial, the Diffusicone-15, is employed together with the new H-600 horn and new Hypersonic T-50 driver. The H-600, with hemispherical diffraction added, complements perfectly the T-50 driver to cover the mid and high ranges from 700 cps crossover to inaudibility. The Diffusicone-15 provides superior bass response to about 1000 cps where its multi-sectional Diffusicone element takes over for mid and high frequency response. With thus both the Diffusicone element and the horn/driver combination providing wide-angle response of the mid-range, this three-element system results in an expansion of spatial separation and an exciting blend of reed and woodwind mellowness (from the Diffusicone element) with the brightness of the brass (from the horn/driver). A balance control adjusts the system to room acoustics and personal taste.



EN-1215 BAFFLE BOARD AND ADAPTERS

- A-Hole for tweeter Model HF-206 or 4401.
- B—Adapter blank to close hole A when tweeter not used.
- C-Adapter for Model UXT-5 tweeter.
- D-Hole for mid-range (Model H-600 horn).
- E-Adapter blank to close hole D when mid-range unit not used.
- F—Hole for Diffaxial Models 315-C, 6303, Diffusicone-15; woofer Models C-15W, C-63W.
- G-12" adapter (supplied) for Diffaxial Models 312, UXC-123; Coaxial Models 6201, Diffusicone-12, UXC-122 or Model 6200; C-12W woofer.

USER NET PRICES:

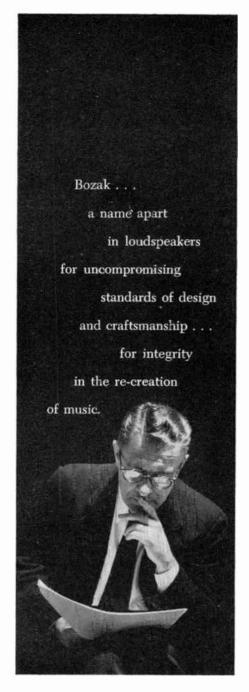
Finish	EN-1215	S-3	S-4
Mahogany	\$63.00	\$196.00	\$197.50
Blond	69.00	199.00	200.50
Walnut	.69.00	199.00	200.50

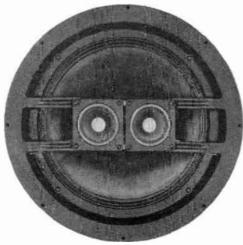
LISTEN

University sounds better



See your high fidelity dealer ... or for FREE LITERATURE on University speakers, complete systems, enclosures and kits, write Desk N-3, University Loudspeakers, Inc., 80 So. Kensico Ave., White Plains, N. Y.





Hear the Bozaks at a franchised Bozak dealer/write for literature/The R.T. Bozak Sales Co./Darien, Conn.



Milton Sleeper discusses

MUSIC IN YOUR HOME

TITH deep regret, we must inform you that the radio program you have just heard marks the end of operations over this network." Such an announcement may be heard more than once before the last page is torn from 1958 calendars. For it's no secret in broadcasting circles that ABC, CBS, and NBC haven't found a formula for turning their current radio network losses into profits, and those losses, now running into millions of dollars, add up to a crash situation.

In 1948, when television stole the show, revenue from radio network time sales began to drop. FCC reports show a decline from \$133.7 million in '48 to \$44.8 million in '56.

Ten years ago, the networks, in the course of promoting their TV time sales, sold radio down the river, even to the point of predicting that television might replace radio broadcasting entirely.

So the big advertisers who had sponsored the fine radio programs we used to have shifted to television, and revenue from radio dropped off. To keep the stations on the air, payrolls were cut, and more and more cheap substitutes were run in to replace the good shows. Today, independent stations can put on programs as good as, and more consistently good than, those originated by the networks!

At the recent Disc Jockey Convention, Mitch Miller said: "Gathered under this roof are a great many men of fantastic skill, taste, and imagination. You caused radio to jump out of bed and click its heels a few years back, while the public was dressing for the funeral. You made radio once again a vital force on the American scene, a source of first-rate entertainment, and — best of all — you made it pay. But what's been happening in the last year or two?

"You refully built yourselves into the monarch of radio and then you abdicated — abdicated your programming to the corner record shop; to the 8-to-14-year-olds; to the pre-shave crowd that makes up twelve percent of the Country's population, and zero percent of its buying power. I know that most of you agree with me that much of the juvenile stuff pumped over the air waves these days hardly qualifies as music. But your standard answer is: 'We're not here to educate. We're here to give them what they want.'

"What who wants? Certainly not the seventy-five per-

cent of the nation over fourteen years old! If they did, they wouldn't be buying hi-fi record-players in unprecedented numbers, setting them up in their living rooms, shutting off their radios — and creating their own homemade programming departments!

"Certainly not those who want variety, musicianship, a little bit of literacy, and a bit more sophistication in their music. And, gentlemen, that's the majority."

Mitch Miller addressed those comments to an audience made up principally of disc jockeys from independent radio stations, but what better entertainment is being provided by the networks?

News on the hour and half-hour is no substitute for entertainment. Interviews and roundtable discussions of public affairs with important people have their place, but they can be as tiresome as those so-called variety shows which repeat ad nauseam the formula: A. some remarks intended to be smart-and-snappy about what is coming next; B. "But first hear this!"; C. a raucous commercial or an offensive announcement about something such as "your golden liver bile" and then; D. remarks by a singer with a very poor speaking voice, followed by a record he or she made, or an interview with someone who tells about something in a dull and awkward manner.

Imagine what would happen if one of the Broadway critics should deliver his opinion of an evening's network programs! Chances are that will never happen, for no one will pay what a top critic would ask for such a stint of listening.

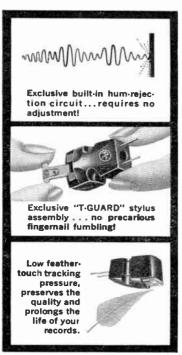
Independently-owned stations affiliated with a network enjoy a theoretical advantage because the network can sell time for them, and can provide programs of outstanding character that no single station could originate. But today, no network wants to sell radio time where it can sell television time to the same sponsors at higher rates. And if a network should develop a new radio program sufficiently entertaining as to draw people away from television, it would be competing with itself!

If this is an over-simplification, it still explains why the networks are no longer important to listeners, and why, in many areas, the best radio entertainment is now heard from radio stations whose owners are not engaged in TV broadcasting, and particularly from those FM stations programmed specifically for mature audiences.

For a greater measure



of listening pleasure...



'Important Quality Features,

no necessary for high fidelity reproduction from records.

play your records with the

incomparable fluxvalve.

PICKERING'S truly miniature FLUXVALVE magnetic phonograph cartridge represents the newest concept in high fidelity cartridge design since PICKERING introduced the first really lightweight high fidelity pickup more than a decade ago.

You get a full measure of listening pleasure... because the FLUXVALVE has a full range response, flat within 2 db, from 10 to 30,000 cycles. Hermetically sealed, the FLUXVALVE is impervious to any and all of the elements...heat, cold, humidity, etc. Moreover, the FLUXVALVE has the exclusive PICKERING hum rejection circuit built-in, assuring hum-free performance.

PICKERING'S "T-GUARD," the newest and safest idea in a stylus assembly, is incorporated in all FLUXVALVE models. Change of stylus is done quickly and easily with the comfortable grip of the "T" shaped assembly... no precarious fingernail fumbling... you are always sure the stylus is correctly seated. The most flexible cartridge in the world, the FLUXVALVE is the only cartridge with the amazing ½ mil stylus, and it can be used with five interchangeable styli to play any record, at any speed.

Only the FLUXVALVE has 100% IQF*, and it may interest you to know that because of its ability to make *precise* and *reproducible* record measurements, the FLUXVALVE is used for calibrating recording channels and record masters.

BUILD UP THE QUALITY OF YOUR HI-FI SYSTEM WITH A PICKERING FLUXVALVE

FLUXVALVE TWIN SERIES 350—A turnover cartridge providing a rapid change of stylus point radius. Available in 12 models featuring many combinations of styli, prices start at a modest \$24.



FLUXVALVE SINGLE SERIES 370-A miniature high quality cartridge for use in any type of autochanger or manual player arm. Available in 5 models, prices start at a low \$17.85.



Model 194D UNIPOISE Pickup Arm—This new... lightweight ... integrated arm and cartridge assembly containing the FLUXVALVE with exclusive "T-Guard" stylusis only a fraction of the weight of conventional tone arms. High compliance and single friction-free pivot bearing assure distortionless tracking of



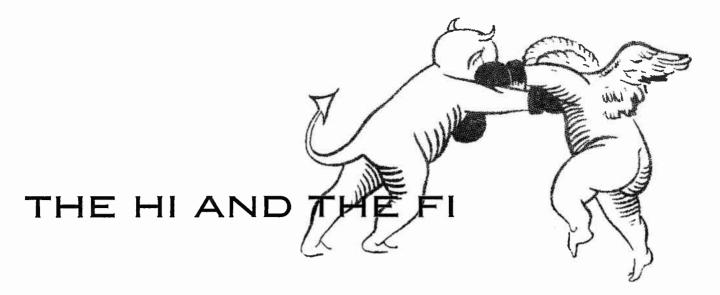
microgroove and standard groove recordings. Available with the ½, 1 or 2.7 mil diamond stylus. Prices from \$59.85.



For those who can hear the difference fine quality migh fidelity products by

PICKERING & COMPANY, INC., Plainview, N. Y.

Enjoy the quality of a FLUXVALVE at your favorite Hi-Fi shop today...you can hear the difference. For the dealer nearest you or for complete literature write to Dept. X-58



The Boom Heard 'Round the World: In the 1958 edition of a pamphlet entitled Concert Music U. S. A. (distributed to musical organizations by Broadcast Music, Inc.) there are a number of quite amazing statistics that give the lie to the old saw that America is ensconced in a provincial backseat as far as musical culture is concerned. Perhaps the most eye-catching statement in this survey is: "Of the approximately 2,000 symphony orchestras in the world, 1,055 (more than half) are in the United States! There were less than 100 U.S. symphony orchestras in 1950, and only 10 in 1900." Here are some more facts pertaining to the radio and recording fields that I've culled from this informative little booklet:

In 1957, Americans spent more money for the purchase of recordings of concert music and hi-fi equipment on which to play them than they did on all spectator sports. About \$240 million was spent on spectator sports last year, about \$80 million was spent for concert recordings, and more than \$166 million went for the purchase of hi-fi phonograph and tape equipment, and FM radios.

There are more radio sets in operation today (135 million of them) than ever before in broadcasting's 37-year-old history, and the average American family listens approximately 15.4 hours per week. To give some idea of the tremendous audience for concert music available to radio: more people hear each Sunday broadcast of the New York Philharmonic than could have been jam-packed into Carnegie Hall in 110 years.

This fifth annual survey conducted by BMI among broadcasting stations revealed that 1,273 radio stations programmed a weekly total of 8,780 hours of concert music; 555 have announced that they intend to increase their use of serious music.

Returning to recordings, Concert Music U. S. A. states that sales of classical discs have soared to where they now account for an astonishing 35% to 40% of the industry's total business. In 1946, "long-hair" music represented only 15% of all record sales. In 1940 there were two U. S. companies manufacturing concert records — Victor and Columbia. The March issue of the Schwann LP Catalogue has 9,981 listings

of classical music on 303 record labels devoted to 718 composers! Of these, 330 are contemporary and 165 are American. In 1934, a recording of the Beethoven Ninth Symphony did well if it had a total sale of 500 copies. By 1954, Toscanini's two-year-old recording of the Ninth had found 148,993 buyers and still gives no evidence of losing its sales momentum.

And so the Fi flies Hi-er and Hi-er! Not since the advent of LP's ten years ago has there been so much excitement in the record industry as there is these days, sparked by the intriguing potentialities of the brand new stereo discs. And with the estimate by the Institute of High Fidelity Manufacturers that the total 1957 volume of audio components business increased by over \$34 million, who knows where the soaring star of hi-fi will find its orbit?

Angel's Loss, Victor's Gain: When the management and distribution of Angel records was taken over by Capitol the first of the year, it appeared for a while that the Sorias - Dario and Dorle - were left out in the cold. Theirs were the inspired hands that molded Angel production and repertoire into the standard which set the pace for the industry as far as classical recordings were concerned. And so it's particularly pleasing to have the announcement from George Marek that Mr. and Mrs. Soria have been engaged to create a special series of "gala classical recordings" for RCA Victor. The Sorias are in Europe now, in quest of repertoire and artists, as well as to assist Gian Carlo Menotti with the Festival of Two Worlds which they helped him organize and that is scheduled to open in Spoleto, Italy, June 5th. The first of their series of recordings for RCA Victor will probably be released early in 1959.

Built-in Woofers and Tweeters: Until the last three years or so, the Mighty Pipe Organ — both baroque and theatre — seemed threatened with almost certain extinction along with the Whooping Crane. But hi-fi has come to the rescue, at least as far as the organ is concerned, and now the walls and floors of the homes housing organ-record enthusiasts all over the Country are trembling as thrillingly

as the ancient stones of Westminster Abbey. For sheer sound and range, no other instrument can deliver the overwhelming tumult of which these monsters of organized hurricanes are capable and, under the control of a true virtuoso, the organ is a beautiful sounding instrument indeed. However, there are certain practitioners making organ records today, especially in the popular field, who should not be allowed to turn the crank of a hurdy-gurdy.

Be this as it may, Mirrosonic Records, Ltd., announces the release of "The First International Congress of Organists", a series of six LP volumes documenting the musical proceedings of the famous Congress held in London during the summer of 1957. The production of these records creates a number of "firsts" in the organ music world; last summer was the first international event of its kind ever held and, notably for the first time in history, an American woman, Marilyn Mason, was permitted to play the organ in Westminster Abbey. Of the thirty-four concerts, twentyfour were recorded by Mirrosonic. Volume I highlights Miss Mason's performance with the Harvey Phillips Orchestra. The volumes also includes Leo Sowerby's Classic Concerto, the composer conducting, Seth Bingham's Connecticut Suite, a recital by Gerald Bales on the giant Westminster Cathedral organ, and Sir William McKie's closing address.

Farewell To a Great Tradition: I have accepted with sadness and premeditated nostalgia the announcement that the CBS radio concerts of the New York Philharmonic will be aired on Saturday nights beginning next fall. For twenty-eight years they have remained a Sunday afternoon radio institution, and they were a comfort and a consolation in this changing world. Even during the darkest days of World War II they were there to give the heart sustenance and hope from the moment, that blood-chilling Sunday, when the concert was interrupted to announce "Pearl Harbor." No, to me the program will not sound the same on Saturday night. Somehow it had seemed that as long as there was radio, there would always be The Sunday Philharmonic. — DOUGLASS CROSS



For more than eight years, Franz Rupp accompanied the master violinist Fritz Kreisler



Marian Anderson and Franz Rupp share such a musical understanding with one another that they have appeared together in over a thousand concerts throughout the world

Let's Make Music Together!

Accompanist Franz Rupp Is a Great Artist in His Own Right — by Sara Given Rockey

He accompanies the greatest artists, is applauded by audiences around the world, and is received by kings and queens and presidents. Sounds easy? "It's hard work," he declares, "as fatiguing as heaving cement bags. But I love it."

Most likely you've heard him on the concert stage or on records when listening to the incomparable Marian Anderson or the master violinist, Fritz Kreisler.

Fritz Kreisler said of him, "Franz Rupp is one of the most gifted pianists in the world." "His musicianship is superb," praised Marian Anderson.

Each time he accompanies a singer or an instrumentalist, he feels all the hard work is worth while if only to assist this particular artist in accomplishing his best. It is as though he says to the soloist from the bottom of his musical heart, "Let's make music together."

Certainly he's tied to the piano strings. Everyday such a music-workman as Mr. Rupp must practice hour after hour. Even on a recent summer vacation, Franz Rupp had a piano put into his mountain cabin near Evergreen, Colorado, for practicing. He did take a little time out for hiking with his wife, his stiff new bluejeans rolled 'way up, for he is short. But while going along a mountain trail with the pine breezes blowing his dark hair and the sun reddening his high forehead and well-shaped nose, he was

more likely than not practicing a new recital in his mind.

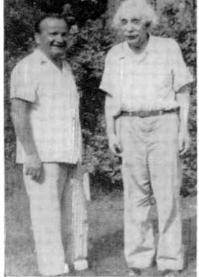
And then, an accompanist has more than his share of trying times. "Once while touring in South America with Mr. Kreisler," Mr. Rupp said, "we flew to Montevideo for an extra concert at the invitation of the President of Uruguay. After concertizing, we stayed up the rest of the night since our plane left at five in the morning for Rio. Although the middle of June, it was winter there and bad weather. Because we had to make an unscheduled landing, we didn't come down in Rio until eight that night. The concert was to begin in half an hour.

"We weren't a bit surprised that the floor of the stage was weaving under our feet," the accompanist continued. "No sleep the night before and fifteen hours in that lurching plane. But were we stunned to discover that we could not hear one another play! We were deaf from the constant roar of the plane. After the concert, could we go to bed? No. We climbed into another plane, off again for another concert."

Mr. Kreisler first chose the young Franz Rupp for his accompanist to record the entire series of Beethoven's sonatas for the Beethoven Society of London. Franz Rupp played for Fritz Kreisler for eight years.

In spite of his crowded schedule, Franz Rupp goes to all the parties he can and enjoys them con abbandono, and edges in every bit of sightseeing possible. For all his

Hi-Ji Music at Home



Dr. Albert Einstein was a walking companion and friend of Mr. Rupp's for years. The physicist was an amateur violinist

On their concert tour through Southeast Asia for the State Department, little Japanese girls gave mimosa and jasmin to the musical ambassadors



ability and fifty-one years, he reminds one of a lively mischievous boy with overflowing energy and inquisitiveness. There is the profoundly serious side, too, for this accompanying job requires it.

"An accompanist must go beyond the abilities and aptitudes of a pianist in some respects," Mr. Rupp says. "It is a make-or-break essential that he have thorough understanding and sympathy with the soloist, comparable to the understanding and sympathy of a conductor with his symphony orchestra."

The accompanist must anticipate any change of mood in the artist. He thinks, feels, breathes with him. He dares not relax. His sensitive ears must be sharply alert so that he can catch his partner if the soloist falters over a false note, misplaced breath, or a forgotten phrase - and cover up for him. Of course, an accompanist must read easily at sight and transpose. He must know languages. One night, he may play for a soprano; the next evening, a baritone. Each may sing the same song but with different nuances and in different keys. Franz Rupp does not follow, neither does he lead. He and the solo artist go along all the way together.

The first time he played for Marian Anderson was in 1940. Miss Anderson's accompanist became suddenly ill and Mr. Rupp, in response to an urgent phone call, rushed from New York to St. Louis. Marian Anderson and Franz Rupp had never made music together before. They had a hurried half hour rehearsal before the concert.

Then and there they established such a musical understanding that for seventeen years they have continued to make music not for hundreds of thousands, but admiring millions, on records and on stage. They have appeared in more than a thousand concerts. Their travels rival those of Secretary of State Dulles. In 1957 they covered 40,000 miles through seven countries in Southeast Asia on behalf of ANTA and the State Department. Perhaps you saw it on television or have heard the RCA Victor sound track.

Between tours, Franz Rupp accompanies other artists. Although small in stature, an active and sturdy man is this



Miss Anderson and Mr. Rupp were invited to make music for the high Buddhist Priest of Japan, Count Olani, and his wife, sister of the Empress. They also gave a concert for the Empress herself

accompanist. He has a cabinet full of medals and gifts, and a memory full of experiences. When he tells of an episode, he accelerandos, moves to the edge of his chair, then crescendo, he bounces agilemente to stand in the middle of the floor, where he talks with wide, emphasizing gestures.

He tells about concerts as close as twenty-five miles to the fighting in Korea. "I accompanied Miss Anderson as she closed her eyes and sang, He's Got the Whole World in His Hands. Surprisingly, the boys wanted to hear My Heart at Thy Sweet Voice from 'Samson and Delilah' as an encore!"

In Japan, an entourage of eight took care of the musicambassadors. Little Japanese girls presented them with heavily scented mimosa and jasmine. By invitation, they gave a concert for the Empress and members of the Imperial Household, and another for Count Olani, the highest Buddhist priest in Japan.

Back home, they sang and played for President and Mrs. Eisenhower, by invitation, in the White House. Others, like the President, praise Mr. Continued on page 56

Which Music Critic Do You Read?

Douglass Cross Discusses a Letter from One of Our Readers Who Presents Specific Evidence of the Conflict Found Frequently in Reviews by Different Record Critics

NCE IN AWHILE a letter arrives at the Music Editor's desk containing such gentle reasonableness and genuine objectivity that it seems important to share it with our readers in toto. The following communication is from Ralph Auf der Heide, of Altadena, Calif.—a manufacturers' representative handling audio components—who explores a very real problem to all record collectors relying upon reviewers' columns for assistance in building their libraries.

"In the February, 1958 issue of HI-FI MUSIC AT HOME, there is a review by Alfred Kaine of the Angel recording 35466, Tchaikovsky Symphony No. 4, Conducted by Igor Markevitch. The rating is A-C-C and Mr. Kaine states:

'Were any enumeration of the liberties taken here to be attempted, the total would consume the entire page. Tasteless, offensive, and lacking logic, Markevitch's utter disdain for Tchaikovsky's indicated wishes as to tempi, phrasing, and rhythm reveal a compulsive musical ego of uncommon brazenness. Angel has strangely distributed only the first movement on side one, and crammed the remaining three on the reverse, which probably explains the pre-echo throughout the second side. Its reproduction evinces altogether too much evidence of monitoring. In sum, a travesty of distortion. Avoid!'

"The January 1958 issue of *High Fidelity* magazine reviews the same record. Here the critic is David Johnson who says:

'If this isn't the top Tchaikovsky Fourth on microgroove it comes close. The sonics are superb, except that the timpani are unquestionably lumpish in the first movement. The orchestra is France's greatest. Listen to the miraculous teamwork of the third movement, especially to the petulant wind octet that begins its middle section; or to the détaché scales of the entire string body in the finale—not a single semiquaver is blurred or lost, although the tempo is allegro con fuoco and the dynamics are ff.

'The conductor is that roving genius Markevitch. May he never settle down to one post if his peripatetics produce results like this. When you hear this recording, you will, I think, be struck by Markevitch's affinities with Toscanini. The perfectionist, the architect who never loses sight of the whole despite his passionate concern for the parts, the supreme individualist who yet gives the impression that he has submerged his personality in that of the composer—these are some of the characteristics that the two men share. Markevitch has not yet recorded an opera, but I predict that when he does it will be an event.'

"My reaction after reading these reviews was to look again to see if both critics were discussing the same record. They were.

"Now the reader has a problem. If he has the opportunity to hear a record before he buys, the answer is simple—listen and decide. If he cannot make a listening test, then there is no adequate way to make an intelligent appraisal of the different opinions presented.

"In the first place the reader should have an idea of the background and personal preferences of the reviewers. Second, it would be helpful if comparisons were made with other recordings to show which versions that particular reviewer prefers, so the reader could get a general idea of the critics' attitudes.

"For example, Mr. Kaine may have a simply enormous knowledge of music. His affection for Tchaikovsky might be so great that any deviation from standards he feels are correct would spoil his enjoyment of any performance that differs from these standards. However, the space limitations required by your capsule method of reviewing allows him no opportunity to expand his points, and one suspects that perhaps the critic is tempted to exaggerate because of the need for brevity. There is good reason to believe that few records could be as completely hopeless as Mr. Kaine says this one is. Were he allotted enough space to spell out where he finds liberties in tempo and tasteless phrasing, which to him are so disturbing, and to cite examples of recordings he considers superior, he would be able to be of service. The reader could then confirm Mr. Kaine's evaluation and find him a useful and competent critic, or an opinionated sciolist.

"Third, the complete lack of any information about playback equipment used by the reviewer is rather remarkable in a magazine 'devoted to hi-fi music from records, tape and FM radio'. If the equipment with which Mr. Kaine listens to records were listed, readers would be in a position to determine how much of the poor sound reported ('pre-echo throughout the second side'—'too much evidence of monitoring'—'distortion') is in the recording, and what part might be due to Mr. Kaine's faulty playback equipment.

"How often have we seen the efforts of a hundred musicians, a conductor of integrity, a responsible recording supervisor, a corps of engineers, editors and various other technicians of professional competence called 'a travesty of distortion' or worse because of the temporary indisposition of a writer or the inadequacy of the playback equipment he is using.

"Since David Johnson found that the sonics are

superb', and 'not a semiquaver is blurred or lost', I would neclude that either Mr. Johnson's ear was adding beauty the sound of the recording, or that his record playing luipment was of an entirely different quality than Mr. Kaine's. At any rate it would be helpful to know what was being used.

"Just for fun I checked the recording to see why, as Mr. Kaine put it, 'Angel has strangely distributed only the first movement on side one and crammed the remaining three on the reverse.' The answer seems to be that the choice could have been made either way. The first movement takes slightly more than 17 minutes. If the second movement were added to the first side, the total would be about 27 minutes. Side two would then be 19 minutes long. As the record now stands, the second, third and fourth movements are 28 minutes in total length, well within the limits permissible in microgroove recordings.

"Having heard the record a number of times, I do not see that the additional length of side two has any deleterious effect on the quality of the recording, since with my equipment (D & R turntable, Grado cartridge, Marantz audio consolette and power amplifier, and Bozak B-310 speaker system) I could detect absolutely no trace of the pre-echo that was so annoying to Mr. Kaine. I was also unable to detect any evidence of monitoring. My own opinion, therefore, is that Mr. Kaine's review is rather more subjective than is desirable. In justice to reviewer, recording, and ultimate consumer I would like to see your reviews enlarged, made more specific, and approached in a much more objective manner."

It is hard to imagine a more dramatic conflict of critical appraisal than Mr. Auf der Heide has managed to confront us with here. It might be said, airily, that it takes all kinds of critics to make a world, and that criticism is born of controversy, but that, of course, leaves the reader absolutely nowhere. There are a few guide-posts, though, by which one can appraise a reviewer's aptitude to evaluate and to select according to the standards that come nearest the readers' own point of view and understanding. Most important: know your critic. Familiarity with his past reports and his outlook on music generally, his examinations of works and performances with which you are acquainted, will quickly decide whether or not he's the man for you, according to your own preferences by and large.

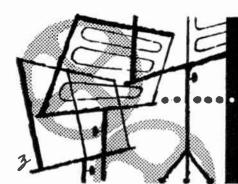
Reviewers certainly do have "off days", and they certainly do have prejudices, hard as a good critic does try to analyze each work fairly and objectively. For instance, without subjecting this beleaguered performance of the *Tchaikovsky Fourth* to yet a third dissection, it is obvious when following the recording with a score that considerable *rubati* is employed in many passages during the Markevitch rendition. (It is rather hard to accept Mr. Johnson's contention that Markevitch shares an affinity with Toscanini when it comes to the *Tchaikovsky Fourth*, a work the latter seldom if ever conducted, and never recorded; and, indeed, when you consider Toscanini's almost rubato-less life and curious ambivalence when it came to all matters Tchaikovsky.) Anyway, Mr. Kaine, a conductor in his own right of not inconsiderable

accomplishment, takes violent exception to the rubati; Mr. Johnson, it seems, revels in it. On the other hand, you might take violent exception to Mr. Johnson's claim that the National Radio and Television Orchestra is the finest symphony in France. But be generous with this prejudice. If you do agree after hearing the Markevitch performance that the interpretation is "tops," then you're with Mr. Johnson. But alas, if you don't, then better return the record to the shop, if you can, and next time listen to Mr. Kaine. Agreed, it would have been helpful if Mr. Kaine had listed a performance of which he did approve, and perhaps it would have been fairer to him if it were possible to allot more space for development of his analysis, but this unfortunately is not feasible if we are to cover the important releases as numerously as we attempt to do. Areas of unanimity are not unknown among members of the critical fraternity, but about all one can advise when faced with the opposing views of music reviewers is: listen, and decide for yourself.

Special care to take cognizance of each critic's specialty or specialties is followed when assigning records for review in H1-F1 Music. To cover the whole musical horizon authoritatively, we have found it advantageous to invite a rather impressive force from various fields to write for us. (Biographical notes about each of our reviewers can be found in the 1958 Hi-Fi Yearbook issue of HI-FI Music.) It is a condition upon which he writes for us that each reviewer will listen to records and tape on acceptable high fidelity equipment. Naturally, they do not all use the same equipment, and we couldn't possibly find space to list all our reviewers' components even if they weren't making changes almost monthly! But there is validity in comparative listening. In other words, the superiorities or deficiencies of records will show up adequately enough if the critic listens to all of them on the same play-back, taking for granted the equipment is of good caliber. It is when changes are made that the ear must sometimes be re-attuned.

Returning once again to our *Tchaikovsky*, Mr. Kaine complained of a "pre-echo" on the second side, while Mr. Johnson apparently found none. To probe into this would be to seek out the highly sensitive mysteries of the LP pressing process, but in fairness to Mr. Kaine it must be stated that when listening to yet a third copy of this recording for the purposes of these comments, a pre-echo was indeed discovered, heralding a few of the *forte* and double *forte* attacks of the final movement. I would hesitate to call it "a travesty of distortion" but it was there, and it was a flaw.

And so, just as there are two sides to every recording, there are two sides to music criticism: For and Against. But if a reviewer's opinion is backed by competence of judgement and a sincere concern for upholding the standards of music, performances, and technical achievement, we should be able to forgive him his private prejudices and even his occasional peevishness if he writes entertainingly enough. I cannot agree with the eminent London music critic, Hans Keller, who declared recently: "The critic's job is to make himself unnecessary." Nonsense. Half the fun would be gone out of life.



RECORDED TAPES

Reviews & Ratings

For Names of Reviewers and Explanation of Ratings, See the Record Review Section

BARTÓK: String Quartet No. 2

Kohon String Quartet
7½ ips. Stereo Time: approx. 30 mins.
Stereo Age Recordings

A

Bartók



The Kohon Quartet makes its recording debut here in what I consider to be the first major chamber work by Bartók, It is also the work's first appearance on stereo. The performers, who have to contend with three competitive versions on records, prove to be among the very finest of our chamber groups. Their integration and understanding of the work from every viewpoint is truly extraordinary. And their not-overfast tempi seem just right to me. More should be heard of this chamber group. The stereo sound is very realistic.

BEETHOVEN: Overtures: Leonore No. 3, Op. 72b; Fidello, Op. 72c; Coriolan, Op. 62; Egmont, Op. 84 Philharmonic Promenade Orchestra of London under Sir Adrian Boult 7½ ips. Stereo. Time: approx. 36 mins. Vanguard VRT 3021

Vanguard VRT 3021

This is grand Beethoven indeed without any unnecessary romantic gimmicks, and the sound is extraordinary. Every small detail is frighteningly clear and ane has to look far to find a dynamic range as wide as in the Leonore Overture. Nor has the effect of off-stage trumpets ever been so fully realized as

BEETHOVEN: Symphony No. 3 in E flat, Op. 55 ("Eroica") Philharmonic Promenade Orchestra of London under Sir Adrian Boult 7½ ips. Stereo Time: approx. 46 mins. Vanguard VRT 4003

it is here.



Boult's interpretation of Beethoven's Eraica cannot be termed otherwise than masterly. Sir Adrian's basic approach is as usual classic and relaxed. He does not allow himself to deviate from an initial tempo and the total structure is always kept in mind. What we have here in addition, however, is an extraordinary building up of block after block. The primary quality of Beethoven's structure appears in all its power, and while this was also the landmark of Toscanini's approach, Boult's tempi are more relaxed and we have no sense of hurriedness. The dynamic range of this tape is extremely wide and the sound is magnificent.

A. Skulsky

BEETHOVEN: Symphony No. 5 in C
minor, Op. 67

Philharmonic Promenade Orchestra of
London, under Sir Adrian Boult
7½ ips. Stereo Time: approx. 31 mins.
Vanguard VRT 3018

Beethoven



This is the fifth version of the Beethoven C minar to be found on stereo tape and a good one it is too. Those who have become familiar with Boult's literal, almost stodgy ways, might question his ability to bring the necessary tension and incisiveness to the work; but not so in this performance. With the first-rate London orchestra at his disposal—its strings are especially fine—Boult manages to hit very hard. When he does relax—in the woodwind entrances throughout the first movement, for example, he has a tendency to be almost "cute" in his exaggeration of the rhythm, but this is not overdone. The recording is close-up and Vanguard engineers, wisely not aiming at sensational stereophonic effects, have produced a solid, tightly-knit sound which enhances Boult's power. A very successful tape.

BEETHOVEN: Symphony No. 6 in F, Op. 68 Philharmonic Promenade Orchestra of London, under Sir Adrian Boult 7½ ips. Stereo Time: approx. 38 mins. Vanguard VRT 3019

Boult's reserved and straightforward approach makes of this more a sleeping-under-the-trees Pastorale than a cheerful one. His tempi are slow and evenly paced, and in subduing climaxes he avoids contrasts. As a result, the first two movements lack delicacy and lyrical quality, and the third is slightly less playful than desired. Nevertheless, the overall effect is pleasant and certainly not dull. Boult really lets loose in the storm movement, and the strength he musters is expertly recorded. Particularly effective here is sharp timpani accenting and resounding brass. This is the first Pastorale available in stereo, and as always with writing of rich tonal texture the two-channel medium is a boon.

L. Menashe

BRAHMS: Symphony No. 3 in F, Op. B 90 B South West German Radio Orchestra A under Jascha Horenstein 7½ ips. Stereo Time: approx. 36 mins. Phonatapes (Vox) S-905 Horenstein



It has been remarked that Brahms' *Third Symphony* is technically by far the most difficult of the four that he wrote, due to problems of rhythm, phrasing and tone. Here is a performance which, it seems to me, deals with the first two of these problems in an eminently satisfying manuer, and almost — if not quite — conquers the third. Horenstein believes in deliberate tempos and spacious phrasing, and the result, far from being phlegmatic, is a performance of grandeur which has, at the same time, rhythmic precision and vitality. The brass and wood winds come through beautifully, and if the strings have an occasional "edgy" quality, it is a very minor complaint.

S. Fleming

GABRIELI: Symphoniae Sacrae
(1597)
A
New York Brass Ensemble, under
Samuel Baron
7½ ips. Stereo Time: approx. 33 mins.
Period PST-6

Since Gabrieli worked with all sorts of antiphonal effects, and the element of space is an integral part of the texture of much of his music, stereo would seem to be the ideal medium for its reproduction. Unfortunately, though, this all-important feeling of spaciousness is conspicuously obsent in the eight canzoni presented on this tape. The sound is lacking in resonance, and the antiphonal elements simply do not have sufficient clarity or depth to be effective. All of which is especially regrettable in view of the excellent performances, and the high degree of interest inherent in this eternally fresh and vigorous music.

OFFENBACH: La Belle Hélène: Overture; La Périchole: Selections A The Boston Pops Orchestra, under Arthur A Fiedler 7½ ips. Stereo Time: approx. 19 mins. Victor BCS-50 Offenbach



Take two parts of scintillating Offenbach melodies, add some zestful conducting by Fiedler, and mix well with lush, wonderfully natural sound, and the result is what you'll find on this sparkling tape. The filting overture to La Belle Hélène contains some of the composer's brightest pages, and the medley of gaily elegant themes from La Périchale is equally ingratiating, even though one may well prefer the songs in their original vocal garb. You'll be getting your money's worth on this tape in every respect but quantity.

R. Sherman

Hi-Fi Music at Home

SESSIONS: Suite from "The Black Maskers"

stman-Rochester Symphony Orchestra under Howard Hanson 1/2 ips. Stereo Time; approx. 21 mins. Mercury Stereo MS5-16

В



When I reviewed The Black Maskers Suite some time ago when it appeared on records I insisted on the first-rate qualities of this work. Written in the 'twenties, it still appears os one of the major works of that decade. Both musically and dramatically it is original and fully of its time. Thus from the very start of his creative career, Sessions appeared as a major American composer. The stereo version enhances the qualities of the work. The intricate details of the difficult score appear with the utmost clarity and both ronge and sound as produced by the Mercury engineers are stunning indeed.

A. Skulsky

STRAVINSKY: Capriccio for Piano and Orchestro

Charlotte Zelka, piano; Southwest German Radio Orchestra under Harold Byrns

Stereo 71/2 ips. Time: approx. 18 mins. Phonotapes (Vox) S-714

Stravinsky's spirited Capriccio is given a well rounded and spirited performance. Charlotte Zelka, while not to be counted among the great virtuosos, is very well fitted to this kind of music which needs mainly strong rhythmic incision and contrasted dynamic levels. The orchestra, under the expert leadership of the American Harold Byrns, plays with the utmost clarity. The stereo sound has a wide range quality especially noticeable in the orchestrol accompaniment.

TCHAIKOVSKY: Symphony No. 4 in F minor Bamberg Symphony, under Heinrich Hollreiser 7½ ips. Stereo Time: approx. 41 mins. Hollreiser Phonotapes (Vox) S-904



This vigorous, dramatic reading of Tchaikovsky's masterwork is blessed with bright, reverberant, amazingly lifelike sound, and the happy combination enables the familiar score to emerge with renewed power and effectiveness. Hollreiser seems to have grouped the strings an the right side and the winds on the left, an unorthodox arrangement which might, I suppose, prove a little distracting to some listeners. I found it perfectly acceptable, however, and perhaps even advantageous — certainly the end result is a tape with unusual clarity and definition, and one which takes full advantage of the potentials R. Sherman

Sarah Vaughan sings George Orchestra conducted by Hal Mooney 7½ ips. Stereo Time: approx. 20 mins. Mercury MS2-17

Gershwin



Sarah Voughan can sing like a dream when she wants to, as she demonstrates well enough in such songs as A Foggy Day, and Bidin' My Time recorded here. But on other songs, particularly The Man I Love and Love Walked In she indulges in those false chest tones and scoops up and down and between the scales that have always seemed musically and stylistically senseless to me. These vocal eccentricities are particularly unfortunate when employed against the perfect architecture of Gershwin's tunes. The arrangements are excellent, and the orchestra under Mooney is recorded in splendid balance.

Central Pork South Joe Rene and his Orchestra 7½ ips. Stereo Time: approx. 16 mins. Manhatton MRC-101



Sparkling, sprightly dance music played by a master. Joe Rene directs his society orchestra in a beguine, a waltz, a fox-trot and a ballad. This is purely music for dancing, and in stereo the illusion of Central Park South is strong indeed. One expects to hear tinkling cocktail glasses and the murmur of subdued conversation along with the gently bouncing rhythms.

Dance Hits of the '30s and '40s New World Theatre Orchestra 7½ ips. Stereo Time: approx. 23 mins. Bel Canto ST-30

The dance hits here assembled are for old grads who like to remember how it was in the days of Glenn Miller, the Dorseys and Goodman, and who can dance while they listen and remember. It was big band music then and so is this. On a stereo tape reel there are severe limits to the number of selections (in this case there are six) but these are well chosen for all who went a'dancing in those days. Stereo helps the mood.

Honeymoon in Manhattan New World Theatre Orchestra В 7½ ips. Stereo Time: approx. 20 mins. Bel Canto ST-31

Five standard mood selections are well executed here by a good-sized orchestra, to evoke memories of New York for those who've visited there. Relaxing while listening to these lush arrangements even this hardened reviewer became nostalgic — and he lives there, and has never had o honeymoon! The opener is, appropriately, Curtain Time, with the excitement of Slaughter on 10th Avenue following, then Romance in Central Park, Autumn Leaves, and finally a rousing Manhattan! Sound is clean, stereo effect fine. C. Graham

A Toast to Tommy and Jimmy Dorsey Members of Dorsey Orchestras under Maxwell Davis 71/2 ips. Stereo Time: approx. 28 mins.

Omegatape 7026



This session recorded twelve of the best known specialties of the two bands led by Tommy Dorsey and by his brother Jimmy. A number of the many fine musicians to pass through these two orchestras are present in the recording ensemble, together with several equally fine west coast studio musicians. They do a most creditable job of recreating Marie, Song of India, So Rare, Green Eyes, and I'm Getting Sentimental Over You, in the arrangements in which most of us know them best. It's also good dance music. Stereo helps the re-creation of atmosphere here. C. Graham

Ruffle and Flourishes Music for Field Trumpets and Drums 7½ ips. Time: approx. 16 mins. Mercury MS5-13



Frederick Fennell conducts members of the Eastman Symphonic Wind En-- four trumpets, four field drums, bass drum and cymbals -assault. The sound, recorded in the Eastman Theatre in Rochester, is almost overpowering, but clearly defined. The variety of musical selections available to bugles would seem to be severely limited, yet here we have traditional marches, inspection pieces, music for rendering honors, and well-known Army bugle calls. A special demonstration of how far the simple instrument that is the bugle can go toward making music is the jazzy Swinging Down the Street, Also available on a monaural LP disc.

All That Jazz Johnny Guarnieri 71/2 ips. Stereo Time: approx. 16 mins. Manhattan MRC-102

Expert jazzman Guarnieri played a great deal with Benny Goodmon, Art Shaw and other big bands of the '30s and '40s. Since 1942 he's stayed off the road most of the time, playing with small groups in the East. Here he's assembled Mundell Lowe, guitarist, and a fine bass and drums for five swinging selections. Piano and guitar shore numerous interesting solo spots, but all in all this is more for dancing than listening. Clean recording, and the stereo effects are apparent.

C. Graham stereo effects are apparent.

Monk's Music Theolonius Monk, Coleman Hawkins, Art Blakey and others 71/2 ips. Stereo Time: approx. 28 mins. Livingston RT 7-20 F





Theolonius Monk is one of today's giants who, like many another innovator before him, remains almost unknown to the general public, but is listened to avidly by muscians great and small, mony of whom he has influenced enormously. Here he plays four of his own compositions, with assistance from the daddy of the tenor saxophonists, Coleman Hawkins. Also present and contributing importantly are well-known modern jazzmen Gigi Gryce, alto sox, John Coltrane, tenor, Wilbure Wore, bass fiddle, the dynamic Art Blokey, drums, and a trumpeter previously unknown to this reviewer, Ray Copeland. Hear especially the tender Ruby My Dear, in which Hawkins plays with only Monk and Blakey. This is one of the most revealing and interesting groupings of modern (for lack of a better phrase) jazz to come our way yet. Fine definition of sound via stereo.



MARTIAL SINGHER

suggests a basic library of vocal chamber music

A leading baritone of the Metropolitan Opera as well as a distinguished recitalist recommends outstanding examples of vocal music with instruments for your record library.

GUIDE TO RECORD **COLLECTING**

Notes and Comments by George Louis Mayer

THE HISTORY OF VOCAL CHAMber music from the Baroque era to our own is haphazard and lacks the continuity of other musical forms which can be easily traced from century to century. The combination of the voice with a keyboard instrument and strings was ideal for the cantata in both its religious and secular guises. As the cantata spread from Italy to France and Germany in the 17th and 18th Centuries, an enormous amount of this type of music was composed. However, when the cantata languished and was replaced by other forms, so too was the combination of the voice and a small instrumental ensemble. The 19th Century almost succeeded in inseparably wedding the voice to the piano or to a full orchestral complement as chamber music became a purely instrumental art. But once Romanticism had passed its peak, composers, searching for new forms and rediscovering Baroque ones, once again joined the voice to small ensembles and created a whole new literature in this genre. Today this repertory continues to grow. And along with the new has come

a revival of the old, so that the existing repertory of vocal chamber music is a large and varied one.

Martial Singher, famous as a leading baritone of the Metropolitan opera, is also one of the most gifted and rewarding recitalists of our day. He has long been associated with this music both as an artist and as a teacher. As a performer he has varied the usual recital fare with such works as Ravel's Chansons Madécasses, which has encouraged other singers to follow suit. His teaching experiences have led him to remark, "I have found young singers more interested in vocal music with instruments than is generally believed. At the Marlboro School of Music in Vermont we opened a class under my direction on this specialty. and achieved beautiful results." His class at the Marlboro School will be repeated this summer.

The list which follows was chosen by Martial Singher "to give the listener selections of great variety in voices, moods, and styles." Unfortunately, a work he especially admires is not to be found on the list. It is the version of Fauré's La Bonne Chanson for voice, piano, and string quartet. The version for voice and piano is often performed, and has been recorded several times, but it still remains for some enterprising company to give us the larger version. Mr. Singher's own identification with this song cycle would make him the logical choice for such a project. Let us hope that it will soon be forthcoming.

Couperin (le Grand): Lecons de Ténèbres: Couperin's three Lessons of Darkness were composed for services on the Wednesday of Holy Week during which the church is gradually darkened as the lights are diminished and eventually extinguished. They are scored for a variety of combinations: No. 1 for high voice, cello, and harpsichord; No. 2 for high voice, cello, and organ; No. 3 for two high voices, cello, and harpsichord. The Latin text is from the Lamentations of Jeremiah. Each verse is introduced by a Hebrew letter which is treated as an elaborate vocalise. And each lesson ends with the plaintive appeal, "Jerusalem, Jerusalem, return to your Lord God". Couperin uses this intense and dramatic text to fashion what is undoubtedly one of the most profoundly moving of all sacred compositions. It is based on Italian models, but the style is completely French. The elaborate ornamentation and chromatic melodic devices are never meaningless decorations. The whole structure of the composition depends upon them. In the Westminster recording, Hugues Cuénod, tenor, is joined by a second tenor, Gino Sinimberghi, harpsichordist and organist Franz Holetschek, and cellist Richard Harand. He has been performing this music since the 30's and his performance shows his love and understanding of it in every phrase. His voice is light and flexible enough to cope successfully with the incredibly long-breathed

pianissimo vocalises, and forceful enough to convey the vitality of the text in recitative sections. It is impossible to overemphasize the power and beauty of the music. Those who have yet to discover it should hasten to acquire this record (Westminster XWN-18581).

Rameau: "L'Impatience", Cantata for Solo Voice, Viola da Gamba, and Harpsichord: The powerful influence of Italian cantatas on French composers is well illustrated by this pastoral cantata composed during Rameau's early 30's. He had not yet turned his attention to opera, in which his style was to become wholly French and his personality most highly felt. "L'Impatience" concerns the impatience of an ardent lover while awaiting his beloved Corinne to join him in the woods where he has been languishing since before dawn. His "grief" is a delightful combination of self-pity and the traditional male discomfort of having to wait for a lady. Pain vanishes as his companion approaches, and he is no longer jealous of the birds who have tormented him with their early morning gaiety. Recitatives alternate with three arias in this cantata, an "air gai", an "air tendre", and an "air légere". Girdlestone, in his recently published book on Rameau, points out that nowhere else does the composer so treat the viola da gamba in the concerto style familiar to us through Bach's solos in the cantatas and in the Passions - as he does in this cantata. The independence of the solo instrument, playing in concertante style, gives us the feeling and the pleasure of a concerto. This is especially effective in the concluding air. The tenor Hugues Cuénod recorded this diverting cantata with Alfred Zighera playing the viola da gamba, and harpsichordist Daniel Pinkham (Lyrichord 44). Another secular cantata by Rameau dating from the same period, "Diane et Actéon", is on the reverse side. This includes a violin in addition to the combination employed in "L'Impatience". Both performances are properly ornamented and stylized, and offer a delightful change to anyone looking for unusual vocal music.

Handel: "Apollo e Dafne": When Handel was in his early 20's he went to Rome. This was during the first decade of the 18th Century while the papal ban on opera was still in full force. Composers, in an attempt to avoid this ban and yet satisfy the opera lovers, used the cantata as their vehicle. It was enlarged beyond its intimate scope and used to dramatic advantage. While the overall proportions of this work put it in a class quite different from others on this list, the cantata does contain features which are pertinent. The general use of obbligato instruments to accompany the voice in arias of this period is exemplified here in Dafne's first two arias. Her first is accompanied by strings

Continued on page 58

Those "Salute" LP'S

The Difference Between Authentic Re-Creations and Originals: Fidelity Vs. Morality — By Leonard Feather

MERICAN jazz enthusiasts who are old enough to have memories of the original Jimmie Lunceford orchestra in full flower, or young enough to treat a pursuit of its legend as a matter of archeological research, have a splendid choice open to them. They may buy "Jimmie Lunceford in Hi-Fi" (Capitol TAO 924), which on inspection of the smaller print is revealed to contain "Authentic Re-Creations of the Original Lunceford Style" played not by Lunceford but by an orchestra under the direction of Billy May; or they can turn to "Jimmie Lunceford in Hi-Fi" (Decca DL 8636), a title that on closer examination turns out to be preceded by "The Original Arrangements of" and to refer to performances by the band of Sy Oliver, recorded a full decade after Lunceford's death; or they are welcome to try "Rhythm Was His Business" (RCA Victor LPM 1301), subtitled "A Salute to Jimmie Lunceford: George Williams and his Orchestra," with the usual grandiose appendage: "A'New Orthophonic' High Fidelity Recording''.

Of course, there is a fourth option, but hardly anyone is likely to take it. This would be "Jimmie Lunceford and his Orchestra" (Decca DL 8050), which, it can be revealed here, is actually played by a band led by Jimmie Lunceford during his lifetime and is in full narrow-range low-fi, a system comparable with television in Glorious Black and White. The album has the additional disadvantage of not containing For Dancers Only, the band's most successful theme song, which is played by all three bands in the hi-fi LPs; nor does it have Rhythm Is Our Business, another Lunceford theme, also common to the May, Oliver, and Williams albums. A fifth possibility is presented by Columbia's reissue of original Lunceford band selections (Columbia CL 634).

The presence of all these albums on the already bulging jazz market raises several issues: moral, musical, and technological. One wonders how far the system of tributes and dedications can be driven, how much blood can be squeezed from a memory. Of the three leaders saluting Lunceford, Oliver has every moral right to record such an album, since it was his orchestrations that earned the original band its place in history; Williams' relationship with the old orchestra was short-lived and insignificant; while May never to my knowledge wrote for Lunceford at all.

Yet how, but for the recording quality, could one discern the difference between these "authentic re-creations" and the originals? Williams rules himself out immediately by using soloists like Conte Candoli and Jimmy Cleveland, whose technique and style can be compared with nothing that existed in Lunceford's heyday. Drummer Jimmy Crawford is the only member of the original band present. But the Oliver LP uses Crawford and a handful of others

who were with Lunceford at one time or another, while the May set, described as authorized by the Lunceford estate, more significantly uses such major Lunceford voices as Trummy Young, Dan Grissom, Willie Smith and Joe Thomas.

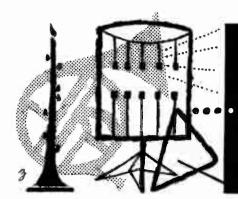
The brutal fact is that on some tracks, especially in the Oliver and May albums, the arrangements often carry all the impact and excitement of the old band, and more. Except for the giveaway hi-fi sound they could at many points easily be mistaken for the genuine article in any blindfold test. This brings up an important question: does the virtue of being the genuine original article, per se, lend to the actual Lunceford LP a musical merit absent from the others?

There are those who will point out that no frequency range on earth can compensate for the lack, in the revival albums, of the indispensable element of authenticity. But this resolves itself into a problem of reportage rather than of esthetics. Objectively, all the musical credit belongs to Lunceford, to the men who worked for him, and to the unique big-band team spirit they engendered; but subjectively, if the music they created is to be enjoyed to the full extent with all the advantage of 1958 engineering, then the new LP's must be recommended.

Even the souping up of old recordings by passing them through echo chambers is not relevant to the main question, which is, very simply stated, what sounds best to the present-day ear? In most cases the answer will tend toward the new recording with full-range frequency response; those who prefer the original may be guided partly by nostalgia, but some claim that they detect the kind of pristine mood of exultancy that dominated the great jazz orchestras of the 1930's and that cannot always be duplicated, no matter how trained and accurate the new performers, no matter how authentic the source of the recreation.

What the listener has to decide for himself is where nostalgia ends and reality begins. If I were starting today as an investigator of the Lunceford legend, I would save up an extra four bucks and purchase both the authentic Decca, and either the May or the Oliver. In this manner the original qualities, observed without any doubt as to their authenticity, could also be compared in the light of the tremendous musical and technical advances made in two decades.

Nevertheless, it is high time the tributes slowed down. Another current case, now achieving the proportions of a small scandal, involves Charlie Parker. Since his death in 1955 every scrap of reject tape, every note he played whenever he blew within fifty feet of the most primitive tape, wire or disc recorder, seems to have found its way onto the market. The jackals are *Continued on page 58*



LP RECORDS

Reviews & Ratings

BOARD OF REVIEWERS: Jean Bowen • Arthur Cohn • Douglass Cross • Oliver Daniel • Leonard Feather • Shirley Fleming • Bernard Gabriel • Charles Graham • Peggy Glanville-Hicks • Edward Jablonski • Alfred Kaine • Ulric Kaskell • Ezra Laderman • Marvin David Levy • George Louis Mayer • Louis Menashe • David H. Miller • Robert Sherman • Abraham Skulsky • Walter Stegman

ORCHESTRAL MUSIC

BERLINSKI: Symphonic Visions GERSCHEFSKI: Saugatuck Suite WILLIAMSON BALLOU: Prelude and Allegro

A-B-B A-A-A A-A-A

Ashai Orchestra of Tokyo under Richard Korn; Vienna Orchestra under F. Charles Adler

CRI 115

Yet another interesting issue from the enterprising Composers Recordings, Inc. Of the three composers presented here, Herman Berlinski is certainly the most gifted. His Visions is inspired by verses from the Bible and has an undeniable dramatic impact. His musical language, while stemming from such diverse sources as Mahler, Bloch and Milhaud, possesses nevertheless an individual character of its own, for the composer displays a lyric gift and harmonic inventiveness. The other works are much more conventional but are not entirely without appeal. The Ashai Orchestra from Tokyo makes its debut on discs and proves a well trained ensemble in the Berlinski work. The Vienna Orchestra also plays well. A. Skulsky

DVOŘÁK: Symphony No. 2 in D minor, Op. 70 Hallé Orchestra under Sir John Barbirolli

Mercury MG-50159

В Α Dvořák



The core of Dvořák's work is to be found in his chamber music and symphonic composition. This indicates most clearly how he is bound to the school of Beethoven, Brahms, and Schubert. Their forms are his, but the contents are strictly individual to Dvořák, and there is a bountiful amount of Czech coloration. Barbirolli just misses an exciting performance. In the scherzo, especially, the rhythms are expressed with validity, but the nationalistic tang does not tingle; in short, the movement is considered too conservatively. The Hallé orchestra has a rich tone, but tends to heaviness, which makes the work less sparkling than it should be.

GRIEG: Peer Gynt Suite; Symphonic Dances; Elegiac Melodies Hallé Orchestra under Sir John Barbirolli Mercury MG-50164

Α Grieg



Edvard Grieg in recent years has been relegated to the pop concerts and classified with contempt. What injustice! Now with the advent of LP's his reputation is re-established. He is no giant but a wonderful and sensitive miniaturist with a great gift of melodic invention, and a resourceful spokesman for his nordic homeland. Barbirolli has just the right approach. His climaxes are restrained, the storms are gentle though dark, and the tunes sing with warmth and sentiment. The folk material that Grieg used in his Elegiac Melodies is truly beautiful and his influence on Sibelius was never more E. Laderman

MILHAUD: Les Choéphores HONEGGER: Symphony No. 5 Genevieve Moizan, Hélène Bouvier, Heinz Rehfuss, soloists; Claude Nollier narrator; Chorale de l'Universite with Lamoureux Orchestra under Igor Markevitch

Decca DL 9956

A-A

Markevitch

It is almost unbelievable that Milhaud was only twenty-seven when, in 1919, he finished his score of Les Choéphores (Part II of "Aeschylus Oresteia"). This is one of the most dramatic and musically original works af our century. In it Milhaud's imagination knows no bounds, and at the same time Aeschylus' tragedy is presented in all its terrifying directness. Honegger's Symphony No. 5 is one of the composer's last works and gives an impression of greaf maturity and of experience gathered throughout a lifetime of creativeness. Both performances are absolutely first rate. Again Markevitch proves his extraordinary insight and conducting powers. It is a shame that Decca does not include the text of Les Choéphores in this release. A. Skulsky

MUSSORGSKY: Night on Bald Mountain BORODIN: In the Steppes of Central

RIMSKY-KORSAKOV: Capriccio Espagnol, Op. 34 GLINKA: Kamarinskaya

Orchestre des Concerts Lamoureux under Jean Fournet and Ohan Dourian Epic LC-3432 Mussorgsky



Here is the smooth and somewhat sophisticated French method of performance superimposed upon the exciting and often barbaric Russo-Romantic style. Consequently, the music often contains more color than these versions would suggest. The Capriccio lacks sufficient rhythmic impulse and contrast. The Glinka fares quite well under the silken tone of this orchestra. Fournet, who conducts the Mussorgsky and Borodin, draws more emotion than does Dourian, although he has a tendency to drag tempi. The soft and dreamy Steppes, however, is lucious in tone and phrasing. The recording is excellent.

PROKOFIEV: Lieutenant Kijé Suite STRAVINSKY: Song of the Nightingale

A-B

Chicago Symphony Orchestra under Fritz Reiner

RCA Victor LM-2150

RATINGS OF CLASSICAL MUSIC

The following explanation of the Record Ratings which accompany the Record Reviews is given so that you will understand exactly the significance of the three letters which appear at the right of each review heading.

COMPOSITION (Top Letter)

At Outstanding
Indicates that the composition is one of the composer's
best works, or that it is outstanding in a particular class
of music. Assignment of this rating is an unqualified recommendation.

B: Important

This rating is but slightly below the A rank.

C: Worthy

A composition which may merit representation in a library of the composer's works, or in a collection of that particular music.

PERFORMANCE (Middle Letter)

A: Outstanding

Indicates a superb performance. Assignment of this rating is on unqualified recommendation.

B: Excellent
A noteworthy performance, subject only to minor criticism.

C. Satisfactory

A performance not without flaws, yet deserving public notice.

RECORDING QUALITY (Bottom Letter)

A: Outstanding Realism

Representing the highest present attainments in occustic and recording techniques.

B: Excellent Quality
Slightly below A rating because of minor faults in the acoustics or recording, or because the noise is considered somewhat above the minimum currently attainable.

Representing the current average of the better LP

R: indicates a re-issue.

Important Note: Records which are rated below C as to the composition, artist or orchestra, ar recording quality ore not ordinarily reviewed here. However, the omission of a record does not mean that it was rejected, as it may not have been submitted to HI-FI MUSIC AT HOME for review.

Hi-Ti Music at Home

REVIEWERS' TRIPLE-A-RAVES IN THIS ISSUE

All the compositions, performances, and recording techniques on the following discs have been given unqualified recommendation

ORCHESTRAL MUSIC

'HAUD: Les Choéphores FGGER: Symphony No. 5 Decca DL-

PKJKOFIEV: Romeo and Juliet (Selections from Suites I and II) RCA Victor LM-

PROKOFIEV: Romeo and Juliet (Selections from Suites I and II) Decca DL-9967 TCHAIKOVSKY: Swan Loke (highlights) London LI-1768

CONCERTOS

GOLDMARK: Violin Concerto in A minor Capitol PAO 8414

HERBERT: Concerto No. 2 for Cello and Orchestra, Op. 30 PETER: Sinfonia in G Mercury MG-50163

WALTON: Cello Concerto BLOCH: Schelmo (Hebraic Rhapsody for

Cello and Orchestra) RCA Victor LM-2109

CHAMBER MUSIC

DVOŘÁK: Trio in E minor, Op. 90 ("Dumky")

SMETANA: Trio in G minor, Op. 15 Vox PL 10,440

OPERA

Carlo Bergonzi Operatic Recitol London

KEYBOARD MUSIC

FRANCK: Pièce Heroïque; Three Chorales: No. 1 in E, No. 2 in B minor, No. 3 in A minor Mercury MG-50168

FOLK MUSIC

Jewish Folk Songs Elektra EKL-141

STAGE, SCREEN & TV

South Pacific RCA Victor LOC-1032 Hans Brinker or the Silver Skates Dot DIP 9001

POPULAR MUSIC

Dream Street Vik LX-1111 The Many Sides of Pat Suzuki Vik LX-1127

JAZZ

Gil Evans and Ten Prestige 7120 Ella Fitzgerald Sings Verve MGV-4010 The Art Tatum-Ben Webster Quartet Verve MGV-8220

Leroy Walks Contemporory C-3542

A-A

A-B

A-A

While neither work can be regarded as the highest achievement of their respective composers, they cannot be dismissed as second-rate. Prokofiev's Lieutenant Kijé is in the composer's best lighter vein, and Stravinsky's tone poem is a somewhat disjointed synopsis of his colorful opera "The Nightingale". Both works are presented with the utmost perfection and precision by Fritz Reiner and his very good orchestra. For the Stravinsky I somewhat prefer the Ansermet version on London, which is more refined and poetic. Nothing, however, can supersede the dazzling sound which the present Victor version offers. A. Skulsky

PROKOFIEV: Romeo and Juliet (Se-A-A lections from Suites I and II) Boston Symphony Orchestra under A-A

Charles Munch RCA Victor LM-2110 PROKOFIEV: Romeo and Juliet (Selections from Suites I and II) TCHAIKOVSKY: Romeo and Juliet Berlin Philharmonic Orchestra under Lorin Maazel

Decca DL-9967

Magzel

The Decca album contains five selections from the Prokofiev score, and the Victor, eleven. This is one of the Russian master's most colorful and dramatic works, and right up Munch's alley, whose stunning interpretation features sensitive blending of orchestral textures. I find that he is more intent upon the imaginative and lyrical elements of the score than is Maazel, and he moulds a performance of great power and beauty. Judging from the Decca release, the 28 year old American Lorin Maazel is a man to watch. His reading emphasizes vitality and strong dynamic contrasts; elements with which this music abounds. His ideas are valid and forceful, and his control of this magnificent orchestra is truly remarkable. His conducting may not be as mellow and finely etched at Munch's, but it is effective. The Tchaikovsky is performed with meticulous attention to orchestral balance. Both recordings are excellent. D. H. Miller

SIBELIUS: En Saga, Op. 9; Pohjola's Daughter, Op. 49; Oceanides, Op. 73; Tapiola, Op. 112 Philadelphia Orchestra under **Eugene Ormandy** Columbia ML-5249

Sibelius

C

Ormandy's continuingly authoritative comprehension of the Sibelius idiam and the distinct qualities of his Philadelphia Orchestra are a potent combination when applied to music such as this. Their most formidable competition comes from Boult (in En Saga, Pohjola's Daughter and Tapiola) and Beecham (in Oceanides), both of whom favor more lyric and introspective approaches on a more subtle level. But to this taste, the lush strings and golden brass of the ensemble at hand, with Ormandy's greater dramatic intensity and robustness, make for stimulating fare. As for the engineering, however, the heavy hand of the monitor is all too apparent. Sibelius' music abounds in pianississimi and their opposites, and it would be a service both to listener and orchestra to hear them as written and played. No flicking of the dials could eradicate the considerable surface hiss.

SUPPÉ: Overtures Hallé Orchestra under Sir John Barbirolli A Mercury MG-50160

Six overtures are here recorded: Poet and Peasant, The Beautiful Galatea. Morning, Noon and Night in Vienna, Light Cavalry, Pique Dame, and the Jolly Robbers. Franz von Suppé (1819-1895) was a true continental whose aperattas were once the toast of Europe. Now nearly forgotten, he is mainly encountered at band concerts. It is a surprise and a pleasure to hear these overtures in their original version, and to hear them as a group at one sitting is instructive. For the recipe becomes apparent: one part Austrian sophisticate, one part Hungarian gypsy, one part Gallic souffle, and two parts Italian street song.

TCHAIKOVSKY: Swan Lake (highlights)

The London Symphony Orchestra under Anatole Fistoulari London LI-1768

TCHAIKOVSKY: Swan Lake (highlights) The Ballet Theatre Orchestra under

Joseph Levin Capitol PAO 8416

Tchaikovsky



Substantially both versions offer the same excerpts from Tchaikovsky's lovely ballet. On many counts, however, the London is to be preferred. The sixteen excerpts which are presented here follow the order of the ballet and are outlined in the liner notes. Not so in the Capital version, nor are we told that what is given are highlights from the work until we look on the record label itself, where the fourteen excerpts are listed in non-ballet order. While both conductors are obviously specialists in the field of ballet and perform with insight into this medium, the London ensemble is certainly superior to its American counterpart, and the London list price is one dollar less than that of the Capitol. So there is little choice left.

WEINBERGER: Excerpts from "Schwanda" SMETANA: Excerpts from "The Bartered Bride" WEBER: Invitation to the Dance STRAUSS: Waltzes from "Der Rosenkavolier", Op. 59
TCHAIKOVSKY: Waltz and Polonaise from "Eugene Onegin" Bamberg Symphony under Heinrich Hollreiser

Vox PL-10.590

A-B

Smetana

If precision of ensemble and incisive attacks are important to you in a performance, then I must warn you against this release. But for my money, this orchestra has two qualities which override the former objections: a bright, exciting tone and an enthusiasm and abandon which for me is nothing short of thrilling. Some of Hollreiser's tempi are too slow, but for the most part he keeps things moving quite well. The only real disappointment here is the "Rosenkavalier" waltzes, which are far more effective with a larger orchestra. Then again, what they lose in body of tone, they gain in intimacy. The recording is bright and a bit too reverberant. D. H. Miller

Music for Strings A to C Leopold Stokowski conducting his Symphony Orchestra Capitol PAO 8415

String arrangements of works by Bach, Gluck, Borodin, Paganini, and Rachmaninov make up this handsome sounding disc of our master colorist. Purists will have a field day criticizing the transformations but sensualists will bathe in the color and moods that Stokowski captures. One arrangement is



particularly successful; that is Bach's Mein Jesu, a song with figured bass realized by Stokowski with taste and restraint. One transformation that does not fare too well is Bach's Preludio in a string version of Bach's own orchestration of his original solo violin Partita in E major. It is far more exciting in its incipient version. With minor revisions one could speak likewise of the other adaptations.

CONCERTOS

BRAHMS: Concerto for Violin and Cello in A minor, Op. 102 Mischa Mischakoff, violin; Frank Miller, cello; NBC Symphony Orchestra under Arturo Toscanini RCA Victor LM-2178

Toscanini



This performance was taped from a 1948 NBC broadcast. It was something of a family affair, the two soloists being principal players in their respective sections of the orchestra, and as one might expect under such circumstances, the performing concept of the work, on the part of conductor, soloists and orchestra, is noticably all-of-a-piece. Disciplined is the word for it. The rhythm is strict, the approach business-like, the playing polished. But for my taste, the soloists might have "let go" a bit more and been permitted a little introspection. Too much sentiment is dreadful in Brahms, but too little is hardly fair to him. The sound is close and clear, but disturbingly unresonant.

S. Fleming

FALLA: Nights in the Gardens of Spain; Three Cornered Hat (excerpt) GRANADOS: Goyescas (excerpt); Danzas Españolas (No. 5) ALBÉNIZ: Suite Españolo (No. 3); Cantos de España (No. 4) MOMPOU: Canco I Danza Artur Rubinstein, piano; San Francisco Symphony Orchestra under Enrique



RCA Victor LM-2181 Rubinstein

This is a wealthy corpus of music by important Spanish composers, ranging from the mid-19th to the mid-20th century. The half-dozen tidbits for solo piano are all miniature gems, but pale in comparison to the unique threemovement work for piano and orchestra. Falla's Nights is a concerto scored with the concentration of chamber music. Nonetheless, in terms of Spanish temperament the music must sound with impulsive determination. Spanish music centers around a general virtuosity; Rubinstein is just a trifle restrained. A. Cohn But the clean stamp of Falla's genuis is unmistakable.

GOLDMARK: Violin Concerto in A minor Nathan Milstein, violin; Philharmonia Orchestra under Harry Blech Capitol PAO 8414



The Goldmark Concerto has a little bit of everything (including brief references to Brahms and Beethoven — but who cares?). There is a melodic sweep and a melting sentiment which gives to the work a character thoroughly its own. Milstein sails in with a radiating warmth, manages just the right turn of phrase here, just the proper shading of tone there, and surely winds up holding the most critical of audiences in the palm of his hand. Gimpel's performance on Vox sounds a bit pinched in comparison. The Philharmonia accompanies well, and is articulate and rhythmically alert during its own fugatos in S. Fleming the first and last movements. Sound is clear and faithful.

Milstein

HAYDN: Harpsichord Concertos in C and F Helma Elsner, harpsichord; Reinhold Barcher, violin; Pro Musica Chamber Orchestra, Stuttgart, under Rolf Reinhardt



Here are crisp, rhythmically alive and stylistically perceptive performances of these two concerti. The coordination and rapport between the soloists and the Pro Musica Chamber Orchestra are truly admirable. Only in the slow movements of both works does the style become a bit rigid and unyielding. This is the only reservation this listener finds in two delightful performances B. Gabriel of two charming and delightful works.

Reinhardt

HERBERT: Concerto No. 2 for Cello and Orchestra, Op. 30 PETER: Sinfonia in G George Miquelle, cello; Eastman-Rochester Symphony Orchestra under Howard Hanson

Mercury MG-50163





Hanson

Credit Mercury, Hanson, Miquelle, and the members of the Eastman-Rochester group with a double first recording of historical and musical importance. And above all, credit Victor Herbert and Johann Friedrich Peter. The latter, particularly, displays a mastery in string writing (the cover does not indicate the work is for strings alone) and a formal-emotianal sensitiveness that is refreshing, even though eclectic in origin. The performances are acutely perspective; both Hanson and Miquelle understand the synthesis of a musical work, while not overlooking any of its details. The result is one of communicative delight, and artistic high-fidelity.

SCHÖNBERG: Concerto for Violin and Orchestra, Op. 36; Concerto for Piano and Orchestra, Op. 42 Alfred Brendel, piano; Wolfgang Marschner, violin; Symphony Orchestra of the Southwest German Radio, Baden-Baden, under Michael Gielen Vox 10,530 Schönberg



There has long been a depressing insistence, on the part of many who write about Schönberg, that each work of his is pure genius, which of course it is not. But he has been a major influence on composers of our time and it will be his theories rather than his works that will make the lasting impressions. Of these two, the Violin Concerto is the finer work; it is, in fact, one of the best of Schönberg's. Both works are unfamiliar but their sound is hardly new; their emotional content is actually old-fashioned: yearning, melancholy, whimpering, whining, tormented, disconsolate and disturbed. The performances are impressive. The execution of the Violin Concerto is more agreeable and relaxed than that on the Columbia version with Krasner as soloist with the N. Y. Philharmonic.

STRAVINSKY: Concerto for Piano and Winds BARTÓK: Sonata for Two Pianos

and Percussion

Carl Seemann, piano, with the Berlin Philharmonic Orchestra under Thomas Scherman; Carl Seemann and Edith Picht-Axenfeld, pianos, with Karl Peinkofer and Ludwig Porth, percussion Decca 9963



Stravinsky

Stravinsky's Concerto shocked the toqued heads of Boston's dowagers 33 years ago and might trouble a few still. It is one of his less popular works, although it is a strong and interesting one; it is athletic, and flexes its sonic muscles forcefully. Scherman conducts splendidly. The Bartók work has many beautiful moments, though it is no unadulterated joy on the turntable. But the performance here is superb and it surges where it should, with fierce intensity, and caresses with a gentle spirit. A more incisive performance was that conducted by Stokowski on RCA Victor. O. Daniel

WALTON: Concerto for Cello and Orchestra BLOCH: Schelomo (Hebraic Rhapsody for Cello and Orchestra) Gregor Piatigorsky, cello; Boston Sym phony Orchestra under Charles Munch Walton RCA Victor LM-2109



The nobility of the cello as a solo instrument is a fact not really questioned since Bach's time, and it is a pleasure to find that truth re-emphasized so conclusively in these major Twentieth Century works. Walton's Concerto is barely two years old, and is dedicated to Piatigorsky. It has certain things in common with the Viola Concerto, and makes the most of the cello's melodic power while, at the same time, calling upon some of the orchestra's more rarely heard voices. Schelomo (1916) is the very essence of cello music, and also perhaps the very essence of Bloch — it is imbued with the spirit of racial crying-out and the Eastern grandeur so often impressive in his music. The performances are magnificent.

CHAMBER MUSIC

DVOŘÁK: Trio in E minor, Op. 90 ("Dumky") SMETANÁ: Trio in G minor, Op. 15 Trio di Bolzano Vox PL 10440

Hi-Ji Music at Home

Vox PL-10.300

Though string quartet teams are quite numerous today, the piano trio combine is a rarity. The recorded performance of any trio from the wealthy repertory is a splendid dividend, doubly so when the instrumentalists understand the p.oblem of proper blend between keyboard and string instruments and solve it to perfection. The Bolzano gentlemen also sense the broad sentiment that defines these works, but do not oversentimentalize their readings. In the Dvořák, the shifts from the melancholic to the exuberant are denoted clearly, the relationships sensitively expressed; no less defined is the tragic postulation of the Smetana. A bow to Vox for this splendid release. Can we hope A. Cohn for the other three Dvořák trios?

A-B

В

HANDEL: Sonata in G minor, Op. 2 No. 7 SARASATE: Navarra WIENIAWSKI: Three Etude-Caprices, Op. 18 BENDA: Trio Sonata in E David and Igor Oistrakh, violinists; Vladimir Yampolsky, pianist; Leipsig Gewandhaus Orchestra under Franz Konwitschny Decca DL-9962 D. Oistrakh



Play a little game with yourself: as you are listening to this disc, try to detect which fiddler is father, and which is son. This won't be an easy game, either each is fantastic, and together they are almost beyond belief! The Sarasate contains everything violinists can't do, but David and Igor toss it off as child's play. They are capable of far more than mere technical feats, however, and the tender and meditative Georg Benda Trio Sonata is beautifully realized. Only one thing mars this record; some distortion, especially on high violin notes. Otherwise, these performances are, if anything, too perfect. D. H. Miller

VOCAL MUSIC

GESUALDO: Madrigals and Sacred Music Vocalists under Robert Craft Columbia ML 5234



These works, for the most part previously unavailable, remind us again of Gesualdo's powerful and original musical mind. His handling of dissonance and his remarkable chromaticism lend to these texts, all of which are preoccupied with death, an urgency and poignancy that haunt the ear long after the music has ceased. These are mature works. The madrigals are chosen from Books 4, 5 and 6; two responses date from 1611 and the Illumina nos from 1603. This motet, which lacks two parts, has been completed for this recording by Stravinsky. The performance, which uses solo voices, is excellent: in tune, flexible, and rhythmically alive. J. Bowen

MOZART: Mass in C, K. 317; Vesperae solennes de confessore,

Wilma Lipp, Christa Ludwig, Murray Dickie, Peter Bender; Vienna Oratorio Choir and Pro Musica Symphony under Jascha Horenstein Vox PL 10.260





Mozart

Two of Mozart's finest church works are coupled here. The Coronation Mass is rich in musical ideas, while the Vespers contains a "Laudate Dominum" whose soaring soprano solo is surely one of Mozart's happiest inventions. The performance, unfortunately, does not do justice to the music. The solo quartet sounds at odds with itself; Wilma Lipp, who often takes the lead in solo passages, is particularly disappointing. The chorus seems to be singing from far away and occasionally is not in tune. As for the orchestra, it gets through J. Bowen the score and not much more.

A to C The Best of Caruso A to C Enrico Caruso with various orchestras and accompanists in 30 songs and arias RCA Victor LM-6056 2-12"



The voice of the God of the Golden Age echoes once again from the vaults of the Victor Company in this collection dating from a fragment of Una furtiva lagrima recorded in February of 1904 to Bois Épais waxed in September, 1920. The dusty old masters sound even more threadbare than remembered (there has been very little "rehabilitation" or superimposing done on this album) but even so, the inexplicable glamour still resounds, the proof still remains that he was one of the greatest singers who ever lived on the face of this earth. He is surrounded here, too, by these immortals: Scotti, Galli-Curci, De Luca, Homer, Ruffo, Journet, Farrar, and Alda. Perhaps the prize

of the album is Sei morta nella vita mia which Mrs. Caruso considered the most faithful reproduction of the voice ever managed. It is very beautiful D. Cross

Gloria Davy Concert Recital: Songs by Purceil, Brahms, Turina, and Poulenc Gloria Davy, soprano; Giorgio Favaretto, piano London 5395



A full, warm soprano, dramatic temperament, and an innate musicality make this "debut recital" by one of the Met's newest sopranos an impressive beginning. Any faults it may have are those of over-eagerness. Too often the voice is used heavily, with a resulting monotony of color and an occa-sional throatiness and push, particularly at the top. Diction, too, needs work. Interpretively the Brahms seemed best. Both Purcell and Turina (Op. 19) suffered from a too-weighty production, while the irony and world-weariness of Poulenc's Fiancailles à rire were barely suggested. But Miss Davy is clearly an artist to watch, and one from whom we may reasonably expect steady growth.

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GLUCK: Orfeo and Euridice Risë Stevens, Lisa Della Casa, Roberta Peters, Chorus and Orchestra of the Rome Opera under Pierre Monteux RCA Victor LM-6136 3-12"

A C

В

Davy

It is difficult to ascertain exactly what segment of the musical public this set aims to please. Lovers of beautiful voices will be disappointed by all but Della Casa, while those to whom vocal beauty is secondary to stylistic purity will be appalled. Even the artists' most ardent fans would probably prefer their idols in other roles. Stevens and Monteux are not only on the wrong side of their prime years but basically ill-suited to this classic score while the rest of the performers (including chorus and orchestra), are miscast. Phrasing, tempi, and dynamics all receive cavalier treatment and orchestral support is incredibly sloppy. G. L. Mayer

PONCHIELLI: Lo Giocondo Anita Cerquetti, Giulietta Simionato, Mario Del Monaco, Ettore Bastianini, Cesare Siepi, with the Chorus and Orchestra of the Maggio Musicale Fiorentino under Gianandrea Gavazzeni

London A 4331 3-12" Del Monaco



This recording captures all the virtues and all the frailties of Ponchielli's crazy, mixed-up tale of the black hysterics of the Inquisition as madly adapted by Boito from a play by Victor Hugo. When listening to this inspired but secondrate masterpiece one reflects anew upon the sublime musical contrasts of which Verdi was capable. "La Gioconda" races on like La Scala afire, never resting, furioso all the way through with characterization turn-abouts that would challenge the virtuosity of a chameleon. The performances on this recording are all excellent, especially those of Cerquetti in the title role and the wonderful Simionato as Laura. Del Monaco's clarion power is all here too. The balance between chorus and orchestra sometimes seems a little D. Cross distorted, but it is not a serious flaw.

SCHÖNBERG: Moses und Aron Hans Herbert Fiedler, Helmut Krebs, soloists; Orchestra and Chorus of the Norddeutscher Rundfunk, under Hans Rosbaud Columbia K3L 241

C В

Works and theories of Arnold Schönberg have exerted a profound influence on the music of our time. For recording his Moses und Aron, Columbia Recordings deserves to be commended; they must be thanked for presenting this three-disc package with ample notes and the libretto in both German and English. A graph of Schönberg's twelve-tone material is included and the annotator's explanation may make the music eminently clear to some listeners. Fortunately he informs us that in this work, "Inversion (which, again is not necessarily the customary contour-interval inversion, but structural inversion of pitch classes) determines, for example, the symmetric property of dyads."

Although Schönberg felt that this work was fifty years ahead of its time, it is actually related to the music of the late 19th century: it is overcharged, tortured, tense and awkward. As a listening experience it is taxing. As an opera, and I do not really think it is one, it must present some serious problems, for the score calls for a naked young man and four naked virgins. This recording, taken from a broadcast, is anything but satisfying. Frankly, I think most listeners will consider it a bore despite its much proclaimed importance.

31

Alexander Kipnis in Russian Opera Scenes and arias by Mussorgsky, Tchaikovsky, Rimsky-Korsakov, Borodin, and Dargomiisky Victor Symphony under Nicolai Berezowsky

RCA Camden CAL-415

A to B

Camden has performed another distinguished service to opera lovers by re-releasing these recordings of this great artist who was never fully appreciated in America. Here is true subtlety in opera characterization, and Kipnis. at his best, was capable of the thrilling intensity and dramatic power of that legend among Russian bassos, Chaliapin. These records show their age a little, as does the voice on several of the cuts, but the Farewell, Prayer, and Death of Boris, for instance, is magnificently majestic and heart-breaking. The

orchestra and chorus, though a little muffled, are quite exciting.

Carlo Bergonzi Operatic Recital Arias by Verdi, Puccini, Meyerbeer, and Cilèa Carlo Bergonzi, tenor; Orchestra of the Accademia di Santa Cecilia, Rome, under Gianandrea Gavazzeni London 5346



D. Cross

Bergonzi is far from being just another Italian tenor. Within his first two seasons at the Metropolitan, he has established himself not only as the best on the roster but the best they have had in many years. The beauty of his voice extends over a wide range and he con adapt it with equal ease to both the tender lyricism of Puccini and Cilèa and the more dramatic Verdion line. That he has his equipment sufficiently under control for him to successfully dispatch the trill in Ah, si ben mio from "Trovatore" more or less tells the story, Lovers of fine singing should hasten to add this to their collections. G. L. Mayer

Flaviano Labo Operatic Recital Arias by Puccini, Ponchielli, Giordano, and Verdi Flaviano Labo, tenor; Orchestra of the Accademia di Santa Cecilia, Rome, under Fernando Previtali London 5408



Labo

Labo is not blessed with an instrument anything like the inherent beauty of Bergonzi's (see above), nor is his singing nearly as polished. He does, nevertheless, make a good impression due to his obvious understanding of the roles he interprets and the meaning of the music he sings. It is unfortunate that he must strain his resources to score his points. Since the major part of this recital calls for smooth legato singing rather than intense dramatic excitement, Labo is at a disadvantage. He sounds his best in the "Tosca" excerpts and is dramatically most effective in the "La Forza" excerpt. Previtali's pacing is leisurely but potent.

KEYBOARD MUSIC

BACH: Two Part and Three Part **Inventions** Alexander Borovsky, piano Vox PL 10550 Borovsky



That famed and much-admired pianist Alexander Borovsky, who has given such brilliant accounts of many a large scale work, seems not to be on his most congenial ground in performing these deceptively simple little gems. Playing with a tone midway between that of a harpsichord and that of the modern piano, his performances in general sound dry and unimaginative, and the moods vary remarkably little from one Invention to another. Very good sound. B. Gabrie

BEETHOVEN: Piano Sonatas: No. 14 in C sharp minor, Op. 27, No. 2 (Moonlight); No. 26 in E flat, Op. 81a (Les Adieux); No. 24 in F sharp, Op. 78 (Á Thérèse); No. 23 in F minor, Op. 57 (Appassionata) Robert Casadesus, piano Columbia ML-5233 Casadesus



Here is an especially well balanced program, beginning with the calm transparency of the Moonlight and working up a rising scale of tension to the Appassionata. On the whole, Casadesus leans toward understatement; the Op. 27 finale, for example, is not as bouyant as it might be, nor the Op. 57 first movement as dramatic. On the other hand, he can do wonders with sheer tone color. The opening of Les Adieux is marvelously distant to the ear, and draws closer as you listen; the passages of storm and stress, elsewhere, are not only close but vivid in sound. The understatement of drama, which arises, I think, from a scrupulous refusal to exaggerate or distort rhythms for the sake of making a point, is compensated for by the variety of touch and appropriateness of color. Recorded sound is good. S. Fleming

BEETHOVEN: 32 Variations in C minor; Andante Favori in F; Bagatelle, "Für Elise"; Six Bägatelles, Op. 126; Ecossaisses in F flat Andor Foldes, piano Decca DL-9964

R A

Foldes



Foldes has no serious competition in these seldom-heard variations which Beethoven used as exercises for his students. They could be dull in a student's hands, but Foldes' superb technical command and imagination make them good listening. Für Elise is taken a bit slowly for my taste, but the six Bagatelles get their best recording to date. The Ecossaisse is rightfully frothy. Unusual item is the Andante Favori, the original slow movement of the Waldstein Sonata which Beethoven replaced but retained as a separate opus. Good sound, clear and undistorted. W. Stegman

CHOPIN: The Four Scherzi: No. 1 in B minor, Op. 20; No. 2 in B flat C minor, Op. 31; No. 3 in C sharp minor, Op. 39; No. 4 in E, Op. 54 Ruth Slenczynska, piano Decca DL-9961 Sienczynska



Although Miss Slenczynska exhibits laudable technical abilities, it is her distortion of Chopin's written directions that spoils her performance for me. Possibly as an attempt at coloristic contrast, her tempi in the less declamatory middle sections of these pieces are invariably slow, to the point of distention of phrase and thematic line. A tendency toward rubato, particularly where the markings are clearly risolute or sestenute, or where the rhythmic design obviously depends upon consistently strict metrics in repetition while building to a climax, further aborts the composer's intent. The reproduction is realistic, although the treble takes on a clang in passages of greater assertiveness.

A. Kaine

FRANCK: Pièce Héroïque; Three Chorales: No. 1 in E, No. 2 in B minor, No. 3 in A minor Marcel Dupré, organ Mercury MG-50168

Virtually every present-day organist of note takes pride in his tutelage under Dupré. Now in his seventies, the Master is still Master, ready at the drop of a stop to develop a given theme into a glorious fantasy with brilliant fugues

and intricacies. His skill and authority give new life to these Franck pieces. But no less praise is in order for the engineering skill which combines Dupré's wizardry and dramatic flair with the excellent Aeolian-Skinner organ at St. Thomas' Church, in New York City. First-rate reproduction and a distin-

guished companion to Dupré's earlier Mercury release (MG-50169). W. Stegman

LISZT: Transcriptions from Operas Alfred Brendel, piano Vox PL-10,580

Brendel



A most interesting disc, both from the historical point of view as well as the pianistic. Many of the Liszt operatic transcriptions no longer appear on concert programs today, but are none the less a fascinating listening experience when performed with a dazzling technic and the "grand manner". Alfred Brendel has flair, speed, and brilliance to burn. One hopes that soon other Liszt transcriptions, such as the "Don Juan" fantasy, may be added to the "Lucia", "Norma", "Oberon", "Tannhäuser", "Tristan" and "Cellini" here represented. Excellent sound. B. Gabriel

MISCELLANY

Julie Wilson at the St. Regis B to C With the Marshall Grant Trio Vik LX-1118

Here's another "on-the-spot" album recorded in the Maisonette of New York's St. Regis Hotel before a noisily sipping and supping and not altogether responsive little audience. Julie Wilson has talent but it is not always in evidence in this one dimensional performance of songs and special material; most of it falls pretty flat from a listening point of view, and much of it is unamusingly vulgar. Personal appearance recordings are fun if they capture the over-all scope of an entertainer's delivery, which is a pretty tricky thing to do on a record. No "Lena Horne at the Waldorf", this.

Hi-Ji Music at Home

FOLK

Folk Sonas Marilyn Child and Glenn Yarbrough Elektra EKL-143

A-B Yarbrovah

Marilyn Child and Glenn Yarbrough first began singing together in 1957 at Chicago's celebrated basement bistro "The Gate of Horn", and their dynamic, highly personal styles are perfectly suited to each other. Whether or not they are entirely suited to folk songs is a question which the individual listener must answer for himself: some of their interpretations are a little too slick for my taste. Nonetheless, this lively and listenable collection contains many fine songs, including "Weel May the Keel Row", "Buffalo Boy" and "Now Let Me Fly". Fred Hellerman's expert guitar accompaniments also merit high praise.

Jewish Folk Songs Theodore Bike Elektra EKL-141



A

8

Bikel

In his excellent liner notes, Mr. Bikel writes: "I sing of my own people's heritage, in words that were my own family's usage and with melodies I knew even before I could say words at all." Indeed, it would be difficult to imagine it being otherwise, so perfectly does he capture the peculiar inflections and the nostalgic mood of these delightful Yiddish songs. The performances have a winning blend of tenderness, charm and spontaneity, and fairly bubble over with humor and warm understanding. Half the songs, incidentally, have guitar accompaniments, while the rest are in colorful (if sometimes distract-R. Sherman ing) orchestral settings.

Music and Songs of the Caribbean The Millard Thomas Group Victor LPM-1551

The name of Millard Thomas will be familiar to many as the guitarist whose deft accompaniments have enhanced many of Harry Belafonte's recordings. Now with his own group, Mr. Thomas presents a pleasant, but undistinguished set of Caribbean songs in popular cafe-style settings. Four of the numbers are instrumental, while the others feature vocals by William Dillard and the Bey Sisters who sing with charm and taste, but without the lilting sparkle we usually associate with this music. In short, this is an agreeable Belafonte-type recording, without Mr. B's compelling vitality and warmth. Clean recorded R. Sherman



The Shanty Boys Elektra EKL-142

An interesting collection of (mostly) American songs is performed with obvious relish and lots of spirit by this new trio. I cannot help feeling, however, that the group is not taking full advantage of the individual talents within it. For instance, all but two of the songs have solos by Mike Cohen, and Roger Sprung's banjo dominates almost all the accompaniments, with a resultant lack of variety and color. When occasionally this pattern is altered (when, for example Lionel Kilberg sings Home in that Rock with a fine guitar backing by Mr. Cohen), it comes as a refreshing and welcome change. Excellent

STAGE AND SCREEN

Gogi Grant, Tony Martin with Dennis Fornon and orchestra RCA Victor LPM-1716



Jumping the gun on the release of the film, Victor has made up a fine album of the songs from the Alan Jay Lerner-Frederick Loewe score, which must rank with the finest ever written for a movie. This is particularly true of the distinguished melodies by Loewe, who has come up with some delightful

waltzes in this Dark Age of Rock 'n' Roll. Miss Grant and Tony Martin do well with the songs and are given particularly apt accompaniment by the Farnon band, but many may want to await the release of the original cast album to hear Maurice Chevalier do his numbers, sung here by Tony Martin. Still, there's nothing wrong with Martin's fine singing of the excellent title song.

E. Jablonski

Hans Brinker or The Silver Skates A Tab Hunter, Peggy King, Jarmila No-A votna and Irwin Kostal and orchestra Dot DLP 9001

Hugh Martin, of the excellent Martin and Blane team, supplied the music and lyrics for a recent TV production of the old classic "Hans Brinker." Martin's score is a most delightful one and the songs possess a special springtime vivacity, gaiety and sprightliness. Excepting Miss Novotna, there are no great voices in the cast, but like the songs, the voices of Tab Hunter and Peggy King lend a youthful, relaxed, quality to the performance. High spots: Miss Novotna singing Trinka Brinker, Peggy King's I Happen to Love You, the orchestra doing Silver Skates, and Tab Hunter's Hello Springtime.

E. Jablonsk

South Pacific Mitzi Gaynor, Giorgio Tozzi, and other A voices of the original soundtrack recording. Orchestra and Chorus under Alfred Newman RCA Victor LOC-1032

Luxuriant, orchidaceous are two adjectives that might be employed to describe this voluptuous recording of the beloved Rodgers and Hammerstein score now out in "Todd-AO." Perhaps this does not have quite the vitality of the Columbia original cast album, but there will be no odious comparisons here. All the performances are splendid, especially that of Giorgio Tozzi who sings the role of de Becque for the soundtrack. The lyrics remain intact, too, even though the chorus seems hesitant to deliver the lustier ones with quite the rowdy bravado they call for. Only complaint: Victor should be roundly scolded for not listing all the principal singers—neither in the liner D. Cross notes nor on the record labels.

POPULAR

Dream Street Tommy Leonetti with Marion Evans and his orchestra Vik LX-1111

Leonetti



Shades of the Good Old Days! Remember when they wrote songs like Lost in a Fog, Am I Bluet, What Is There to Sayt, Lucky in Love, The Way You Look Tonight, Now I Know (an unduly neglected Harold Arlen song), Deep Purple? These, plus five others almost equally good, are sung by a young man who knows how to sing them. Tommy Leonetti has a warm, smooth, baritone; he also has a fine sense of rhythm which keeps the pacing of this album from dragging-made up ,as it is, mostly of ballads. The arrangements by Marion Evans, and the backing, are unobtrusive and sensitive yet not overly sentimental. An excellent song collection beautifully done.

E. Jablonski

Hims Anita Ellis with orchestra under Hal Schaefer Epic LN 3419

The only reason for this review is the presence of Miss Ellis on this otherwise disappointing record. Here is one of the finest voices around, with range, quality, and fame among lyricists who love to hear every syllable sung clearly and intelligibly. But except for a few of the songs, there are few melodious syllables particularly worth hearing. Trying to fit each and every song into the idea of the album's title inevitably led to some pretty sad choices of rather mediocre material. The good includes the Kern-Wodehouse Bill, Weill and Nash's That's Him, Sissle and Blakes' I'm Just Wild About Harry E. Jablonski and an affectingly sung Danny Boy.

The Many Sides of Pot Suzuki Pat Suzuki with Henri Rene and His Orchestra Vik LX-1127

Miss Suzuki, a small bombshell from out California way, possesses the most exciting vocal talent I have heard in much too long a time. Not only does she have an amazing range and power, she also has a voice of true musical quality, and the intelligence and control to use it effectively and beautifully. Further, Miss Suzuki has the other rare gift (lacking in so many fine pop singers): the ability to choose material which not only showcases her voice but which is of high quality on its own; so here we have Cole Porter's From This Moment On, Ellington's Solitude, Kay Swift's Fine and Dandy, and just about the most beautiful rendition of Latouche and Moross' Lazy Afternoon

Way 1958

JAZZ

Critics' Choice Pepper Adams World Pacific PJM 407 Adams



Nowadays the jazz musician is unknown on Sunday, a new sideman in town on Monday, leader on his own LP on Tuesday, and a Down Beat poll winner Wednesday. Too often this means that he is forgotten by Thursday, but in Adams' case the sudden fame may endure, for this baritone saxophone player from Detroit shows an admirably intelligent absorption of early and later jazz influences. In six long exercises he offers a standard (Alone Together) and five original lines, written by himself and other Detroit musicians. Trumpeter Lee Katzman is competent and the rhythm section (Jimmy Rowles, Doug Watkins, Mel Lewis) propels Adams energetically through both impressive sides, Liner notes: John Tynan. Helpful background on Adams and trackby-track analysis.

Selections of Rodgers and Hammer-В stein C Australian Jazz Quintet Bethlehem BCP 6022

Novelty seekers will find much of interest here; jazz hunters may observe that the ambidextrous doubling of bassoon, flute and other timbres is not an end in itself. Many of these tunes have been recorded before, sometimes with greater impact, during the show-tune jazz vogue of the past year. More interesting than the tricky arrangements are Bryce Rohde's incisive piano solos and Errol Buddle's tenor sax. Hello, Young Lovers, which in this treatment might have been retitled The Sledgehammer Waltz, is a particularly unfortunate malperformance. Liner notes: Dom Cerulli. Good, but the personnel box, with drummer Osie Johnson listed as a bassist, is vague and L. Feather

C Jazz from the San Francisco Water-В Burt Bales and the Marty Marsala Band R ABC-Paramount 181

Recorded before an audience in a Carmel, California auditorium, this session does a surprisingly effective job of applying artificial respiration to six overwrought Dixieland standards. Bales, a happy-music-style pianist, is one of several capable soloists in the Marty Marsala combo featured here. Among the others are a Teagardenish trombonist named Skipp Morr and a blind clarinetist, Vince Cattolica. Recommended for the listener still capable of maintaining diplomatic relations with Hindustan, Tin Roof Blues, Muskrat Ramble, Baby Won't You Please Come Home, Save It Pretty Mama, and King Porter Stomp. Liner notes: Ralph J. Gleason, who produced the album. Enthusiastic and informative.

The Roaring Twenties Eddie Condon and his All-Stars Columbia CL1089



When you've heard them all, you've heard one Eddie Condon record. As always, there's a gimmick linking the twelve tracks (this time, dedications-Monday Date to Hines, Davenport Blues to Bix, etc.), and as expected, the pristine jazz roars its way into the late '50s unchanged by bop, the State Department, or the Saturday Review. The proceedings are consolidated by the presence of such irregular Condonians as trombonist V. Dickenson (Wolverine Blues, China Boy, St. James' Infirmary, That's a Plenty), Billy Butterfield, and eight others). Liner notes: Two sets—redundant and conflicting, but entertaining.

Urbane Jazz В Roy Eldridge and Benny Carter Verve MGV-8202 Α В Two great veteran igzzman improvise top flight igzz with a fine three-man (no guitar) rhythm section. There are four ballads for Carter's polished, gently rocking alto saxophone, and Eldridge's, taut crackling trumpet builds repeatedly to explosive climaxes. Listen especially to the teamwork on Polite Blues, The Moon Is Low, and Close Your Eyes. Another four numbers show Roy's mettle in a real exercise as he improvises with only drums backing his horn. Finally, he pounds boogie woogie chords out on an old upright piano with drum accompaniment, then re-records a searing trumpet solo over the piano and drums to make an unique Wailing. Recommended for all jazz lovers, polite or otherwise. C. Graham

Ellington Indigos Duke Ellington and his Orchestra Columbia 1085

A Ellington

A



In an era of "Sam Zero Digs the Duke" (usually with Duke's picture, and none of Zero, on the LP cover, to insure deception of unwary buyers), it is ironic to find, on a mood-music LP by the real Duke, five out of nine songs not written by him. Most tracks are solo vehicles: Mood Indigo for Shorty Baker's trumpet, Where or When for Gonsalves' tenor; Tenderly for Hamilton's clarinet. The Ozzie Bailey vocal on Autumn Leaves is expendable. This is not Duke in depth, but Sam Zero in his brightest shining hour could never duplicate its affectionate glow. Liner notes: Irving Townsend. One small error: The Sky Fell Down, not "Duke's newest song", was recorded in 1942 as Someone. Label lists a nonexistent Jimmy Grissom vocal on Tenderly.

Gil Evans and Ten Gil Evans and His Orchestra Prestige 7120

Here is what could have happened to the dance band business if it had lived. Evans draws more color and life from ten men than, say, Glenn Miller ever could from twenty; more, his music swings, and at the same time gives adequate space and admirable settings to the sploists, who include Steve Lacy on soprano sax, Jimmy Cleveland on trombone, and Evans on piano. The seven tunes comprise Berlin's Remember, the traditional Ella Speed, Leonard Bernstein's Big Stuff, Rodgers' and Hari's Nobody's Heart, Cole Porter's Just One of Those Things, Tadd Dameron's If You Could See Me Now, and Evans' own Jambangle. Liner notes: Ira Gitler. Excellent. L. Feather

Ella Fitzaerald Sinas the Duke Ellington Songbook Verve MGV-4010 (4 LPs)

A A **Fitzgerald**



In this extraordinary album Ella Fitzgerald sings over 35 Ellington songs many of them all time favorites. She is assisted on four LP sides by the entire Ellington organization, and on four more sides with two different rhythm groups which include various fine backings and solos by irrepressible hot violinist Stuff Smith and tenor saxophonist Ben Webster. Ella caresses, glissandoes and belts her way, alternately happy and blue according to lyrics, through all the tunes so that the least comes through well served, the best as small masterpieces. Among the specially-to-be-replayed are Rockin' in Rhythm and Cottontail, both instrumental specialties in which Miss F. is at her wordless bopping best. The handsome album is almost worth the price of admission for the wealth of background material and pictures alone, 19 pages in all, with text by Leonard Feather.

The Harris Touch Bill Harris EmArcy MG 36113

A R Harris



RATINGS OF JAZZ AND POPULAR RECORDS AND TAPE

It must be obvious ta everyone that popular music, jazz and music of the theatre and motion picture, cannot be rated in the same manner as classical music, save for the audio quality of the records. Therefore, the following explanation is given so that you will fully understand the significance of the three letters which appear at the left of reviews of popular, jazz, theatre and motion picture olbums:

COMPOSITION (Top Letter)

A: Extraordinary Indicates that the collection is of superior character, both from a standpoint of material and programming. Assignment of this roting meons an unquolified recommendation.

B: Good

In general the collection is excellent, but additions ar substitutians might have made the work more attractive and more lastingly enjoyable.

C: Satisfactory
A collection that is highlighted by only a few numbers
yet the over-all is quite acceptable. This might often
apply ta collections that have a limited appeal, yet are
important to those who specialize in specific types of
music. It might often apply to collections of historic importance where the artistic performance is the primary
factor.

PERFORMANCE (Middle Letter)

Indicates a superior performance throughout the callec-tion. Assignment of this reting means on unqualified tion. Assignment recommendation.

Good

In general the performance is excellent, save that there are minor imperfections or breaches af artistry.

Satisfactory
To oll intents and purposes an enjoyable recording, ye one that does not qualify far B rating.

RECORDING QUALITY (Bottom letter)

, B, C: The same as for clossical recordings.
Indicates a re-issue.

Hi-Ji Music at Home

Bill Harris' approach to jazz guitar has been amplified, in two senses, since the release of his first LP last year: on the present sides he plays electric as well as traditional Spanish guitar, and he is accompanied by a rhythmisection (unidentified in the notes except for pianist Hank Jones). The striking Rock Bottom Blues is one of five Harris originals included. It is incredible that a man with this talent should have been forced to make his living, for the past eight years, as accompanist to a rock-and-roll vocal group. Perhaps a couple of more albums like this may earn him parole. Liner notes: Unsigned. Well-written, but factually incomplete.

The Big Reunion B
Fletcher Henderson All Stars in Hi-Fi B
Jazztone J1285 B

Henderson, who died in 1952, had a big band from 1923-39 that included, at one time or another, most of the men present here, including cornetist-leader Rex Stewart. The reunion shows that some of these 40 to 55-year-old veterans (Hawkins, Webster, Higginbotham, Bailey) retain the fire of youth; others betray technical superannuation. Old arrangements (Sugar Foot Stomp, Wrappin' It Up, King Porter Stomp) stand up well in elongated and reasonably clean treatments; new scores by Jim Timmens are ineptly written and played. An interesting essay in nostalgia. Liner notes: By George Simon, who produced the session. Thorough solo credits, but nothing about Henderson's historic role.

L. Feather

Man, We're Woilin'
Louis Jordan and His Tympany 5

Mercury MG 20331

A

Jordan, who virtually originated rock-and-roll when he started his band twenty years ago, evidently was unable to obtain a copyright and prevent its degeneration. His own brand remains tasteful, still swings, and qualifies as joyfully unpretentious jazz in which his admirable singing predominates, with support from Jackie Davis' Hammond organ and a rhythm section. Route 66 has a jaunty, Dinah Washingtonesque vocal by Dorothy Smith. Jordan fares less well as a ballad singer on I Never Had a Chance. His alto sax peeks in effectively from time to time. Liner notes: Incomplete personnel details: two guitarists are named (Irving Ashby, Austin Powell) with no indication who plays on what.



The Astounding Bernard Peiffer The Bernard Peiffer Trio Decca DL-8628

Peiffer's prodigious technique astounds even Peiffer so much that he tends at times to swallow the whole keyboard. But Tatum himself had his florid moments, and the Frenchman, like Tatum, can outswing and out-ideate just about any pianist living. His Requiem for Art Tatum, written immediately after the latter's death, is a mood masterpiece; his Prelude, Fugue and Trio on Lullaby of Birdland is a trifle too vaudevillian in concept, but such items as the simple, swinging blues titled Pied Peiffer are ample compensation. Ernie Furtado Johnny Cresci accompany on bass and drums. Liner notes: By Barry Ulanov, Peiffer's first and most vocal U. S. fan. Excellent.

Blues in the Closet A
The Bud Powell Trio A
Verve MGV 8218 B

Powell, the 1940's prime jazz piano influence, reflects his erratic personality in variable LPs. This one was cut two years ago on one of his better days and with an unprecedented rhythm section (Ray Brown, bass, Osie Johnson, drums). Much of the material is early bop (Gillespie's Woodyn' You and Be-Bop; Monk's 52nd Street Theme, Parker's Now's the Time) plus two blues by Oscar Pettiford, a Powell original and five standards. In contrast with the innumerable pallid imitations that have arisen in the past decade, the mordant and facile single-note lines of this ill-starred originator carry more impact than ever. Liner notes: Nat Hentoff. No information on tunes or performances, but a sensitive and helpful evaluation of Powell.

L. Feather

Movin' In A to B
Specs Powell & Co. A to B
Roulette R 52004 B

Locked in CBS studio work for 15 years, drummer Powell returns eagerly to jazz, leading an 11-piece band in arrangements by Ray Copeland. Many vigorous and compelling modern jazz moments both in solos and ensembles, notably by Sahib Shihab, baritone sax; Hank Jones, piano; J. Cleveland, trombone. A highlight is Powell's rocking Spyder Blues. Undecided is decidedly unconventional. Liner notes: Dizzy Gillespie. The idea of having musicians write liner notes is admirable, though these fail to distinguish between personnels of different sessions.

L. Feather

Portroit of Shorty Shorty Rogers and his Giants RCA Victor 1561 Way Up There Shorty Rogers and his Giants Atlantic 1270 C-B B-B A-A



Rogers

After running up a discography that would measure at least six inches more than Shorty himself, California's most recorded musician inevitably finds it increasingly hard to bring any element of surprise into each new LP. The Victor session, played by a big band with slick soloists, a few of whom achieve some degree of individuality (Pepper Adams, Richie Kamuca), sounds too often like a dehydrated version of something the Basie band could have done with more attack and soul. The Atlantic set, recorded earlier, is far superior in its use of five different instrumental groups, mostly smaller and less formalized, with excellent solo moments from Harry Edison, Jimmy Giuffre and the usual west coast clique. Liner notes: Here again Atlantic scores, with an amusing, never-too-earnest essay by Jack Tracy. L. Feather

The Art Totum—Ben Webster Quartet

tet

Verve MGV 8220

A

Ben Webster complains that his reverence for Tatum made him nervous, that he played out of tune, and that in Have You Met Miss Jones he was dealing with a tune he had never heard before. His ear must be keener than mine, for I heard nothing but sheer beauty. True, Ben sounds like two instruments; one, his tenor sax, the other, his afterbirth of breath lingering on the final note of each phrase; yet the impact on these superb ballads (All the Things You Are, My Ideal, Night and Day, Where or When, Gone With The Wind) is incomparable. The superb Buddy De Franco—Tatum LP, also a triple-A item, has at last been issued on Verve 8229. Liner notes: Fine on Webster, unfair in curt dismissal of De Franco.

Out on a Limb Clark Terry Argo 620 C B B Terry



Terry, an Ellingtonian since '51, is still far short of due recognition as one of the two or three most original trumpet players in jazz. This is partly his own fault; on these sides, for instance, surrounded by unnamed mediocrities, he tends too often toward trick effects, too seldom to honest expression. Material includes battle-fatigued standards like Caravan and Basin Street. Yet there are wonderful moments, and the set must be recommended to dedicated Terry fans. Liner notes: Refer to Terry's "majazztic musical ability," state that "more and more gophers go for him", etc. Name none of the Chicago musicians involved except reedman Mike Simpson.

L. Feather

Leroy Walks Le Roy Vinnegar Sextet Contemporary C-3542 Leroy Walks

One of the best jazz LP's of the year. Contemporary is to be congratulated on providing this forceful answer to the complaint that west coast jazz is anaemic and that a handful of men monopolize the studios. Here are such under-recorded, under-recognized soloists as Gerald Wilson, trumpet, Teddy Edwards, tenor, Carl Perkins, an exceptional pianist, and Vic Fediman, brilliant British vibraphonist. Tunes are excellent standards, with "Walk" or "Walkin" in six of seven titles. Vinnegar is the spiciest jazz condiment since Art Pepper. Liner notes: Nat Hentoff. Splendid.

Stable Mates Sevoy MG 12115 B A B Lateef



The stable is a curious place for these mates, who are partners under Islam:

A. K. Salim, arranger, leads an octet on one side while Yusef Lateef, composer, plays admirable jazz flute and leads a quintet in three of his own tunes on the other side. The Salim group, in addition to such familiar names as Kenny Burrell and Tommy Flanagan introduces promising newcomer, John Coles on trumpet. An exciting young trombonist, Curtis Fuller, enlivens the Lateef side. Liner notes: H. Alan Stein. Short but adequate.

L. Feather

May 1958

35



This is the way John Hammond arranged the two loudspeakers when he changed from a monaural to a stereo system

Changing from Mono to Stereo Music

Here's an Idea for You If Your Equipment Is Old-fashioned — By Charles Graham

THETHER it's tape, radio, or now records, hi-fitalk is about stereo these days. Oh, there are some holdouts, to be sure. Others insist that two speakers on monaural music are just as good as stereo, but almost invariably those who hold that opinion admit, when asked, that they haven' heard stereo music.

This observation seems to apply to the producers and engineers in the recording studios, as well as to the non-professional hi-fi enthusiasts. John Hammond, for example, is numbered among those who have converted their monaural systems to stereo, as I learned during a recent visit at his home. You probably know him as a director of the Newport Jazz Festival, and director of artists and repertoire for Vanguard Records. Equally at home in jazz and serious music, his activities have ranged from being Benny Goodman's chief advisor and talent scout during Goodman's reign as King of Swing, to persuading Friedrich Gulda, the European pianist, to come to the United States.

A Good System, but an Old One

The change from monaural to stereo reproduction is bringing about the up-dating of many installations. John Hammond's equipment was installed in the early 40's. It consisted of a professional transcription turntable, a massive custom-built amplifier with 2A3 tubes in push-pull, and two theatre-type speakers. Some time back, the old arm

and crystal pickup were replaced by a new Pickering arm and magnetic cartridge and preamp. Also, he had added a tape machine.

Thus, the performance was excellent, even from this odd assembly of old and new equipment. In fact, that massive amplifier is probably equal to the best of the more compact and less expensive types made today. But it wasn't a stereo system.

The Change to Stereo

The accompanying photographs, taken in John Hammond's New York apartment, present an excellent example of transition from a monaural to a stereo system, and show how it can be done without discarding good equipment previously in use. In this particular case, the only items replaced were the old monaural tape machine (even that could have been converted to two channels), and the pair of theatre speakers, for which he substituted the two A-R's you can see on each side of the fireplace.

You will see the connections for the system in the block diagram. Added components are the Madison-Fielding FM-AM tuner, with separate circuits for picking up stereo broadcasts; a Tandberg stereo tape machine; and a 30-watt Fisher amplifier. The old amplifier is in the cabinet beneath the new tuner. Incidentally, the tuner has a switch to turn on FM, AM, or both at the same time for listening



The new FM-AM stereo tuner above, and 30-watt amplifier on the bottom of the cabinet. Below the tuner is the old amplifier, still used, and good as ever

The stereo tape machine does double duty. John Hammond uses it to play stereo tapes, and also dictates to it when he is working on the text of his new book



to stereo broadcasts now increasingly frequent in the New York metropolitan area.

In the block diagram, two preamps are indicated. At present, the left-hand preamp, connected to the original amplifier, is only a switching device. A second, new amplifier will be installed for the left-hand channel, however, when the phono pickup is changed to a stereo type. Meanwhile, however, extra pre-amplification is not needed because the outputs of the tuner and the tape machine (with built-in 3-watt amplifiers on each channel) are ample to drive the power amplifiers directly.

When he plays stereo tapes, Hammond sets the volume control for each amplifier, so as to balance the sound coming from the loudspeakers; then he adjusts the master volume control on the tape machine to raise or lower volume on both channels. He also finds the 3-position speaker switch on the Tandberg very useful. This is the switch

marked UPPER TRACK, LOWER TRACK, and Off. It allows him to switch the built-in speaker of the recorder from the left-hand channel to the right-hand one, so that he can listen to the sound coming from either channel right at the tape machine, comparing it with the sound from the main system speakers on either side of the fireplace.

John Hammond had a particular reason for choosing the Tandberg tape machine. In addition to using it for his system at home, he plans to take it along when he is away from home. Since it has two built-in amplifiers and one loudspeaker, it will only

be necessary to take along an extra speaker in order to use the machine for stereo reproduction.

In addition, he is now working on a book, and he is using the machine, set at slow speed, for dictation, thereby getting double duty from it.

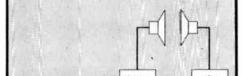
At the time the accompanying photographs were being taken, a piano was on its way to an upper apartment in the house where Mr. and Mrs. Hammond live. Idly curious, I asked about it, and was told that it was being delivered to Arthur Miller, whom you may know as a playwright, a Pulitzer Prize winner, and husband of Marilyn Monroe. Since the Hammonds and the Millers are friends as well as neighbors, there may soon be another stereo installation right there in the same building!

It's Easy to Change

This basic conversion plan can be adapted to practically

any existing hi-fi installation. Even in small apartments or in homes where living room space is limited, the change creates no difficulties, particularly because such excellent stereo quality can be obtained from speakers in relatively small enclosures.

To add stereo tape reproduction to any monaural system, only a stereo tape machine, a power amplifier, and a loudspeaker need be added. Along with these, a second radio tuner will provide reception of stereo broadcasts. Then, to play stereo records, it is only necessary to change to a stereo pickup, and to add a preamp.



Block diagram showing the old and new components

ORIGINAL NEW AMR

AMT FM PREAMP

PREAMP

PREAMP

PREAMP

PHONO

May 1958

Battle of the Stereo Discs

RCA Victor and Columbia Come out Swinging Names, Claims, and Counterclaims

ou CAN put down April 3, 1958, as the day when the first guns were fired in the Battle of the Stereo Discs. For on that date, Columbia gave a demonstration for the press of their "Compatible Stereo" system at the CBS Building on East 52nd Street in New York, while RCA was holding a similar demonstration of their "True Stereo" system at their East 24th Street headquarters.

Columbia announced that they would cut their discs in a manner they have developed because the Westrex method to be used by RCA does not produce compatible discs, i.e., they are not intended to be played with both monaural and stereo pickups.

RCA Victor announced that they will cut their discs with the Westrex method¹ because the Columbia system is only a compromise, in that it does not deliver truestereo reproduction.

In these demonstrations, only RCA offered an opportunity to compare reproduction from an original stereo tape with the corresponding stereo record. The tape was definitely superior, particularly as to background noise. Undoubtedly, that would have been the case if Columbia had offered a similar comparison.

Demonstration Methods and Conditions

Always, demonstrations of this sort are held for the purpose of proving some particular point. In this case, RCA undertook to show that their "True Stereo" discs were superior to what they called the Columbia "compromise" discs, while Columbia's purpose was to prove that their "Compatible Stereo" can be achieved without sacrifice of stereo quality.

Under these conditions, it is difficult, in the course of listening to brief samples of music produced in different ways, for a total of perhaps 30 minutes, to arrive at truly definitive opinions. It is only possible to say that each company proved the points it undertook to establish.

RCA's demonstration was more spectacular soundwise, for the stereo effect and the quality, except for the scratch, was excellent, and greatly superior to monaural reproduction from one channel of the stereo pickup. The latter, as might be expected, was inferior to a monaural recording of the same music. A record described as having been cut by the Columbia method sounded inferior to the RCA stereo records.

Columbia's undertaking was to prove that their compatible records could be played with either a stereo or a monaural pickup. Their stereo effect was also excellent, but reproduction from a monaural pickup suffered by comparison because only one speaker was used. It would have been improved somewhat if both speakers had been

connected to the same amplifier. One 45/45 record played with the Columbia stereo pickup suffered by comparison with the Columbia "Compatible" records. There was no way to check the wear on the record from a monaural pickup, of course, but the statement was made that tests showed it to be no more than with a stereo pickup.

Columbia's "Compatible System"

For patent reasons, Columbia has not released the full details of their system. It was explained in a brief manner as employing a new method of recording in which the left and right channels are added together and recorded laterally, while the left channel minus, the right channel pass through an "automatic stereo recording amplifier" called "ASTRA" to be recorded vertically. Thus

L + R = lateral cut = monaural effect

L - R = vertical cut = stereo effect

The vertical component is small compared to the lateral component, thus reducing the vertical compliance of the stylus necessary to hold the wear on the grooves to that of a monaural record and pickup. And since the lateral cut combines the left and right channels, normal monaural reproduction is obtained from any monaural pickup.

No special circuits are required between the Columbia pickup and the preamp-amplifiers. For the demonstration, the pickup was connected directly to two Bogen DB130's.

The Future of Stereo Records

Both the Westrex and Columbia methods of cutting master records are available to other record manufacturers. Unanswered still, however, are the questions:

Will the Westrex or the Columbia system become the industry standard?

2. Is it necessary to make stereo records that can be played with monaural pickups, since the Westrex and Columbia types of stereo pickups can play monaural records?

Only time can give us the answer to the first question. Hi-fi enthusiasts, dedicated to audio quality, will prefer out-and-out stereo discs, rather than risk a concession to compatibility. On the other hand, it is probable that a larger number of stereo records will be bought by people to whom the standard of reproduction is what they have been hearing from 4-in. speakers, side-mounted on table-model TV sets. And these people will play their stereo records on packaged equipment of no more than medium-fi capabilities. They will probably make the decision, unless a determination is arrived at by the manufacturers.

As for compatibility, that seems more important to the manufacturers than the users. It is a factor in sales — a sales gimmick, if you please — to offer records that can be played with your monaural phonograph now, and with a stereo phonograph if and when you Continued on page 50

¹For information on the Westrex system used by RCA Victor, see "Some Pacts about Stereo Records" by Charles Griham, Hi-Fi MUSIC, January-February 1958.



Fig. 1. Rear, front, and inside views of a master switching and volume control unit for stereo systems using separate preamps and amplifiers

Master Stereo System Control

Dual Volume Control and Mono-Stereo Channel-Switching Unit

tremendously interesting experience, but if you have made the change by adding a second preamp, amplifier, and speaker, you will soon discover that there is a very annoying lack of flexibility in your system. It shows up in three ways:

1) Each time you change the volume level on stereo, you must re-balance the two channels, since the volume controls are on separate preamps; 2) when you change to a monaural source, only one speaker will operate unless you change the wiring; and 3) you'll have to change the leads to the speakers if you want to reverse the channels. You may not mind making the changes the first few times, but soon you will come to feel that it is a most awkward arrangement.

One way to correct this situation is to discard the individual preamps, and get one of the new stereo models. A simpler and much less expensive solution is to keep your separate preamps, and add a Scott Stereo-Dapter. Fig. 1 shows the details of this device, with a block diagram in Fig. 2.

Basically, this unit provides switching and a master

gain control for whatever is fed into the preamps, since it is inserted between each preamp and its corresponding amplifier. Fig. 2 shows the use of monaural and stereo tape machines, stereo tuner, and monaural and stereo phonographs, although a particular system might not have all these sources. Many people, however, will use a monaural pickup in a recordchanger, and a stereo pickup for a turntable.

One preamp and amplifier are plugged into the

upper left-hand pair of jacks, and the second preamp and amplifier into the right-hand pair. With the preamps switched to the stereo source you want to use, and the volume controls on the preamps once adjusted to balance the speakers, the system can be operated entirely from the Stereo-Dapter thereafter.

The selector switch has five positions: monaural, with both speakers playing from a single source; stereo, stereo channels reversed; channel A only; and channel B only. At the right is the master volume control which adjusts both channels simultaneously, with a volume-loudness switch above, and a record-playback switch at the left.

At the right in Fig. 1, the cover was removed to show the tandem volume controls, switch, and wiring. The volume control carries the power switch for the AC outlets at the rear. Therefore, the amplifiers can be turned on or off if they are plugged into the Stereo-Dapter, since it has its own line cord. If the other units are then plugged into the amplifiers, the whole system can be turned on and off from a single switch.

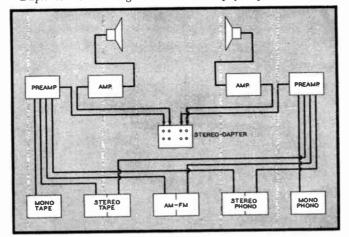
The markings on the terminals at the rear are those used on Scott preamps and amplifiers, but Fig. 2 shows

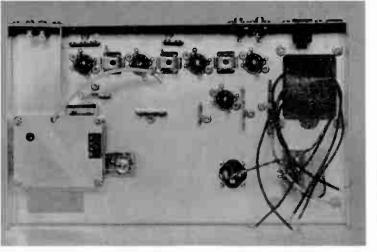
the connections for units of any manufacture.

Each left-hand jack of the lower pairs is for connection to the tape input, while the right-hand jack go to the monitor output. In this way, program material taped off the air can be monitored while it is being recorded

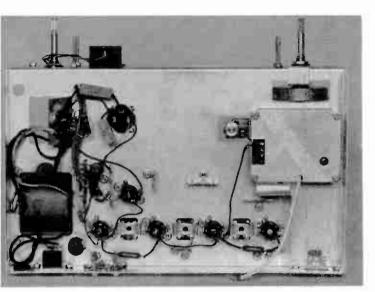
Input and output impedances of this device are 300,000 ohms and 100,000 ohms respectively. The circuits are completely passive and introduce no distortion.

Fig. 2. When the selector switch is in the monaural position, the Stereo-Dapter connects the single source to both amplifier-speaker channels

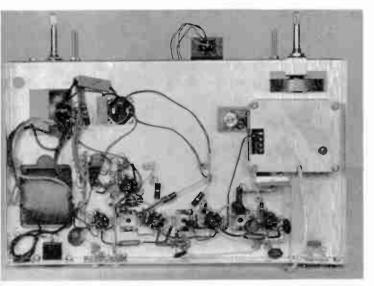




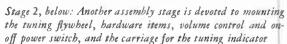
Stage 1, above: The FM tuning unit, lower left, and the power transformer are mounted at the start, together with such small parts as the tube sockets, IF transformers, and terminal strips

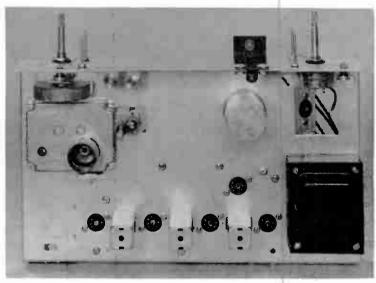


Stage 3, above: Wiring starts here, and the first capacitors, chokes, and resistors are added. Most of the 25 steps detailed in this stage have to do with connecting the transformer

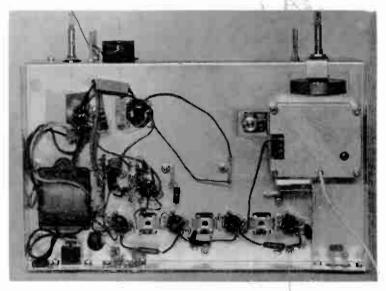


Stage 5, above: This view seems very much like Stage 4, but if you look closely, you can see that more resistors and capacitors are added — a total of 15 by actual count. There are 28 steps carried out in the course of this assembly stage

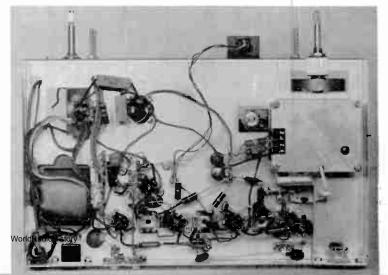


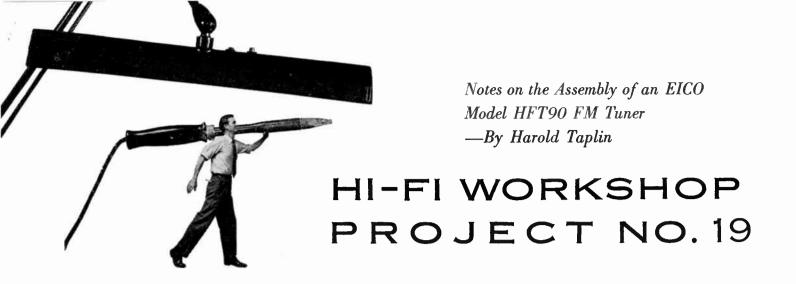


Stage 4, below: Comparing this view with Stage 3, you can see how the wiring progresses in the next 28 steps. Some parts are added, but most of the wiring is for those already mounted



Stage 6, below: There are only 14 steps in this stage. They complete the wiring of the tuner. It is amazing to see how step-hy-step instructions simplify an otherwise difficult job





into the EICO FM tuner. The tuning circuits come as an assembled unit in a die-cast enclosure which serves as an RF shield. It is ready to mount, and requires no adjustments. You can see the bottom and the top of it in the pictures of Stages 1 and 2, with the cord drive added in the photograph of the finished chassis. Another feature is the "exclamation point" tuning indicator. Instead of using a pointer and an illuminated dial, the indicator is a tiny lamp that glows in the shape of an exclamation point.

The layout of the chassis is very clean, and the arrangement such as to make the terminals readily accessible for mounting the parts, and soldering the wires. Most important of all, of course, the performance is excellent.

As you would expect, more time is required to complete this tuner than one with the connections localized on a printed-circuit panel. On the other hand, there are differences of opinion about the use of printed circuits in FM tuners. This is probably a matter of personal preference, for there are advantages both ways.

Here is the writer's record of the time on each assembly stage, without deductions for minor interruptions. It should be noted that this kit was assembled and wired without assistance from someone to read off and check the individual steps.

Stage 1: 50 minutes (14 steps)

Stage 2: 40 minutes (11 steps)

Stage 3: 80 minutes (25 steps)

Stage 4: 90 minutes (28 steps)

Stage 5: 80 minutes (28 steps)

Stage 6: 35 minutes (14 steps)

Stage 7: 25 minutes (20 steps)

The total time of 6 hours and 40 minutes for 140 steps would have been reduced substantially with the help of someone to read the instructions, and to make a double-check on each operation.

The EICO instructions differ from those supplied with other kits in that the individual terminals and parts are identified by red arrows and lines which run out to code numbers in the margin of each diagram. In the succession of drawings, the parts and wires shown previously are included, but only those added in the new assembly stage are indicated by the red arrows and lines.

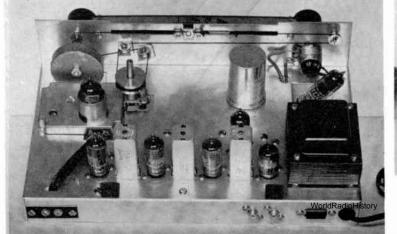
The two controls shown in the view of the front panel are for volume and the AC on-off switch, and tuning. No additional level-set is needed. The rated output is 1 volt with a 10-microvolt input signal at 75 kc. deviation. There are two outputs. One is a cathode follower, and the other a connection to the ratio detector.

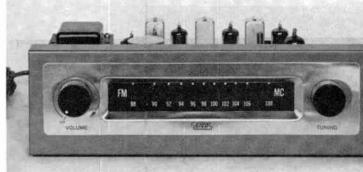
Tubes are: ECC85/6AQ8 grounded-grid RF amplifier and reflex converter: two 6AU6 IF amplifiers; 6AU6 IF amplifier and limiter; 6AL5 dual diode detector; 6C4 cathode follower output; 6X4 full-wave rectifier; and DM70 tuning indicator. The pierced metal cover is 12 ins. wide, 35% high, by 8½ deep.

For the benefit of those who want to check the alignment, there is a chart showing the visual procedure, and a list of voltages measured with the AC on, and resistances with the AC off.

This writer's experience indicates that the extra time, care, and patience required because the work must be done without benefit of a printed-circuit panel is offset by very satisfactory performance from the finished tuner.

The complete FM tuner, ready for use. Finishing touches call for stringing the dial cord, putting on the indicator light, and mounting the panel





Hi-Fi Standards and Measurments

Part 3: Measurement of Harmonic and Intermodulation Distortion, and their Significance — Rating Maximum Power Output — By Julian Hirsch and Gladden Houck

AMPLITUDE distortion, or non-linearity, was discussed briefly in Part 2. Now let us consider the audible results, namely, harmonic distortion and intermodulation (IM) distortion. They are measured quite differently, and are numerically different for a given amplifier. If only harmonic distortion were present, reproduction would not be affected appreciably, but it is accompanied by intermodulation distortion, resulting fuzzy or discordant effects, particularly on loud passages.

Discussion of Harmonic Distortion

Harmonic distortion is usually specified at a mid-range frequency such as 400 or 1,000 cycles. Most amplifiers deliver their best performance at these frequencies, so distortion figures taken at 400 or 1,000 cycles will usually be the lowest obtainable on any given amplifier. It is not surprising,

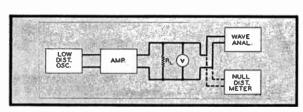
to find amplifiers which cannot deliver 10% of their mid-range power at 20 cycles, or which have several percent distortion at 20 cycles at any power level, no matter how small.

There is little or no musical content below 30 cycles and rarely any at that frequency. The purpose of a 20-cycle test is simply to tax the amplifier, no matter how good, beyond the limits of its normal performance in order to see how closely it approaches the ideal.

Methods of Measuring Harmonic Distortion

Harmonic distortion can be measured in two ways, as indicated in Fig. 6. The basic, and most accurate method, is by means of a wave analyzer. This is a very sensitive and selective voltmeter with circuits which can be tuned to respond to any audio fre-

> Fig. 6. Setup for measuring barmonic distortion in an amplifier, using a wave analyzer or a null-type distortion meter



therefore, to find these figures emphasized in manufacturers' catalogs and advertising.

All amplifiers (with the possible exception of those not using output transformers) distort more at very low frequencies than elsewhere. This is due to the inherent limitations of the iron core of the output transformer. In general, the more iron used in the core (and therefore the greater its size, weight and cost), the less it will suffer from low-frequency distortion. Of course, there are other design considerations affecting low-frequency transformer performance which we cannot go into at this time.

Practically all amplifiers, therefore, show more harmonic distortion at 20 or 30 cycles than at 400 or 1,000 cycles at any given power level. The specifications of high-quality amplifiers will usually indicate the low-frequency distortion as well as the mid-frequency distortion, and there will be little difference between the two figures. Where low-frequency distortion is not mentioned, it is reasonable to assume that it is appreciably higher than the mid-frequency value. We measure harmonic distortion at frequencies of 20 cycles and 1,000 cycles. When this data is plotted against power output, one can easily detect any limitations in low-frequency performance. It is not uncommon

quency. As an example of its use, assume that a 1,000 generator is connected to the input of an amplifier. The output will consist of a 1,000-cycle fundamental, with some 2nd, 3rd, 4th, and 5th harmonic content, audible as distortion. The wave analyzer is first tuned to 1,000 cycles and adjusted for a meter reading of 100%. It is then successively tuned to 2,000, 3,000, 4,000, and 5,000 cycles, and the presence of each harmonic is read directly on the meters as a percentage of the output at 1,000 cycles.

To plot the amplitude of each distortion component against power output, though informative, is cumbersome and time consuming. Therefore the various distortion components are usually combined into a single figure, termed "total RMS distortion". The magnitude of this distortion is equal to the square root of the sum of the squares of the individual harmonic amplitudes. If, in our hypothetical case, the harmonic amplitudes are 2% 2nd, 1% 3rd, 0.7% 4th, and 0.33% 5th, the total RMS distortion is

$$\sqrt{(2)^2 + (1)^2 + (0.7)^2 + (0.33)^3} = \sqrt{5.6} = 2.37\%$$

This is the value usually referred to in the specification of distortion.

There is a much simpler and quicker way to measure harmonic distortion without an expensive wave analyzer. This involves the use of a null-type distortion meter. The amplifier output, containing the fundamental frequency and harmonics, is fed to the input of the distortion meter, which is adjusted to read 100%. A null circuit within the instrument, tuned to eliminate the 1,000-cycle fundamental (in our example), leaves only the harmonics to reach the metering circuit. The meter then reads directly the total RMS distortion, together with any hum or noise which may be present in the signal.

Due to the lower cost and simpler operation of the null-type distortion meter, it is much more widely used than the wave analyzer. The chief drawback of the null method is the fact that its readings include hum and noise. At low power levels, the hum content of an amplifier's output becomes comparable to, or greater than, the distortion. It is desirable to observe on an oscilloscope the output of a distortion analyzer at its metering circuit as the hum and harmonic distortion can

Methods of Measuring Intermodulation Distortion

In practice, IM measurements yield little information that cannot be gathered from ordinary harmonic distortion measurements. The technique of measurement is somewhat simpler, however, and hum in the output does not affect the IM readings, since it is filtered out in the analyzer.

Most IM measurements are made in accordance with the SMPTE method, Fig. 7. A low frequency, usually between 40 and 100 cycles, is mixed with a high-frequency signal of 2,000 to 12,000 cycles. The amplitude of the low-frequency signal is adjusted to 4 times that of the high-frequency signal. The combined signals are fed to the amplifier under test. The output of the amplifier is connected to an IM analyzer. In the IM analyzer, the low-frequency is filtered out. The high-frequency signal is demodulated and the percentage of modulation imposed on it by the low-frequency signal is read on a meter.

A detailed explanation of the modulation and demodulation process mentioned above is beyond the scope of this article. But briefly: when the two test signals, (for example 100 cycles and 5,000 cycles) are passed through a non-distorting amplifier, only the two original input signals will appear in the output. Filtering out the 100-cycle signal will leave only the

5,000-cycle signal, and the meter will indicate zero IM distortion. If any non-linearity exists in the amplifier (as it must in any practical case), the 5,000-cycle signal will be modulated by the low-frequency signal. The modulation process generates spurious frequencies at the sum and difference of the two frequencies involved. In this case, spurious signals would be present in the output at 5,100 cycles and at 4,900 cycles. The demodulator separates these frequencies from the 5,000-cycle signal, and indicates on a meter their amplitude relative to the 5,000-cycle level. This ratio is called % IM distortion.

may encounter a certain amount of musical energy, yet suffer an appreciable loss of response at higher frequencies. Harmonics of the 10,000 to 15,000-cycle region will be attenuated, and appear to be less serious than they really are. The SMPTE measurement does not reveal any but the most drastic high-frequency imperfections. Since the CCIF method translates high-frequency non-linearity into a lower-frequency region where it can be easily measured, it is the most desirable method to use for this sort of measurement.

So far as we know, only one major American hi-fi manufacturer uses the CCIF so-called "grid overload (GOL) point", at which the grids of the output tubes are driven positive. This changes the operating bias of the tubes so as to limit their power output. If the bias is adjusted to its steady-state value, the output stage can be driven to a higher output. Naturally, the user of an amplifier cannot change the bias in normal operation, so the GOL point effectively determines the maximum continuous power output.

In a home music system, an amplifier is almost never called upon to deliver a large, sustained output. The average level is always well below the point at which

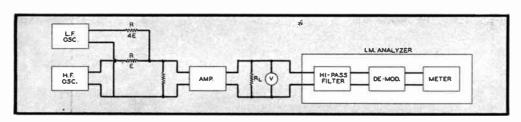


Fig. 7. The SMPTE method of measuring intermodulation distortion is the more frequently used. The IM figure is usually higher than that obtained with the CCIF procedure

The SMPTE IM distortion test primarily measures non-linearity at the lower test frequency, and readings are roughly dependent on the choice of frequency. Both test frequencies must be specified in order for an IM figure to have meaning. The most widely used low frequency in this test is 60 cycles, due to its availability from the power line.

A second method of IM distortion testing is the so-called CCIF method, Fig. 8. Unlike the SMPTE method, which is chiefly a measure of low-frequency performance, the CCIF method measures nonlinearity at any frequency.

Two test signals are used, of equal amplitude and with a constant frequency separation (usually 1,000 cycles). The output of the amplifier contains the original test frequencies, as well as their sum and difference frequencies, as in the earlier example. The combined output is passed through a selective filter, which allows only the difference frequency to pass through to a meter which measures its amplitude. This amplitude, expressed as a percentage of the amplitude of one of the test frequencies, is the percentage of IM distortion.

It is clear that the CCIF method has an advantage over both the harmonic distortion and SMPTE IM distortion measurements in the measurement of high-frequency distortion. An amplifier may be non-linear at frequencies between 10,000 and 15,000 cycles, for example, where one

method in rating his amplifiers. These ratings can be recognized by the reference to 'first order difference frequency IM'', and by the fact that the numerical values obtained by this method are considerably lower than those resulting from an SMPTE measurement on the same amplifier. In fact, they may even be lower than harmonic distortion figures for the same power

the tube operating voltages are affected, and only an occasional peak, lasting a fraction of a second, may reach the maximum power capabilities of the amplifier. Such peaks are too brief to affect the tube voltages, so the amplifier may be able to deliver an appreciably greater power for a short time than it can continuously.

Some amplifiers are rated in terms of

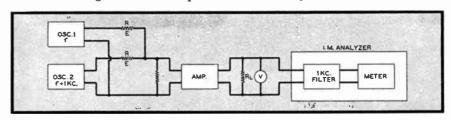


Fig. 8. The CCIF method of measuring intermodulation gives more informative results, but it is seldom employed. Outputs of the oscillators are equal, but they differ in frequency by 1,000 cycles

output, whereas ordinary SMPTE IM figures are almost always higher.

Maximum Power Output

There is sometimes a considerable difference (as much as 30%) in the maximum power output an amplifier delivers without serious distortion, depending on whether harmonic distortion or IM distortion is used as the criterion for establishing the maximum. The IM measurement shows a larger apparent output for a given percentage-of-distortion figure.

One limitation on the maximum steadystate power output of an amplifier is the their musical power capacity, as well as their steady state power. Another common power rating is that of instantaneous peak power. When dealing with sine waves, that is mathematically twice the continuous or RMS power output. Thus we may find an amplifier rated at 40 watts on music waveforms, 35 watts continuous power output, and 80 watts instantaneous peak power output. All are legitimate ratings when so identified, and all describe the same amplifier. When comparing different amplifiers, one must be sure that the same system of power rating is being used.

Part 4 will appear in the July issue

HI-FI HOUSE IN THE GRAND CENTRAL STATION

Watch next month for a detailed announcement about Hi-Fi House, sponsored by Hi-Fi Music Magazine, to be erected in Grand Central Station, New York.

Hi-Fi House will serve the public in three ways: It will provide display space for informative exhibits of hi-fi components. Demonstrations of music from records, tape, and FM radio will give the public an opportunity to hear genuine hi-fi reproduction at home listening levels. And hi-fi experts will be on hand to give advice without prejudice, as nothing will be sold at Hi-Fi House.

The value and effectiveness of this project as a means of acquainting the public with truly hi-fi music can be judged by the fact that, in a year's time, more people pass through the area where Hi-Fi House will be located than the total population of the U. S. A. Music demonstrations will be given from 8:00 a.m. to 10:00 p.m.

FM Broadcast Stations

Listing All FM Stations in the U.S. and Possessions Now on the Air, or for Which Construction Permits Have Been Granted, Arranged by Operating Frequencies

	88.1 MC.								WPRO-FM	Providence	R. I.
KLON	Long Beach	Cal.	This lis	t of FM broadc	ast stati	ons was pre	pared from offi	icial	WJPB	Feirmont	W.Va.
WEPS WGVF	Elgin Gary	lll. Ind.	FCC re	cords, complet	e to Jan	uary 1, 195	8. If you find	any		92.5 MC.	
WNAS	New Albany	Ind.		or omissions, yo			•		WHOS-FM	Decatur	Ala.
KDPS	Des Moines	lowa		ncy and Notific		-	_		WMBD-FM	Peoria	111.
KSDB-FM	Manhattan	Kans.		ssion. New Pos					WOMI-FM	Owensboro	Ky.
KTJO-FM	Ottawa	Kans.		e grateful if you				1	WHNC-FM WMHE	Henderson Totale	N. C.
WBJC WAMF	Baltimore Amherst	Md. Mass.	1,0112	e graterar ir yot	A WIII 101	us, at 111-11	oo.oaga.	.	WIFI	Toledo Glenside	Ohio Pa.
WHPR	Highland Park	Mich.	l						WESC-FM	Greenville	S. C.
WMMI	Meridian	Miss.	WGPS	Greensboro	N. C.		91.5 MC.		KRLD-FM	Dollars	Tex.
WSPE	Springville	N. Y.	WUSV	Scranton	Pa.	KUSAC	Los Angeles	Cal.	WRFL	Winchester	Va.
WAER	Syracuse	N. Y.	WUSC-FM	Columbia	S. C.	WFSU-FM	Tallahassee	Fia.		92.7 MC.	
WBGU WKSU-FM	Bowling Green	Ohio Ohio	WHSA	Madison	Wisc.	WPRK WBEZ	Winter Park	Fla. III.	KACE-FM	Riverside	Cal.
KTEC	Kent Oretech	Ore.		90,1 MC.		WEVC	Chicago Evansville	ind.	WRAJ-FM	Anna	III.
KNER	Dallas	Tex.	KSCU	Santa Clara	Cal.	WWHI	Muncie	Ind.			
KHBL	Plainview	Tex	WABE	Atlanta	Ga.	KANU	Lawrence	Kans.	WCKA EM	92.9 MC.	_
KVSC	Logan	Utah	WIAN	Indianapolis	Ind.	WMMI	Meridian	Miss.	WGKA-FM WVLN-FM	Allanta Olney	Ga. III.
KYOK	Honolulu	т. н.	WOI-FM	Ames	lowa	KSLH	St. Louis	Mo.	WBOS-FM	Brookline	Mass.
	88.3 MC.		WCFM WRTI-FM	Williamstown Philadelphia	Mass. Pa.	WNYE WRP!	Brooklyn Troy	N. Y. N. Y.	WBNY-FM	Buffalo	N. Y.
KSDS	San Diego	Cal.	W KII-FM	rniiddeibiiid	ra.	WUNC	Chapel Hill	N. C.	KDKA-FM	Pittsburgh	Pa.
WBGO	Newark	N. J.		90.3 MC.		WOUI	Athens	Ohio	WDSC-FM	Dillon	s. c.
WBWC	Berea	Ohio	WSH\$	Floral Park	N. Y.	WOBN	Westerville	Ohio	KONO-FM	San Antonio	Tex.
WHWC	Madison	Wisc.	WBOE	Cleveland	Ohio	WYSO	Yellow Springs	Ohio	KREM-FM	Spokane	Wash.
	88.5 MC.		WHLA	Madison	Wisc.	WDUQ	Pittsburgh	Pa.		93.1 MC.	
KFCA	Phoenix	Ariz.		90.5 MC.		WMTI	Norfolk	Va.	KNX-FM	Hollywood	Cal.
WMHC	Sa. Hadley	Mass.	KSHS	Colorado Sprs.	Colo.		91.7 MC.		WKAT-FM	Miami Beach	Fla.
WMUB	Oxford	Ohio	WHUS	Storrs	Conn.	WUOA	Tuscaloosa	Ala.	WHYN-FM WJBK-FM	Springfield Detroit	Mass.
KVOF-FM	El Paso	Tex.	WKAR-FM	East Lansing	Mich.	KALW	San Francisco	Cal.	WPAT-FM	Paterson	Mich. N. J.
	88.7 MC.		WCBE	Columbus	Ohio	WTHS	Miami	Fla.	WDDS-FM	Syracuse	N. Y.
KXLU	Los Angeles	Cal.	KWGS	Tulsa	Okla.	WGRE	Greencastle	Ind.	WAIR-FM	Winston-Salem	N. C.
KSTE	Emporia	Kans.	WFOS KUOW	South Norfolk Seattle	Va. Wash.	KŞUI WEDK	lowa City Springfield	lowa Mass.	,		
WBFQ	Buffalo	N. Y.	KUOH	Honolulu	T. H.	WUOM	Ann Arbor	Mich.	KYA-FM	93.3 MC.	<i>c</i> .
WHA-FM	Madison	Wisc.				WICB	Ithaca	N. Y.	WFLA-FM	San Francisco Tempa	Cal. Fla.
	88.9 MC.			90.7 MC.		KAMC-FM	Stillwater	Okla.	WRBL-FM	Columbus	Ga.
WTUN	Tampa	Fla.	KSPC	Claremont	Cal.	WPWT	Philadelphia	Pa.	WKYC	Paducah	Ky.
WERS	Boston	Mass.	WPSR WAMC	Evansville Albany	Ind. N. Y.	KVTT WEMC	Dallas Harrisonburg	Tex. Va.	KCMK	Kansas City	Mo.
KOKH	Oklahoma City	Okla.	WFUV	New York	N. Y.	KTOY	Tacoma	Wash.	WJTN-FM	Jamestown	N. Y.
WXPN	Philadelphia	Pa.	WHAD	Madison	Wisc.				WBBO-FM WIP-FM	Forest City Philadelphia	N. C. Pa.
KEPH	Ephraim	Utah					91.9 MC.		WBIR-FM	Knoxville	ra. Tenn.
	89.1 MC.			90.9 MC.		KASU	Jonesboro	Ark.	WQFM	Milwaukee	Wisc.
KWAR	Waverly	lowa	WILL-FM WBUR	Urbana Boston	III. Mass.	KVCR WSRV	San Bernardino Carbondale	Cal.			
KMUW	Wichita	Kans.	WFTR	Detroit	Mich.	WKSD	Kewanee	111. 111.	KEDO	93.5 MC.	C-1
WAPS	Akron	Ohio	WNAD-FM	Norman	Okla.	WHCI	Hartford City	Ind.	WNRC-FM	Ontario New Rochelle	Cal. N. Y.
KANW WRKF	Albuquerque Richmond	N. M. Va.	WHYY	Philadelphia	Pa.	WVSH	Huntington	Ind.	WITHCOM	Tew Rochello	14. 1.
W KKI	Ridilliond	vu.				WFPK	Louisville	Ky.		93.7 MC.	
	89.3 MC.		140.00	91.1 MC.	***	WGTS-FM	Takoma Park	Md.	WSFM	Birmingham	Ala.
KPFB	Berkeley	Cal.	WNIC WGCS	DeKalb Goshen	lii. Ind.	WHSR-FM WNTI	Winchester Hackettstown	Mass. N. J.	WHCN	Fresno Hartford	Cal. Conn.
KPCS	Pasadena Hartond	Cal.	WYSN	New Castle	Ind.	KRVM	Eugene	Ore.	WDEL-FM	Wilmington	Del.
WRTC-FM WNUR	Hartford Evanston	Conn. III.	WBOR	Brunswick	Me.	WUOT	Knoxville	Tenn.	WCMI-FM	Ashland	Ky.
WFPL	Louisville	Ky.	WMUA	Amherst	Mass.	WHRM	Madison	Wisc.	WJEF-FM	Grand Rapids	Mich.
WOAK	Royal Oak	Mich.	WSLN	Delaware	Ohio				KCFM	St. Louis	Mo.
WCUR-FM	Kansas City	Mo.	KWAX	Eugene	Ore.	KDCD	92.1 MC.	Cul	WMVO-FM	Mt. Vernon	Ohio
WHPS	High Point	N. C.	WDFM WKCS	Saint College Knoxville	Pa. Tenn.	KPSR WEED-FM	Palm Springs Rocky Mount	Cal. N. C.	WKJF WFBC-FM	Pittsburgh	Pa.
WHHS	Havertown	Pa.	KACC-FM	Abilene	Tex.	WARD-FM	Johnstown .	Pa.	KSEL-FM	Greenville Lubbock	S. C. Tex.
KSMU-FM WHKW	Dallas Madison	Tex. Wisc.	WLFM	Appleton	Wisc.	KREL-FM	Baytown	Tex.	NOCE-1111	BBBBCK	TOX.
******	Madison	** 13C.					·			93.9 MC.	
	89.5 MC.			91.3 MC.			92.3 MC.		KPOL-FM	Los Angeles	Cal.
WAMF	Amherst	Mass.	KCVN	Stockton	Cal.	KFAC-FM	Los Angeles	Cal.	WAHR-FM	Miami Beach	Fla.
WSOU	Sa. Orange	N. J.	KRCC WWKS	Colorado Sprs. Macomb	Colo. III.	K\$JO-FM WDBO-FM	San Jose Orlando	Cal. Fla.	WEBH-FM WFMW-FM	Chicago Madisonville	III. Ky.
	89.7 MC.		WSKS	Wabash	ind.	WJOB-FM	Hammond	Ind.	WCOU-FM	Lewiston	Me.
WGBH-FM	Cambridge	Mass.	WBKY	Lexington	Ky.	WHOM-FM	New York	N. Y.	KWPM-FM	West Plains	Mo.
WOSU-FM	Columbus	Ohio	wwws	Greenville	N. C.	WFLY	Troy	N. Y.	WNYC-FM	New York	N. Y.
			WTDS	Toledo	Ohio	WGWR-FM	Asheboro	N. C.	WFNS-FM	Burlington	N. C.
KCRW	89.9 MC. Santa Monica	Cal.	KUHF WTJU	Houston Charlottesville	Tex. Va.	WCOL-FM KEX-FM	Columbus Portland	Ohio Ore.	KSPI-FM KBFM	Stillwater Salt Lake City	Okla. Utah
WKCR-FM	New York	N. Y.	WHHI	Madison	Wisc.	WRRN	Warren	Pa.	WRC-FM	Washington	D. C.

		94.1 MC.		WFLN-F-	Philadelphia	Pa.	KTNT-FM	Tacoma	Wash.	WDLP-FM	Panama City	Fla.
KERN-F	M	Bakersfield	Cal.				WKWK-FM	Wheeling	W.Va.	WHBF-FM	Rock Island	III.
KPFA		Berkeley	Cal.		95.9 MC.					KBOA-FM	Kennett	Mo.
KFSD-F		San Diego	Cal.	WCHA-FM	Chambersburg	Pa.		97.5 MC.		WSNJ-FM	Bridgeton	N. J.
			III.	*** €1174-1111	C.1.0		KQXM	Riverside	Cal.	WHFM	Rochester	N. Y.
WMIX-					96.1 MC.		KRCW	Santa Barbara	Cal.	WKBN-FM	Youngstown	Ohio
WHBC		Canton	Ohio	WI Chi Eli		A.I.	WDWS-FM	Champaign	111.	KYFM	Oklahoma City	Okla.
WIBG-		Philadelphia	Pa.	KLCN-FM	Blytheville	Ark.		Rackford	III.			
WKOK	(-FM	Sunbury	Pa.	KCRA-FM	Sacramento	Cal.	WROK-FM			WSPA-FM	Spartanburg	sc.
WOAY	/-FM	Oak Hill	W.Va.	WMBR-FM	Jacksonville	Fla.	KWNO-FM	Winona	Minn.			
WEAU-	-FM	Eau Claire	Wisc.	KROS-FM	Clinton	lowa	WTOA	Trenton	N. J.		99.1 MC.	
				KFMX	Council Bluffs	lowa	WALK-FM	Patchogue	N. Y.	KPIP	Riverside	Cal.
		94.3 MC.		WVJS-FM	Owensboro	Ky.	WAKR-FM	Akron	Ohio	WNHC-FM	New Haven	Conn.
MARKE		Pittsfield	A4	WTAG-FM	Worcester	Mass.	KRIC-FM	Beaumont	Tex.	WMAZ-FM	Macon	Ga.
WBEC-			Mass.				WKAZ-FM	Charleston	W.Va.	WNAV-FM	Annapolis	Md.
WOCB	I-FM	W. Yarmouth	Mass.	WMBH-FM	Joplin	Mo.						
WJLK-I	FM	Asbury Park	N. J.	WMBO-FM	Auburn	N. Y.	WORA-FM	Mayaguez	P. R.	KFUO-FM	Clayton	Mo.
WBUY	-FM	Lexington	N. C.	WKIX-FM	Raleigh	N. C.				WAWZ-FM	Zarephath	N. J.
KCLE-F		Cleburne	Tex.	WOHS-FM	Shelby	N. C.		97.7 MC.		WHIO-FM	Dayton	Ohio
			W.Va.				KPOC-FM	Pocahontas	Ark.	WSLS-FM	Roanoke	Va.
WEPM	-rw	Martinsburg	W.W.		96.3 MC.		WFST-FM	Caribou	Me.			
				KAER		~ .	WBET-FM	Brockton	Mass.		99.3 MC.	
		94.5 MC.		KRED	Eureka	Cal.	WBUT-FM	Butler	Pa.	VECO EU		
WNDB	-FM	Daytona Beach	Fla.	KRKD-FM	Los Angeles	Cal.	WDOITM	DUNE	ru.	KFGQ-FM	Boone	lowa
WLAP-	-FM	Lexington	Ky.	WGBS-FM	Miami	Fla.		07.0.46		WFRO-FM	Fremont	Ohio
KWKH		Shreveport	la.	WBBM-FM	Chicago	III.	=	97.9 MC.		WAJR-FM	Morgantown	W.Va.
WHDH		Boston	Mass.	WJR-FM	Detroit	Mich.	KMJ-FM	Fresno	Cal.			
			Mo.	KHFM	Albuquerque	N. M.	KNOB	Long Beach	Cal.		99.5 MC.	
KWOC		Poplar Bluff		WQXR-FM	New York	N. Y.	WQXT-FM	Palm Beach	Fla.	WAFM	Birmingham	Ala.
WSYR-		Syracuse	N. Y.				WEHS	Chicago	101.	KTKT-FM	Tucson	Ariz.
WFSC-		Franklin	N. C.	WBAP-FM	Ft. Worth	Tex.	WFDS-FM	Baltimore	Md.			
WLOE-	-FM	Leaksville	N. C.	WMVA-FM	Martinsville	Va.	WJLB-FM	Detroit	Mich.	KHOF	Los Angeles	Cal.
wws\	W-FM	Pittsburgh	Pa.	WJMC-FM	Rice Lake	Wisc.				KDEN-FM	Denver	Colo.
WRVA		Richmond	Va.	WTOP-FM	Washington	D. C.	KMFM	Mountain Park	N. M.	WJBR	Wilmington	Dela.
******							WEVD-FM	New York	N. Y.	WEFM	Chicago	И.
		94.7 MC.			96.5 MC.		WAZL-FM	Hazleton	Pa.	WTAD-FM	Quincy	III.
				VEHV	San Diego	Cal.	WCOS-FM	Columbia	S. C.	WSON-FM	Henderson	Ky.
KRHM		Hollywood	Cal.	KFMX			WFAA-FM	Dallas	Tex.			
WDOV	/-FM	Dover	Del.	KRON-FM	San Francisco	Cal.	KFMK	Houston	Tex.	WGAY-FM	Silver Spring	Md.
WENR-	-FM	Chicago	III.	WTIC-FM	Hartford	Conn.	KIMK	110031011	iex.	WLLH-FM	Lowell	Mass.
WNG	O-FM	Mayfield	Ky.	WHOO-FM	Orlando	Fla.		98.1 MC.		WLOL-FM	Minneapolis	Minn.
WMAS		Springfield	Mass.	WEWO-FM	Laurinburg	N. C.	MICTA FM			WBAI	New York	N. Y.
WHFI	, , , , ,	Detroit	Mich.	WHAT-FM	Philadelphia	Pa.	WCTA-FM	Andalusia	Ala.	WGFM	Schenectady	N. Y.
	***		Mo.	WDOD-FM	Chattanooga	Tenn.	KAFE	Oakland	Cal.	WMFR-FM	High Point	N. C.
KTTS-F		Springfield		WFMR	Glendale	Wisc.	KCBM	Kansas City	Kans.	KISS	San Antonio	Tex.
WAAT		Newark	N. J.	W FMK	Glenagie	W ISC.	WBRL	Baton Rouge	la.	WBKW	Beckley	W. Va.
WPTF-	FM	Raleigh	N. C.		-		WNBH-FM	New Bedfard	Mass.	VV DIL VV	Deckley	w. vu.
WVKC)-FM	Columbus	Ohio		96.7 MC.		WSAM-FM	Saginaw	Mich.			
				KWIZ-FM	Santa Ana	Cal.	WNBF-FM	Binghamton	N. Y.		99.7 MC.	
		94.9 MC.	}	WSTC-FM	Stamford	Conn.		Fayetteville	N. C.	KWPC-FM	Muscatine	lowa
						_	WFNC-FM			2445445	Date 1 1	
KSER		San Francisco	Cal	WCOH-FM	Newnan	Ga.				WFMP	Pittsburgh	Pa.
KSFR		San Francisco	Cal.	WCOH-FM	Newnan	Ga.	WCAU-FM	Philadelphia	Pa.		. •	
WSJG		Miami	Fla.	WORX-FM	Madison	Ind.				WMCF	Memphis	Pa. Tenn.
WSJG KCMO	-FM	Miami Kansas City	Fla. Mo.	WORX-FM WFOB-FM	Madison Fostoria	Ind. Ohio	WCAU-FM WSNW-FM	Philadelphia	Pa.		Memphis	
WSJG	-FM	Miami	Fla. Mo. N. H.	WORX-FM	Madison	Ind.	WCAU-FM WSNW-FM KCMC-FM	Philadelphia Seneca Texarkana	Pa. S. C. Tex.	WMCF	Memphis 99.9 MC.	Tenn.
WSJG KCMO	-FM V-FM	Miami Kansas City	Fla. Mo. N. H.	WORX-FM WFOB-FM	Madison Fostoria	Ind. Ohio	WCAU-FM WSNW-FM KCMC-FM WCOD	Philadelphia Seneca Texarkana Richmond	Pa. S. C. Tex. Va.	WMCF WKRG-FM	Memphis 99.9 MC. Mobile	Tenn.
WSJG KCMO WMTV WPHB	-FM V-FM -FM	Miami Kansas City Mt. Washington	Fla. Mo. N. H. Pa.	WORX-FM WFOB-FM	Madison Fostoria	Ind. Ohio	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM	Philadelphia Seneca Texarkana Richmond Seattle	Pa. S. C. Tex. Va. Wash.	WMCF	Memphis 99.9 MC.	Tenn.
WSJG KCMO WMTV WPHB WGRV	-FM V-FM -FM /-FM	Miami Kansas City Mt. Washington Philipsburg Greeneville	Fla. Mo. N. H. Pa. Tenn.	WORX-FM WFOB-FM WQMS	Madison Fostoria Hamilton 96.9 MC.	Ind. Ohio Ohio	WCAU-FM WSNW-FM KCMC-FM WCOD	Philadelphia Seneca Texarkana Richmond	Pa. S. C. Tex. Va.	WMCF WKRG-FM	Memphis 99.9 MC. Mobile	Tenn.
WSJG KCMO WMTV WPHB- WGRV WDBJ-	-FM V-FM -FM /-FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke	Fla. Mo. N. H. Pa. Tenn. Va.	WORX-FM WFOB-FM WQMS	Madison Fostoria Hamilton 96.9 MC. Sacramento	Ind. Ohio Ohio Cal.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison	Pa. S. C. Tex. Va. Wash.	WMCF WKRG-FM WMYC-FM KPAX	Memphis 99.9 MC. Mobile Marysville San Bernardino	Ala. Cal.
WSJG KCMO WMTV WPHB WGRV	-FM V-FM -FM /-FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville	Fla. Mo. N. H. Pa. Tenn.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville	Ind. Ohio Ohio Cal. Fla.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC.	Pa. S. C. Tex. Va. Wash. Wisc.	WMCF WKRG-FM WMYC-FM KPAX WINZ-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami	Ala. Cal. Cal. Fla.
WSJG KCMO WMTV WPHB- WGRV WDBJ-	-FM V-FM -FM /-FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield	Fla. Mo. N. H. Pa. Tenn. Va.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon	Ind. Ohio Ohio Cal. Fla. Ga.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison	Pa. S. C. Tex. Va. Wash.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg	Ala. Cal. Cal. Fla. III.
WSJG KCMO WMTV WPHB- WGRV WDBJ-	-FM V-FM -FM /-FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke	Fla. Mo. N. H. Pa. Tenn. Va.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon	Ind. Ohio Ohio Cal. Fla. Ga. Ill.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina	Pa. S. C. Tex. Va. Wash. Wisc.	WMCF WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute	Ala. Cal. Cal. Fla.
WSJG KCMO WMTV WPHB- WGRV WDBJ-	-FM V-FM -FM /-FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield	Fla. Mo. N. H. Pa. Tenn. Va.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon	Ind. Ohio Ohio Cal. Fla. Ga.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury	Pa. S. C. Tex. Va. Wash. Wisc.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor-	Ala. Cal. Cal. Fla. III.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI	-FM V-FM -FM /-FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield	Fla. Mo. N. H. Pa. Tenn. Va. Wisc.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon	Ind. Ohio Ohio Cal. Fla. Ga. Ill.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris	Pa. S. C. Tex. Va. Wash. Wisc.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute	Ala. Cal. Cal. Fla. III. Ind.
WSJG KCMO WMTV WPHB- WGRV WDBJ- WWCI	-FM V-FM -FM /-FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass.	WMCF WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor-	Ala. Cal. Cal. Fla. III.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI	-FM V-FM -FM /-FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM	Memphis 99.9 MC. Mobile San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland	Ala. Cal. Cal. Fla. III. Ind. Mich. N. Y.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI WGHF WJAX- WFBE WRRE	-FM V-FM -FM -FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLSH-FM WPAD-FM KALB-FM WXHR WLAV-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM WCTC-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM WKRT-FM WTOD-FM	Memphis 99.9 MC. Mobile San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo	Ala. Cal. Cal. Fla. III. Ind. Mich. N. Y. Ohio
WSJG KCMO WMTV WPHB- WGRV WDBJ- WWCI WGHF WJAX- WFBE WRRE WGPA	-FM V-FM -FM V-FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem	Fla. Mo, N, H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro	Ind. Ohio Ohio Cal. Fla. Ga. III. Ky. La. Mass. Mich. N. C.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton	Ala. Cal. Cal. Fla. III. Ind. Mich. N. Y. Ohio Pa.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI WGHF WJAX- WFBE WRRE	-FM V-FM -FM V-FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM WCTC-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J.	WMCF WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM WERC-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie	Tenn. Ala. Cal. Cal. Fla. III. Ind. Mich. N. Y. Ohio Pa. Pa.
WSJG KCMO WMTV WPHB- WGRV WDBJ- WWCI WGHF WJAX- WFBE WRRE WGPA	-FM V-FM -FM V-FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston	Fla. Mo, N, H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAY-FM WEQR KGPO WLAN-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster	Ind. Ohio Ohio Cal. Fla. Ga. III. Ky. La. Mass. Mich. N. C. Ore. Pa.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WCTC-FM WHLI-FM WTNC-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM WEC-FM KISW	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash.
WSJG KCMO WMTV WPHB- WGRV WDBJ- WWCI WGHF WJAX- WFBE WRRE WGPA	-FM V-FM -FM V-FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem	Fla. Mo, N, H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston	Ind. Ohio Ohio Cal. Fla. Ga. III. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM WCTC-FM WHII-FM WTNC-FM WTNC-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa.	WMCF WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM WERC-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie	Tenn. Ala. Cal. Cal. Fla. III. Ind. Mich. N. Y. Ohio Pa. Pa.
WSJG KCMO WMTV WPHB- WGRV WDBJ- WWCI WGHF WJAX- WFBE WRRE WGPA	-FM V-FM -FM V-FM -FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston	Fla. Mo, N, H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAY-FM WEQR KGPO WLAN-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster	Ind. Ohio Ohio Cal. Fla. Ga. III. Ky. La. Mass. Mich. N. C. Ore. Pa.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAD-FM WHAI-FM WTVB-FM WCTC-FM WHII-FM WTKL-FM WRHI-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM WEC-FM KISW WCLO-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash.
WSJG KCMO WMTV WPHS WGRV WDBJ- WWCI WGHF WJAX- WFBE WRRE WGPA WTMA	-FM V-FM -FM V-FM -FM F -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC.	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston	Ind. Ohio Ohio Cal. Fla. Ga. III. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM WCTC-FM WHII-FM WTNC-FM WTNC-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM WEC-FM KISW WCLO-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC.	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc.
WSJG KCMO WMTW WPHB WGRV WDBJ- WWCI WGPA WTMA KJML KSJO-I	P-FM W-FM -FM V-FM -FM F -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAD-FM WHAI-FM WTVB-FM WCTC-FM WHII-FM WTKL-FM WRHI-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM WEC-FM KISW WCLO-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWC WGHF WJAX WFBE WRRE WGPM WTMA	-FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAD-FM WPRS-FM WHU-FM WCTC-FM WHIL-FM WTNC-FM WRHI-FM KHFI	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM WEC-FM KISW WCLO-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC.	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI WGFF WJAX- WFBE WGPA WTMA KJML KSJO-I WKOF WSRS-	P-FM V-FM -FM V-FM -FM F F F -FM A-FM P-FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts.	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC.	Ind. Ohio Ohio Cal. Fla. Ga. III. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAI-FM WHAI-FM WTVB-FM WHLI-FM WTNC-FM WEEX-FM WRHI-FM KHFI	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM WEC-FM KISW WCLO-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Wash. Wisc.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWC WGHF WJAX WFBE WRRE WGPM WTMA	P-FM V-FM -FM V-FM -FM F F F -FM A-FM P-FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WIBH-FM WPAD-FM KALB-FM WYAR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM WTVB-FM WHLI-FM WTNC-FM WHLI-FM KHFI KRPM KFML-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHFB-FM WKRT-FM WECX-FM WECX-FM WECX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI WGFF WJAX- WFBE WGPA WTMA KJML KSJO-I WKOF WSRS-	P-FM V-FM -FM V-FM -FM F F F -FM A-FM P-FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WPAD-FM KALB-FM WYAD-FM WALAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM WTIC-FM WHLI-FM WTINC-FM WEEX-FM WHII-FM KHFI KRPM KFML-FM WSB-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WKRT-FM WCD-FM WEX-FM WEX-FM WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harborst. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Pa. Tex.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI WGFF WJAX- WFBE WGPA WTMA KJML KSJO-I WKOF WSRS-	P-FM V-FM -FM V-FM -FM F F F -FM A-FM P-FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts.	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WHAD-FM KALB-FM WYAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM WTVB-FM WHLI-FM WTNC-FM WHLI-FM KHFI KRPM KFML-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WTOD-FM WEEX-FM WERC-FM KISW WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI WGFF WJAX- WFBE WGPA WTMA KJML KSJO-I WKOF WSRS-	P-FM V-FM -FM V-FM -FM F F F -FM A-FM P-FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WHAD-FM KALB-FM WYAD-FM KALB-FM WYAD-FM WAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WHIB-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans	Ind. Ohio Ohio Cal. Fla. Ga. III. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. III. La.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM WTIC-FM WHLI-FM WTINC-FM WEEX-FM WHII-FM KHFI KRPM KFML-FM WSB-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WKRT-FM WCD-FM WEX-FM WEX-FM WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harborst. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Pa. Tex.
WSJG KCMO WMTW WPHB WGRV WDBJ- WWCI WGPA WTMA KJML KSJO-I WKOF WSRS- WINA-	-FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC.	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va.	WORX-FM WFOB-FM WQMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WHAD-FM KALB-FM WYAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAD-FM WHAI-FM WTVB-FM WTVB-FM WTVB-FM WTIC-FM WHII-FM KFMI-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WTOD-FM WEEX-FM WERC-FM KISW WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI WGHF WJAX- WFBE WRRE WGPA WTMA KJML KSJO-I WKOFS WINA- KELE KABC-	P-FM V-FM V-FM V-FM F F F F-FM F F F F F F F F F F F F F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ariz. Cal.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WHAD-FM KALB-FM WYAD-FM KALB-FM WYAD-FM WAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WHIB-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WMISC-FM WHAI-FM WTVB-FM WCTC-FM WHLI-FM WTNC-FM WHLI-FM WEEX-FM WRHI-FM KFML-FM KFML-FM WSB-FM KFML-FM KFML-FM WSB-FM KFMC-FM KWOS-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WTOD-FM WEEX-FM WERC-FM KISW WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC.	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va.
WSJG KCMO WMTV WPHB WGRV WDBJ- WWCI WGHF WJAX. WFBE WGPA WTMA KJML KSJO-I WKOF WSRS- WINA- KELE KABC- WDHF	-FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WHEM-FM WPAD-FM KALB-FM WYAR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KWFM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Mich.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM KDWC WLAD-FM WPRS-FM WHAI-FM WTVB-FM WTINC-FM WHIL-FM WTINC-FM KHFI KRPM KFML-FM KFML-FM WSB-FM WSB-FM WKOS-FM KWOS-FM KRSN-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. Ill. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WTOD-FM WEEX-FM WERC-FM KISW WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC.	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va.
WSJG KCMO WMYHB WGRV WDBJ- WWCI WGHF WJAX- WFBE WRRE WRRE WRRE WRRE WRRE WRRE WRRE WR	-FM W-FM -FM -FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N, Y. Ohio Va. Ariz. Cal. Ill. Ind.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WPAD-FM KALB-FM WYAR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WCSC-FM WOPI-FM KRBC-FM WMIB WRCM WWJ-FM KFMU WNIB WRCM WWJ-FM KWFM WRCA-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. ill. La. Mich. Mich. Mich. N. Y.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAD-FM WPRS-FM WHAI-FM WTVB-FM WHIL-FM WTNC-FM WEEX-FM WHIL-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM WSB-FM WRKO-FM KTSI-FM KWOS-FM KWOS-FM KNOS-FM WHLD-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WGRT-FM WEEX-FM WECX-FM WECX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WIS WCLO-FM WKBR-FM KELS WWOD-FM WIUS	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harborst. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va.
WSJG KCMO WMYN WGRV WDBJ- WGRV WGRV WGRV WGRV WGRV WGRV WGRV WGRV	-FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WHBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KWFM WWJ-FM KWFM WWJ-FM KWFM WBNS-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Minn. N. Y. Ohio	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WCTC-FM WHII-FM WTVB-FM WTHII-FM WTHII-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM WSB-FM WRKO-FM KTIS-FM KWOS-FM KRSN-FM WHID-FM WERE-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM WGRT-FM WEEX-FM WERC-FM KISW WCIO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Pa. Tex. Va. Va. Cal.
WSJG KCMO WMTVW WPHB WGRV WDBJ- WWC WGHF WJAX. WFBE WRRE WGRV WKOF WSRS. WINA- KELE KABC- WDHF WFMS WRNC WLDM	-FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KWFM WRCA-FM WBNS-FM KPFM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. ill. La. Mich. N. Y. Ohio Ore.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAD-FM WHAI-FM WTVB-FM WCTC-FM WHLI-FM WTNC-FM WHLI-FM WRHI-FM KFML-FM KFML-FM KFML-FM KFML-FM KFML-FM WSB-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM WHLD-FM WBRE-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM WKRT-FM WEEX-FM WEC-FM KISW WCIO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KLIR-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Ariz. Cal. Colo.
WSJG KCMO WMYN WGRV WDBJ- WGRV WGRV WGRV WGRV WGRV WGRV WGRV WGRV	-FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Md. Md. Mich. Nev.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WHSH-FM WPAD-FM KALB-FM WXHR WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KWFM WRCA-FM WBNS-FM KPFM KFFM WEEL	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Minn. N. Y. Ohio Ore. Pa.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WCTC-FM WHII-FM WTVB-FM WTHII-FM WTHII-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM WSB-FM WRKO-FM KTIS-FM KWOS-FM KRSN-FM WHID-FM WERE-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WERZ-FM WECZ-FM WECZ-FM WECZ-FM WECZ-FM WERC-FM KISW WCIO-FM WKBR-FM WLBR-FM WLBR-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KUR-FM WORZ	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Cal. Colo. Fla.
WSJG KCMO WMTVW WPHB WGRV WDBJ- WWC WGHF WJAX. WFBE WRRE WGRV WKOF WSRS. WINA- KELE KABC- WDHF WFMS WRNC WLDM	-FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WLBH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KWFM WRCA-FM WBNS-FM KPFM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. ill. La. Mich. Mich. N. Y. Ohio Ore. Pa. Utah	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAD-FM WHAI-FM WTVB-FM WCTC-FM WHLI-FM WTNC-FM WHLI-FM WRHI-FM KFML-FM KFML-FM KFML-FM KFML-FM KFML-FM WSB-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM WHLD-FM WBRE-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WCD-FM WEX-FM WERC-FM KISW WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KLIR-FM KMLA KLIR-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harborst. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill.
WSJG KCMO WMYHB WGRV WDBJ- WGRV WJAX WFBE WGPA WTMA KJML KSJO-I WKOF WSRS- WINA- KELE KABC- WDHF WFMS WRNC WLDM WLDM WABC	FM FM FM FM FM FFM FFM FFM FFM FFM FFM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich, N. Y. Pa. S. C. Cal. Cal. N, Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich, Mich, Nev. N. Y.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WHSH-FM WPAD-FM KALB-FM WXHR WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KWFM WRCA-FM WBNS-FM KPFM KFFM WEEL	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Minn. N. Y. Ohio Ore. Pa.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAD-FM WHAI-FM WTVB-FM WCTC-FM WHLI-FM WTNC-FM WHLI-FM WRHI-FM KFML-FM KFML-FM KFML-FM KFML-FM KFML-FM WSB-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM WHLD-FM WBRE-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WERZ-FM WECZ-FM WECZ-FM WECZ-FM WECZ-FM WERC-FM KISW WCIO-FM WKBR-FM WLBR-FM WLBR-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KUR-FM WORZ	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Cal. Colo. Fla.
WSJG KCMO WMYHB WGRV WDBJ- WGPA WTMA KJML KSJO-I WKOF WSRS- WINA- KELE KABC- WDHF WFMS WRNC WLDM KNEV WABC WHPE-	FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ind. Md. Mich. Nev. N. Y. N. C.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WPAD-FM KALB-FM WYAD-FM WCAL-FM WCGR KGPO WLAN-FM WCGR KGPO WLAN-FM WCOPI-FM KRBC-FM WNIB WRCM WNIB WRCM WWJ-FM KWFM WRCA-FM WBNS-FM KPFM WFFM WEEL KLUB-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. ill. La. Mich. Mich. N. Y. Ohio Ore. Pa. Utah	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WTVB-FM WTVB-FM WTLI-FM WHII-FM WTHI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM WSB-FM WRKO-FM KTIS-FM KWOS-FM KRSN-FM WHID-FM WBRE-FM WBRE-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC.	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa. Tenn.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WCD-FM WEX-FM WERC-FM KISW WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KLIR-FM KMLA KLIR-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harborst. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill.
WSJG KCMO WMTW WGRV WGRV WGRV WGRV WGRV WGRV WGRV WGR	-FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint San Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown	Fla. Mo. N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich. Nev. N. Y. N. Y. N. Y. N. C. Pa.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WPAD-FM KALB-FM WYAD-FM WCAL-FM WCGR KGPO WLAN-FM WCGR KGPO WLAN-FM WCOPI-FM KRBC-FM WNIB WRCM WNIB WRCM WWJ-FM KWFM WRCA-FM WBNS-FM KPFM WFFM WEEL KLUB-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. ill. La. Mich. Mich. N. Y. Ohio Ore. Pa. Utah	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WCTC-FM WHLI-FM WTNC-FM WRHI-FM KFML-FM KFML-FM KFML-FM KFML-FM KFML-FM WSB-FM KWOS-FM KRSN-FM WHLD-FM WERE-FM WKPT-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa. Tenn.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WHFB-FM WKRT-FM WTOD-FM WEEX-FM WERC-FM KISW WCIO-FM WLBR-FM WLBR-FM WLBR-FM WLBR-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KLIR-FM WORZ WFMF WHO-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill. Ind. Iowa
WSJG KCMO WMYHB WGRV WPHB WGRV WDBJ- WWCI WGHF WJAX. WFBE WGPA WTMA KJML KSJO-I WKOF WSRS WINA- KELE KABC- WDHF WFMS WRND KNEV WABC WHPE WJAX.	-FM -FM -FM -FM -FM -FM -FM -FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Md. Mich. Nev. N. Y. P. R. I.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WHSH-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KWFM WRCA-FM WBNS-FM KPFM WEEL KLUB-FM WASH	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Minn. N. Y. Ohio Ore. Pa. Utah D. C.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAD-FM WPRS-FM WHAI-FM WTWB-FM WTINC-FM WHII-FM WTINC-FM WHII-FM KFML-FM KFML-FM KFML-FM KFML-FM WSB-FM WRO-FM KTS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KRSN-FM WHID-FM WERE-FM WKPT-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. Ill. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa. Tenn.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHFB-FM WKRT-FM WECY-FM WEND-FM WHO-FM KFH-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill. Ind. Ind. Ind.
WSJG KCMO WMYHB WGRV WPHB WGRV WDBJ- WGRV WGRV WGRV WGRV WGRV WGRV WGRV WGRV	FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich. N. Y. N. C. Pa. R. I. Tex	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WPAD-FM KALB-FM WYAD-FM WCQR KGPO WLAN-FM WEQR KGPO WLAN-FM WCOPI-FM KRBC-FM WOPI-FM KFMU WNIB WRCM WWIJ-FM KFMU WNIB WRCM WWJ-FM KFFM WRCA-FM WBNS-FM KPFM WEEL KLUB-FM WASH	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. ill. La. Mich. Minn. N. Y. Ohio Ore. Pa. Utah D. C.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WPRS-FM WHAI-FM WTWB-FM WTINC-FM WHIL-FM WTNC-FM WRHI-FM KFML-FM KFML-FM WSB-FM WRKO-FM KTS-FM WRO-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWSN-FM WHLD-FM WERE-FM WKPT-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkinsville	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. Y. Ohio Pa. Tenn.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WEX-FM WIS WCLO-FM WLBR-FM KUSR-FM KUSR-FM KUSR-FM WUSR-FM KUSR-FM WOD-FM WIUS	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill. Ind. Iowa Kans. Mich.
WSJG KCMO WMYHB WGRV WDBJ- WGRV WGRV WGRV WGRV WGRV WGRV WGRV WGRV	FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin Corpus Christi	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich. Nev. N. Y. N. C. Pa. R. I. Tex Tex	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WIEX-FM WNEX-FM WPAD-FM KALB-FM WYAR WCAV-FM WEQR KGPO WLAN-FM WCOPI-FM KRBC-FM WOPI-FM KFMU WNIB WRCM WWJ-FM WRCA-FM WBNS-FM KWFM WECA-FM WBNS-FM KPFM WECA-FM WBNS-FM KWFM WECA-FM WASH	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco Boulder	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. ill. La. Mich. Mich. N. Y. Ohio Ore. Pa. Utah D. C. Cal. Colo.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WTVB-FM WTVB-FM WTINC-FM WHII-FM KFMI-FM WSB-FM WRKO-FM KTIS-FM KRSN-FM WRKO-FM KRSN-FM WHID-FM WERE-FM WBRE-FM WKPT-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkinsville New York	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa. Tenn. Cal. III. Ky. N. Y.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHH-FM WHFB-FM WGRT-FM WEEX-FM WERC-FM KISW WCLO-FM WKBR-FM WLBR-FM WLBR-FM KELS WWOD-FM WIJB-FM KMLA KLIR-FM KMLA KLIR-FM WORZ WFMF WCNB-FM WHO-FM KFH-FM WKH-FM WKH-FM WFHA-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn Red Bank	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill. Ind. Iowa Kans. Mich. N. J.
WSJG KCMO WMYHB WGRV WPHB WGRV WDBJ- WGRV WGRV WGRV WGRV WGRV WGRV WGRV WGRV	FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich. N. Y. N. C. Pa. R. I. Tex	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WIEX-FM WIBH-FM WJAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KFM WBNS-FM KWFM WBNS-FM KWFM WEEL KLUB-FM WASH KEAR KRNW WCKR-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco Boulder Miami	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Minn. N. Y. Ohio Ore. Pa. Utah D. C. Cal. Colo. Fla.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WCTC-FM WHLI-FM WTNC-FM WRHI-FM KFML-FM KFML-FM KFML-FM KFML-FM KFML-FM WSB-FM WRKO-FM KTS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM WHLD-FM WERE-FM WHD-FM WGRE-FM WHOP-FM WOR-FM WOR-FM WOR-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkinsville New York Greensboro	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. Y. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Minn. Mo. N. M. N. Y. Ohio Pa. Tenn. Cal. III. Ky. N. Y. N. C.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WTOD-FM WEEX-FM WERC-FM KISW WCIO-FM WKBR-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KLIR-FM WORZ WFMF WCNB-FM WHO-FM KFH-FM WKMH-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn Red Bank High Point	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill. Ind. Iowa Kans. Mich. N. J. N. C.
WSJG KCMO WMYHB WGRV WDBJ- WGRV WGRV WGRV WGRV WGRV WGRV WGRV WGRV	FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin Corpus Christi	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich. Nev. N. Y. N. C. Pa. R. I. Tex Tex	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WIEX-FM WNEX-FM WPAD-FM KALB-FM WYAR WCAV-FM WEQR KGPO WLAN-FM WCOPI-FM KRBC-FM WOPI-FM KFMU WNIB WRCM WWJ-FM WRCA-FM WBNS-FM KWFM WECA-FM WBNS-FM KPFM WECA-FM WBNS-FM KWFM WECA-FM WASH	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco Boulder	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. ill. La. Mich. Mich. N. Y. Ohio Ore. Pa. Utah D. C. Cal. Colo.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WTVB-FM WTVB-FM WTINC-FM WHII-FM KFMI-FM WSB-FM WRKO-FM KTIS-FM KRSN-FM WRKO-FM KRSN-FM WHID-FM WERE-FM WBRE-FM WKPT-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkinsville New York	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa. Tenn. Cal. III. Ky. N. Y.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHFB-FM WKRT-FM WECY-FM WECY-FM WECY-FM WECY-FM WERC-FM KISW WCIO-FM WKBR-FM WLBR-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KIIR-FM WORZ WFMF WCNB-FM WHO-FM KFH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WCLT-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn Red Bank High Point Newark	Tenn. Ala. Cal. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Pa. Tex. Va. Ariz. Cal. Colo. Fla. Ill. Ind. N. J. N. C. Ohio
WSJG KCMO WMYHB WGRV WDBJ- WGRV WGRV WGRV WGRV WGRV WGRV WGRV WGRV	FM F	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin Corpus Christi	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich. Nev. N. Y. N. C. Pa. R. I. Tex Tex	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WIEX-FM WIBH-FM WJAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KFM WBNS-FM KWFM WBNS-FM KWFM WEEL KLUB-FM WASH KEAR KRNW WCKR-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco Boulder Miami	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Minn. N. Y. Ohio Ore. Pa. Utah D. C. Cal. Colo. Fla.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WISC-FM WHAD-FM WHAI-FM WTVB-FM WCTC-FM WHIL-FM WTNC-FM KFML-FM KFML-FM KFML-FM KFML-FM WRKO-FM KTMS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM KWOS-FM WHD-FM WEEL-FM WHD-FM WCR-FM WHOP-FM WOR-FM WMDE KPOJ	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkinsville New York Greensboro Portland	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. Ill. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. Y. Ohio Pa. Tenn. Cal. Ill. Ky. N. C. Ore.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WTOD-FM WEEX-FM WERC-FM KISW WCIO-FM WKBR-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KLIR-FM WORZ WFMF WCNB-FM WHO-FM KFH-FM WKMH-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn Red Bank High Point	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill. Ind. Iowa Kans. Mich. N. J. N. C.
WSJG KCMO WMYHB WGRV WPHB WGRV WDBJ- WGRV WGRV WGRV WGRV WGRV WGRV WGRV WGRV	FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin Corpus Christi Honolulu 95.7 MC.	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich. N. Y. N. C. Pa. R. I. Tex Tex T. H.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WNEX-FM WPAD-FM KALB-FM WXHR WCSC-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KWFM WRCA-FM WBNS-FM KVFM WEEL KLUB-FM WASH	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco Boulder Miami Savannah Carmi	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Minn. N. Y. Ohio Ore. Pa. Utah D. C. Cal. Colo. Fla. Ga. Ill.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAI-FM WTWB-FM WHIL-FM WTNC-FM WHIL-FM WTNC-FM KFML-FM KFML-FM KFML-FM WSB-FM WRKO-FM KTIS-FM KWOS-FM KWOS-FM KWOS-FM WHLD-FM WBRE-FM WHLD-FM WBRE-FM WHLD-FM WBRE-FM WHLD-FM WBRE-FM WHOP-FM WOR-FM WOR-FM WOR-FM WOR-FM WOR-FM WOR-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkins ville New York Greensboro Portland Salt Lake City	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. Ill. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. Y. Ohio Pa. Tenn. Cal. Ill. Ky. N. C. Ore. Utah	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHFB-FM WKRT-FM WECY-FM WECY-FM WECY-FM WECY-FM WERC-FM KISW WCIO-FM WKBR-FM WLBR-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KIIR-FM WORZ WFMF WCNB-FM WHO-FM KFH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WCLT-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn Red Bank High Point Newark Portland	Tenn. Ala. Cal. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Pa. Tex. Va. Ariz. Cal. Colo. Fla. Ill. Ind. N. J. N. C. Ohio
WSJG KCMO WMYHB WGRV WDBJ- WGRV WGRV WGBA WGFA WTMA KJML KSJO-I WKOF WSRS- WINA- KELE KABC- WDHF WFMS WRNC WLDM KNEV WJAC WPFM WJAC WPFM KAZZ KDMC KAIM-	-FM W-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin Corpus Christi Honolulu 95.7 MC. Tuscaloosa	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Md. Mich. Nev. N. Y. N. C. Pa. R. I. Tex Tex T. H.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WIEX-FM WIB-FM WPAD-FM KALB-FM WYAR WLAV-FM WEQR KGPO WLAN-FM WCOS-FM WOPI-FM KRBC-FM WNUB WRCM WWIB-FM WRCM WWIB WRCM WWIB-FM WRCA-FM WBNS-FM KPFM WEEL KLUB-FM WASH KEAR KRNW WCKR-FM WIOC-FM WROY-FM WBSM-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco Boulder Miami Savannah Carmi New Bedford	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. ill. La. Mich. Mich. N. Y. Ohio Ore. Pa. Utah D. C. Cal. Colo. Fla. Ga. Ill. Mass.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WTVB-FM WTIC-FM WHII-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM WRKO-FM KTS-FM WRKO-FM KRSN-FM WHID-FM WERE-FM WBRE-FM WKPT-FM WCBH WFMT WHOP-FM WOR-FM WMDE KPOJ KDYL-FM WVA-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkinsville New York Greensboro Portland Salt Lake City Wheeling	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa. Tenn. Cal. III. Ky. N. Y. Ore, Utah W.Va.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHI-FM WHFB-FM WECX-FM WECX-FM WECX-FM WERC-FM KISW WCLO-FM WKBR-FM WVAM-FM WUBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KLIR-FM WOOZ WFMF WCNB-FM WHO-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harborst. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn Red Bank High Point Newark Portland Meadville	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill. Ind. Ind. Iowa Mich. N. J. N. C. Ohio Pa.
WSJG KCMO WMTH WGRV WPHB WGRV WDBJ- WWCI WGHF WJAX. WFBE WGPA WTMA KJML KSJO-I	-FM W-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM -F-FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin Corpus Christi Honolulu 95.7 MC. Tuscaloosa Meriden	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ill. Ill. Ind. Md. Mich. Nev. N. Y. Pa. R. I. Tex Tex T. H. Ala. Conn.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WIEX-FM WIEX-FM WHEN-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KFM WRCA-FM WBNS-FM KWFM WEL KLUB-FM WASH KEAR KRNW WCKR-FM WTOC-FM WROY-FM WHCU-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco Boulder Miami Savannah Carmi New Bedford Ithaca	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Mi	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WHAI-FM WTWB-FM WHIL-FM WTNC-FM WHIL-FM WTNC-FM KFML-FM KFML-FM KFML-FM WSB-FM WRKO-FM KTIS-FM KWOS-FM KWOS-FM KWOS-FM WHLD-FM WBRE-FM WHLD-FM WBRE-FM WHLD-FM WBRE-FM WHLD-FM WBRE-FM WHOP-FM WOR-FM WOR-FM WOR-FM WOR-FM WOR-FM WOR-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkins ville New York Greensboro Portland Salt Lake City	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. Ill. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. Y. Ohio Pa. Tenn. Cal. Ill. Ky. N. C. Ore. Utah	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WTOD-FM WEEX-FM WERC-FM KISW WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KUR-FM WOD-FM WHO-FM KMLA KUR-FM WORZ WFMF WCNB-FM WHO-FM KH-FM WKH-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn Red Bank High Point Newark Portland Meadville Williamsport	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill. Ind. Ind. Ind. Ind. Ind. Ind. Ind. Ind
WSJG KCMO WMYHB WGRV WPHB WGRV WDBJ- WWCI WGHF WJAX. WFBE WGPA WTMA KJML KSJO-I KSJO	FM	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin Corpus Christi Honolulu 95.7 MC. Tuscaloosa Meriden Effingham	Fla. Mo, N. H. Pa. Tenn, Va. Wisc. Conn, Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ind. Mch. Nev. N. Y. Pa. R. I. Tex Tex T. H. Ala. Conn. Ill.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WNEX-FM WIBH-FM WPAD-FM KALB-FM WYLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM WRCA-FM WRCA-FM WBFM WEEL KLUB-FM WASH KEAR KRNW WCKR-FM WTOC-FM WHOY-FM WHOU-FM WHCJ-FM WHP-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco Boulder Miami Savannah Carmi New Bedford Ithaca Harrisburg	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. Mich. Minn. N. Y. Ohio Ore. Pa. Utah D. C. Cal. Colo. Fla. Ga. Ill. Mass. N. Y. Pa.	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WTVB-FM WTIC-FM WHII-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM WRKO-FM KTS-FM WRKO-FM KRSN-FM WHID-FM WERE-FM WBRE-FM WKPT-FM WCBH WFMT WHOP-FM WOR-FM WMDE KPOJ KDYL-FM WVA-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkinsville New York Greensboro Portland Salt Lake City Wheeling Washington	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa. Tenn. Cal. III. Ky. N. Y. Ore, Utah W.Va.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WHFB-FM WKRT-FM WECY-FM WESY-FM WECY-FM WESY-FM WESY-FM WESY-FM WESY-FM WESY-FM WESY-FM WISH-FM WLBR-FM KELS WWOD-FM WIJS KWJB-FM KMLA KUR-FM WOD-FM WORZ WFMF WCNB-FM WHO-FM KFH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM WKMH-FM KSL-FM KSL-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn Red Bank High Point Newark Portland Meadville Williamsport Salt Lake City	Tenn. Ala. Cal. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Pa. Wash. Wisc. N. H. Pa. Tex. Va. Ariz. Cal. Colo. Fla. Ill. Ind. N. J. N. C. Ohio Ore. Pa. Utah
WSJG KCMO WMTH WGRV WPHB WGRV WDBJ- WWCI WGHF WJAX. WFBE WGPA WTMA KJML KSJO-I	FM V-FM V-FM V-FM V-FM FF F-FM FF F-FM FM FM C-FM AT	Miami Kansas City Mt. Washington Philipsburg Greeneville Roanoke Greenfield 95.1 MC. Brookfield Jacksonville Flint Sa. Bristol Center Bethlehem Charleston 95.3 MC. Sacramento San Jose Binghamton Cleveland Hgts. Charlottesville 95.5 MC. Phoenix Los Angeles Chicago Indianapolis Oakland Oak Park Reno New York High Point Johnstown Providence Austin Corpus Christi Honolulu 95.7 MC. Tuscaloosa Meriden	Fla. Mo, N. H. Pa. Tenn. Va. Wisc. Conn. Fla. Mich. N. Y. Pa. S. C. Cal. Cal. N. Y. Ohio Va. Ariz. Cal. Ill. Ill. Ill. Ind. Md. Mich. Nev. N. Y. Pa. R. I. Tex Tex T. H. Ala. Conn.	WORX-FM WFOB-FM WGMS KFBK-FM WZOK-FM WIEX-FM WIEX-FM WHEN-FM WPAD-FM KALB-FM WXHR WLAV-FM WEQR KGPO WLAN-FM WCSC-FM WOPI-FM KRBC-FM WHTB-FM KFMU WNIB WRCM WWJ-FM KFM WRCA-FM WBNS-FM KWFM WEL KLUB-FM WASH KEAR KRNW WCKR-FM WTOC-FM WROY-FM WHCU-FM	Madison Fostoria Hamilton 96.9 MC. Sacramento Jacksonville Macon Mattoon Paducah Alexandria Boston Grand Rapids Goldsboro Grans Pass Lancaster Charleston Bristol Abilene 97.1 MC. Talladega Los Angeles Chicago New Orleans Detroit Minneapolis New York Columbus Portland Erie Salt Lake City Washington 97.3 MC. San Francisco Boulder Miami Savannah Carmi New Bedford Ithaca	Ind. Ohio Ohio Cal. Fla. Ga. Ill. Ky. La. Mass. Mich. N. C. Ore. Pa. S. C. Tenn. Tex. Ala. Cal. Ill. La. Mich. Mi	WCAU-FM WSNW-FM KCMC-FM WCOD KING-FM WISC-FM WISC-FM WISC-FM WHAI-FM WTVB-FM WTVB-FM WTIC-FM WHII-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM KFMI-FM WRKO-FM KTS-FM WRKO-FM KRSN-FM WHID-FM WERE-FM WBRE-FM WKPT-FM WCBH WFMT WHOP-FM WOR-FM WMDE KPOJ KDYL-FM WVA-FM	Philadelphia Seneca Texarkana Richmond Seattle Madison 98.3 MC. West Covina Danbury Paris Greenfield Coldwater New Brunswick Hempstead Thomasville Easton Rock Hill Austin 98.5 MC. San Jose Denver Atlanta Boston Minneapolis Jefferson City Los Alamos Niagara Falls Cleveland Wilkes Barre Kingsport 98.7 MC. Los Angeles Chicago Hopkinsville New York Greensboro Portland Salt Lake City Wheeling	Pa. S. C. Tex. Va. Wash. Wisc. Cal. Conn. III. Mass. Mich. N. J. N. C. Pa. S. C. Tex. Cal. Colo. Ga. Mass. Minn. Mo. N. M. N. Y. Ohio Pa. Tenn. Cal. III. Ky. N. Y. Ore, Utah W.Va.	WKRG-FM WMYC-FM KPAX WINZ-FM WEBQ-FM WTHI-FM WTOD-FM WEEX-FM WERC-FM KISW WCLO-FM WKBR-FM WVAM-FM WLBR-FM KELS WWOD-FM WIUS KWJB-FM KMLA KUR-FM WOD-FM WHO-FM KMLA KUR-FM WORZ WFMF WCNB-FM WHO-FM KH-FM WKH-FM	Memphis 99.9 MC. Mobile Marysville San Bernardino Miami Harrisburg Terre Haute Benton Harbor- St. Joseph Cortland Toledo Easton Erie Seattle Janesville 100.1 MC. Manchester Altoona Lebanon Nacogdoches Lynchburg St. Croix 100.3 MC. Globe Los Angeles Denver Orlando Chicago Connersville Des Moines Wichita Dearborn Red Bank High Point Newark Portland Meadville Williamsport	Tenn. Ala. Cal. Cal. Fla. Ill. Ind. Mich. N. Y. Ohio Pa. Wash. Wisc. N. H. Pa. Tex. Va. Va. Ariz. Cal. Colo. Fla. Ill. Ind. Ind. Ind. Ind. Ind. Ind. Ind. Ind

	100.5 MC.		WPPA-FM	Pottsville	Pa.		103.9 MC.		WHAT-FM	Philadelphia	Pa.
WHMA-FM	Anniston	Ala.				KAMS	Mammoth Sprs.	Ark.	KSFM	Dallas	Tex.
KGMS-FM	Sacramento	Cal.		102.1 MC.		KTYM-FM	Inglewood	Cal.			
WLDS-FM	Jacksonville	111.	KDFC	Sausalito	Cal.	WDUN-FM	Gainesville	Ga.		105.5 MC.	
WTRX-FM	Bellaire	Ohio	WSOY-FM	Decatur	III.	WPRB	Princeton	N. J.	KBCA	Beverly Hills	Cal.
WFIN-FM	Findlay	Ohio	WMCR	Kalamazoo	Mich.	WFAS-FM	White Plains	N. Y.	WRBI	Fair Lawn	N. J.
WDXY	Spartanburg	S. C.	WREV-FM	Reidsville	S. C.	WBLY-FM	Springfield	Ohio	WWGP-FM	Sanford	N. C.
WHTN-FM	Huntington	W. Va.	WDOK-FM	Cleveland	Ohio	KTWR	Tacoma	Wash.		3	
***********	rioliningron	vv. vu.	WIMA-FM	Lima	Ohio	KITTK	racoma	*** 4311.		105.7	
	100.7 MC.				Pa.		104.1 MC.		KUOA-FM		Ark.
14/DAE 514		E1	WCED-FM	Du Bois		MADD EN		~ .		Siloam Springs	
WDAE-FM	Tampa	Fla.	WFIL-FM	Philadelphia	Pa.	KTRB-FM	Modesto	Cal.	WAUG-FM	Augusta	Ga.
WTRC-FM	Elkhart	Ind.	WRNL-FM	Richmond	Va.	WRUF-FM	Gainesville	Fla.	WRUN-FM	Utica	N. Y.
WCOP-FM	Boston	Mass.				WLAG-FM	LaGrange	Ga.	WSIC-FM	Statesville	N. C.
WLNA-FM	Peekskill	N. Y.		102.3 MC.		WIKY-FM	Evansville	Ind.	KYW-FM	Cleveland	Ohio
WFMA	Rocky Mount	N. C.	KOFX-FM	Long-Beach	Cal.	WMUN	Muncie	Ind.	WNOW-FM	York	Pa.
WHK-FM	Cleveland	Ohio	WBAB-FM	Babylon	N, Y.	KMLB-FM	Monroe	La.			
WFMZ	Allentown	Pa.		,	-	WBCN	Boston	Mass.		105.9 MC	
WTJS-FM	Jackson	Tenn.		102.5 MC.		WWOL-FM	Buffalo	N. Y.	KBMS	Glendale	Cal.
WJHL-FM	Johnson City	Tenn.	MCALA EAL		C-1	WSJS-FM	Salem	N. C.	WHCN	Hartford	Conn
WSVA-FM	Harrisonburg	Va.	KSMA-FM	Santa Maria	Cal.	WPAY-FM	Portsmouth	Ohio	WPFB-FM	Middletown	Ohio
	•	Va. Va.	WGAU-FM	Athens	Ga.	WLAB	Lebanon	Pa.	WFMB	Mashville	Tenn.
KIRO-FM	Seattle		WCTW	New Castle	Ind.				AA LWID	Indalialile	IGINE
WLIN	Merrill	Wisc.	WCRB-FM	Waltham	Mass.	WTJS-FM	Jackson	Tenn.			
WRNJ-FM	Racine	Wisc.	WHKP-FM	Hendersonville	N. C.	WMFM	Madison	Wisc.		106.1 MC	
			WRVC	Norfolk	Va.				WRFS-FM	≰lexander City	Ala.
	100.9 MC.						104.3 MC.		WLET-FM	Toccoa	Ga.
WKLF-FM	Clanton	Ala.		102.7 MC.		KPLA	Los Angeles	Cal.	WTSV-FM	Claremont	N, H
WABZ-FM	Albermarie	N. C.	KCMS-FM	Manitou Springs	Colo	WSEL	Chicago	HI.	WCLI-FM	Corning	N. Y
WIFM-FM	Elkin	N. C.	WOPA-FM		III.	WAIL-FM	Baton Rouge	La.	WPAC-FM	Patchogue	N. Y
		-		Oak Park		WITH-FM	Baltimore	Md.	WQAL	Philadelphia	Pa.
	101.1 MC.		WCAO-FM	Baltimore	Md.	WOMC	Royal Oak	Mich.			
WFMH-FM	Cullman	Ala.	WNEW-FM	Newark	N. J.	WNCN	New York	N. Y.		106.3 MC.	
KHJ-FM	-		W\$Al-FM	Cincinnati	Ohio	WLOS-FM		N. C.	WEXI	St. Charles	III.
	Los Angeles	Cal.	WORG-FM	Orangeburg	\$. C.		Asheville				
WMAQ-FM	Chicago	III.				WCPS-FM	Tarboro	N. C.	WBBS	Crawfordsville	ind.
KGLO-FM	Mason City	lowa		102.9 MC.		WJPA-FM	Washington	Pa.	WUST-FM	Bethesda	Md.
WLBJ-FM	Bowling Green	Ky.	WRLD-FM	Lanett	Ala.				WOTW-FM	Mashua	N. H.
KRMD-FM	Shreveport	La.	KRE-FM	Berkeley	Cal.		104.5 MC		WWON-FM	Woonsocket	R. I.
WXYZ-FM	Detroit	Mich.	WCUM-FM	Cumberland	Md.	KBAY-FM	San Francisco	Cal.	KDNT-FM	Penton	Tex.
WCBS-FM	New York	N. Y.			Miss.	WAJC	Indianapolis	Ind.			
WBBB-FM	Burlington	N. C.	WJDX-FM	Jackson		WWST-FM	Wooster	Ohio		106.5 MC	
KOIN-FM	Portland	Ore.	WPEN-FM	Philadelphia	Pa.	KIXL-FM	Dallas	Tex.	WFML	Washington	Ind.
WCAC	Anderson	S. C.	WPIC-FM	Sharon	Pa.				WBEN-FM	Buffalo	N. Y.
WRR-FM	Dallas	Tex.	KPRC-FM	Houston	Tex.		104.7 MC.		WFTP-FM	Salisbury	N. C.
KTRH-FM	Houston	Tex.				WJLN	Birmingham	Ala.	WHLM-FM	Bloomsburg	Pa.
				103.1 MC.				Ariz.			W.Va.
WWDC-FM	Washington	D. C.	KNOB	Long Beach	Cal.	KTYL-FM	Mesa		WAAM-FM	Parkersburg	w.vu.
			WSTR-FM	Sturgis	Mich.	KOXR-FM	Oxnard	Cal.			
	101.3 MC.	. .	WSNS	Sanford	N. C.	KDFR	San Diego	Cal.		106.7 MC.	
KPEN	Atherton	Cal.	11 0110	oanioi a		WPKM	Tampa	Fla.	WBZ-FM	Boston	Mass.
WATG-FM	Ashland	Ohio		102 2 44		WITZ-FM	Jasper	Ind.			
WGAL-FM	Lancaster	Pa.		103.3 MC.		W JEJ-FM	Hagerstown	Md.		106.9 MC.	
WGBI-FM	Scranton	Pa.	KBEE-FM	Modesto	Çal.	KFAM-FM	St. Cloud	Minn.	WBRC-FM	∦irmingham	Ala.
			WAGA-FM	Atlanta	Ga.	WKIP-FM	Poughkeepsie	N. Y.	KPUP	\$an Francisco	Cal.
	101.5 MC.		WEEI-FM	Boston	Mass.	WTOL-FM	Toledo	Ohio	WMRI-FM	Marion	ind.
KQXR	Bakersfield	Cal.	WDBQ-FM	Dubuque	lowa	WSVS-FM	Clewe	Va.	WTBO-FM	Cumberland	Md.
KGB-FM	San Diego	Cal.	WILY	Kenmore	N. Y.	WPRP-FM	Ponce	P. R.	WARK-FM	Hagerstown	Md.
WWPB	Miami	Fla.	WYZZ	Wilkes Barre	Pa.				WMIT	Clingmans Peak	
WJBC-FM	Bloomington	III.	WLOG-FM	Logan	W.Va.		104.9 MC		WMRN-FM	Marion	Ohio
KAYL-FM	Storm Lake	lowa	WFHR-FM	Wisconsin Rapids	Wisc.	WFUL-FM	Fulton	Ky.			
WRAL-FM	Raleigh	N. C.		•		WFOW	Madison	Wisc.		107.1 MC.	
WSPD-FM	Toledo	Ohio		103.5 MC.		0 **	madison	** 130.	KSJW	Alhambra	Cal.
	Providence		KGLA	Los Angeles	Cal.		105.1 MC.		WXFM	Elmwood Park	III.
WXCN	LIONIGEUCE	R. I.	WKFM	Chicago	III.	WAVU-FM		Alm			
	1017				Mich.		Albertville	Ala.	WHRB-FM	Cambridge	Mass.
	101.7 MC		WMUZ	Detroit		KDBX	Los Angeles	Cal.	WFUM	Flint	Mich.
WVBR-FM	lthaca	N. Y.	KYSM-FM	Mankato	Minn.	KTGM	Denver	Colo.		J	
WFAH-FM	Alliance	Ohio	WGLI-FM	Babylon	N. Y.	WEAW-FM	Evanston	III.		107.3 MC.	
			WSOC-FM	Charlotte	N. C.	WGEM-FM	Quincy	III.	WRSW-FM	Warsaw	Ind.
	101.9 MC		WMOH-FM	Hamilton	Ohio	WDNC-FM	Durham	N. Ç.	WEOL-FM	Elyria	Ohio
KBTM-FM	Jonesboro	Ark.	WSTV-FM	Steubenville	Ohio	WCPO-FM	Cincinnati	Ohio	WMAL-FM	Washington	D. C.
KARM-FM	Fresno	Cal.	WGMS-FM	Washington	D. C.	WLYC-FM	Williamsport	Pa.			
KUTE	Glendale	Cal.				WPJB-FM	Providence	R. I.		107.5 MC.	
WCLM	Chicago	III.		103.7 MC.		WARL-FM	Arlington	Va.	KBBI	os Angeles	Cal.
WNES-FM	Central City	Ky.	KGO-FM	San Francisco	Cal.						
WTOW-FM		Md.	WBBQ-FM	Augusta	Ga.		105.3 MC.			107.7 MC.	
						KDFR	San Diego	Cal	WDEM-FM	Providence	R. I.
WSFL-FM	Springfield	Mass.	WTAX-FM	Springfield	. m.d			_	** DEM-FM	TOTIGETICE	n. 1.
WDET-FM	Detroit	Mich.	WFIU	Bloomington	ind.	KBCO	San Francisco	Cal.		107 0 44	
WRRC	Cherry Valley	N. Y.	WOC-FM	Davenport	lowa	WDSU-FM	New Orleans	La.	VVO 4 F14	107.9 MC.	C .
WBFM	New York	N. Y.	WMOU-FM	Berlin	N, H.	WWHG-FM		N. Y.	KXOA-FM	Sacramento	Cal.
WGNC-FM	Gastonia	N. C.	WRRA	lthaca	N. Y.	WMSA-FM	Marsena	N. Y.	WEST-FM	Easton	Pa.
WKRC-FM	Cincinnati	Ohio	WICA-FM	Ashtabula	Ohio	WDAS-FM	Philadelphia	Pa.	KDFW	Cedar Hill	Tex.

STEREO BATTLE ENDS QUICKLY

At press time, Goddard Lieberson, president of Columbia Records, announced that his company will produce 45/45 discs:

"It is our intention to produce for commercial sale in the near future a socalled non-compatible, stereophonic disc which will contain every element necessary for full stereophonic effect. This stereophonic disc will not in any way affect our monaural catalog which is, and will continue to be, the world's largest LP catalog.

"Our point of view has always been that the introduction of the stereophonic disc is merely a refinement, not a revolution, in the realm of "Lp" recording. Various methods for reproducing stereophonically have been developed, and others are still in the laboratory stage. The Columbia full stereophonic disc will conform to the technical standards adopted by both the record and phonograph industries."



You Can't Judge a Book By Its Cover, nor Hi-Fi Equipment By Its Outward Appearance. Here Are Photographs Showing the Inside Construction of New Components Which Have Been Granted the Commendation Seal

"INSIDE

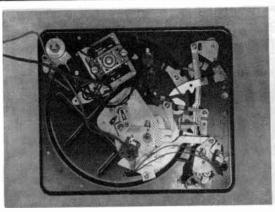
INFORMATION"

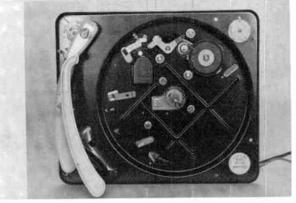
The HI-FI Music Commendation Seal, which bears the inscription "A Commended Design in Its Price Class", has been awarded to the specific models described and illustrated in this department.

In making these awards, five factors are considered. They are: mechanical design, electrical design, workmanship, performance, and facilities provided. These factors are then related to the retail price.

Thus, designation as "A Commended Design in Its Price Class" represents a composite of the various points which must be taken into account in the selection of hi-fi equipment.

It should be clearly understood that the Commendation Seal is not a confirmation of the manufacturer's specifications. However, when we have received such confirmation from an independent engineering laboratory, this is so stated in the discussion of the equipment, and the name of the laboratory is given for purposes of identification.





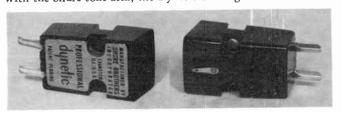
Award No. 49: Garrard RC121 II 4-speed changer. Second from lowest in price range of the four Garrard changer models, this is a revised design incorporating a number of excellent features. It operates at 16, 33, 45, and 78 rpm. Up to ten 10 or 12-in. records of the same speed can be intermixed. Separate, concentric controls permit the choice of automatic or manual operation. On manual, the arm is free and disengaged from the cycling mechanism except at the

end of the record, when the arm is returned to the starting position, and the motor is switched off. In addition, a brake acts in the inside rim of the turntable to stop it quickly when the motor switch is actuated.

The head which carries the pickup has three plug-in contacts, with connections for a stereo pickup. Thus, with an extra head, both monaural and stereo pickups can be used. Price without pickup \$42.50; Base \$4.60 additional.



Award No. 50: Shure Dynetic cartridge. Originally sold only with the Shure tone arm, the Dynetic cartridge is now available



separately, as illustrated. The stylus is mounted on an arm carried by a magnetized shank. This assembly can be removed when it is necessary to replace the stylus. Any standard head will take this pickup. Recommended stylus force is 3 to 6 grams, depending upon the particular arm used. A 1-mil diamond or a 3-mil sapphire is furnished with the separate cartridge. The .7-mil stylus which tracks at 1 to 2 grams is supplied only with the pickup mounted on the Shure arm. Price with 1-mil diamond is \$27.50; with 3-mil sapphire, \$15.00.

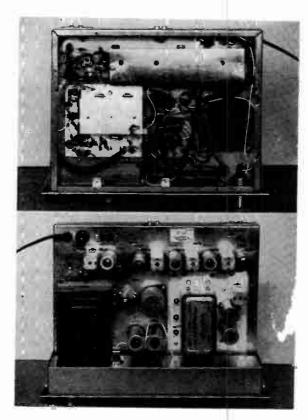


Award No. 51: H. H. Scott model 310-B FM tuner. While the 310-B is similar in appearance to the original 310 design, mechanical and electrical refinements have been made which contribute to the overall performance.

The upper front-panel control is for volume. Once set, it does not require readjustment from station to station, for the automatic volume control maintains constant level. The lower control is for the Dynaural noise suppressor. It should be adjusted until no noise is heard between stations. On extremely weak signals, the control should be disabled by turning the knob to 10 on the scale.

Jacks at the rear of the chassis provide about 5 volts from OUTPUT, or 1 volt from Tape. If the level from OUTPUT is too high to drive a particular amplifier, the Tape connection should be used.

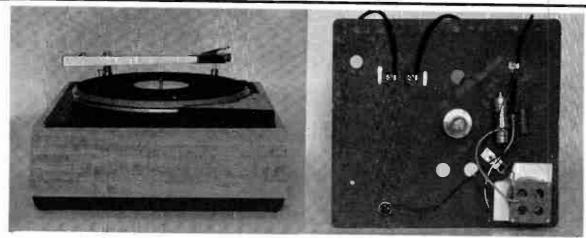
The meter serves as a tuning indicator and also as a signalstrength meter. That is, the tuning is adjusted for maximum

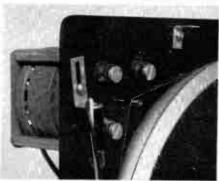


swing. The stronger the signal, the farther the pointer will move to the right at resonance.

Only criticism of this tuner is that the 10 major divisions of the logging scale are divided into 4 parts, instead of 5, so that readings for individual stations cannot be recorded in decimal figures.

Mechanically and electrically, this is an excellent FM tuner, with exceptionally high sensitivity, selectivity, and stability. Price is \$189.95.





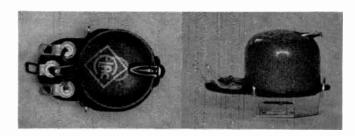
Award No. 52: Gray model 33-H 33-rpm. turntable. The most advanced features have been engineered into this turntable. Reflecting the tendency of those concerned with high-quality music from records, this model is designed to operate at 33 rpm. only, thereby eliminating complications introduced by speed-change mechanisms. Terminals and leads with pin jacks are provided for connections to a stereo pickup. As a means of increasing the inertia of the power source, and thereby reducing wow and flutter, the casing of the hysteresis mo-

tor rotates, in contrast to the usual construction in which the rotating element is an armature of less weight and smaller diameter. This accounts for the appearance of the motor, shown in the picture at the left.

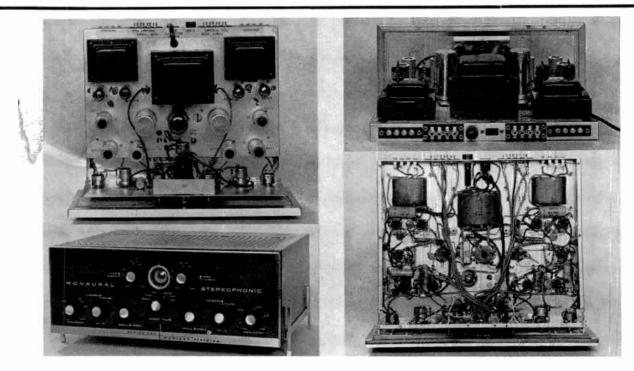
In the top view, the new Gray tone arm is mounted on the ½-in. steel plate, although any other 12-in. arm can be used. The plate is 16 ins. wide by 14¾ deep; a clearance of 3 ins. is required beneath the plate. Turntable is machined aluminum. Price is \$79.95.

Award No. 53: Audiogersh stereo pickup. Our entire staff took time off to listen to this pickup, for it was the first submitted for our use. It came mounted on the arm of an Audiogersh changer, but we used it with the manual-operation spindle.

This is a variable-reluctance type of pickup, intended for 45/45 stereo records. Opinion was unanimous that the performance was equal if not superior to what we have heard at the various demonstrations given by manufacturers of stereo discs for the press. We were also very pleased with the performance of this pickup on monaural records. It can be mounted in any standard head. Recommended stylus force is 4 grams with a

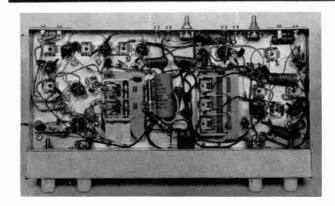


turntable, and 6 grams with a changer. Price with .7-mil diamond is \$59.50.

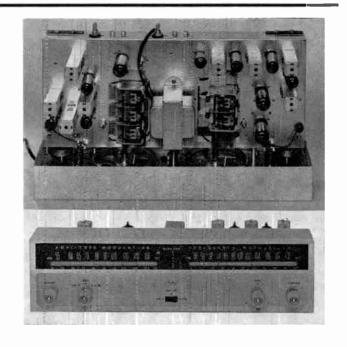


Award No. 54: Madison Fielding series 320 stereo preampamplifier, rated 20 watts output on each channel. Two preampamplifiers are contained in this unit. At the center of the panel is the master gain control. Concentric with it is the selector switch for monaural preamp, radio, tape; and stereo preamp, radio, and tape. In the monaural positions, an electronic crossover at 600 cycles feeds a woofer and a tweeter separately.

Each channel has an equalization control, and concentric loudness and volume, and bass and treble controls. Also, on each side of the dual magic eye is a level control calibrated from .25 to 20 watts, and a concentric balance control. The rear view shows four pairs of pin jacks for one low-level and two high-level inputs, and tape monitoring. Speaker terminals are for 4, 8, and 16 ohms. Price is \$169.95; metal case \$19.95.



Award No. 55: Arkay model ST-11 FM-AM stereo tuner. Separate circuits can be switched to either FM or AM, or to both for stereo reception. On the FM side there is an AFC switch, and a narrow-band switch on the AM side. Each section has a cathode follower output, with a level-set control and pin jacks for amplifier and tape connections. Chassis is 15 ins. wide, 4 high, and 8 deep. Price is \$74.50; cover \$3.95. Also in kit form at \$49.95.





THEY'RE <u>BOTH</u> MADE BY GRAY!

America's First, Quality Turntable designed for the new Stereo Discs!

The new Gray 33-H Turntable, designed specifically for stereo discs, is your best buy in High Fidelity equipment. Since stereo disc reproduction demands turntable components with extremely low vibration, this insures the highest quality reproduction of conventional microgroove recordings. Shock-mounted hysteresis synchronous motor. Superior construction and a minimum of moving parts assure long trouble-free life. Price \$79.95.

New Gray Micro-Balanced Tone Arm with Dual Viscous Damping!

Three years of Gray research brings you exclusive dual viscous damping providing maximum tracking stability and static balance. Result: finest sound reproduction designed for all popular cartridges. Adjustable stylus force. Price \$34 for 12-inch and \$36.50 for 16-inch arm.

New Gray Micro-balanced Pressure Gauge Saves Your Styli, Your Records, Your Money!

Incorrect pressure on your stylus produces distortion and record damage. The easy-to-use Gray pressure gauge helps you to check and adjust your tone arm, tells you at a glance when the stylus pressure is correct. Price \$2.50.

THE **CRAY** MANUFACTURING CO., 16 ARBOR ST., HARTFORD 1, CONN.

HI-FI DEMONSTRATIONS

It's about time that we start to distinguish between those who are interested in volume of sound, and those who are interested in quality of reproduction. Up to this time, it has been generally assumed that they are one and the same, comprising the group we call the hi-fi enthusiasts.

This was so forcefully brought out at a recent demonstration of stereo records and equipment staged by a company that is new in this field. Someone had readied the setup in advance. After a brief address, the president of the company turned the switch, and out came the music. But, to, that was not music!

The ve ume of sound was so intense as to mask the music completely, while the distortion was what one would expect a severely overloaded system. Yet the pany executive stoll around be at their audience as if were malanimously happy to share a tre it, and confident that it was being enjoyed by all present. What happened after that cannot be reported here, because this member of the audience walked out!

More and more frequently one hears the comment: "I just don't care for hi-fi. It's too loud." That is a sad commentary on the manner in which hi-fi equipment is so frequently demonstrated. It makes no more sense than for an automobile sales-Continued on page 63

STEREO DISCS

Continued from page 38

buy one. In addition, it eleminates the need for producing monaural and stereo discs of each title. This is an inventory problem for both the manufacturers and the dealers, since stereo tapes of the same titles must be produced and carried in stock, too.

We could evaluate the need for compatible discs if we knew how quickly, and to what extent the sale of stereo equipment, initiated by recorded tapes, is going to grow. Sales are still small in relation to the purchase of phonographs, but tape has added "stereo" to our national vocabulary, and has launched an accelerating demand for stereo tape machines and the associated components. It is already evident that packaged phonographs without stereo pickups selling at \$150 or more will be obsolete this fall, and that all models at that price and above will at least have connections for adding an amplifier and speaker.

As for the cheap phonographs, we would venture the suggestion that the real need will be for an inexpensive compatible monaural pickup designed specifically to play both "non-compatible" stereo discs as well as the ordinary monaural records.

This, it appears, would take care of those who want to play 45's and both Continued on page 56





stereo tape deck kit

HEATHKIT \$14395

Enjoy the wonder of Stereophonic sound in your own home! Precision engineered for fine performance, this tape deck provides monaural-record /play-

back and stereo playback. Tape mechanism is supplied complete. You build only the preamplifier. Features include two printed circuit boards-low noise EF-86 tubes in input stages-mic and hi-level inputs-push-pull bias-erase oscillator for lowest noise level-two cathode follower outputs, one for each stereo channel-output switch for instantaneous monitoring from tape while recording. VU meter and pause control for editing. Tape speeds 3% and 7% IPS. Frequency response ± 2 db 40-12,000 CPS at 7%IPS. Wow and flutter less than .3%. Signal-to-noise 55 db at less than 1% total harmonic distortion. NARTB playback equalization. Make your own high quality recordings for many pleasant listening hours.

stereo equipment cabinet kit

HEATHKIT MODEL SE-1 (Price to be announced soon)

Beautifully designed, this stereo equipment cabinet has ample room provided for an AM-FM tuner-tape deck - preamplifier - amplifiers - record changer - recand storage and speakers. Constructed of 3/4" solidcore Philippine mahogany or select birch plywood, beautifully grained. Top has shaped edge and sliding top panel. Sliding doors for front access. Mounting panels are supplied cut to fit Heathkit units with extra blank panels for mounting your own equipment, Easyto-assemble, all parts are precut and predrilled. Includes all hardware, glue, legs, etc. and detailed instruction manual. Speaker wings and center unit can be purchased separately if desired. Overall dimensions with wings 82" W. x 37" H. x 20" D. Send for free details.



DELUXE AM-FM TUNER KIT

HEATHKIT MODEL PT-1 \$8995

Here is a deluxe combination AM-FM tuner with all the ad-vanced design features required by the critical listener. Ideal for stereo applications since AM and FM circuits are separate and individually tuned. The 16-tube tuner uses three circuit boards for easy assembly. Prewired and prealigned FM front end. AFC with on/off switch—flywheel tuning and tuning meter.



STEREO PRE-AMPLIFIER KIT

HEATHKIT MODEL SP-1

(Price to be announced soon)

This unique two-channel control center provides all controls necessary in stereo applications. Building block design lets you buy basic single channel now and add second snap-in channel later for stereo without rewiring. 12 inputs each with level control—NARTB tape equalization -6 dual concentric controls including loudness controlsbuilt-in power supply.



55 WATT HI-FI AMPLIFIER KIT

HEATHKIT MODEL W-7M \$5495

First time ever offered—a 55-watt basic hi-fi amplifier for \$1 per watt. Features EL-34 pushpull output tubes. Frequency re sponse 20 CPS to 20 KC with less than 2% harmonic distortion at full output throughout this range. Input level central and "on-off" switch provided on front panel. Unity or maximum damping factors for all 4, 8 or 16 ohm speakers.



12 WATT HI-FI AMPLIFIER KIT

HEATHKIT MODEL UA-1 \$2195

Ideal for stereo applications, this 12-watt power package repre-sents an outstanding dollar value. Uses 6BQ5/EL84 pushpull output tubes. Less than 2% total harmonic distortion throughout the entire audio range (20 to 20,000 CPS) at full 12-watt output. Designed for use with preamplifier models WA-P2 or SP-1. Taps for 4, 8 and 16 phm speakers.

For complete information on above kits—Send for FREE FLYER.

HEATH COMPANY • a subsidiary of paystrom, Inc. • Benton Harbor 8, Mich.

easy-to-build

high quality

Look ... how simply you can assemble your very own high fidelity system! Fun-filled hours of shared pleasure, and an everlasting sense of personal accomplishment are just a few of the rewards. Heathkits cost you only HALF as much as ordinary equipment and the quality is unexcelled. Let us show you how easy it really is! ...



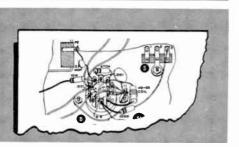
HEATHKITS®

Install a .001 µfd disc condenser from socket B7 (NS) to ground lug B11 (NS). Cut the leads so that they are just long enough to reach and dress the condenser close to chassis, over the wires already present. Connect a 470 KR resistor (yellow-violet-

) Connect a 470 KB resistor (yellow-violetyellow) from socket B7 (S) (2) to B8 (NS). Mount as close to the socket as possible.

Step-by-Step Assembly Instructions

Read the step ... perform the operation ... and check it off— it's just that simple! These plainly-worded, easy-to-follow steps cover every assembly operation.



Easy-to-follow Pictorial Diagrams . . .

Detailed pictorial diagrams in your Heathkit construction manual show where each and every wire and part is to be placed.



Learn-by-doing Experience For All Ages . . .

Kit construction is not only fun—but it is educational too! You learn about radio, electronic parts and circuits as you build your own equipment.



Top Quality Name-Brand Components Used in All Kits

Electronic components used in Heathkits come from well-known manufacturers with established reputations. Your assurance of long life and trouble-free service.



HEATHKIT

bookshelf 12-watt

amplifier kit

NEW

MODEL EA-2

\$2795

There are many reasons why this attractive amplifier is a tremendous dollar value. You get many extras not expected at this price level. Rich, full range, high fidelity sound reproduction with low distortion and noise . . . plus "modern" styling, making it suitable for use in the open, on a bookcase, or end table. Look at the features offered by the model EA-2: full range frequency response (20-20,000 CPS ± 1 db) with less than 1% distortion over this range at full 12 watt output-its own built-in preamplifier with provision for three separate inputs, mag phono, crystal phono, and tuner-RIAA equalization-separate bass and treble tone controls-special hum control-and it's easy-to-build. Complete instructions and pictorial diagrams show where every part goes. Cabinet shell has smooth leather texture in black with inlaid gold design. Front panel features brushed gold trim and buff knobs with gold inserts. For a real sound thrill the EA-2 will more than meet your expectations. Shpg. Wt. 15 lbs.

TIME PAYMENTS AVAILABLE ON ALL HEATHKITS WRITE FOR FULL DETAILS



chairside enclosure kit

This beautiful equipment enclosure will make your hi-fi system as attractive as any factory-built professionally-finished unit. Smartly designed for maxiress consistent with attractive appearmura flexit

for any of the Heathkit amplifiers P. During construction the tilt-out desig shelf and in be in affed on either right or left side as decucted of sturdy, veneer-surfaced furnituresired. Cabinet is co. grade . lywood 1/2" and 1/4" whick. All parts are precut and predrilled for eas assembly. Contemporary available in birch or mahogany, traditional in in pagany only. Beautiful hardware supplied to match each style. Dimensions are 18" W x 24" H x 351/2" D. Shpg. Wt. 46 lbs.





high fidelity FM tuner kit

For noise and static free sound reception, this FM tuner is your least expensive source of high fidelity material. Efficient circuit design features stablized oscillator circuit to eliminate drift after warm-up and broadband IF circuits assure full fidelity with high sensitivity. All tunable components are prealigned so it is ready for operation as soon as construction is completed. The edge-illuminated slide rule dial is clearly numbered for easy tuning. Covers complete FM band from 88 to 108 mc. Shpg. Wt. 8 lbs.

MODEL FM-3A \$25.95 (with cabinet)



broadband AM tuner kit

This tuner differs from an ordinary AM radio in that it has been designed especially for high fidelity. A special detector is incorporated and the IF circuits are "broadbanded" for low signal distortion. Sensitivity and selectivity are excellent and quiet performance is assured by a high signal-to-noise ratio. All tunable components are prealigned before shipment. Incorporates automatic volume control, two outputs, and two antenna inputs. An edge-lighted glass slide rule dial allows easy tuning. Your "best buy" in an AM tuner. Shpg. Wt. 9 lbs.

MODEL BC-1A \$25.95 (with cabinet)



HEATH

HEATHKIT

master control preamplifier kit

Designed as the "master control" for use with any of the Heathkit Williamson-type amplifiers, the WA-P2 provides the necessary compensation, tone, and volume controls to properly amplify and condition a signal before sending it to the amplifier. Extended frequency response of ± 11/2 db from 15 to 35,000 CPS will do full justice to the finest program material. Features equalization for LP, RIAA, AES, and early 78 records. Five switch-selected inputs with separate level controls. Separate bass and treble controls, and volume control on front panel. Very attractively styled, and an exceptional dollar value. Shpg. Wt. 7 lbs.

MODEL WA-P2 \$19.75 (with cabinet)

pioneer in "do-it-yourself" bsidiary of Daystrom, Inc. electronics

COMPANY . BENTON HARBOR 8, MICHIGAN

May 1958





HEATHKIT 7

MODEL W-5M

\$5975

high fidelity amplifier kits

To provide you with an amplifier of top-flight performance, yet at the lowest possible cost, Heath has combined the latest design techniques with the highest quality materials to bring you the W-5M. As a critical listener you will thrill to the near-distortionless reproduction from one of the most outstanding high fidelity amplifiers available today. The high peak-power nandling capabilities of the W-5M guarantee you faithful reproduction with any high fidelity system. The W-5M is a must if you desire quality plus economy! Note: Heathkit WA-P2 preamplifier recommended. Shpg. Wt. 31 lbs.

~ufacturer: For an amplifier of increase : will be growing capacities of you pur provides you with the Heathk. loud speaker systems improve approach a dynamic range close Heath brings to you an amplifie ape plenty of reserve power without distortion ing for a high powered amplifier of outsta yet at a price well within your reach, the W-6M is for you! Note: Heathkit model WA-P2 preamplifier recommended. Shpg. Wt. 52 lbs.

HEATHKIT DUAL-CHASSIS MODEL W3-AM

\$4975

\$3975



HEATHKIT SINGLE-CHASSIS MODEL W4-AM



DISC page 50

Equipment

pes paved the way for

promotion c

e to the sale

LP's on low-priced dition, many would non-compatible picksive compatible mon-Il be no problem with ments that have 45/45 ce they can play all

high fidelity amplifier kits

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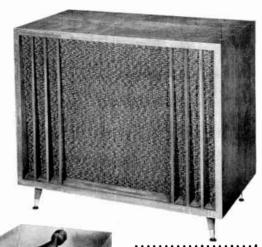
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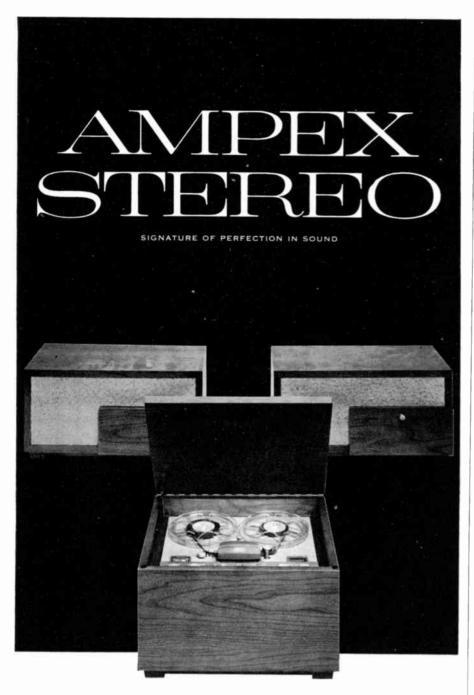
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STEREO

Continued from

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source over both speakers.

It looks, therefore, as if most people who take their music-at-home seriously will eventually have stereo tape machines, and turntables or changers with stereo pickups. And what about tape magazines? That raises the question: Are they necessary? Surely it's easier to master the knack of starting a tape by just holding the end of the tape on the hub and turning the reel around once than learning how to operate the fancy controls they're putting on new kitchen stoves!

LET'S MAKE MUSIC

Continued from page 21

Rupp. "The extraordinary accompaniments of Franz Rupp went far to accomplish the total perfection of effect." So wrote Robert Lawrence, in *The New York Times*. The *San Francisco Chronicle's* music critic, Albert Frankenstein, noted, "As always, Franz Rupp was the consummate accompanist." But, for all his work and ability, the critics sometimes pass the accompanist over with, "At the piano, Franz Rupp."

At first, Mr. Rupp may be taken aback, but up he bounces again. He knows the discord can be a difference in interpretation, it can be that the critic had an off-night, or maybe the accompanist had! After each concert, Franz Rupp works to strengthen any weak spot. "My feeling of need for improvement," he declared, "forever goads me."

"In America, popular acclaim is all for the solo celebrity. In the old countries," he said, "a musician is a musician whether he plays first or second fiddle. It is customary, over there, to give the soloist and accompanist equal billing and to give each due respect and appreciation for his part in the performance."

Franz Rupp, himself, is often spot-Continued on page 57

LET'S MAKE MUSIC

Continued from page 56

lighted as a solo pianist. To be an accompanist and at the same time a piano virtuoso is a real accomplishment. La Prensa, Buenos Aires, said of him, "Again we listened to the artist Franz Rupp, by now well known to us. In reality we have a pianist with precise mechanism. In Beethoven he displayed a great vigor and expression. Because of Mr. Rupp's respect for the composition he plays, his interpretations are of truest fidelity."

Of all his critics, he thinks his wife is the most discriminating. She comes from the old musical Moskowski family of Potand, and coaches opera singers. She is prottl of her husband's abilities and his accomplishments.

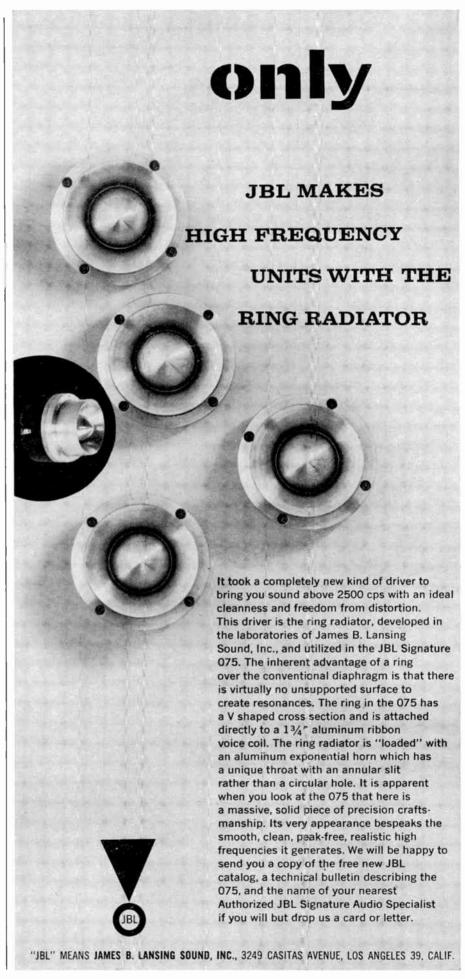
Franz Rupp began his music in his Bavarian home town of Schongan. When five years old he studied violin with his father. Wl "seven he put down the violin for the piano. At fourteen, he entered the Munich Academy and each year, there, won the Grand Prize awarded by the Bavarian Government.

As naturalized Americans, Mr. and Mrs. Rupp have made the same Central Park apartment their headquarters and home for nineteen years. In Central Park, they walk a lot together. A frequent walking companion was Dr. Albert Einstein, a friend for years.

Once while tramping a Colorado mountain road, the Rupps found a new acquaintance, a gold miner, also spending a holiday hiking the hills. That evening, the three sat in the Rupp cabin around the open fire and had coffee, the aroma of the coffee mixing pleasantly with that of the burning pitch-pine. Franz could not help noticing that his guest cast a longing glance from time to time toward the shining grand piano that stood before the wide windows of the cabin. He knew what this meant, alas! His friend hoped that he would play. But after all, he was here for a rest — to get away from the keyboard, to forget for awhile the rigors of the concert season ahead. Nevertheless, instead of going out to the kitchen to brew another pot of coffee as he had intended, he went, instead, to the piano and played very softly at first, an arrangement of Schubert's Serenade. To his amazement, their guest, just as softly, began to sing in a baritone of great and longing beauty, the German of the original text. "You are an artist," Franz Rupp congratulated his fellow-musician when they had finished. "Now — let's try it again. This time, full voice!"

And so, long into that chilly Colorado summer night, after Mrs. Rupp had prepared another giant pot of scalding coffee, the great *lieder* of Schubert, Schumann, and Brahms echoed through the pine-clad canyons of the Rockies. At the piano, Franz Rupp.

It is the same for each artist he accom-Continued on page 58



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panies, for every audience wherever he may be, for any music lover listening to hi-fi on records at home. Franz Rupp says to each, "Let's make music together."

Sara Given Rockey has achieved what is the goal of many writers; she free-lances from the serenity of her home in the Colorado mountains.

"SALUTE" LP'S

Continued from page 27

mercilessly throwing low-fi mud at Bird's memory while plundering his grave. Lunceford was a keen businessman himself and had an astute manager; Parker was merely a genius with no capacity for examining royalty statements. It is a fair bet that the pickings for his estate will be meager and that the current parace of "Salute to Charlie Parker" LP's will be of little value to his widow and children.

When the inevitable recession in jazz record sales sets in, as predicted here last month, it is to be hoped the here tribute-salute-dedication LP will be the first casualty. It is pleasant to be able to hear Jimmie Lunceford (or pseudo-Lunceford) from 16 through 15,000 cycles, but it is also uncomfortable to know that there may be a few more vultures hovering over Birdland to see who will be the next subject for a "Salute to Joe Doakes in Hi-Fi." I would rather see Doakes stick around for awhile and pick up the cash for himself.

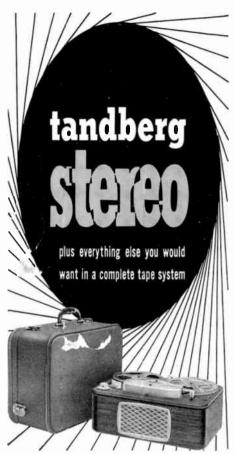
RECORD COLLECTING

Continued from page 26

played pizzicato (except for the double bass which carries the bass line) and a solo oboe. Italian models may have influenced Handel's formal approach to his music, but his own stamp is already evident in this broad melody. In Dafne's second aria, both solo oboe and solo violin join the soprano. "Apollo e Dafne" is available in a fine performance by Margaret Ritchie and Bruce Boyce conducted by Anthony Lewis (Oiseau Lyre 50038). Music lovers who are attracted to both this period and to the combination of voice and instruments will do well to investigate other cantatas of this era.

Brahms: Two Songs for Contralto with Viola Obbligato: If, during the 19th Century, composers were overly preoccupied with music for voice and piano alone, they did, nevertheless, occasionally add an obbligato instrument to the combination. Brahms' use of the viola in these tender songs is a striking example of how a second instrument can be used to heighten a song's effectiveness and add to its message. In the first song, Gestille Sebnsucht (Longing at Rest), the viola intensifies the yearning expressed in the text by its own poignant melodies which are different from those of the contralto. The play between voice and instrument is sufficiently rich and varied to give the feeling of chamber music; the viola is not a meaningless obbligato. The

Continued on page 59



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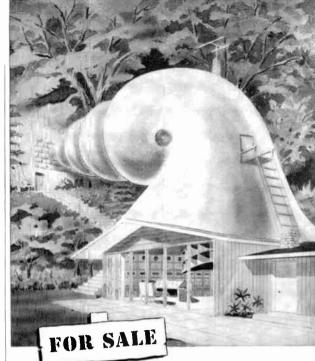
RECORD COLLECTING

Continued from page 58

most impressive use of the viola, however, is found in the second song, Geistliches Wiegenlied (Virgin's Cradle Song), in which the medieval German carol, Joseph lieber, Joseph mein is played by the viola as a counter melody to the one sung by the singer. In the hands of a composer less gifted than Brahms, such a device could easily have led to confusion and chaos. Here, however, both melodies complement one another with the greatest naturalness and ease. The recording made by the late Kathleen Ferrier with Max Gilbert viola, and Phyllis Spurr piano (London 5098) is a lovely reminder of this singer's great gifts. It is a pity that Brahms did not compose more music of this type.

Ravel: Chansons Madécasses, for Voice, Flute, Cello, and Piano: Ravel's settings of these three unrelated texts, adapted from poems of Madagascar by the 18th Century French poet Evariste de Parny are probably the most frequently performed of all 20th Century compositions for voice and instruments. The settings are languorous and heavy with atmosphere. The free declamatory vocal style requires deft and subtle handling if all the imagery and moods of these songs are to be captured. If they are, they have a compelling fascination. Those who associate the use of the flute and voice with Proch's Air and Variations should study the use of the combination in the second song of this set. It chronicles the reasons why the native should mistrust the white intruders. The first flute motive which is repeated in every measure of the first part of the song captures the mood of wistfulness and sadness of the situation, but as the song grows more rebellious so, too, does the flute. The songs are full of master strokes of instrumentation. Martial Singher was the first man to sing these songs. He reports that "Maurice Ravel, although grateful to the ladies who sang the Madécasses in the 20's and early 30's, told me once that he had been disappointed that no man had seen fit to sing them." They are still sung by ladies, despite the fact that the texts are undeniably the utterances of a man. Martial Singher has recorded his performance superbly (Concert Hall CHS 1124). Recently there were five other recorded versions, but the only one easily available at present, other than the Singher disc, is by Irma Kolassi (London LL-1425). She uses her warm mezzo to good effect.

Vaughan Williams: On Wenlock Edge, for Tenor, Piano, and String Quartet: A. E. Housman's texts have been used by many British composers. This cycle of six songs is based on poems from "A Shropshire Lad". Vaughan Williams, who is now considered the dean of Continued on page 60

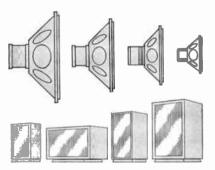


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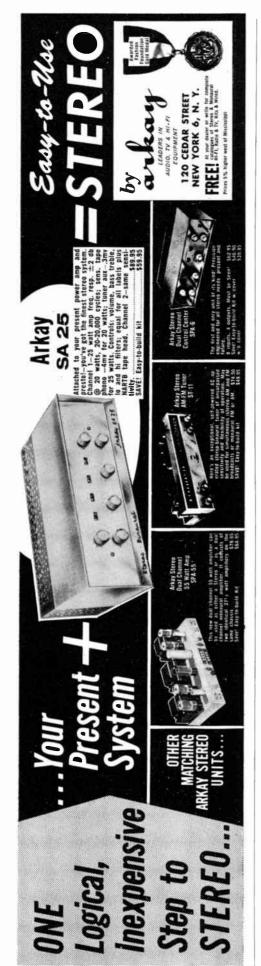
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RECORD COLLECTING

Continued from page 59

British composers, occupied no such exalted position when he composed these songs in 1909. They were immediately successful, however, and admiration for them has been growing for the past half century. Two very important features make them outstanding. First, he has succeeded in easily and unselfconsciously translating English speech into melodic song as skillfully as French and German composers have treated their native languages. Many British and American composers have stumbled over this hurdle. Vaughan Williams has accomplished this without loss of either effectiveness or inventiveness. His handling of the instruments is the other notable achievement. It is very important in music of this kind that both voice and instruments be treated with full regard for their individual potentials and yet add up to a coherent and satisfying whole. Bredon Hill and Is My Team Ploughing? the two longest songs of this cycle. are miniature dramas of great and powerful effect. The melodic line is never awkward or unsingable and the instruments underline and point up the moods in their own most characteristic ways. This cycle can easily serve to silence those who claim that the 20th Century has produced no remarkable vocal music. Choice between the two recorded versions is difficult. Neither performance is ideal but both have solid virtues. The ideal would combine the voice quality of George Maran (London 5365) with the intensity of expression of Alexander Young (Westminster 18097). Both instrumental groups are satisfactory.

Respighi: Il Tramonto, Poem for Quartet and Voice: Shelley's poem "The Sunset" is here given a musical setting via a translation into Italian by Ascoli. Respighi's colorful portraits of the pines and the fountains of Rome appear frequently on symphony programs but his ability to work effectively with more intimate and economic forces is relatively unknown because his work in this metier is so infrequently performed. And, apart from a song or two, his vocal music is little known. This work goes far toward increasing our knowledge of both aspects of Respighi's art. His attraction to the French impressionistic school of composition and his attempt to translate it into purely Italian terms is one of the dominating characteristics of his music. He found a perfect subject in Shelley's poem. It is not so much a miniature drama as it is a character study of a woman whose spirit was broken and whose search for peace and rest were destroyed by the sudden death of her lover. It is a tragedy of mood and atmosphere which the strings capture and underline as neither piano nor full orchestra could. Respighi sets the text in a declamatory style which strikes a happy balance between recitative and aria. Sena Jurinac,

Continued on page 61





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RECORD COLLECTING

Continued from page 60

who was unable to fulfill her Metropolitan contract this year and is still known to us only by her recordings, creates a touching portrait. The Barylli Quartet, which performs with her, is made up of first-desk men of the Vienna Philharmonic. Their performance is hauntingly beautiful (Westminster XWN 18597).

Stravinsky: Three Shakespeare Songs, for Soprano, Flute, Clarinet, and Viola: No discussion of vocal music with instruments would be complete without mention of Stravinsky's contributions to the literature. The Shakespeare Songs include Musick to Heare, Full Fadom Five, and When Dasies Pied. These were composed in 1953 and show the composer's use of the twelve-tone technic. The songs are severe, and could hardly be imagined for use within the framework of a stage presentation of the plays; they are decidedly concert pieces. A disc of Igor Stravinsky's chamber works from 1911 to 1954 for voice and instruments makes it easy for the listener to acquire and evaluate these compositions with one simple purchase (Columbia ML5107). The composer himself conducts the works. The other works included are In Memoriam Dylan Thomas (1954), Four Russian Songs (1915-1919), Two Balmont Songs (1911), Three Japanese Lyrics (1913) and Three Souvenirs (1913). It is a varied and rich recital. Some of the early songs were arranged for instruments and voice years after their composition. Some of them may appeal more than others, but there is much here to please the listener anxious to extend his familiarity with music of this type. Stravinsky is only one of the many modern composers writing songs with wind instruments but the combination still bears the stamp of novelty despite predecessors 200 years old.

Villa-Lobos: Bachianas Brasileiras No. 5, for Soprano and Eight Celli: Villa-Lobos has composed eight suites in memory of J. S. Bach in his own unique and unmistakable idiom - they breathe the atmosphere of his native Brazil much more strongly than that of 18th Century Germany. The irresistible attraction of the Suite No. 5, the only one which includes voice, has made it one of the best known compositions of the 20th Century. The recording made by Bidu Sayao has long been one of the best-selling records of serious music ever put on the market. However, her performance only includes the opening section, Cantilena. It begins with a long vocalise on "ah", continues with a Portuguese text which evokes the melancholy aspects of twilight by the sea and ends with an abbreviated repetition of the opening, this time hummed. The second part of the suite is an exuberant Dansa in the style of many Brazilian folk Continued on page 62

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For further information, write to:

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RECORD COLLECTING

Continued from page 61

songs. This love song is in stark contrast to the sensuousness of the first part. There are no listening problems in this music. Its appeal is immediate and its rewards linger over repeated hearings. Columbia has just re-released Sayao's performance as part of a recital containing many of her best recordings (Columbia ML-5231). The complete work is available on Cook 1062, a record devoted to works by Bach and compositions which could be labeled "hommage à Bach" by Villa-Lobos and Stravinsky. Phyllis Curtin is the soprano soloist here and her clear, pliable voice fits the music just as admirably in its own way as Sayao's. Villa-Lobos himself called her performance "really definitive".

Thomson: Stabat Mater, for Soprano and String Quartet: Another striking example of the use of voice with string quartet is this setting of Max Jacob's French text composed by Virgil Thomson in 1932. The work is a short one but it succeeds admirably in capturing the sorrow of the Virgin Mary at the foot of the cross. The text consists of a brief dialogue between Mary, Jesus, St. John and an angel as they seek to comfort one another. The quartet establishes the mood at the beginning and maintains it as the participants speak in turn of their feelings. Jennie Tourel has recorded the work admirably with the new Music Quartet (Columbia 3ML-4491). This record was issued as part of Columbia's splendid Modern American Music Series.

Britten: Serenade for Tenor, Horn and Strings, Op. 31: At first thought, the combination of tenor and horn seems unwieldy, presumptuous, and even esoteric. However, not to investigate is to miss one of Britten's most sumptuous and amazing compositions. The prologue and epilogue are for solo horn unaccompanied. In between are six songs with texts by Cotton, Tennyson, Blake, Johnson, Keats, and an anonymous 15th Century poet. The horn accompanies the voice in all except Keat's Sonnet which is for tenor and strings alone. The demands on both tenor and horn player are enormous, for Britten has spared neither in his attempt to set these texts with full regard for their imagery and magic. This is virtuosity used solely for artistic ends, however, since tricks and gimmicks are completely absent in these nocturnal evocations. The services of both voice and horn are utilized wholly in Britten's effort to illuminate the meaning of his chosen texts. It is fortunate that the two musicians to whom this composition was dedicated, Peter Pears tenor, and the late Dennis Brain horn, recorded the work with the string section of the New Symphony Orchestra under Eugene Goossens. Both performed imaginatively, painstakingly, and skillfully (London 5358).

press comment

Atlantic (John M. Conly)

"The AR-1W woofer gives the clebass response I ever have heard."

AUDIO (Edward Tatnall Canby)

"... the highs impressed me immediately as very lovely, smooth, unprepossessing, musical (for music) and unusually natural. No super-hi-fi screech and scratch... As to the lows... I was no end impressed, from the first time I ran my finger over a pickup stylus and got that hearty, wall-shaking thump that betokens real bottom bass to the time when I had played records and tapes on the speaker for some months on end."

The Audio League Report*

"Speaker systems that will develop much less than 30% distortion at 30 cycles are few and far between. Our standard reference speaker system,† the best we've ever seen, has about 5% distortion at 30 cycles."

*Vol. I No. 9, Oct., '55. Authorized quotation #30. For the complete technical and subjective report on the AR-I consult Vol. I No. 11. The Audio League Report, Pleasantville, N. Y.

The AR-1W

The Saturday Review (R. S. Lanier)

"... goes down into the low, low bass with exemplary smoothness and low distortion. It is startling to hear the fundamentals of low organ notes come out, pure and undefiled, from a box that is two feet long and about a foot high."

High Fidelity (Roy Allison)

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Prices for Acoustic Research speaker systems, complete with cabinets, (AR-1 and AR-2) are \$89.00 to \$194.00. Literature is available from your local sound equipment dealer, or on request from:

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HI-FI DEMONSTRATIONS

Continued from page 50

man to take a prospective customer and his wife for a demonstration ride at 120 miles an hour on a busy highway.

We buy automobiles for transportation and for the pleasure of going places—not to out-speed other cars. You have probably noticed that the manufacturers are currently emphasizing comfort rather than horsepower.

The majority of the people who are becoming interested in buying equipment for records, tape, and FM radio seek the enjoyment of fine music. They find no virtue in volume of sound that rattles the windows.

The truth is that performance is at its very worst at top volume, not only because distortion increases as the output is cranked up, but because critical listeners, if they are willing to listen at all, can hear defects in the reproduction much more clearly at high levels. That is why recording engineers generally turn their monitor speakers away up during recording and playback sessions. It makes anything that isn't good sound so much worse.

We must start to understand the difference in the effects of volume of sound and quality of reproduction on people who are interested in hi-fi equipment because they enjoy music. People who listen to demonstrations in public places naturally relate what they hear to what they want to have in their homes. That is what they are thinking about when they say: "I don't like hi-fi. It's too loud for me."

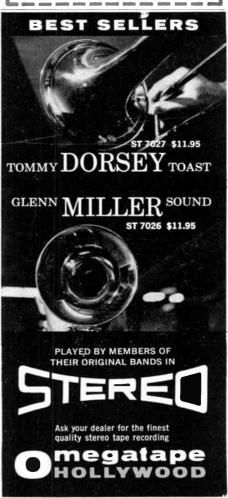
Perhaps the best approach to this serious and important problem of hi-fi public relations (it amounts to just that) is to remember that only a few audio nuts want those ear-splitting sounds from their loudspeakers, just as 120-mph. speeds are for the small number engaged in auto racing. Everyone else thinks of records, tape, and FM radio as sources of music that can be enjoyed at home!

So when we give demonstrations to show off the performance of hi-fi equipment, let's impress people with the beauty of the music, and the authentic quality of reproduction. Let's guard against making them say: "Well, if that's hi-fi, I don't want it in my home."

CHANGE OF ADDRESS

In recent months, there has been a considerable increase in the number of people who are moving to new homes. But relatively few people let us know in advance of their changes of address. We only find it out after magazines are mailed, and we receive their new addresses from the Post Office. This means that these subscribers miss their copies because magazines are not forwarded. They are destroyed by the Post Office.





BUY, SELL, or SWAP

The opportunity to buy, sell, or swap items of equipment or records through the use of this department is made available as a service to readers of HI-FI MUSIC without charge. Copy should be limited to 35 words.

Items which appear to be from dealers will be rejected.

Receipt of items will not be acknowledged unless an addressed postcard is enclosed.

SELL: ESL C-60 cartridge, diamond 1-mil, used about four months. Excellent condition \$24. P. Coppi, 2022 East 26th St., Brooklyn 29, N. Y. SH 3-4774.

BUY: TP1 with Lowther PM3 speaker, Grado cortridge (new) with Grado arm, Karg tuner, Components 4-speed turntable, Leak 50-watt plus amplifier and varislope preamplifier. Greenburgh, 112 Belmont Ave., Long Beach, N. Y. GE 2-8880.

BUY: Ampex, Telectro, Magnecorder, or Berlant tape deck. Pay to \$125. David Gomberg, 1630 Arch Street, Berkeley 9, Calif.

SELL: Heath W5M amplifier, assembled and checked out but never used \$60. Audak KT-12 arm, assembled but not used \$7.50. A. Sheppard, 4246 Monterey, Detroit, Michigan.

SELL: Heathkit WA-P2 preamp, practically new, completely assembled, wired, tested, perfect condition. Also, almost new Eric \$49 value FM tuner with AFC. Either one for best offer over \$25. Larry Rabinowitz, 5010 N. Figueroo, Los Angeles 42, Calif. Cl. 7-9830.

SELL: Will take best offer for complete set of High Fidelity Nos. 1–63. Also complete set Hi-Fi Music at Home Nos. 1–26. Edwin Levy, 1205 E. Cary St., Richmond 19, Va.

SELL: Altec Lansing A-7 speaker system enclosed in bland formica cabinet. Like new, \$225. Harold Robbins, 1300 Midland Ave., Yonkers, N. Y. Beverly 7-8019.

SWAP: Brand new Wharfedale super-8/FS/AL speaker; played two hours. Goodmans Axiom-100 12-in., little used. Swap Wharfedale for 4401 or similar tweeter or both speakers for University or similar coaxial. Also consider armplifier for stereo application. Leon Brassard, 176 Rue Saint-Charles, Jonquiere, P.Q., Canada.

SELL: Hartley speaker \$29.50 (regular \$65); Bozak B-200X dual tweeters \$16 (regular \$31); Electro-Sonic concert LP cartridge \$18 (regular \$36); Goldring turnover cartridge diamond LP stylus \$12 (regular \$25); Rek-O-Kut T-12 turntable \$39 (regular \$84.50). All guaranteed like new. R. Balzer, 435 East 74th St., New York 21, N. Y.

SELL: 78-rpm records, opera, symphony, vocal instrumental. Several hundred discs by principal artists, none played more than twice. Inventory on request. Also somewhat worn 78 pop and jazz. J. D. Schick, 100 Memorial Drive, Cambridge 42, Mass.

BUY: Good used FM booster, and encyclopedia Britannica. B. Bornemisza, 1832 W. Michigan St., Saginaw, Michigan.

SELL: Clarkstan transcription arm, model 212, \$14. G.E. cartridges: RPX-040 sapphire for 78-rpm, \$2.50; RPX-063 diamond microgroove, \$9. All in good condition. Shipping extra. H. Ernest, 704a Bloomfield Ave., Montreal 8, Canada.

SELL: Electro-Voice SP128 speaker installed in double shelf model RJ enclosure, \$40. James Yount, 318 W. 14th Street, New York 14, N. Y.

SELL: Sherwood S-2000 AM-FM tuner and Sherwood S-1000II 36-watt amplifier \$200. Also Viking FF75-RS stereo ployback, monaural record tape deck RP61 record and playback amplifier in portable case \$125. All equipment only 4 months old. Arthur L. Shafer, 1677 St. Johns Place, Brooklyn 33.

BUY: Klipschorn mid-range horn model K-5-J with or without driver. Also Acrosound TO-300 output transformer. R. D. Dickson, 8375 Zeta St., La Mesa, Calif.

SELL: Equipment used 4 months then factory serviced December '57: Marantz consolette, mahogany cabinet \$120; D&R 12B hysteresis 4-speed turntable, mahogany base drilled for 280A, 281A arms \$95; ESL C-1 cartridge, 201-F transformer \$35; Fairchild 280A arm \$27, 281A arm \$28; Scott 240 amplifier \$85; AR-I, mahogany cabinet \$130. Any or all plus transportation, excellent condition. Thomas B. Looney, 234 No. Evergreen, Memphis 12, Tenn. Broadway 8-4584.

SELL: Paper tapes on one hour radio programs on LUX Radio Theatre and United States Steel, if interested write me, around 40 boxes of Scotch paper tapes in all 80 programs \$50.00. Charles Berwick, 872 Macon Street, Brooklyn 33, N. Y.

SELL: Gott bookshelf-size speaker system. Jensen 8-in. woofer, 3-in. tweeter, and crossover \$25. Michael Munk, 1505 S.E. Lambert, Portland 2, Oregon.

SELL or SWAP: Aristocrat III, perfect, \$150. (Must change to smaller room with no available corner.) Also E-V 108 system \$60. RJ enclosure F-12 with special walnut finish \$30. No long-distance delivery. Want AR-1, AR-2, Janszen 1-30. Howard H. Volan, M.D., Medical Arts Building, Syracuse 2, N. Y.

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SELL: Midwest late model KD16, 5 band AM-FM radio chassis with 12-in. speaker. World wide reception, \$45 (cost \$129). Also Pentron champion stereo tape recorder with tapes, practically new, \$95 (list \$259). V. Cossan, 297 Main St., Keansburg, N. J.

SELL: Ampex A-692P recorder, two Ampex A-122P amplifier-speaker, Altec microphone 660B, four months old \$700. 1 G.E. Al-400 speaker and Al-406M enclosure \$65, like new. George Heidelmeier, 31 Northwood Ave., Demarest, N. J.

BUY: Old 78's by B. Gigli. Please send list to: Samuel Wudowsky, 515 Alabama Ave., Brooklyn 7, N. Y.

BUY: REL Precedent FM tuner. Please state age, condition, and price. All letters answered. A. E. Van Hise, 239 W. 10th St., New York 14, N. Y

SELL: ESL professional series arm and cartridge with extra cartridge for 78's and transformer. Cartridges very recently checked by ESL and diamonds replaced. Best offer over \$75.00. David Babin, 1466 Park Haven, Cleveland 7, Ohio.

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SELL: Audak 16-in. studio arm, Audak D16 pickup, 2 perfect diamond styli, excellent condition, \$30. Leslie L. Clark, 509 Orange St., New Haven, Conn.

SELL: Very heavy 18 cu. ft. infinite baffle enclosure. Braced panels 2 to 2½-ins. thick. Will adapt it to mount buyer's speaker. \$135 FOB. W. E. Hooks, 1511 Jackson St., Durham, N. C.

SELL: Back issues of Hi-F Music at Home. 1954, 1955 all; 1956 March-April through November-December; 1957 all including Yearbook. Also Audio, Audio-craft, High Fidelity, Radio Electronics, Radio & TV News, Popular Electronics. Meyer Green, 7022 So. Shore Drive, Apt. 214, Chicago 49, Ill.

SELL: Pentron tape-recorder model HF400, 2-speed, 3 speakers, inputs: mike, rodio; outputs: ext. amplifier, ext. speaker. Original price \$249.50, sell for \$125.00. F. G. Patton, 92 Pinehurst Ave., New York 33, N. Y.

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SELL: Scott type 112 dynaural preamp, dynamic noise suppressor. A-1 condition, little used. \$25.00 plus shipping. Frank Damico, 86–75 Midland Pky., Jamaica 32, N. Y.

SELL: Heath 12-watt EA-2 amplifier and Garrard RC121 for cash or trade. Both in excellent condition. James Cohen, 1054 President Street, Brooklyn 25, N. Y.

BUY: Copy of Victor set M-420, Mozart Piano Concerto in D minor, No. 20. Played and conducted by Bruno Walter. Either 78 or album in LP. Not sure of LP number. Quote condition and price. Thomas Curtin, 115–95 221 St., Cambria Heights 11, N. Y.

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SELL: British Chapman FM. AM short wave tuner. Short waves plus FM. Excellent quality on AM with variable selectivity. Radio frequency stage on all bands. New condition. \$85.00. Gerald Little, 1000 S. 26th St., Arlington 2, Va.

SELL: Shure model 55S professional mike on Atlas floor stand with baby boom \$50. Simpson 4½-in. illuminated VU.DB meter \$20. Both items never used and in original cartons, Mr. Gene Levine, 54 West 174th St., Bronx 53, N. Y.

SELL: Granco T160 FM tunet \$30; Rek-O-Kut L-37 turntable on base with 120 arm and G.E. RPX-041A cartridge, completely assembled and ready to use \$100; Revere T1100 recorder \$125; Revere TF902 foot control for T1100 recorder \$10. L. Grotsky, 230 South St., Philadelphia 47, Pa. MA 7-4380.

SELL or SWAP: SP 120 Hammarlund all-wave receiver, 5 bands 15-560 meters, heavy duty Jensen speaker. Separate power supply. Recently factory checked. Walnut cabinet. Interested good tape recorder, deck, speaker system. Charles Lieberman, 65 Fort Washington Avenue, New York 32, N. Y. WA 8-3088.

SELL: Garrard RC-98 crown II 4-speed changer, GE diamond pickup, blond base. Used 5 hours, mint condition, \$50.00. DeJur (Grundig) tape deck, model TM8820. 1 year old. Excellent condition, factory inspected. Used, not abused, \$160. J. Bolton 11 West Halley Lane, Central Islip, N. Y.

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Literature Available on NEW PRODUCTS

To obtain literature or catalogs on the products described here, circle the corresponding letters on the Literature Request Card at the right, below.

Electro-Voice Catalogs

Catalog 118, "How to Choose Hi-Fi Speakers and Components" is now available. This catalog contains detailed information on building-block kits of E-V loudspeakers used to improve an existing hi-fi speaker system. It supplements catalog 117, "Guide to Hi-Fi Loudspeakers," which will also be sent to readers. Circle letter A.

Wollensak Stereo Tape Machine

This tape recorder for stereo tape play-back and monaural recording is especially compact and light. It includes a preamplifier for stereo playback so that it can be used with any TV set or radio which has a phono jack as a temporary stereo system. The machine includes a 10 watt amplifier for playing tapes through its own speaker. Circle letter B.

University Loudspeakers

A large, attractive brochure details the complete line of University hi-fi loud-speakers, enclosures, and speaker systems. Dimensions of all cabinets are given, along with technical specifications, pictures, and general descriptions. Circle letter C.

Sargent-Rayment Stereo Amplifier

The model SR 17-17 stereo amplifier includes two complete preamplifiers, a control center and power amplifiers on one chassis. Each power amplifier is rated at 17 watts output. Included are equalized inputs for stereo tape playback, channel reversing switch, and various other facilities. Circle letter D.

Components Corp. Turntable

This two-speed turntable is available in either the 33- and 78-rpm. model, or the 33- and 45-rpm. model. It uses the belt drive developed by Components for their Professional turntable. Circle letter E.

Stephens Bass-Plane Enclosures

Stephens Tru-Sonic now has literature describing their Bass-Plane series of speaker enclosures. These cabinets are said to be designed around new principles of acoustic engineering. Also described are the company's Free Cone loudspeaker units. Circle letter F.

Fairchild Stereo Cartridge

Among the first production models of stereo cartridges available for use by hi-fi enthusiasts is the Fairchild model XP-4. This cartridge is designed to work with the Westrex 45-45 stereo disc recording system. Circle letter G.

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MAY 1958

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Bakers 12-Inch Loudspeaker

A 12-inch loudspeaker with high flux density and very low rated cone resonance is the Bakers Ultra 12 loudspeaker. It is being distributed in this Country exclusively by Bradford Audio Corporation. Gircle letter H.

Sonotone Coaxial Speaker

This is a low-cost loudspeaker in which the woofer section is a 12 in. cone, and the tweeter is a small, elliptical cone designed for more even dispersion of the high notes. The system includes a dividing network, and features high flux-density magnetic structures on both speakers. Circle letter K.

Scott FM Tuner 311-C

Newest version of the famed Scott 311 FM tuner, the 311-C features a wide-band design which increases selectivity while reducing co-channel and adjacent channel interference. Drift is rated negligible and rejection of spurious signals high. The tuner includes a cathode follower low-impedance output, and separate output for off-the-air tape recording. Circle letter L.

Acoustic Research Brochure

Acoustic Research, Inc., manufacturer of the AR-1 and AR-2 speaker systems, has prepared a four-page booklet on the AR-2. The brochure includes a brief explanation of the patented acoustic suspension design, harmonic distortion, and frequency response curves. The AR-2 is a lower cost speaker than the AR-1, with slightly higher low-frequency cutoff. It incorporates a level control for the tweeter included in the cabinet as an integral part of the AR system. Circle letter M.

G.E. 20-Watt Amplifier

Model PA-20 amplifier is a complete control center and power amplifier in an attractive cabinet suitable for bookshelf or end-table use. It has separate volume and loudness compensation controls, and a sharp cut-off rumble filter, in addition to the customary tone controls and four phonograph equalization settings. Gircle letter N.

Klipsch "Heresy"

The newest member of the Klipsch line of corner loudspeakers is a non-corner design. The model H loudspeaker is a comparatively small unit with restricted low-frequency response, designed especially for use in the second or third channels of a stereophonic system. Details on the model H are supplied along with information on obtaining 3-channel stereo from 2-track disc or tape recordings. Circle letter O.

Fisher Power Amplifier

Model 100 is a compact 30-watt power amplifier which includes the Fisher Z-matic damping factor control, an impedance-matching switch for use with 4, 8, or 16-ohm loudspeakers, and an input level control. *Circle letter P*.

KLH Loudspeaker System

The KLH model Six is a two-way speaker system enclosed in a bookshelf cabinet. Incorporating the acoustic suspension mechanism principle, the woofer is a 12-inch cone, intended to handle up to 1,200 cycles. The cone tweeter takes over at 1,200 cycles. Circle letter Q.

Knight Tuner-Amplifier

This tuner-amplifier on one chassis requires only the addition of a loudspeaker for FM-AM radio reception, and a record changer or turntable to make a complete radio-phono installation. The amplifier section of the KN-315 includes rumble and scratch filters and is rated at 15 watts output. Circle letter R.

Altec Buflex Loudspeakers

The new speakers developed by Altec-Lansing Corporation utilize mechanical crossover from the woofer section to the high-frequency cone at the center. The rated frequency response of these speakers when they are used in specified baffles is guaranteed by the manufacturer. Circle letter S.

Eico Kits and Wired Units

A 16-page catalog pictures and describes the complete EICO line of tuners, amplifiers, and loudspeakers. It also includes the company's electronic test instruments. All the units are available in both kit form and as wired, ready-to-use units. Circle letter T.

Integrand Amplifier-Speaker System

A 6-page brochure called "The Integrand Story" describes that company's integrated amplifier-speaker system. It uses three separate amplifiers and loudspeaker driving units for the three frequency ranges: low, middle and high. Any preamplifier control unit, FM tuner or other signal source may be used to drive the Integrand system. Gircle letter U.

Robins Phono & Tape Accessories

Makers of the Gibson Girl tape splicers and many other devices for use with tape and LP records, Robbins Industries offers a booklet describing those products, as well as their plastic turntable and record-changer dust covers, LP record files, and tape threader. Circle letter V.

Norelco Speaker Catalog

Their illustrated booklet describes the various loudspeakers and speaker enclosures. It also shows details of the Norelco microphone, tape recorder, and new magnetic cartridge. Circle letter W.

Heath Stereo Equipment

Latest catalog includes stereo tape deck, completely assembled, stereo preamp kit, handsome knocked-down cabinets for radio, tape machine, and record player, matching stereo speaker enclosures, and new amplifiers, in addition to kits for many other components. Circle letter X.

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THIS is the new Bogen Stereophonic Dual Amplifier-Preamplifier. With this single unit you can precisely control all stereo sources (tapes, FM-AM radio broadcasts and the exciting new stereo discs!) and feed them through the self-contained dual 12-watt amplifiers to your stereo speakers. When you play monaural program sources, you have a total of 24 watts of power available for your speakers. Ask your Bogen dealer to tell you about the exclusive "Speaker Phasing Switch" which eliminates the "hole-in-the-middle" effect that sometimes occurs in stereo. See and hear the DB212 today . . . stereo hi fi by Bogen, the world's most experienced high fidelity manufacturer. Chassis price: \$115.00. Pearl grey enclosure: \$7.50.

DB212: Output Power: 24 watts (two 12-watt channels). Peak Power: 48 watts. Harmonic Distortion: 0.5% at rated output; less than 1% at 28 watts. Frequency Response: 20 to 20,000 cycles, ±1db. Sensitivity: tuner, aux, high tape – 0.25 v; mag, low tape – 8 mv. Noise and Hum (referred to rated output): tuner, aux, high tape – 80db; mag, low tape – 55db. Dutput Impedances: 4, 8 and 16 ohms. Tone Controls: Bass (60 c) – ±10db. Treble (10 kc) – ±8db. Equalization: Tape (Std NARTB), Phono (RIAA). Controls: Selector (four positions: tape, phono, radio, aux). Function (Monaural: Channel 1, Channel 2, Channels 1 & 2; Stereophonic: normal, inverted). Volume. Bass. Treble. Hi Filter (flat, 4 kc). Lo Filter (flat, 100 c). Speaker Phasing (2 positions). Power (on-off).

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