# RADIO DIGEST-Illustrated

HIS VOICE TO REACH ALL OVER COUNTRY



President Coolidge will be the first presi-dent of the United States ever to have had his inaugural ceremonies broadcast. On March 4 over thirty stations located from coast to coast, a record-breaking chain of broadcasters, will give the inauguration program simultaneously direct from Wash-ington. The above photo was taken when he broadcast a speech some time are at he broadcast a speech some time ago at a banquet in New York.

# **BROADCAST INAUGURAL** (Continued from page 1)

wire lines transmit the program to WJZ, its New York station, and WGY, the Schenectady station of the General Electric company, for broadcasting 'at those points.

**Probable Stations to Broadcast** The usual A. T. & T. link, consisting of Stations WCAP, WJAR, WEEI, WDBH, WGR, WCAE and WFI, will undoubtedly carry the inaugural program. Many other stations will be tied in besides.

The Westinghouse group of WBZ, KDKA, KYW and KFKX are almost cer-tain to be included. KOA and KGO, Denver and Oakland stations respectively of the General Electric company, are also fairly sure to be in the link.

More than sixteen other 500-watt broadcasters located in every part of the country are negotiating for the privilege of sharing a part of the expense and carry-ing the ceremonies on March 4.

The final list of participating stations will be announced just prior to the event. To the Radiophan of today the fact that a public address loud speaker sys-tem is to be installed means but little. Four years ago, however, it marked an epoch-making event in the history of voice transmission. Newspapers throughout the country on the evening of March 4, out the country on the evening of March 4, 1920, and the following day carried the headlines, "125,000 People Hear Harding's Voice," "A Telephone Achievement Rank-ing with the Opening of the Transcon-tinental Line," and then proceeded to tell the story of how, "with the aid of the Bell loud speaker, installed at Washington by engineers of the Bell system, President Harding addressed the greatest number Harding addressed the greatest number people that has ever listened to one man's voice at one time in the history of the world."

People throughout the land were amazed when they learned that on this inauguration day the voice of President Harding was clearly heard and understood by a crowd of 125,000 people, a crowd that completely filled the plaza in front of the capitol and overflowed into the park beyond. Today this same equipment acts as an aid to bring the voice of the President of the United States not to 125,000 but to several millions. It is this equipment, combined with the use of the long distance telephone lines of the Bell system and Radio relays, that brings the human voice to many stations for broadcasting.

# THEATRICAL LIGHTS **GIVE RADIO ALARM**

WHILE MOVIE MANAGERS INDORSE BROADCASTS

Actors' Equity Organizes Committee to Discuss Radiocast Competition and Other Problems

NEW YORK. - Representatives of actors, managers, dramatists, composers, scenic artists, publishers, stage hands and musicians—leading lights of the theatrical world—sounded a Radio alarm recently when they met together here for the first time in history to form a committee to make plans for the "betterment of the in-

stitution to which we all belong." Radio broadcasting and its relation to the theater, discussed pro and con, mostly con, for two hours was named as the

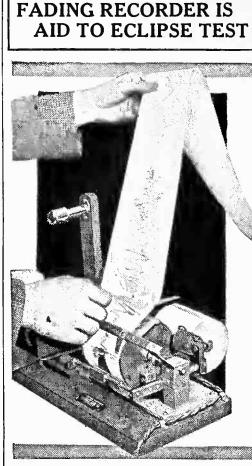
first matter for the committee to handle. The Actors' Equity association is the moving spirit behind the organization of the new committee of the theater. Although many other problems are said to be ready for discussion by the proposed committee, none of these has been named. Radio's so-called competition with the spoken play is of chief interest.

# Movie Managers Indorse Radio

While the Actors' Equity in New York was sponsoring the call to arms against Radio, down in Atlanta, Georgia, the Fa-mous Players-Lasky theater managers from all parts of the United States and Canada in convention assembled unanimously indorsed Radio broadcasting as an influence beneficial to the growth and pros-perity of the silent drama.

The motion picture theater managers further declared themselves in favor of a policy of close co-operation between theater directors and broadcasting stations.

The meeting was attended by Jesse L Lasky, production manager of the organization, and Harold B. Franklin, head of the theater department. Lambdin Kay, director of WSB, the Atlanta Journal station, spoke in behalf of broadcasting.



The apparatus pictured is a fading re-corder and was used by the Radio Cor-poration of America in the recent Radio eclipse tests in New York city to make a permanent record of the effect the eclipse had on Radio signals of various wave lengths. If signals came in always with same strength the result would be straight line on the paper tape. Note the wavy line on the tape.

Union College, Schenectady, 2XQ, recently held two-way Radiotelegraph communication with G. Marcuse, England, 2NM.



TRIRDYN and other Radios CROSLEY TRIRDYN SPECIAL THE biggest selling high SCA

Model with Cabinet to house batteries-

UU

"Uncle John" Daggett, KHJ Director-Announcer, and his almost equally famous staff, including "Kindness," "Happiness" and "Joy," will be pictured next week, together with the station of the Los Angeles Times. Read about beloved "Uncle John" and his broadcasting ideals in the next issue of Radio Digest. Tuning and Trouble Shooting the Knox Reflex will be the third part of the series February 14, 1925

# Australia Hears Complete **Program from Pittsburgh**

E. PITTSBURGH, Pa.-Station KDKA Westinghouse company here, recently reached several cities in Australia with a complete program. A cablegram received here told of the success of the test. The steamship distance to Sydney is about 9,000 miles.

Arrangements for the test were made between the Westinghouse company and The Melbourne Herald. The hour was from 5 to 6 a.m., eastern time, which corresponds with 8 to 9 p. m. at night in Australia, there being a difference of fifteen hours in time.

ill fin grade receiver on the mar-W. H. H. Knox. Readers that have built this improved renes the tuning not at all complicated and errors in assembly can be easily located. ket-the Crosley Trirdyn-reduced from \$65 to \$50. The Trirdyn Special—the beautiful

Addrese

City

Antenna and Ground Requirements are treated by Mr. Jones in the next issue in a way that is distinctly new. Antenna circuit resonance and some pointers on securing selectivity are not usually included in articles of this type.

CONTENTS

An Evening at Home with the Listener in, a Popular Chart Showing When to

Listen in for Your Favorite Station.....

formerly \$75, now \$60. The Crosley 51-P, a tremendous seller An Easily Made Quick Reference Station Directory which enables readers to use at \$25, reduced to \$23.50. the lists printed in Radio Digest without searching through several copies will be presented by David J. Morris. Compactness and low cost are other factors which recommend it.

Newsstands	5 Don	't /	Alway
Have	One	Le	ft

Looking Ahead

WHEN YOU WANT



BY SUBSCRIBING NOW

SEND IN THE BLANK TODAY S

Publisher Radlo Digest, 510 N. Dearborn St., Chleago, Ilinois.	
Please find enclosed chock (Six, Foreign) for Ono Radis Digest, Illustratsd.	
Name	

State

We unhesitatingly state that these sets, together with the other Crosley Radios represent the biggest values ever offered. Crosley Radios range in price from the one tube Model 51 at \$14.50 to the Trirdyn Special at \$60. There is a

Crosley to suit every taste and pocketbook. Before You Buy---Compare Your Choice Will Be a Croslev Most Good Dealers Handle Crosley Radios As is customary prices quoted do not include tubes, toud speaker, phones or batteries. All Crosley Radios Are Licensed Under Armstrong U.S. Patent 1,113,149.

Prices West of Rockies-Add 10 per cent.

The Crosley Radio Corporation POWEL CROSLEY, JR., President 2492 Sassafras St. Cincinnati, O. Crosley Owns and Operates Broadcasting Station WLW February 14, 1925

RADIO DIGEST-Illustrated

# SONG COMPOSERS IN **NEW WAR ON RADIO** BACK BILL FOR MORE CON-

TROL OF WRITINGS

American Society Believed Instigator of Proposed Legislation Aimed to Throttle Broadcasters Anew

WASHINGTON .- Song composers have broken out with a new war on Radio. Up to very recently they were willing to license stations to broadcast their music. Now they would take away that license, even to the extent of cancelling privileges already bought and paid for. The latest move is a lobby here in sup-

port of a new copyright bill, supported and promoted it is said by the American Society of Composers, Authors and Pub-lishers. The new copyright bill, needless to say, is stronger than any protective copyright measure ever considered before, and contains, of course, a clause indica-tive of the American society's Radio throttling policy.

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tipe this

The bill, introduced in the House of Representatives by Representative Per-kins of New Jersey, has been referred to the House patents committee, which likewise has been a reception committee dur-ing the past few weeks for a lobby composed of song composers, playwrights,

authors and artists galore. The American society, incidentally, is reported with having notified broadcasters whom they have licensed that broadcasting of certain late popular songs, which they name, must be stopped forthwith because one of their members (Arthur Hammerstein) objects. The society even goes so far as to suggest cancellation of licenses. In explanation this means that a broadcaster has no assurance that he may broadcast the music which the society claims to control, even after he pays for a license.

# Amateur Quebec Bands Play for La Presse Trophy

MONTREAL, Can.-Keen competition has been aroused in the province of Que-bec for the silver cup offered by La Presse station, CKAC, for the most popular local amateur bands. Bands from Joliette, St. Hyacinthe, St.

John and Drummondville have already gone through the ordeal of broadcasting their musical programs and the mayor of each town has waxed eloquently on the values of their individual cities.

The cities of Three Rivers, Quebec, Sorel, St. Jerome and many others have entered the contest, and especially good band programs are promised listeners who choose to dial on the 425 meter mark each Sunday afternoon between 4:30 and 6:30, eastern time.

Talks on Home Lighting

CHICAGO .- The first of a series of ten lectures on "home lighting" was given recently from Station WQJ by C. E. Johnson, speaking under the auspices of the lighting educational commission.

# **STARS FOR KIDDIES** FROM UNCLE WALT

HICAGO.—"Uncle Walt," the 5:30 o'clock story teller at WGN, Chi-cago, has become so engulfed in requests from young listeners for "shooting stars" that he has set aside certain days

for children with certain names. On Tuesday, February 10, all little girls named "Mary" who wrote to Uncle Walt and asked for a star received one, and no-



"Uncle Walt"

# HEAR U. S. BUSINESS **MEETING PUT ON AIR**

WASHINGTON.—Even the United States government can have a business meeting. Radiophans learned this recently when the semiannual business meeting of the govern-ment was broadcast for the first time. The principal feature of the evening was an address of President Coolidge and the report of Gen. H. M. Lord, director of the budget. Ten stations, well scattered about the country, broadcast the entire meeting. The ones carrying the program included WCAP, Washington; WEAF, New York city; WOO, Philadelphia; WJAR, Providence, R. I; WDBH, Worcester, Mass.; WEEI, Boston; WCAE, Pittsburgh; WMAQ, Chicago; WWJ, Detroit, and WOC, Davenport, Iowa. All stations reported good reception of the program.

# TRAIN FANS AKE UP **CHURCH COLLECTION**

SASKATOON, Sask.—The old joke that Scotchmen prefer Radio church services because of the absence of collection plates will have to be discarded. When the Continental Limited, a Radio-equipped Canadian National railway train, approached here on a recent Sunday morning the passengers heard the services from the Westminster Presbyterian church in this city. They also heard the sermon by Rev. George A. Dixon of Knox church in Calgary, Alta. Both pleased the passengers in the Radio observation so much that a collection was taken and handed to the minister of the Westminster church when the train much surprised by the unexpected contribution.

# LEAVES STAGE TO BROADCAST

Maxine Brown, musical comedy leading woman, who is the first to quit the stage for Radio. She is now a paid entertainer at Station WTAS, Elgin, Ill. Miss Brown is well known to thousands of theatergoers, having played in "Odds and Ends," "Floradora" revival, "Moonlight," "The Right Girl" and "Plain Jane."

# **FAMED ANNOUNCERS TO TRAVEL TO WDAF**

# MEET IN KANSAS CITY FOR **RADIO-ELECTRIC SHOW**

# Hired Hand, Solemn Old Judge, Bill Hay, Lambdin Kay and Gene Rouse Gather

KANSAS CITY, Mo .- Interest of Radiophans all over the country will be centered in Kansas City during the week of March 2, when the Kansas City Electric club will hold its Radio and Electrical show.

For during that week the best-known announcers in the United States will be grouped together for the first time in the history of broadcasting. Announcers who have already accepted the invitation of the Electrical club include the Hired Hand of WBAP; George Hay, the solemn old judge of WLS; Bill Hay, of KFKX; Lamb-din Kay, the voice of the south, WSB; Gene Rouse of WOAW; and two Kansas City announcers, John Schilling of WHB and Leo Fitzpatrick, the merry old chief of WDAF. All programs of WHB and WDAF will be broadcast from a special glass-front studio in Convention hall, where the show is to be held, and all the announcers will take part in directing and announcing.

Samuel Furst, who managed the Radio show held in the Hotel Muehlebach in 1923 and also the Electrical show last year, has been elected manager of the show. Leo Fitzpatrick, Radio editor of the Kansas City Star and director of WDAF, will be in charge of entertainment and broadcasting from the hall.

# NAA Gets 1,000-Watt Set; Only Waiting New Wave

WASHINGTON.—Fans living within a thousand miles of Washington may soon pick up a "new" and powerful broadcasting station. But the call is an old one in the east; it is "NAA," Arlington, Va., the pioneer naval Radio station and government broadcaster.

A new 1,000-watt set has been installed and the station will start using it just as soon as a suitable wave length can be secured from the department of commerce. The old wave of 435 meters, it is said, would interfere seriously with the two local stations, WRC and WCAP. On account of the increased power, a lower or higher channel is being sought.

# Lutheran Church Plans to **Broadcast Gospel Services**

ST. LOUIS, Mo .--- Following the news that the Paulist Fathers would establish Roman Catholic broadcasting station in New York city, the National Lutheran council announced recently the Lutheran Church in America would shortly broadcast messages through Station KFUS here. In experimental broadcasting, the coun-

cil said, it had been heard from Colorado to Massachusetts. Prominent Lutherans will appear on the program from time to time

# **ENGLISH IN DRIVE ON OSCILLATING FIENDS**

ONDON, England.—Easily the most hated man in the British Radio world is the oscillating fiend who persists in ruining the relaying of every American program in this country. The British Broadcasting



company has promised to ruthlessly track him down. The howling and screeching he sets up by trying to pick up the

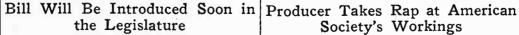
MAINE WOULD ERECT | Hammerstein Would STATE BROADCASTER Control Music Used

body but the Marys got one that eve-ning. The next evening, it was "John-ny's" turn, and all John's who had written to the fat fellow found a star shot into the heavens for them.

Every night will be dedicated to another name-Thurs-

day, February 12, "Margaret's or Peggy's" night; Friday, February 13, ''James' OI Jimmy's" night; Tuesday, February 17, "Helen's" party; Wednesday, February 18, "Paul's" show; Thursday, February 19, "Louise's" time, and Friday, February 20,

"Tom's or Thomas" turn. Each evening at 5:30 Uncle Walt con-ducts Skeezix time at WGN. "Cuckoo," the impudent bird, is custodian of the children's stars. He tacks the names of the children on the twinkling stars in his star-shooting machine; then there is a "boom" and a sky-rocket whir -and Uncle Walt points the children's attention to the place in the sky where that British programs, but the results have star is.



AUGUSTA, Me.—A bill will be intro-duced soon in the Maine legislature by Senator Benedict F. Maher of Kennebec county seeking the establishment of a state broadcasting station at Augusta. It is proposed to tell the world about Maine through this medium, giving out news as to the agricultural, tourist and industrial resources of the state. The bill will call for an initial appropriation of \$30,000 for the establishment of the service and \$25,000 a year for the maintenance for the first two years.

The nearness of the proposed station to Europe and that it would be America's most easterly 500-watt broadcasting station is being emphasized.

German broadcasting stations have commenced transmitting conversations and lectures in English to enable their listeners to learn the language. For a long time past French lessons and some not reached expectations.

NEW YORK.—Arthur Hammerstein, producer of "Rose-Marie" and other large musical productions in recent years, has announced that he would stop the publication of sheet music of the tunes of any of his future productions and that he would reserve for himself the rights to the disposition of this music for use by Radio, victrolas and orchestras.

"The composer of shows in whose production I have risked hundreds of thousands of dollars," said Mr. Hammerstein, 'by arrangement with the American Society of Composers, Authors and Publishers, permits these melodies which I have popularized to be played everywhere.

"At the end of the year the revenue is

divided between this organization and the composer, this despite the fact that I have been directly responsible for creating the demand for the music.

"In the future the composer will have to consent to giving me the sole rights Spanish talks have been included in of his work, and if he is a member of the American Society he will have to resign or disregard its rules."



Pittsburgh station direct cannot be cut out by the B. B. C. set and consequently are heard in most parts of Britain, as the American station is re-transmitted from every British station, being relayed from Biggin Hill.

Re-radiators have The Re-Radiator become such pests that a special de-

partment has been set up by the British Broadcasting company to deal with them. This department is using direction-finding apparatus to track down the culprits. According to Captain Eckersley, chief engineer of the B. B. C., a re-radiator can effect reception over a radius of quite five miles from his set. This is because the apparatus used in Britain has not been raised to the high standard of selectivity used in America. The accompanying cartoon is reproduced

from a recent issue of the London Evening News, and illustrates the feeling ourrent hero.

ou

February 14, 1925



#### COMMERCE DEPARTMENT DESPAIRS AT PROBLEM

# Announces Final Allocation of Wave Lengths-\$100,000 Is Allowed for Investigation of Tangle

WASHINGTON, D. C .-- Despairing at any possible chance of obtaining more wave channels for contemplated broadcasters, the department of commerce has issued an official list of the new wave lengths for class B stations. This list was effective February 4 and is the result of work of the experts of the department since the third Radio conference last fall. It will be noted that comparatively few

changes have been made, because several schemes which were worked out experimentally, did not prove practicable.

New and Final Class B Assignments

Wave		Wave		1
Tanath	Call		Call	1
Length	T attorn	Motors	Letters	
Meters	TUNIAC	Length Meters 379.5	WCV	L
280.2	Call Letters WNAC WOAN	379.5	WUA7	Į.
282.8	WUAN			L
285.5 285.5	WREO	384.4	WMBF	E
285.5	WEMC	389.4		
285.5	WKAR	389.4		Ŀ
288.3	KFKX	394.5		1
291.1	Reserved	394.5		1
293.9	WEAO	394.5		Ľ
293.9 293.9	WBAV	399.8		L
296.9	KFRU	405.2		Ł
299 8	WPG	405.2	WJY	1
302.8	.WTAS	410.7	Reserved	1
302.8	WIID	416.4	WCCO	İ.
302.8 305.9	WIAR	422.3	WLW	L
309.1	KDKA	422.3	WMH	L
312.3	Degerved	422.3 428.3	WSB	L
315.6	WAHC.	434.5		L
315.6			WDWF	L
J10.0	WGDS	440.9		L
315.6	KFDM	447 5	wor	L
319.0		447.5 447.5	WWAA	L
322.4		441.0	W WIALQ	Ł
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333.1		468.5	WRC	L
336.9		475.9		L
336.9	KFMX	475.9		Ļ
336.9 340.7	WCAL	475.9		ł.
340.7	WKAQ	483.6	WHAA	Ľ
340.7	KSAC	483.6	WOC	Ł
344.6	WLS	491.5	WEAF	ţ.
344.6	.WCBD	499.7		L
348.6	KOB	508.2		Ľ
348.6	WTIC	508.2	WIP	İ.
		516.9		
352.7 352.7	WIAD	526.0	WNYC	
356 9	Reserved			Ł
361.2			WOAW	Ł
365.6	WHP	535.4	w v w	Į.
265 6	WDAF	535.4	WHA	1
365.6 370.2	WERU	545.1		
370.2	WCN	545.1		
374.8		040.1		1
014.0				

#### \$100,000 for Investigation

An investigation to determine why a receiver within ten miles of a broadcasting station may fail to receive its transmission although in another direction receivers as far as 200 miles away may be obtaining good results, has been approved by the budget bureau. A \$100,000 expenditure for this has been allowed.

Detecting devices will be placed at various points throughout the country. From the results it is hoped to make a better allocation of wave lengths and territories to broadcasters.

The great trouble is caused by the present inadequate legislation giving no power to the secretary of commerce to refuse a license to any applicant who has fulfilled the easy qualifications now necessary. And many class B stations are pending.

# ANNOUNCE NEW SUPER STATION FOR CHICAGO

WLS Contemplates the Erection Within Three Months' Time

CHICAGO .- Erection of a new 5.000-

# BEAUTIES ENTERED IN WLW BEAUTY CONTEST



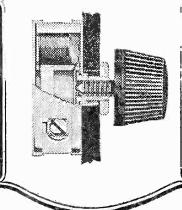
Reading from left to right: Melba Hardert, Mrs. Vera Fischer Weber, Rhoda Bogardus and Lavera M. Bourgeois. Radiophans will vote for them on St. Valentine's night, Saturday, February 14, at 8 p. m., when they are described from Crosley WLW.

Allow \$220,525 for Radio Law

Before

of commerce for the fiscal year 1926, the ministering the Radio law. It is expected WASHINGTON, D. C.—In reporting out appropriations committee of the House of that in addition to this a deficiency will the appropriation bill of the department Representatives allowed \$220,525 for ad- be allowed.

Build Your Radio Set



# **Distinctive** Features

- -Extremely compact without loss of control.
- -One-hole mounting for panels. Table mounting if desired.
- 3 -Noiseless, stepless condue to grap hite

ee the New Allen-Bradley Line Radio amateurs are building better receiving sets, today! They want

greater distance, better selectivity and clearer reception.

The new Bradleystat, Bradleyleak, Bradleyohm, Bradleyometer and Bradleyswitch have met with instant favor, everywhere. In a superclass, by themselves, they are the exclusive choice of the discriminating amateur who has learned from experience that noiseless, stepless control is essential for perfect radio reception. Your set will work better with Allen-Bradley Radio Devices. For sale by leading dealers

watt super-power broadcasting station to replace the 500-watt equipment now in use by WLS, Chicago, was announced here to-day by Charles M. Kittle, president of Sears, Roebuck and company. The new station is to be built in the open country to avoid interference with other Chicago broadcasters, but the exact location of the antennae has not been decided. The sending towers will probably be erected within fifty miles of Chicago.

Service from the new station will start within three months, according to the present plans of Edgar L. Bill, director of WLS. At the time of inaugurating the new plant it is hoped to have the twin studios now in preparation in the down-town district of Chicago ready for use.

# Open House at WEBW

BELOIT, Wis.—Station WEBW recently broadcast the "open house" of the Fair-banks, Morse and company. This is held every year by the employees. The stars of the evening were "Put"

Mossman, Eldora, Iowa, youth, who is the present world's champion horscshoe pitcher, and George May, Akron, Ohio, pitcher, twice holder of the world's barnyard golf championship title.

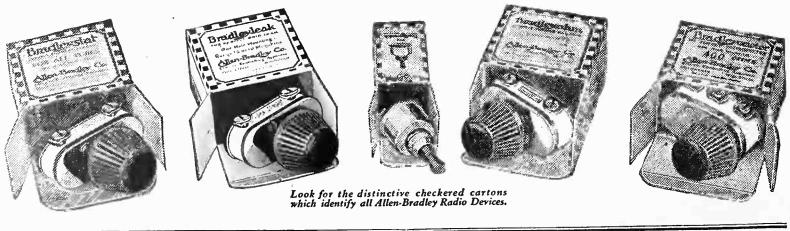
-Guaranteed against

- defects in material and workmanship.
- -Sold in distinctive checkered cartons by leading radio dealers.



Electric Controlling Apparatus 290 Greenfield Avenue

Milwaukee, Wisconsin



General Office and Factory:

February 14, 1925

# WFI-In The City of Brotherly Love

Ednyfed Lewis, station director at WFI.

I F YOU'RE a DX hound you've no doubt heard Station WFI, one of the most powerful'stations in the United States. It is not an idle boast to say WFI is powerful, for, be it known, it is the only station in Philadelphia that was heard on the other side during the recent trans-Atlantic tests. And that's going some, for the city of brotherly love boasts of five broadcasters transmitting on 500 watts.

WFI, operated by Strawbridge and Clothier, a large department store, boasts of the honor of being the first station in Philadelphia to broadcast. It just nosed out another "Philly" station by about fifteen minutes for the coveted honor. The governor of Pennsylvania and the mayor of Philadelphia both participated in the opening exercises, and then proceeded to another station just across the street, there to also officially open that station.

When WFI "went on the air" it was only a 15-watt station. Then it got a little more power, and now, since the station has been rebuilt at a large expense, it transmits on 500 watts. The wave length is 35 meters.

To give the people what is best in everything is a hard road to travel, and one on which the owners and the personnel of any broadcasting station will find little help. But, and WFI proves it, if a station will stick to its rule and allow no deviations, it will finally win a host of admirers, and admirers are listeners in, and that's what every station wants.

WFI is the Philadelphia station which broadcasts the Everesdy hour and the Goodrich Silvertown Cord orchestra, and its latest achievement is to be among those broadcasting the Victor concerts, which have created a furore in theatrical circles. Man other features have been offered WFI, but it turned them down flat and simply because it did not think it was the kind of entertainment its clientele of listeners in wanted. The personnel is composed of people musically inclined. The director, Ednyfed Lewis, is one of the best known Welsh tenors in the eastern section of the country. He comes of a musical family. His father was an opera star, and his brothers are part of a well-known Welsh quartet. Mr. Lewis last year won the \$1,000 prize in Philadelphia as director of the Welsh chorus, which competed against a number of other well-known musical organizations. John Vandersloot bears the reputation of being one of the best announcers in the country. He is known as "J. V.," and is also an excellent bass soloist. Mabel Swint Ewer, program director and hostess to those who entertain from the studio, is an accomplished musician. She also comes from a musical family of Boston, and to keep up the

name, Mrs. Ewer is having all the little Ewers study music. Although her children are well up in music, none have ever been heard over the Radio, for living up to the traditions of the station, Mrs. Ewer says they will not be heard until she thinks they are up to the mark for the best Radio broadcasting. Harold A. Simonds, who announces as "H. S.," is the possessor of a pleasing baritone voice, particularly adapted to Radio broadcasting. Aleta Smith, an assistant, is a soprano with a sweet mellow voice, who hopes to be heard in the higher circles of music some day.

Music some day. One of the best known entertainers from WFI is Jean Hight, better known as "Sunny Jim, the kiddies' pal." Mr. Hight, who is still quite young, made "a hit over night." Previous to his coming to WFI, the station always had women bedtime story tellers. Sunny Jim came, spread a lot of sunshine among thousands of kiddies all over the country, and became so popular that one of the song hits last year, "Sunny Jim," which was played and sung at virtually every station throughout the country, was composed in his honor by a nationally known song writer.

There is one person connected with the station who is virtually unheard of over the air and he is, nevertheless, the guiding light in all things musical. It may be said that he is responsible for nearly all of the big musical events heard from this station. He is Mr. Herbert J. Tily, general manager of the store, and a doctor of music. Mr. Tily is one of those unusual combinations of successful business man and musician, and neither vocation suffers because of the other. He is a conductor, an organist, composer and a connoisseur of art, and was a regular entertainer some time ago over the Radio.

Above, view of the studio, showing Harold Simonds at the microphone. Miss Caroline Hoffman, one of the station's accompanists, at the piano. Left, Mabel

Swint Ewer, program director.

Now, Radiophans know why WFI broadcasts such wonderful music. It is said that song pluggers on passing WFI hang a piece of crepe on their hats and go their way. They know there is no open door for them.

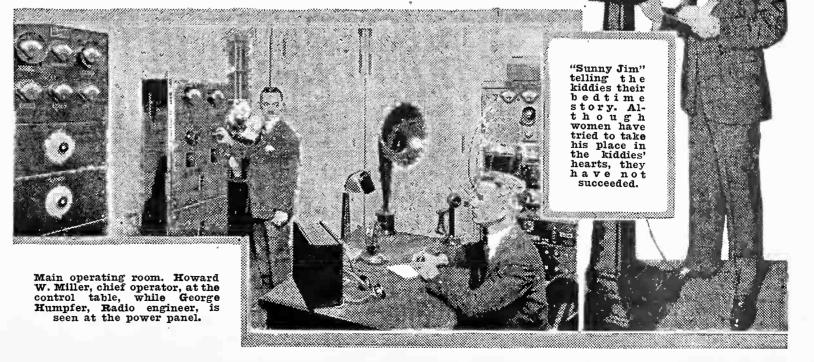
One of the outstanding broadcasts that this station has put across, was when they broadcast the Carnivora Opera company. The members of the company, be it known, hail from Africa, Asia and points west. Their initial appearance was broadcast from

initial appearance was broadcast from their present headquarters at the Zoological Gardens in Philadelphia.

Leo Africanus, a gentleman of color, with a deep bass voice, proceeded to imitate static during its worst period when he opened his mouth. At last reports, the operators of the station were well on the way to having the microphone adjusted to its normal sensitiveness.

Novel features WFI has just added are the Gold Dust Twins and the Atwater Kent Radio artists. Many novel and unique features are scheduled for this station in the future. That is one of the WFI staff's best pastimes—planning new and original features for Philadelphia and outside listeners—and they thrive on the pastime. John Vandersloot, bass soloist and announcer "J. V."

Jean Hight, better known as "Sunny Jim, the kiddies' pal."





# ENGLISH ARE PUZZLED BY NON-PAYING LISTENERS

# Believe Three Times as Many Set Owners Exist as Pay—Problem Irritates Officials

LONDON, England.-How many "pirate" listencrs arc there in Great Britain?

That is the question that is puzzling the British Broadcasting company, which relies for its entire revenue upon a per-centage of the license fees. Radio "pi-rates" abound in their thousands. The estimates of people who are supposed to know, place the number of persons using receiving sets without a license at no less than 2,000,000, or twice the number of persons with licensed sets. While this may perhaps be going too far it is undoubtedly a fact that there are many towns in England where for every licensed listener there are two unlicensed.

Only a few days ago a station director found out of 1,200 letters on a certain broadcast topic only about sixty were signed, indicating that they had come from license holders.

#### **Conscientious Objectors Object**

It is felt that the enactment of new legislation covering this contingency is needed. Many fans are refusing on principle to pay the license fee, declaring that strictly in the law broadcast licenses are illegal under the particular act of parliament by which they were brought into being. But it is unfair that one section of the Radio public should be paying for the entertainment of another section that refuses to admit its liability to pay.

One fan, however, points out that he would willingly take out a license if he listened to British programs, but states that as he only listens to Continental programs, he owes the B. B. C. nothing.

(Note .- At present the annual license fee which all British fans must pay is \$2.50, one-fourth of which is retained by the post office.)

# French Lessons Swell Class

CINCINNATI, Ohio. -- Madame Ida Tcimpidis, teacher of French at Crosley WLW, has a number of interesting letters from her pupils in all parts of the land who have been following her lessons.



LAST TUBE PATENT

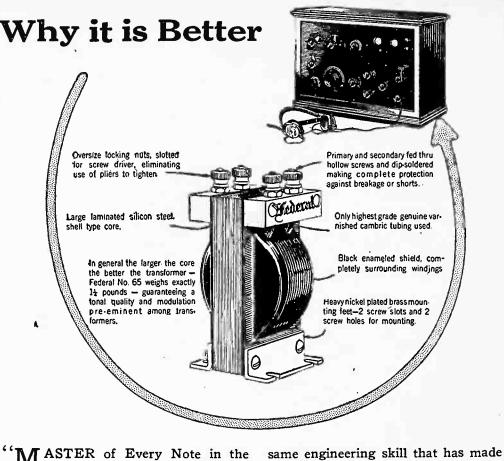
**EXPIRES NEXT WEEK** 

HE second and last basic patent on the three electrode vacuum tube expires Wednesday, February 18. What will happen to tubes as a result of competition will be the source of much delight to Radiophans, it is believed. In this connection what is believed to be the first Radio tube is shown in the above picture. It is being held by C. W. Mitman, curator of engineerirg at the U. S. National museum at Washington, and was made in 1898 by D. McFarlan Moore of New York city. Radio impulses from this tube ignited a bomb a city block away and blew up a miniature of the battleship Maine.

# New Broadcasting Chamber for Station WHA Musicians

MADISON, Wis .- A new broadcasting chamber in the music hall has been fitted up for broadcasting musical programs from Station WHA, University of Wiscon-sin, in addition to the regular broadcasting room in Sterling hall.

The choral union and the university or chestra are now using the new music hall room, and regular programs are being also sent out at the station headquarters.



MASTER of Every Note in the Orchestral Range" is the proven claim of the Federal No. 65 Audio Frequency Transformer! Volume without distortion is the basis for the beauty of Federal Tone.

From its oversize locking nuts to its heavy brass mounting feet the Federal No. 65 Transformer incorporates the

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trical communication apparatus since 1890. Insist upon Federal parts for your

Federal the recognized leader in elec-

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Goodrich Hard Rubber Radio Panels + Goodrich V. T. Sockets + Goodrich Variometers Unwound. Radiophone Ear Cushions - Spaghetti Tubing **Battery Mats.** 

**Better Reception** 



The Silvertown Cord Orchestra (above) under the direction of Joseph Knecht, has been delighting millions of lovers of good dance music in programs broadcast every Tuesday night from 10 to 11 from WEAF, N.Y.; WJAR, Providence; WFI, Philadelphia: WCAE, Pittsburgh; WGR, Buffalo; WEEI, Boston.

Science has established a big fact in radio-dielectric losses reduce range and selectivity.

Hard Rubber has the lowest dielectric losses of any practical panel material yet employed. Goodrich Hard Rubber Panels are distinctly superior in permanence of color and lustre, and freedom from warpage. Use them in your set and bring in those distant stations finer—get better reception and enjoy to a greater degree the big dance orchestras, soloists, orators, and other features.

For maximum selectivity and widest possible range use Goodrich Rubber Radio Products. Fifty-five years' experience is behind them - they represent highest rubber quality.

THE B. F. GOODRICH RUBBER COMPANY ESTABLISHED 1870 Akron, Ohio

RUBBER Goodrich **RADIO PRODUCTS** 

"Best in the Long Run"

# **STATION CHIC OPENS** WITH FINE PROGRAM

NORTHERN ELECTRIC NOW OWNS TWO STATIONS

Famous Artists to Broadcast Through Courtesy of Canadian National Carbon Company in Future

TORONTO, Can.-Station CHIC is now on the air. This station, owned and con-trolled by the Northern Electric Company, Ltd., is the second station owned by this company to broadcast in Canada. The other station is located at Montreal, using the call letters CHYC.

The opening program was broadcast on 350 meters from 7:30 to 8:30 p. m., consisting of numbers of a classical na-ture. From 9:30 to 11 p. m. was a popular dance program.

Radiophans in the eastern part of the country are going to hear more programs by famous artists, who are recognized masters in their particular arts. This will be through the courtesy of the Canadian National Carbon company.

#### Use Best Talent Procurable

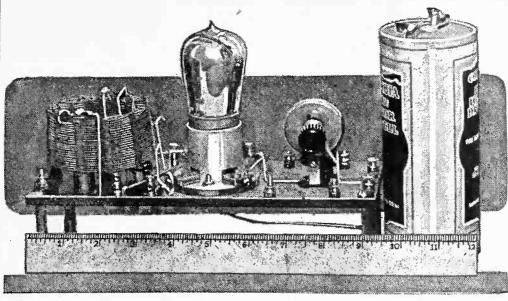
Senor Alberto Guerrero, who is recognized among authorities as one of the greatest pianists in North America; Mr. Ferdinand Fillion, who is perhaps Can-ada's finest exponent of the violin, and Mr. Arthur Blight, who is not only Canada's premier baritone, but is rated as one of the authorities on voice in this continent, are slated for two recitals to be given in the near future.

All three of these artists are members of the faculty of the Toronto Conserva-tory of Music of the University of Toronto, and have been heard in connection with Eveready entertainments throughout the eastern part of the United States on previous occasions. This will be the first time that all three of these artists have appeared on the same program.

The hornless loud speaker made out of papier mache is rapidly gaining favor in England. Greater care, however, is necessary in adjusting this type of pro-ducer to avoid a tendency to "drummi-ness" ness.



# SMALL BROADCAST TRANSMITTER



The small sending set shown above with foot rule and dry cell for size comparison is capable of broadcasting a distance of several miles. Listeners in, however, should not attempt to build sending sets without first obtaining a government license. This requires an expert knowledge of Radio. Radiophans might remember this picture as an object lesson, for receiving sets this size and larger often transmit disagreeable noises for miles around when improperly handled.

Experiments in voice amplification are pulpit and the reading desk. It has not being carried out at Westminster Abbey. yet been decided whether the installation Microphones have been placed over the is to be permanent.

# WAHG IN NEW FEAT: **REBROADCASTS KGO**

# IS FIRST TIME EAST HAS RELAYED WEST COAST

Presents Program of Harry Halstead Orchestra Playing in San Francisco —Will Repeat Stunt

RICHMOND HILL, N. Y.—Thousands of eastern Radiophans experienced a brand new thrill on a recent morning when from 2:25 to 4 a. m., eastern time, WAHG, A. H. Grebe station here, rebroadcast the program of KGO, General Electric station at Oakland, Calif.

This is the first time in the history of Radio that a west coast program has been rebroadcast by an east coast station.

The program at KGO, picked up and released for its second flight over the ether, was by the Harry Halstead orches-tra at the St. Francis hotel, San Francisco. The rebroadcasting at Richmond Hill was done through the experimental station which uses the call letters 2XE. A wave length of 516 meters was employed instead of the usual 316-meter wave length of WAHG.

More rebroadcasts of KGO are promised for eastern fans by WAHG. The first very successful effort was rewarded by a great response from eastern listeners. Telephone messages and telegrams flooded into the offices of the Grebe station.



Earns College Education I entered the maritime serv-lee of the Radio Corporation of America and served several months on board ship. I not only had the advantages of visiting foreign countries at no cost to me but I was also able to save enough money to pay for my tuition to college. G. E. Rogers, Y.



Earns \$50 to \$83 a Week Earns 550 to 563 a week I enjoyed every one of your lessons and had no trouble whatever. I earn \$50 to \$83 a week beside a commission on sales. Michael De Marco, Boston, Mass.



You can do it!

Radio just teems with money making opportunities. Every Radio set which is sold means profit in somebody's pocket. Every broadcasting station erected means big pay for Radio Engineers, Radio Mechanics, Operators, etc. Thousands are "cleaning up," fortunes are being made almost overnight in this fascinating business. Big salaries, interesting, easy work, short hours, and a wonderful future are offered to ambitious men who get into Radio now!

One of our recent graduates is making over \$400 a month in his own business. Another has increased his pay \$1,300 a year. another writes, "I made \$3,500 in one year working for myself." Still

# Easy to Learn Radio at Home in Spare Time

Right now Radio is the fastest growing industry in the world. Thousands of Certified Radio-tricians are wanted to design Radio sets; to make new Radio improvements; to manufacture Radio equipment and install it; to maintain and operate great broadcasting stations and home Radio sets; to repair and sell Radio apparatus; to operate aboard ships and at land stations. Employers write and telegraph us continually, seeking to employ our graduates at splendid salaries.

You, too, can easily and quickly qualify in your spare time at home through the help of the National Radio Institute—America's first and biggest correspondence Radio school. No matter how little you know about electricity or Radio, we will guarantee to prepare you thoroughly for one of the big jobs in a few months. One of our recent graduates, "I now have a license and a good job, although I did not know the difference between a volt and an ampere before enrolling." Roodzant, w ites.

\$405 in One Month I cleaned up \$405 in one month recently. Not so bad —is lt—for a fellow who just completed your course a short time ago. Emmet Welch. Peculiar, Mo.



Triples Salary I am earning three times as uch as before enrolling. Arthur Herke, Vancouver, B. C. much as before



From \$15 to \$80 a Week Before I enrolled I waa making \$15 a week. Now. I earn from \$2,080 to \$4,420 a year. I believe the course will be worth at least \$100.-



Can you imagine nationally famous builders of sets costing up to \$400

each, jeopardizing the tone quality of their

instruments with anything short of the best

amplification? Of course not! That is why Thordarsons are standard on more quality

sets than are all competitive transformers

combined. Follow the lead of the leaders-

build or replace with Thordarsons. Unconditionally guaranteed. Audio frequency: 2-1, \$5. 3½-1, \$4. 6-1, \$4.50. Power Amplifying,

pair \$13. All good dealers, Made in Chicago by Thordarson Electric Manufacturing Oa

**Doubles** Salary I can very easily make double the amount of money now than before I enrolled with you. T. Winder, Grand Junction, Colo.



Pay Increases Over \$100 a Month a Month I am averaging anywhere from \$75 to \$150 a month more than I was making be-fore cnrolling with you. I would not consider \$10,000 too much for the course. A. N. Long, Greensburg, Pa.

# You Learn by Doing

All materials required for practical instruction are furnished you free of charge. This is an absolutely complete course now being offered which prepares you for a Government First Class Commercial License and the really "big-pay" jobs in Radio.

# Send for Free Book and Special Offer

No other field today offers such great opportunities as Radio. Take your choice of the wonderful openings everywhere. Prepare now to step into the most fascinating and best paid profession today. Read about the opportunities open now-the different kinds of work—the salaries paid. Write today for 32-page book, "Rich Rewards in Radio," that tells how promi-nent Radio experts can teach you to become a Certified Radio-trician in your spare time.

Important-those who act immediately will also receive the details of our Special Reduced Rate. Mail the coupon or write a letter Now.—National Radio Institute, Dept. 55DB, Washington, D. C.

000 to me. George A. Adams, Tamaqua, Pa.



NATIONAL RADIO INSTITUTE, Dept. 55DB, Washington, D. C. Without obligation send me your book, "Rich Rewards in Radio," which teils all about the oppor-tunities in Radio, how spare time study at home will qualify me quickly as a Certified Radio-trician so I can get one of these splendid positions, and how your Employment Service helps me to secure a big nay iob your Em pay job.

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Two-Tube Reflex

Instructions for Use.—All the hours above are given in Central Standard Time. If your city uses Eastern Time, add one hour to each of the periods stated; if your city uses Mountain Time, subtract one hour; if your city uses Pacific Time, subtract two hours. This table includes only the evening Radiocasts, and, on Sunday, the late afternoon program.

Meter	s Call	Meter	rs Call	Meter	s Call	Meter	s Call	Meter	rs Call	Meter	rs Call
238	KFQX	275	WABL	315.6	WAHG	361.2	WHN	422.3	WLW	475.9	WBAP
240	WOAX	275.2	KQV	315.6	WGBS	365.6	WDAF	422.3	WMH	475.9	WEEI
244	WABN	275.3	WJAS	319	WGR	365.6	WHB	428.3	WSB	475.9	WFAA
248	WBBG	278	WCAU	322.4	KOA	370	CYB	429.5	KPO	480	CYL
250	WTAY	278	WLBL	325.9	WSAI	370.2	WEBH	430	CFAC	483.6	woc
263	WGAQ	278	WORD	330	CYX	370.2	WGN	434.5	NAA	483.6	wsui
265.5	WMAK	278	WREC	330	KFAE	374.8	KTHS	435	AT9	491.5	WEAF
266	KFNF	280.2	WNAC	333.1	WBZ	379.5	WGY	435	CNRO	491.5	KGW
266	WBCN	285.5	WKAR	336.9	KFMX	379.5	WHAZ	437	CKAC		
266	WCBK	285.5	WREO WEMC	336.9	KNX	389.4	WEAR	440	CFCN	499.7	WMC
268	KFPT	$\frac{285.5}{288.3}$	KFKX	336.9	WCAL	384.4	WMBF		WDWF	508.2	WIP
270	WGST WOI	200.3 293	KJS	336.9	WSAC	389.4	WTAM	440.9	wos	508.2	<u>woo</u>
270 272.3	WBBR	293.9	WBAV	340.7	KSAC	394.5	WLIT	447.5	WMAQ	509.9	KLX
272.6	KTW	293.9	WEAO	340.7	WKAQ	394.5	WFI	447.5	WQJ	516.9	wcx
273	KFKB	299.8	KGO	341 344.6	CHYC WCBD	394.5	WOAI	450	CKY	526	$_{\rm WHO}$
273	WEBJ	299.8	WPG	344.6	WLS	399.8	WHAS	450.2	KFOA	526	WOAW
273	WFBH	302.8	WJJD	348.6	KOB	404.1	KHJ	454.3	WJZ	526	WNYC
273	WHK	302.8	WTAS	350	CFCA	405.2	WJY	461.3	WCAE	535.4	KYW
273	WRW	305.9	WJAR	352.7	wwj	405.2	WOR	467	KFI	535.4	WHA
275	KFAU	309.1	KDKA.	360	WEAY	410	CKCD	468.5	WCAP	545.1	KFUO
275	KFMO	315.6	KFDM	360	WGI	416.4	wcco	468.5	WRC		KSD

Operates a loud speaker-Two tubes do the work of five-Cuts battery cost 60% – Does not squeal, howl or radiate-Stations can be logged with utmost accuracy—Amazing clarity and volume!

Insist on the genuine Shamrock Kit containing only genuine licensed Shamrock - Harkness parts. They are specially balanced, \$7 and are backed by our 50 unconditional guarantee.

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# VALENTINE PARTY SATURDAY AT WGN

# Saturday, February 14

Saturday, silent night for: CFAC, CFCA, CKY, KFAE KFOM, KFKU, KFKX, KFMX, KJS, KOB, KSAC WBAP, WBAV, WCAU, WCBD, WOWF, WEEL WEMC, WGST, WHA, WHAZ, WHB, WHO, WJY WKAQ, WMAK, WOAI, WOI, WOO, WORD, WOS WSUI.

CHNC, Toronto, Can. (Eastern, 350), 9-11 p. m., Charles E. Bodley and his orchestra; Ariine Jackson,

WBZ, Springfield, Mass. (Eastern, 333.1), 7:15 p. m., sketches from the U. S. naval history, E. S. R. Brandt; 7:30, Hotel Kimbeli trio; 8, Myron A. Kesner, reader; 8:15, Ellse Biron, violinist; Mrs. Phillip Ware, pianist; 8:33, "Glant Worlds Yet in the Making," George Leo Patterson; 9:05, William J. Doyle, baritone; 9:20, Elise Biron, violinist; Mrs. Phillip Ware, pianist; 9:40, Geraldyne I. Havens, soprano; Mrs. Inez Main Momm, accompanist; 10:05, R. H. Isensee, bass; Helen Isensee Wilkins, contralto; 10:20, Geraldyne I. Havens, soprano; Mrs. Inez Main Momm, accompanist; 10:05, R. H. Isensee, bass; Helen Isensee Wilkins, contralto; 10:20, Geraldyne I. Havens, soprano; Mrs. Inez Mein Momm, accompanist; 10:30, R. H. Isensee, bass; Heien I. Wilkins, contralto.
WCAE, Pittsburgh, Pa. (Eastern, 462), 2:30 p. m., tea-dansant, Nixon restaurant; 4:30, dinner concert, William Penn hotel; 7:30, Uncie Kaybee; 7:45, movie cbats; 8:30, music.

Charles E. Bodley and his orchestra; Arine Jackson, planist.
CKAC, Montreal, Can. (Eastern, 425), 7 p. m., kiddles' stories in French and English; 8:30, University of Montreel night; 10:30, Ben Leonard and his Windsor hotel Red Jacket orchestra.
CNRO, Ottawa, Ont., (Eastern, 435), 7:30 p. m., bed-tlme story, Aunt Agnes; 8, James McIntyre and his Windsor fune story, Aunt Agnes; 8, James McIntyre and his Windsor in story, Aunt Agnes; 8, James McIntyre and his Windsor in chateau Laurier hotel orchestra; 8:30, "Bees," Rev. G. Gauvreau; Mrs. Weston Allan, vocalist; G. Bourque, planist; cheracter Coster songs, Gordon Rogers; Hawainian orchestra; Tom Hamilton, Scotch comedian.
KFI, Los Angeles, Calif. (Pacific, 467), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, "Inspirational

Langdon Brothers, Hawaiian guitarists; 11, Cambridge Sisters; Oriole orchestra; Loos Brothers; Nubs Allen, soloist; Langdon Brothers, Hawaiian guitarists; Nick Lucas; Marie Wright, eoprano; Banks Kennedy, pianist; Ned and Ches. WFAA, Oalias, Tex. (Central, 475.9), 8:30-9:30 p. m., program, Methodist Orphanage; 11-12, artists, Capitol theater.

theater." WFI, Philadelphia, Pa. (Eastern, 395), 3 p. m., Mary Liitile Brown, soprano, Florence W. Keller, mezzo soprano, Nellie S. C. Hennessy, pianist; "Can a Good Thing Come out of Nut Tree Pianting," John W. Hershey; 4, Dickerson's dance orchestra; 6:30, Meyer Davis Bellevue Straiford concert orchestra; 7, Sunny Jim; 8, concert from WEAF. WGBS, New York, N. Y. (Eastern, 315.6), 6-6:30 p. m., Uncle Geebee; 6:30-7:30, Cameo Collegians; 8:30-9, "The Outpost," Radio drama, Captain Archibald; 9-9:30, authors night, Lyon Meerson, director; Ben Hecht, Fulton Oursler, the anonymous author of Haunch, Paunc' and Jowl, Anzia Yezlerska, Harry Drago; 9:30-9:45, Sam Comiy, movie talk; 9:45-10:15. Ruth Bowman, contrelto; 10:15-10:35, songs of old Ireland; 10:35-11, Hotsie Totsie Boys; 11-12, Vincent Rose orchestra.

Rose orchestra.
 WGN, Chicago, III. (Central, 370.2), 5:30 p. m., Skeezix time; 6:30-7, dinner concert, Drake concert ensemble, Blackstone string quintet; 8-9, classical progrem, St.

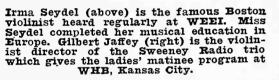
WJZ. New York, N. Y. (Eastern, 454.3), 1-2 p. m., Er-dody's Park Lane orchestra; 2:15-3, Saturday Dis-cussion of National Republican club; 4:30-5:30, Sherry's Tea orchestra; 7-8, Freddie Rich and Hotel Astor dance orchestra; 8-8:15, "Art for Laymen." Walter M. Grant; 8:15-9, Jean Walker, baritone: Helen B. Frommer, accompanist; 9:30-9:45, "Ice Hockey," Toin Howard; 9:45-10, Fay Foster, un-published compositions; 10-10:15, Orphens quartet; 10:15-10:30, Constance Mering, pianist; 10:30-11:30, Joseph Knecht's Waldorf-Astoria dance orchestra. WLBL, Stevens Point, Wis. (Central, 278), 12 midnight, Enemies of Sleep.

Enemies of Sleep. WLIT, Philadelphia, Pa. (Eastern, 395), 4:30 p. m., Cotton Pickers dance orchestra; 7:30, Arcadla cafe concert orchestra.

concert orchestra.
WLS, Chicago, III. (Central, 344.6), 7 p. m., iullaby time, Ford and Glenn's trip to Germany; 7:20, national barn dance, Glenn's Corn Huskers; Ralph Emereon, organist; Isham Jones and his College Inn orchestra; Harmony Girls; Waiter Peterson; Sears-Roebuck 4 Aces of Harmony; Ford and Glenn; 11:15, Senate theater revue.
WLW, Cincinnati, Ohio (Central, 423), 6 p. m., dinner hour concert, Selinsky Instrumental quintet; Lafafone, E. D. Leonard.
WMAO Chicage III. (Central, 447.5), 6 p. m., Ohioare

W.W. Chichmath, Selinsky Instrumental, 423), 6 p. m., dhiner hour concert, Selinsky Instrumental quintet; Lafafone, E. D. Leonard.
WMAQ, Chicago, III. (Central, 447.5), 6 p. m., Chicago Dally News Newsboys' band; 8, LaSalle hotel orchestra; 8:30, 'Guenos Aires,' Isaac Cox; 9, weekly Chicago theater revue.
WMC, Memphis, Tenn. (Central, 499.7), 8:30 p. m., classical program, William Newton, director.
WNYC, New York, N. Y. (Eastern, 526), 7-7:30 p. m., dance program; 7:35-8, dance program; 8-8:30, concert, Anna Plinto, harpişt and other artists; 8:30-9, police quartet; 9:10:30, dinner to Grend Exalted Ruler, B. P. O. E., John G. Price from Elks club, N. Y. C.
WOAW, Omaha, Nebr. (Central, 526), 6:30 p. m., dramatic hour, Davis Studio of Expression; 6:30, selected readings and regular weekly lesson in voice improvement, J. Simmons Davis; 6:45, dinner program; 9, program, WOAW's studio in May Seed & Nursery company; 11, Frank W. Hodek, Jr., and his Omaha Nightingales; 11:30, Arthur Havs, organist.
WOC, Oavenport, 1a. (Central, 483.6), 7 p. m., sandman's visit; 7:30, International Sunday school leseon, Rev. M. A. Getzendaner; 9, Lonis Connor and his LeClaire hotel orchestra; Jack Little, Paul Small, Radio entertainers.
WOO, Philadelphia, Pa. (Eastern, 509.9), 4:45 p. m., organ recital, Mary E. Vogt.
WQJ, Chicago, III. (Central, 448), 11-12 m., "Abroad with a Paint Box and a Family of Six," Helen Harrington Downing; "Authority on Advertising," J. W.

Bonnie Barnhardt (below) is the charm-ing lady who sings and tells bedtime stories to the Radio children who dial each evening for WSB, Atlanta.



- Psychology," Dr. Clyde Sheldon Shepard; 7-7:45. Dye Syncopaters; 7:45-8, The Bookshelf, Nency; 8-9, Ori-ental song recital; 9-10, Examiner, program, Orange Chamber of Commerce; 10-11, Packard Radio ciub.
  KFNF, Shenandoah, la. (Central, 266), 6:30 p. m., con-cert, Braddyville, Donald K. Wilson, director.
  KFOA, Seattle, Wash. (Pacific, 455), 6:45-8:15 p. m., Rhodes Department etore program, dance music; Betty Winningham, juvenile prodigy; 8:30-10, Times pro-gram, Moyer's Meiody Night Hawks, Honeymoon serenaders; Jack Mooney, tenor; 10-11, Eddie Harkness and his orchestra.
  KFQX, Seattle, Wash. (Pacific, 238), 7:15-8 p. m., bed-time story, Aunt Vivien; 8-9, Earl Gray and his Hotel Buller orchestra; 9-10, concert hour; 10-11, Earl Gray and his orchestra.
  KFSG, Los Angeles, Calif. (Pacific, 278), 7:30-9:30

- Hotei Butler orchestra; 9-10, concert hour; 10-11, Earl Gray and his orchestra.
  KFSG, Los Angeles, Calif. (Pacific, 278), 7:30-9:30 p. m., auditorium service, testimoniels and sermon on Divine Healing, Aimee Semple McPherson, pastor.
  KGO, Oakland, Calif. (Pacific, 300), 8 p. m., California string quartet; Harvey Shubert, tenor; trumpet solos, S. Duke Smith; Mrs. S. G. Waish, contraito; "Con-tentment," Dr. Frederick VV. Clampett; Walter Kliegel, baritone: Winston Petty, cellist; "Stemp Collecting," George W. Ludlow; 10-1, Henry Halstead's orchestra.
  KGW, Portland, Ore. (Pacific, 492), 10 p. m., Colburn's Melody Men, Hotei Portland.
  KHJ, Los Angeles, Calif. (Pacific, 404), 6-6:30 p. m., Art Hickman's Blitmore hotei concert orchestra; Ed-ward Fitzpatrick, director; 6:30-7, little stories, American history, Prof. Waiter Sylvester Hertzog; Henrictta Poland, Heien Pirie, screen juveniles, with Uncle John; 7:45, "Income Tax," Capt. John T. Riley; 8-10, El Encanto Apartments' Valentine party; 10-11, Earl Burtnett's Blitmore hotel dance orchestra; 12-2 a. m., The Lost Angels of KHJ.
  KNX, Hollywood, Calif. (Pacific, 337), 6:15-7:20 p. m.,
- a. m., The Lost Angels of KHJ. KNX, Hollywood, Calif. (Pacific, 337), 6:15-7:30 p. m., Green Mill dance orchestra; 7:30-8, Wurlitzer pipe organ etudio; 8-10, continuity, Voyage to the South Seas by Salisbury and Alexander; 10-11, Abe Lyman and his Coccanut Grove dance orchestra from Ambas-sador hotel; 11-12, popular songs, June Pursell, the KNX girl.
- KNX girl. KOA, Oenver, Colo. (Mountain, 322.4), 9-12 midnight, dance music, Joe Mann and his Rainbow-Lane orches-
- tra. KPO, San Francisco, Calif. (Pacific, 429.5), 5:30 p. m., "What Is Playing at the Various Theaters;" 8-12, Art Weidner's orchestra.

pieno tuning in number on the Duo-Art; address, personai message, Roger W. Babson; Tell-Me-a-Story Lady; music, Trianon ensemble; 11:45-1 a. m., Merry Old Chief, Plantation pieyers.
WEAF, New York, N. Y. (Eastern, 491.5), 4-5 p. m., Eugene M. Ingraham's orchestra; 5-5:20, Heten V. Ryan, violinist; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:15, talk, Boy Scouts; 7:15-7:30, Gertrude J. Van Deinse, soprano; 7:30-7:50, stories for boys, Fred J. Turner; 7:50-8:15, Addiph Katchko, Cantor of Jewish Communai; 8:15-8:25, Jimmy Hudson, readings, monoiogues; 8:25-8:50, Josenh Gingold, violinist; 8:50-9, Cora Griffin, contraito; 9-9:45, Waldorf-Astoria hotel concert orchestra; 9:45-10:30, WEAF Light Opera quartet; 10:30-10:45, Bert Brenner, oboe soloist, accompanied by Maria Blance; 10:45-11, Louis Zanuido, Mexican tenor; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra.
WEAF, Columbus, Ohio (Eastern, 294), 8 p. m., play by play report of Minnesota-Ohio State basketball gene, H. Lee Henderson, announcing.
WEBH, Chicago, III. (Central, 370.2), 7 p. m., Oriole orchestra; Radio Sunday school lesson, Dr. Herbert W. Virgin; 9, Marie Kelly, reader; Oriole orchestra;

Bealer's musical piogram, 0-1.30, dinner music, Hall-pryd string quartet.
WGY, Schenectady, N. Y. (Eastern, 379.5), 9:30 p. m., dance music, Phil Romano's orchestra.
WHAS, Louisville, Ky. (Central, 399.8), 7:30-9 p. m., Sylvian trio; Orie E. Vesselis, beritone; Paui G. Clemmons, tenor.
WHK, Cleveland, Ohio (Eastern, 273), 12:30 p. m., Dean Smith, planist; soloists: 6:30 p. m., talk: "The Ohio Legislature Week by Week," by a member; 9 p. m., carnival night program; McCrory's Entertain-ers, Bille Bugbee, Violet Owens, Betty Booth; June Farley, Bobbie and Dede Fitzpatrick, Dean Smith, Emerson Gill's Bamboo Garden orchestra.
WIP, Philadelphia, Pa. (Eastern, 509.9), 6:05 p. m., St. James dinner dance orchestra; 11, organ recital, Kari Bonawitz.

# Headliners of the Week

NE station at least plans a unique Valentine party Satur-day. WGN, the Chicago Tribune station, promises an unusual celebration, with all the thrills of the old school postoffice. WCCO is more serious, scheduling a lecture by Captain Kilroy Harris, a native Australian, who will tell about the curious prehistoric animals and plants of his continent.

evening. Part one, thirty minutes long, will be supplied by Antonio de Grassi, violinist, and Maxine Cox, pianist. Part two consists of old time songs given by the Francisco mixed quartet. The Francisco quar-



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Foley; 3-4 p. m., Koffee Klatsch; 7-8, Ralph Williams and his Rainbo Garden orchestra; Agatha Karlen, reader; Otis Pike Jester, soprano; Mary Thrash House, planist; Henrietta Nolan, violinist; 10-2, Ralph Williems and his Rainbo Skyiarks; Melodians, Laurie. Eddie, Bennie; Jerry Sullivan; Herry Geise; Alfred Tweed, harmonica and guitar soloist: Clarence Theders, tenor; George A. Little. Larry Shay, song writers; June Lee, comedienne; Yukona Cameron, soprano.
WREO, Lansing, Mich. (Eastern, 286), 10-12 midnight, Frank Logen and his orchestra, Arcadia ball room.
WSB, Atlanta, Ga. (Central, 429), 6 p. m., Sunday school lesson, Dr. Marion M. H. Hull; 8-9, DeMoss family concert; 10:45, Journal hired help; Ed and Grece McConneli.

Valentine's program; 10-11, Don Bestor Drake dance orchestra, Jerry Conley Blackstone dance orchestra.
WGR, Buffalo, N. Y. (Eastern, 319), 12:30-1 p. m., Hotel Statler concert ensemble, 2:30-4:30, Radio Dealers' musical program; 6-7:30, dinner music, Hall-pryd string quartet.

- KSO, St. Louis, Mo. (Central, 545.1), 8 p. m., concert, St. Louis Symphony orchestra, Rudoiph Ganz, con-
- St. Louis Symptons Control Park, Ark. (Central, 375). KTHS, Hot Springs National Park, Ark. (Central, 375). 8:30-10 p. m., concert, Charles L. Fisher and his Eastman hotel orchestra; 10-11, dance music, Meyer Davie New Arlington hotel. orchestra, Jack Renard,
- director. KYW, Chicago, III. (Central, 535.4), 5:35-7 p. m., children's bedtime story, Uncie Bob; 7-7:30, dinner concert; Congress intel; 8-8:58, Fannie Schiesinger, soprano; John Hayes, baritone; Ned Santry, tenor; 9:05, talk, auspices Nationai Live Stock & Meat Board; 9:15, health talk, Dr. John M. Dodson; 9:35-11:30, Congress claasic; 12-2, Congress carnival. PWX, Havana, Cuba (Eastern, 400), 8:30 p. m., concert, artist.
- artist. WBAP, Fort Worth, Tex. (Central, 475.9), 7 p. m., interdenominational Sunday school lesson, Mrs. W. F.
- Barnum.
   WBBR, New York, N. Y. (Eastern, 272.3), 8 p. m., Frank Wood, flutist; 8:10, vocai solo; 8:15, Bibie ques-tions and answers; 8:45, vocai solos; 8:50, Frank Wood, flutist.
- Mood, futist.
   WBCN, Chicago, III. (Central, 266), 6-6:30 p. m., juvenile period, Lucila Drew Wilson; 6-6:45, dinner concert, Harold Rule's orchestra; Margaret Walsh, soprano; Clyde March, tenor; 7-3, fireside hour, George R. Cleveiand; Harold Rule's orchestra; Genevleve Logan, reader; R. E. Silas, tenor; Jack Heath and Eddie Downs, harmony duo; 8-12, James Smisek, harmonica player; Marle Wright, soprano; Midway Gardens dancing orchestra; George Forsyth, boy tenor; Southtown Harmonizers; Elizabeth Einmeit Malone, soprano; George Collins, mouthorganist; Triangle En-tertainers; Murphy Sisters; Englewood afring quintet; Les Cameron, tenor; Florence Tenney, blues singers; Belden Briscoe; Mrs. Arma Seigert, violinist; 12-1 a, m., early morning concert, Murphy Sisters; Engle-wood string quintet; Les Cameron, tenor; Southtown Harmonizors; George Collins, mouthorganist.

KTHS is giving a Spanish-American concert Sunday complimentary to Latin-American friends of this station. All announcements will be made in Spanish by Leon Numainville. The Venetian Serenaders, a musical organization of skill, will be the Sunday headliner of WDWF, Providence.

Francis Macmillen, who startled the Radio world not long ago by giving an entire recital before the microphone, returns to KSD Monday. Lovers of classical music should reserve this date, as Mr. Macmillen is a famous American violinist. The Radio Lighthouse Musicmakers of WEMC, Berrien Springs, will prove this same evening that music may be both classical and popular.

A musical program in three parts will be broadcast by KGO Tuesday tet, also in charge of the third part of the program, will sing operatic airs.

Good band music is promised Wednesday by WLIT (formerly WDAR), Philadelphia. The famous Atlantic City Railroad band will play. Thursday WGST, Atlanta, features

a talk, "Chivalry in the Old South," by Edwin H. Folk. Frances Wood-bery, Mrs. C. R. Prescott, Helen Schaid and Mrs. Mary Miller Trownsell will entertain musically.

Listeners in to KHJ, Los Angeles, will take a trip Friday through Orange county, where acres of orange trees blossom and bear. Fans will take part in wild surf fishing and hear the modern pirate, the bootlegger, land at night.

A translation of one of the oldest poems contributed to English litera-ture, "Beowulf," will be read by Pro-fessor William Ellery Leonard on Friday at WHA, Madison.

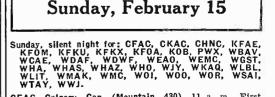
WSUI are the new call letters of WHAA, Iowa City.

y concert; McConneli.

WTAM, Cleveland, Ohio (Eastern, 390), 6 p. m.. Guy Lombardo's Royai Canadians orchestra; 9, WTAM dance orchestra, Ev Jones, director, soloists.

WTAY, Oak Park, III. (Central, 250), 6:15-6:30 p. m., Al Mildgard, organist; 6:30-7:30, Guyda Don Howe, soprano; Zelma Lowry, painist; Mildred Broman, reader; 9-9:15, organ, Parthenon theater; 9:15-10, Rex Bernt, tenor; Ray Kroc, planist; Lester Kelsey, tenor; Fred Jacobsen, Swedish alderman.

WWJ, Oetroit, Mich. (Eastern, 352.7), 3 p. m., Detroit News orchestra; 6, dinner concert.



CFAC, Calgary, Can. (Mountain, 430), 11 a. m., First Baptist church, Rev. Dr. H. H. Bingham.
CFCA, Toronto, Can. (Eastern, 350), 11 a. m., services, Bloor Street Presbyterian church. Preacher, Rev. George C. Pidgeon; 5:55-6 p. m., Bible story for small children; 7, service, Walmer Road Baptist church, Preacher, Dr. John MacNeill.

(Continued on page 10)

# RADIO DIGEST-Illustrated

# KHJ VISITS ORANGE COUNTY FRIDAY

# Sunday, February 15

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#### (Continued from page 9)

CKAC, Montreal, Can. (Eastern, 425), 4:30 p. m., band CKY, Winnipeg, Can. (Central, 450), 7 p. m., service,

- CKY, Winningg, Can. (Central, 450), 7 p. m., service, St. Stephci's Tresbytcrian church.
   KDKA, East Pittsburgh, Pa. (Eastern, 309.1), 10:45
   a. m., Emory Mcthodist Episcopal church, Rev. W. W. Duncan, pastor; 2:30 p. m., concert; 4, organ recital, Dr. Charles Geinroth; 4:45, services, Shadyslde Presbyterian church, Rev. Hugh Thomson Kerr, pastor; 6:30, dinner concert, Gregorlo Scalzo, conductor; 7:45, Calvary Episcopal church, Rev. E. J. Van Etten, pastor
- 6:30, dinner concert, Gregorio Scalzo, conductor, 7:43, Calvary Episcopal church, Rev. E. J. Van Etten, pastor.
  K FI, Los Angeles, Calif. (Pacific, 467), 10-10:45 a. m., L. A. Church Federation service; 11-12:30, morning, service and organ recital of Temple Baptist church; 4:5 p. m., vesper service, Federated Church musiclans; 6:45-7, musical appreciation talk; 7:8, stage acts, orchestra Irom stage of Motropolitan theater; 8-9, Antolnette and Sigurd Frederleksen, duo cello numbers and William Hiestand, tenor: 9-10, Thercon Bennett's El Alhanenan dance orchestra.
  KFMX, Northfield, Minn. (Central, 366.9), 7 p. m., college vesper service, Rev. Samuel Johnson.
  KFNF, Shenandoah, Ia. (Central, 266), 10:45 a. m., First M. E. church; 3 p. m., sacred concert, Creston: 6:30, Golden Rule Circle.
  KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-12:30 p. m., morning service, Angelus Temple, sermon by pastor, Aimec Semple McPherson; 2:30-4:30, afternors rector; 3:30 p. m., concert, KGO Little sympliony orchestra, Carl Rhodehamel, conductor; Arthur S. Garbett, musical interpretative writer; 7:30, service, Trinity Episcopal church. Rev. Charles P. Deems, rector.
  KGW, Portland, Ore. (Pacific, 492), 10:30 a, m., service, Trinity Episcopal church, Rev. Charles P. Deems, rector.

- Trinity Episcopal entrel, Rev. Charles 1. Decans, rector.
  KGW, Portland, Ore. (Pacific, 492), 10:30 a. m., service, First Presbyterian church, Dr. Harold Leonard Bowman, pastor; 3 p. m., municipal concert; 6, church service, Portland Council of churches; 7, Colburn concert orchestra; Jeannette Relerson, planist.
  KHJ, Los Angeles, Calif. (Pacific, 404), 10:30-12:30 p. m., First Methodist Episcopal church, Dr. E. E. Helms, pastor; Arthur Blakely, organist; 6:30-7, Art Hickman's Billmore hotel concert orchestra. Edward Fitzpatrick, director; 7-7:30, organ recital, Arthur Blakely; 8-10, program, Los Angeles Soap company, J. Howard Johnson.
  KIS. Los Angeles, Calif. (Pacific, 293), 10:45-12:30 p.
- Bickman & Dirkmeter in 7-7:30, organ recital. Arthur Blakely; 8-10, program, Los Angeles Soap company, J. Howard Johnson.
  KJS. Los Angeles, Calif. (Pacific, 293), 10:45-12:30 p. m., morning services, Rev. William H. Pike; 7:15-9:30, regular evening service of Church of Open Door; 6-6:45, Radio vesper service, Rev. William H. Pike; 7:15-9:30, regular evening service of Church of Open Door, sermon, pastor, Allred A. Butler, organist and cholr of 100 voices.
  KNX. Hollywood, Calif. (Pacific, 337), 5 p. m., vesper service of Wilshire Congregational church. Dr. Frank Dyer, pastor; 7-7:45, International Bible Students' association hour of music; 8-9, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 9-11, program, Globe Ice Cream company.
  KOA. Oenver, Cole. (Mountain, 322:4), 11 a. m., service, Gentral Christian church, Dr. James E. Davis, pastor; 7:45 p. m., service, Central Christian church, Dr. James E. Davis, pastor.
  KSAC, Manhatan, Kan. (Contral, 340.7), 8 p. m., piano voluntary; 8:05, special sacred music; 8:15, prayer of affirmation; 8:15, hymn; 8:20, "Common Folks:" talk; 9:35, song of benediction, Walter Burr, director, Chauneey Hickok; 8:30-10, Spanish-American concert, Hickok; 8:30-10, Spanish-American concert, Hoyer Davis-New Arlington hotel ensemble; Spanish announcements, Leon Numainville; 10-11:45, dance concert; 7, Chicago Sunday Evening club, Raymond B. Fosdick, speaker.
  WBAP, Fort Worth, Tex. (Scattral, 475.9), 11 a. m., services, St. Paul's M. E. church, Rev. C. D. Micade, pastor; 7, etc. Gentral, 675.9, 11 a. m., service, St. Paul's M. E. church, Rev. C. D. Micade, pastor; 7, Chicago Sunday Evening club, Raymond B. Fosdick, speaker.
  WBAP, Fort Worth, Tex. (Central, 475.9), 11 a. m., services, St. Paul's M. E. church, Rev. C. D. Micade, pastor; 4 p. m., concert, Rialto theater; 11-12, midninght frohes, Ted Miller's Crazy hotol orchestra.
  WBAR, New York City, N. Y. (Eastern, 272.3), 9:10 p. m., pr. Hans Haag, violini



Leon Dashoff is the leader of the Des Moines Theater Symphonic orchestra, which will be heard this week, Wednesday, February 18, at WHO, Des Moines. Mr. Dashoff is also a concert violinist, who has won Radio fame and recognition.

mon, Rev. R. A. White, Pcoples Liberal church; 4-5, Lain and Son classical concert; 5:15-6:15, talk, Rev. Bichard D. Hughes, vesper scribe, Emerald Avenue Presbyterlan church; 7-8, Blue Bird Screnaders; 8-10, Rosemary Hughes, soprano; Midway Daneing Gardens orchestra; Susannah Pepper, coloratura soprano; Homer Pepper, flutist; Adelle Pepper, alio; Mrs. Florence St. Claire, contralto; Borden Brothers; Bohby Michr, hlues singers; Buster Graves, boy soprano; Blanche Robinson, pianist; Florence Eastman, unczzo-soprano; Alfred Winterfeldt, concertinist; 10-10:15, Midway Dancing Gardens orchestra.
WCAE, Pittsburgh, Pa. (Eastern, 462), 10:45 a. m., services, Rodef Shalom temple; 3 p. m., People's Radio church services; 4, Prof. Otto Kaltels, planist; 6:30, dinner concert, William Penn hotel.
WCAU, Philadelphia, Pa. (Eastern, 278), 5:15 p. m., recital; 5:30, sermon, Rev. Dr. John W. Stockwell; 5:15, recital; 6, dinner concert, Meyer Davis Hotel Pennsylvania orchestra, direction Lon Chassy.
WCBO, Zion, III, Central, 344.6), 8 p. m., Chester Bagg, baritone; Weldman Siaters; Esther Weldman, soprano; Bessle Wiedman planist; Mrs. Hester Roh-inson, reader.
WCCO, Minneagolis-St. Paul. Minn (Central 417) White, Peoples Liberal church; 4-5, mon, Rev. R. A. Lain and Son cl Star program; Times-Star or hestrandentar duintet; 8, Times-Star program; Times-Star or hestra, William Kopp, director; soloists, Hazel Motz, soprano; Howard Haf-ford, tenor; Armand Lebrun, young Marinuba artist; Senator Schultz W MAQ, Chicago, III. (Cential, 447.5), 6:30 p. m., Hotel WMAQ, Chicago, III. (Central, 447.5), 6:30 p. m., Hotel LaSalle orchestra.
WMC, Memphis, Tenn. (Central, 499.7), 8:30 p. m., concert, Hotel Gayoso orchestra.
WNYC. New York, N. Y. (Eastern, 526), 7-7:30 p.\*m., dance program; 7:30-7:45, health talk; 7:45-9:25, special studio program; 9:25-10:30, Ricsenfeld's Rialto program; 10:35-10:50, talk, "Trend of the Times," Dr. Sydney N. Ussher.
WDAW, Dmaha, Nebr. (Central, 526), 6 p. m., Arthur Hays, organist; 6:30, studio, Mrs. Henry G. Cox, planist; 6:45, Harmo-Jazz orchestra, Ralph Foral, director; 9, program, auspices Auto Electric & Radio corporation. Mex, Section Arcssystem in the pastor.
 WNYC, New York, N. Y. (Eastern, 526), 9-11 p. m., program, Brooklyn Mark Strand theater.
 WDAI, San Antonio, Tex. (Central, 394.5), 11 a. m., services, Central Christian church; 7:30 p. m., serv-ices, Central Christian church; 9:30, WOA1 enter-tainers in "Carmen."
 WOAW Omsha Nehr. (Central, 526), 9 a. m., Radio talners in "Carmen." WOAW, Omaha, Nebr. (Central, 526), 9 a. m., Radio chapel service, Rev. R. R. Brown, pastor; 1:30 p. m., matlnce program, WOAW's May Sced & Nursery company building; 2:30, music; 6, Bible study, Mrs. company bullding; 2:30, musle; 6, Bible study, Mrs. Carl R. Gray, director; 9, musical chapel service, Trinity Baptist church, Rev. Charles Francis Holler, pastor; E. Catherine, organist.
vOC, Oavenport, I.a. (Central, 433.6), 8 p. m., church service, Rev. John M. Stephenson, pastor Broadway Preshyterian church; musical numbers; 9:30, The Lumer Little Symphony, Erwin Swindell, conductor, vOO, Philadelphia, Pa. (Eastern, 509.9), 10:35 a. m., services, Bethany temple; 5:05, organ recital, Clarence K. Bawden. 11-piece Esatuman hotel orchestra. KYW, Chicago, III. (Central, 535.4), 6:35-7 p. m., chil-dren's bedfime story, Unc'e Pob. WBAP, Fort Worth, Tex. (Central, 475.9), 7:30-8:30 p. m., Frensley Moore's Black and Gold Serenaders: 9:30-10:45, Montgomery Ward & Co.'s "Trail Blazers." WBAV, Columbus, Chio (Fastern, 294), 8 p. m., WBAV orchestra, Frances Handibeau, directing; solos, to be announced. corporation.
WOC, Davenport, Ia. (Central, 483.6), 7 p. m., sand-man's visit, Val McLaughlin; 7:20, educational lecture, "Human Spino-Mechanics," R. G. Maybach; 8, musical: Wesley Gosline Hawaiian trio; C. C. Harrod, tenor; Einit Haas, reader; 10, 3-act comedy-drama, "Deacon Dupps," W. E. Van Alleu, director.
WOI, Ames, Iowa (Central, 270), 10 p. m., program of popular music.
WOO, Philadelphia, Pa. (Eastern, 508.2), 7:30 p. m., A. Candelori's cnsemble from Hotel Adelphia; 8:30, concert from WEAF; 10:30, Vincent Ikizzo's dance orchestra. pastoi WOC, Minneapolis-St. Paul, Minn. (Central. wcco. Minneapois-St. Paul, Minn. (Central, 417), 0 a. m., Plymouth Congregational church, Rev. II. Dewey, pastor; 4:10 p. m., House of Hope byterlan church, Rev. H. C. Searingen, pastor, Central Lutheran church, Rev. J. A. Stub, or; 9:15, classical concert; Norweglan male chorus, G. Hansen, director; Lillian Dahl Lindstrom, int. W00. meed. , New York, N, Y. (Eastern, 272.3), 8 p. m., n Oriental music, Toufic Moubaid, Elizabeth K. Bawden, VORO, Batavia, III. (Central, 275), 7 p. m., I. B. S. A. choral singers; 7:10, Irwin L. Fisher, planist; 7:20, Violet Tait, soprano; 7:25, Bible lecture, W. H. Woodley; 7:50, I. B. S. A. choral singers, /DS, Jefferson City, Mo. (Central, 440.9), 7:30 p. m., Tellgious service, First Christian church, Rev. R. M. Taibert, pastor. WORD, orenestra, WORD, Batavia, III. (Central, 275), 8 p. m., Columbla Conservatory of Music of Auvora; 8:25, world news Ikuns, Ralph Leffler; 8:45, Columbia Conservatory of Music of Auv.es nianist WCX, Oetroit, Mich. (Eastern, 516.9), 7:15 p. m., serv-7DS, lees, Central Methodist Eplse dal church. WDAF, Kansas City, Mo. (Central, 365.6), 4-5 p. m., Music of Aur a WOS, Jefferson City, Mo. (Central, 440.9), 8 p. m., "Arrow R.ck Tavern," Mrs. W. W. Graves; "What Figures Show about Missourl Public Schools," W. W. Gibbany; musical program, Mrs. Honer Talbert. WQJ, Chicago, 111. (Central, 448). 11-12 m., "Sauces classical music, Star's Radio orchestra. WOWF, Providence, R. I. (Eastern, 440.9), 5-6:45 p. m., Radio recital, The Venetian Serenaders; Philhaumonic Talbert, pastor. (01), Chicago, III. (Central, 448), 10:30 a. in., sermon, Dr. Preston Brudley; Clarence Eddy, organist; 8-10, Ralph Williams and his Ralnbo Garden orchestra; Jeannette Van Lennep, mezzo-soprano; Maty Van Jeuron, accompanist; Milford Burdsall, baritone; Har-id Haewe, pionist; Gobort Misteier, Parisian planlat. wāj, Dr. Ralph W Jeannette (APPECION, APPECIAL, Central, 344.6), 8 p. m., Erma (CCD, Zion, III. (Central, 344.6), 8 p. m., Erma Reynolds, seprana; Mrs. G. R. Sparrow, contralto; G. R. Sparrow, tenor; Mr. and Mrs. G. R. Sparrow; pipe organ. WEAF, New York, N. Y. (Eastern, 401.5), 8:15-9:29 p. n., Roxy and Ma gang, Capital theorer; Giz-10:15, Usasi Sectors. (Continued on page 11).

well Wilson; 7:30, services, Aren Street Fresbyterian church.
WGN, Chicago, III. (Central, 370.2), 2 p. m., organ rectal, Lyon and Healy; 3, Tribune master artist concert, Mossalye Boguslawski, pianis.; 3:30, program, Chicago Musical college; 9-10, special program, "Old Ballads," ("harles H, Gabricl, Jr.
WGR, Buffalo, N. Y.' (Eastern, 319), 3-4 p. m., vesper service, Rev. Oscar Krauch of St. John's United Lutheran church, speaker; 4-5, John F. Gunderman, Jr., organist; 7:16, service of Central Presbyterian church, Willam Wall Whilddit, organist; Dr. Robert J. MacAlpine, speaker.
WGY, Scheneotady, N. Y. (Eastern, 375.9), 10:30 a. m., services, First Baptist church; organ prelude, Mrs. J. B. Van Patten; 3:35 p. m., WGY Symphony orches-

# Monday, February 16

Monday, silent night for: CFCA, CKAC, CKY, KFKX, KFSG, KJS, PWX, WBCN, WCAU, WDWF, WEAO, WEBH, WFI, WGN, WHAS, WJY, WKAQ, WLBL WLS, WMAK, WMAQ, WOAI, WQJ, WREO, WSUI WTAY.



Here are the Novak's Vaudettes, a Portland, Oregon, organization, pleasing both to the eye and ear, which performs regularly at KGW. Elma Novak, director, plays the piano; Beulah Blackwell, the violin; Esther Rickard, the trumpet; Ruth Hook, banjo, and Calla Howard, the drums.

tra; Mrs. W. Lawyer Hanes, soprano; 5, Dr. Frank Sill Rogers, organist; T. Roy Keefer, violinist; 7:30, First Baptist church services, organ prelude; P. J. Brunton, tenor; sermon, Rev. Gordon H. Baker; 8:45, Symphony orchestra, Waldorf-Astoria, Joseph Knecht, conductor.
WHAS, Louisville, Ky. (Central, 399.8), 4-5 p. m., vesper song service, auspices, First Unitarian church, Dr. Lon R. Call, pastor; Mrs. Velda Grant Kelleher, soprano; Reginald W. Billin, baritone.
WHB, Kansas City, Mo. (Central, 365.6), 9:40-11 a, m., nonning service, Linwood Christian church, Dr. Burris A. Jenkins, minister; 8-9:15 p. m., evening services, Independence Boulevard church, R. H. Miller, pastor; midnight, popular dance music, Gilbert Jaffey's music unasters.

masters.
WHK, Cleveland, Ohio (Eastern, 273), 10:30 a. m., Old Stone church, Rev. W. H. Foulkes, pastor; 4:30 p. m., vesper services, Cleveland Federated churches, Rev. E. R. Wright, conductor; current religious topics, hymns, sermon; 7:30 p. m., Epworth-Euclid Memorial church, Rev. Louis Wright, pastor; 9 p. m., Conn Synphony orchestra, Ralph E. Story, conductor; solo numbers.

numbers. WHD, Des Moines, Ia. (Central, 526), 11 a. m., sermon, Dr. Charles S. Medbury, pastor, University Church of Christ; 4, classical program, Dean Holmes Cowper, dimeter of the second se

WLW, Cincinnati, Ohio (Central, 423), 6 p. m., dinner

William C. Dunn, euphonium soloist; Paul Stewart, cornetist; Mary Ross, planist; Marion Lee, reader.
WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 5:30 p. m., children's hour, Mrs. R. G. Cargill; 6, sports talk; 8, "Poultry Feeding," N. E. Chapman; 8:15, "Care of Brood Sovs," Prof. E. F. Ferrin; 8:30, South Dakota night; 9:30, Wallie's Collseum orchestra; White Brothers & Stendal, singing trio.
WCX, Detroit, Mich. (Eastern, 516.9), 4:15 p. m., musical program; 6 p. m., dinner concert broadcast from the Book-Cadillac hotel; 8:30 p. m., musical program.
WDAF, Kansas City, Mo. (Central, 365.6), 6-7 p. m., plano tuning-in number on the Duo-Art; address, C. H. Cheney; weekly request-story night; music, Trianon ensemble; 8-9:15, "Around the Town with WDAF;" 11:45-1 a. m., Merry Old Chief and the Plantation players.

WEAF, New York, N. Y. (Eastern, 491.5), 4-4:15 p. m., Elsle Nesbl, soprano; 4:15-4:30, Arthur Storc, blind pianist; 4:40-5, children's stories; 6-7, dinner music, Waldorf-Astoria hotel orchestra; 7:15-8:30, Strand theater program; 8:30-9, Cushman's Sons, Inc.; 9-10, A and P Gypsles; 10-10:30, Choir In-vlsible from Washington, D. C.; 10:30-11:30, Ben Bernle's Hotel Roosevelt orchestra.
WEAR, Cleveland, Ohio (Eastern, 390), 7 p. m., Loew's State theater, organ recital, soloists and vaudevilie features.

and his Sinfollans; 1:30, Charlestown State Prison; 8:45, musicale; 8:55, Pathe News flashes; 9, A. & P. Gypsles.
WEMC, Berrien Springs, Mich. (Central, 235.5), 8:15 p. m., Radio Lighthouse musicmakers.
WFAA, Oallas, Tex. (Central, 475.9), 6:30-7:30 p. m., vesper recital, Tommy's Texans; 8:30-9:30, musical recital, faculty respresentatives of Gunter college.
WFI, Philadelphia, Pa. (Eastern, 395), 6:30 p. m., Meyer Davis' Bellevue Stratford concert orchestra; 7, Sunny Jim.
WGA, Chicago, III. (Central, 370.2), 6 p. m., organ recital, Lyon and Healy; 6:30-7, diuner concert, Drake concert ensemble, Blackstone string quintet.
WGR, Buffalo, N. Y. (Eastern, 319), 10:45-11 a. m., Gold Medal home service talk, Betty Crocker; 12:30-1 p. m., Hotel Statler concert ensemble; 2:30-4:30, Radio Dealers' musical program; 4:30, address, "The Spanish War Veteran," Leonard S. Spire; 6-7:30, dinner music; 8:15-8:45, musical program, the National Vadeville exchange; 8:45-9, address, "Rural Sanita-tion," J. Warren Fortenbaugh, chief sanitary engineer of the Kaustine company; 6-10, musical program, Elm Vocational school; 10-11, "The Musical Entertainers," 11-1 a. m., supper-dance music, Vincent Lopcz' Hutel Statler dance orchestra, Harold Gieser, director.
WGST, Atlanta, Ga. (Central, 270), 9-10 p. m., Tech. glee elub, Al Holden, president.
WGY, Schenectady, N. Y. (Eastern, 375.9), 6:20 p. m., sport talk, Harold Anson Bruce; 6:40, dinner musie, Hotel Ten Eyck trio; 7:30, WGY orchestra; Ethel Doyle, soprano; Giovanni Trombini, cellist; American trio; Edward A. Rice, violinist; Peter Schmidt, clari-netist.
WHA, Madison, Wis. (Central, 535.4), 7:80 p. m., haskethall gaue lowa, Wis : address on food and m.

Doyle, soprano; Giovanni Trombini, cellist; American trio; Edward A. Rice, violinist; Peter Schmidt, clarinetist.
WHA, Madison, Wis. (Central, 535.4), 7:80 p. m., basketball game, lowa-Vis.; address on food and nutrition, Mrs. Nellie Kedzie Jones.
WHAZ, Troy, N. Y. (Eastern, 380), 9 p. m., vocal recital, direction of A. Y. Cornell of Troy; 11, dance program, Arcadians.
WHB, Kansas City, Mo. (Central, 365.5), 2-3 p. m., ladies' hour program, Al Bridge Garden players; Gilbert Jaffey, violinist; Jess Sutton, pianist; 7-8, popular music, Pekin eale; address, George J. Enkin, ausplees K. C. Optometric association.
WHO, Des Moines, Ia. (Central, 526), 7:30-9 p. m., Helen Miller, pianist; Vera Trevits, planist; George Davis, flutist; classical program, Al Eastern, 273), 6:15 p. m., Hotel St. James dinner dance orchestra; 7, Uncle Wip's bedtime stories; dancing lessons, Miller Conservatory of dancing.
WIZ, New York, N. Y. (Eastern, 454.3), 4-4:15 p. m., Alvan Harlow Atwood, tenor; 4:15-4:30, Flora Intemann Lange, contralic; 8:45-9, "Speed Skating," John Murray; 9-10, Friendly Sons of St. Patrick glee club concert, Astor hotel.
WIT, Philadelphia, Pa. (Eastern, 395), 5:15 p. m., Gus Daniel's dance orchestra; 7, son Daday; 8:30-9, Goorge P. Boggs, baritone; 9:25, Stanley theater; 10:02, Arcadia cafe dance orchestra; raudeville features from Fay's Knickerbocker theater.

Mrs. Ruth G u n n e l l, violinist, is one of the promising young musicians of Musicians of Kansas City. She will take part Wednes-day night, February 18, in the 8 p.m. program of WDAF, the Kansas City Star station.



LEVER RAL

At KRW. Elinia NOVAR, diffector, plays
Esther Eickard, the trumpet; Ruth Hook,
Ioward, the drums.
Little Symphony orchestra; Lionel H. Bllton, cellist;
Simeon Joyce, planist; Aeolian male quartet.
KOKA, East Pittsburgh, Pa. (Eastern, 309.1), 6:15
p. m., KDKA Little Symphony orchestra, Vietor Saudek, conductor; 7:30, children's period; 8:30, concert.
KFI, Los Angeles, Calif. (Pacific, 467), 5:30-6 p. m., Examiner's musical half hour; 8-9, Evening Herald, Owen Fallon's Californians; Wm. MacDougall, Scotch character singer; 9-10, program, Walter M. Murphy Motors company; 10-11, Examiner, Ray West and his Alexandria hotel dance orchestra.
KFKU, Lawrence, Kan. (Central, 275), 6:50 p. m., plano tuning-in number; 7, music; 7:15, 'Basketball Officiating,'' Dr. F. C. Allen; 7:30, 'The Ethics of Debate,'' Prof. B. A. Gilkinson; 7:35, Spanish lesson.
KFNF, Shenandoah, Ia. (Central, 266), 6:30 p. m., concert, Henry Field Seed company.
KFQA, Seattle, Wash. (Pacific, 238), 7:15-8 p. m., bed-time story, Aunt Vivien; 8-9, Earl Gray and his Butler hotel orchestra.
KGO, Oakland, Calif. (Pacific, 300), 8 p. m., ''Limitations of Co-operative Mlarketing,'' Prof. Erdman; ''A Lesson in English,'' Wilda Wilson Church; 'The Challenry Reinhardt; 'Chats about New Books,'' Joseph Henry Jackson; 10-1, Henry Halstead's orchestra.
KGW, Portland, Ore. (Pacific, 300), 8 p. m., children's program; 8, Oregonian concert orchestra; 10, Colburn's Meledy may force the Professional Life,'' Dr. Aurelia Henry Reinhardt; 'Chats about New Books,'' Joseph Henry Jackson; 10-1, Henry Halstead's orchestra.
KOA, Oenver, Colo. (Mountain, 322.4), 8 p. m., studio program, featuring Evenet at the Supply company; 10-11, Silvertown Cord orchestra and Lifly and Mallenger, contralt, presented by B. F. Goodrich Rubber company; 11-12, Abe Lyman's Cocoanut Grove dance orchestra from Ambassador hotel.
KOA, Oenver, Colo. (Mountain, 348.6), Di. Charles S. Alexandry, Program, Dean Holmes Cowper, director.
WIP, Philadelphia, Pa. (Eastern, 509.9), 4 p. m., talk, "Give the Boy a Chance," H. Leo Taylor; 7:15, services, Holy Trinity church, Rev. Floyd W. Tomkins, D. D.; 9:30, Ben Stad and his Wip Symphony orchestra; Karl Bonawitz, organist.
WJZ, New York, N. Y. (Eastern, 454.3), 2:30-3:30 p. m., Radio Bible class; 3:30-4, Brooklyn string quartet; 5:36-6:30, "The Metronolis of MankInd," Edgard White Burrill; 8-8:15, Marie Rothman, soprano; 9:30-10:30, Godfrey Ludlow, violinist.
WLIT, Philadelphia, Pa. (Eastern, 395), 2:30 p. m., Arcadia cafe concert orchestra, Feri Sarkozi, director.
WLS, Chicago, III. (Central, 344.6), 6:30 p. m., Ralnh Emerson, organist; 7, Fourth Congregational church choir, Thomas Munroe, director.
WLW Cincinnati, Ohio (Central, 423), 9:30 a. m., school, editorial staff of Sunday School Puhlications, Methodist Book concern; 11, services, Church of the Covenant, Dr. Frank Stevenson; 7:30 p. m., services, First Presbyterian Church of Walut Hills, Frederick McMillan; 8:30, Western and Southern orchestra, William Kopp, director; Italo Picchi, basso.
WMC, Memphis, Tenn. (Central, 499.7), 11 a. m., services, Second Presbyterian church service.
WMC, New York, N. Y. (Eastern, 526), 9-11 p. m.,

CHNC, Toronto, Can. (Eastern, 350), 8-10 p. m., CHNC

WEAR, Cleveland, Ohio (Eastern, 390), 1 p. m., Philip Spitalny's Allen theater symphony orchestra.
WEEI, Boston, Mass. (Eastern, 473.9), 7:20-8:15 p. m., Roxy and his Gang, Capiliol theater.
WEMC, Berrien Springs, Mich. (Central, 285.5), 11 a. m., sacred music, Radlo Lighthouse choir; Augle Wilson, W. R. French.
WFAA, Oallas, Tex. (Central, 475.9), 6-7 p. m., Radio Biblic class, Dr. William M. Anderson, pastor; 7:30-8stor; Anderson, solotst; Scienato and his orchestra.
WFI, Philadelphia, Pa. (Eastern, 395), 4:30 p. m., service, Methodist; Neil Lowrey, solotst; Bicleanto male quartet; 9:30-11, Jack Gardner and his orchestra.
WFI, Philadelphia, Pa. (Eastern, 395), 4:30 p. m., service, Mirs. Robert H. Morton, solotst; Neil Lowrey, solotst; Bicleanto male quartet; 9:30-11, Jack Gardner and his orchestra.
WFI, Philadelphia, Pa. (Eastern, 395), 4:30 p. m., service, Morroe Methodist Charler, Street Presbyterian church; Mich. (Central, 326.7), 11 a. m., service, St. Paul's cathedral; 2 p. m., Detroit News orchestra.
WGN, Chicago, III, (Central, 370.2), 2 p. m., organ

WEAF, No. Elsle

State theater, organ round, features.
WEEI, Boston, Mass. (Eastern, 475.9), 6:30 p. m., big brother club, Noah's Arkadians; 7:15, Dok-Elsenbourg and his Sinfonlans; 7:30, Charlestown State Prison; 8:45, musicale; 8:55, Pathe News flashes; 9, A. & P. Comelec

# SPANISH-AMERICAN MUSIC AT KTHS

# Monday, February 16

(Continued from page 10)
and Garnishes," Mrs. Jean Prescott Adams; "Ice Cream—For Health," J. E. Davles; 3.4 p. m., "The Hot Sandwich Meal," Helen HartIngton Downing; "The Care of Your Hair," Madame Huntingford.
w SAI, Cincinnati, Ohio (Central, 325.9), 10 p. m., Ai Wiebe's Peerless dance orchestra.
wSB, Atlanta, Ga. (Central, 429), 5-6 p. m., Myers' Melody artists; 8-9, Rich's Mandolin club; Frank Wil-son, pianist; 10:45, Tucker's entertainers orchestra.
wTAM, Cleveland, Ohio (Eastern, 390), 6 p. m., Guy Lombardo's Royal Canadians orchestra; 8, Windermere quartet, concert program; Mrs. Robert McKee, soprano; Grace Toy Davidson, contralto; Harvey Maretto, bass; C. C. Chatel, tenor; Grace Gordon, pianist.
wWJ, Oetroit, Mich. (Eastern, 352.7), 3 p. m., Detroit News orchestra; 7, Detroit News orchestra. (Continued from page 10)

# Tuesday, February 17

Tuesday, silent night for: CHNC, KFAE, KFKU, KFKX, KFMX, KFNF, KOA, KOB, KYW, PWX, WBBR, WCBD, WEAO, WEMC, WGST, WHA, WHAZ, WHO, WOC, WOI, WOO, WORO, WOS. CFCA, Toronto, Can. (Eastern, 350), 8:15 p. m., "Cbem-istry Applied to Industry," J. W. Bain. CKAC, Montreal, Can. (Eastern, 425), 7 p. m., kiddies'

KTHS, Hot Springs National Park, Ark. (Central, 375). 8:30-10 p. m., "Versatility Concert," Cbarles L. Fisher and his Eastman hotel orchestra.
KYW, Chieago, III. (Central, 535.4), 6:35-7 p. m., chii-dren's beditme story, Uncle Bob; 7-7:30, dinner con-cert, Congress hotel; 8-8:20, musical program, Chicago Musical college; 8:20-8:45. American Farm, Bureau federation: "Tarmers at School," C. L. Kutil; "Grain Market Reriew," J. W. Coverdale; 8:45-9, musical program; 10-11:30, evening at home program; "Apple-sauce" club, Ransom Sherman.
WBAP, Fort Worth, Texas (Central, 475.9), 7:30-8:30 p. m., musicai program; 9:30-10:45, musical program, artists of Texas Woman's college.
WBAV, Columbus, Ohio (Eastern, 294), 8 p. m., Dis-patch program, talent from Richwood, Ohio, J. J. Corbett In charge.
WBAV, Columbus, Ohio (Eastern, 294), 8 p. m., Dis-patch program, talent from Richwood, Ohio, J. J. Corbett In charge.
WBCN, Chicago, III. (Central, 266), 6-6:30 p. m., juvenile period, Luella Drew Wilson; 7-8, Mrs. Davidson Tague and affiliated artists; 8-8:30, Marie Wright, soprano; George Forsyth, boy tenor; Mid-way Dancing Gardens orchestra; 8:30-9, Walton School of Commerce program; 9-12, Midway Dancing Gardens orchestra; Will Rossiter's Melody Chris; F. H. McDonald, president Broadcast Listeners' association; Larry Loser, tenor; Finney

auspices of English Speaking union; 8:10-8:20, N. Y. U. Air college; 9-10, Brunswick music memory con-test; 10-10:15, talk, Fravius Gildrist Wood, woman explorer; 10:15-10:30, Vassili Zavadsky, pianist. WLBL, Stevens Point, Wis. (Central, 278), 8 p. m., musical program, auspices of the Stevens Point Chamber of Commerce.

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explorer; 10:15-10:30, Vassili Zavadsky, planist.
WLBL, Stevens Point, Wis. (Central, 278), 8 p. m., musical program, auspices of the Stevens Point Chamber of Commerce.
WLIT, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., dally almanac; 12:02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 4:30, Florence Hall Quimby, soprano; 7:30, Dream Daddy's bedtime stories; 7:50, play review, Arnold Abbott.
WLS, Chicago, III. (Central, 344.6), 6:30 p. m., Ralph Emerson, organist; 6:50, Senate theater studio; 7. lullaby time, Ford and Glenn; 7:15, McGraves ladies' trio; 7:45, Anthony Wons' invenile adventure; 8, Florence K. White, Grace Wilson, Kenneth Clark; 9, Nubs Allan; 9:10, Shakespearean drama, Anthony Wons; 9:30, Cleero male trio; 9:40, Senate syncopators; 10, Elizabeth Rusbmore ensemble; 10:30, Isham Jones and his orchestra; 10:40, Ford and Glenn time; 11, Glenn's cornhuskers; 11:10, vaudeville nite, Carrell Vaudeville agency; 12, minght revue, Ralph Emerson, Isham Jones and bis orchestra; Ford and Glenn.
WLW, Cincinnati, Ohio (Central, 423), 6 p. m., dinner hour concert, Selinsky Instrumental quintet; 7:30, program, Miami university; Mlami university quartet: 10, concert program, Bathouse Coffee company; 10:40, songs, Marian Manship Schaeffer; Elizabeth Thuis, acompanist; The Cineinati Zither quartet: Ruth and Charles Hohe, A. Ruhrick and Louis Wegert; 11, Keefer-Kocker orchestra.
WOAU, Omaha, Nebr. (Central, 256), 6 p. m., advice to lovelorn, Cynthia Grey; 6:25, dinner program, May Seed & Nursery company; 9, concert, Mooce band, J. J. Gillogly, leader; 10:30, Frank W. Hodek, Jr., and his Omaha Nightingales.
WOAO, Batavia, III. (Central, 256), 8 p. m., Willam Benson, tenor; 8:10, Evelyn Nelson, pianist; 8:20, Mrs. Lou McArthur, soprano; 8:30, Eible lecture, M. E. Wooldey; 8:50, William Benson, tenor.
WOA, Omaha, Nebr. (Central, 426), 11-12 m., "Indoor Pienics," Agnes M. Olson; "Pictures a

Gardner. WRC, Washington, O. C. (Eastern, 469), 6:45 p. m., children's bour, Peggy Albion; 7, dinner music, New Willard orchestra; 8, show shopping, Leonard Hall; S:10, Katberlne Riggs, harpist; 8:30, "Political Situ-ation in Washington Tonight," Frederick William Wile; 9, third Brunswick Memory contest; 10, George M. Ross, planist; 10:15, Meyer Davis Leparadis band. WREO, Lansing, Mich. (Eastern, 285.5), 8:15-9:45 p. m., Reo Motor Car company band; Reo Male glee club.

club. WSAI, Cincinnati, Ohio (Central, 325.9), 7 p. m., Hotel Gibson orchestra, R. M. Visconti, director; 7:30, chimes; 7:45, children's story; 8, Hotel Gibson or-chestra; 9, University of Cincinnati speaker; 9:10, Oliver Plunkett, tenor; Ruth Dittman, soprano; John Drury, baritone.



Richard Miller (left), popular Buffalo tenor, will be featured Wednesday, February 18, at WGR. Charlotte Meyers (above) is the blues singer known throughout Detroit's (above) is the blues singer known throughout Detoits Radio circles for her singing Tuesday evenings at the Red Apple club of WCX. Little Betty Sargent (four years old) broadcasts regularly from WGBS, WJZ and WFBH, New York city.

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dinner concert, William Penn boiel; 7:30, Undé Kaybee; 7:45, special feature; 8:30, Gold Dust twins; 9, Eveready hour; 10, concert, Goodrich Silvertown Cord orcbestra; 11, late concert.
WCAU, Philadelphia, PA. (Eastern, 278), 7:30 p. m., concert, Snellenburg Choral society, direction Henry Gordon Thunder; 8, talk, Clara Zillessen; 8:15, talk, "Dry Cleaning;" 8:50, recital.
WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 5:30 p. m., chidren's hour, Gold Medal lady; 6:30, Original George Osborn's Nicollet hotel concert orcestra; 7:30, "Income Tax Returns," Cbarles Preston; 7:45, "Bankers' Hobbies," Emil A. Bole.
WCX, Detroit, Mich. (Eastern, 516.9), 4:15 p. m., musical program; 10, the Red Apple ciub.
WOAF, Kansas City, Mo. (Central, 36:56), 6-7 p. m., piano tuning-In number on the Duo-Art; Radio piano lessons, Maudellen Littlefield; Trianon ensemble; 11:45-1 a. m., "Newman Nightawk Night."
WOWF, Previdence, R. L. (Eastern, 440.9), 9:30-10:30 m., 'children's hour with Harry James Beardsley (Cousin Jim); Eugene Lamb, pianist.
 KGO, Oakland, Calif. (Pacific, 300), 8 p. m., Antonio de Grassi, violinist; Maxine Cox, planist; 10-1 a. m., dance music, Henry Halstead'a orchestra.
 KGW, Portland, Ore. (Pacific, 492), 5 p. m., children's program, story, Uncle Dave; 8, Oregon Agriculturai college extension service lecture; 8:30, concert, Mt. Angel College Jubilee minstrels; 10, Multnomah hotel etrollers. concert, Carl'Zoeller's melodists; cbapter of the "Billy and Jane" stories, James Speed. WHB, Kansas City, Mo. (Central, 365.6), 7-7:30 p. m., dinner hour concert, Music Masters, Gilbert Jaffey, director; 8-10, Indian musical program, Mary Red Eagle, Chief Standing Elk; "Meaning of an Edu-cation," Dr. James W. Fifield; Bill Lynch and his orchestra. WTAY, Oak Park, III. (Central, 250), 6:15-6:30 p. m., organ, Parthenon theater; 6:30-7:30, Sandy Meek, baritone; Ray Kroc, pianist; Raynor Dalheim & company orchestra.
 WUJ, Oetroit, Mich. (Eastern, 352.7), 6 p. m., dinner concert; 7, soloists. director; 8-10, Indian musical program, Mary Red Eagle, Chief Standing Elk: "Meaning of an Education," Dr. James W. Fifield; Bill Lynch and his orchestra.
WHK, Cleveland, Ohio (Eastern, 390), 6:15 p. m., News items; 6:30, Emerson Gill's Bamboo Garden orchestra; 7:30 p. m., Al Dister's orchestra; Mrs. Mirlani Ward, contralto; Alex Worth, tenor.
WIP, Philadelphia, Pa. (Eastern, 508.2), 6:05 p. m., songs, Mark Fisher, Joe Burke; 6:15, Harvey Marburger and his vaudeville orchestra; 7, Uncle Wip's bedtime stories; 8, dramatic review, Elliott Lester; 8:15, Pbiladelphia police band; 9, Grace Kuschner, planist; 10:05, "Emo's Weekly Movie Broadcast," Eli M. Orowitz; 10:30, Harvey Marburger's vaudeville dance orchestra.
WJY, New York, N. Y. (Eastern, 405.2), 8:15-10 p. m., American Orcbestral concert, direct from MacAfillan theater at Columbla vulversity; 10-10:35, talk, Prof. Emory Hoilowog of Loubleday Page.
WKAQ San Juan, P. R. (Intercolonial, 340.7), 9-10:30 p. m., Euterpe jazz band.
WMAC, Chicago, III. (Central, 447.5), 6 p. m., Chicago theater organ; 6:25, Hotel LaSale orchestra; 6:50, Daddy; 8, Bush Conservatory orchestra.
WMC, New York, N. Y. (Eastern, 526), 7:35-7:45 p. m., sports talk, Thornton Fisher; 8:30-10, program under ausplees of American Association of Engineers; 10:10-10:30, Board of Education Lecture service.
WIZ, New York, N. Y. (Eastern, 454.3), 4-4:15 p. m., Hazel Dudley, soprano; 4:15-5, Louis W. Yaeckel, tenor; 5-5:30, "Tuesday Afternoon" at the Piaza. Angel College Jubilee minstreis; 10, Multhomah hotel strollers.
KHJ, Los Angeles, Calif. (Pacific, 404), 6-6:30 p. m., Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, little stories, American history, Prof. Walter Sylvester Hertzog; weekly visit of Queen Titania and Samdman from Fairyland, Uncle John and Louis F. Klein, harmonica and autoharp soloists; 7:45, "Income Tax," Capt. John Tr. Riley; 8-10, program, Julie Kellar trio, Peerless Producte company; 10-11, Earl Burtnett's Biltmore hotel dance orchestra.
KJS. Los Angeles, Calif. (Pacific, 293), 8-9:30 p. m., vural and instrumental program, Prof. J. B. Trow-bride, and instrumental program, Prof. J. B. Trow-bride, and parts. Wednesday, February 18 Wednesday, silent night for: CKAC, CHNC, CKY, KFDM, KFKU, KFKX, KGO, KIS, KSD, WBAY, WCBO, WOWF, WFAA, WFI, WGY, WGST, WHAZ, WJY, WLBL, WMAK, WMC, WOAW, WOAI, WOI, WORO, WIP, WREO, WSAI, WSUI. WORO, WIF, WREO, WSAI, WSUI.
CFCA, Toronto, Can. (Eastern, 350), S:15 p. m., Toronto Oratorio society's Mendelssohn's "St. Paul."
CNRC, Calgary, Can. (Mountain, 450), 9 p. m., studio program, Augustine Arildge and party; A. Phillips, violinist; dance program, Plaza cabaret.
CNRO, Ottawa, Ont. (Eastern, 435), 7 p. m., half-hour talk for boys and girls, Uncle Dick; S, dinner concert, James McIntyre and his Chateau Laurier hotel orches-tra; Elgar mixed quartet; Mrs. Frank Bird, planist; Hawaiian orchestra; Mrs. Robertson, soprano; address, H. M. Melanson; J. L. Dodington, tenor; James Mc-Intyre and his Chateau Laurier hotel orchestra.
PWX, Havana, Cub. (Eastern, 400), S:30 p. m., Band of the Cuban navy; Mrs. Caridad de Miguel and mem-ber of her academy.
KOKA, East Pittsburgh, Pa. (Eastern, 309.1), 6:15 p. m., dinner concert, Gregorio Scalzo, conductor; 7:30. cbildren's period; 8:15, address, University of Pitts-burgh studio; 8:30, concert. (Continued on page 12) lessons, Maudellen Littleneta; Tranton Custometer, Terminet, Custometer, Newman Nighthawk Night."
WOWF, Providence, R. 1. (Eastern, 440.9), 9:30-10:30 p. m., Vincent Lopez Arcadia dance orchestra.
WEAF, New York, N. Y. (Eastern, 491.5), 11-11:15 a. m., Bee Lawnhurst, planist; 4-4:15 p. m., Maude Killam, planist; 4:15-4:30, Elizabeth Heslop, mezzo soprano; 4:30-5, Womer's program; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:15, Esther Cadkin, soprano; 7:15-7:30, Theodore Lebmann, violinist; 7:30-7:45, Elsie Nesbit, soprano; 7:45-8, LeRoy Flsher, baritone; 8-8:15, talk, Bank of America; 8:30-9, Gold Dust Twins; 9-10, Eveready hour; 10-11, Goodrich Rubber company. vural and instrumental program, Prot. J. B. 'ITow-bridge.
KriX. Hollywood, Calif. (Pacific, 337), 5:45-6:15 p. m., Wurlitzer pipe organ etudio; sports talk. Sid Ziff; i:30-7:30, dinner hour music, R. C. ''Cliff'' Durant; 3-9, program, First National and Pacific-Southwest banks; 9-10, KNX feature program; 10-12, movie night, Ambassador hotel, Town Crier, introducing celebrities over microphone, Abe Lyman's Coccoanut Grove dance orchestra.
KOA, Oenver, Colo. (Mountain, 322.4), 6-6:30 p. m., dinner music, 7:30, ''Fertilizing Alfalfa,'' R. I. Throckmorton; 7:40, music, Mrs. G. W. Salis-bury, director; 7:50, ''Operating the Incubator,'' L. Fr Payne: company. /EAR, Cleveland, Ohio (Eastern, 390), 7 p. m., pro-gram arranged by the Cleveland News-Leader; bed-time story; Don Palmer, Radio talk cartoon, studio WEAR. time story, for the program.
WEBH, Chicago, III. (Central, 370.2), 7 p. m., Orlole orcheetra; Dan Ruseo, Ted Fiorita; musicai bits, Riviera theater; 9, Orlole orchestra; talk on personallty, M. S. Szymczak; Dennis Sisters; Orlole orchestra; taos Brothers; Nick Lucas. Payne. S0, St. Louis, Mo. (Central, 545.1), 6 p. m., concert, Benjamin Rader'a orcheetra; 9, etudio recital, Clarence H. Hogue, tenor; Paul Friess, planist; "Interior Decorating as a Fine Art," Paul Valenti. KŠŐ (Continued on page 12)

A DECEMBER OF THE OWNER 
stories in French and English; 7:30, classical concert, Windsor hotel dining room; 8:30, studio variety program; 10:30, dance program, Windsor grill; frolics.
CKY, Winnipeg, Can. (Central, 450), 7:30 p. m., university lecture; 8:15, studio concert; 9, half-hour program, Capitol theater; 9:30, Roseland dance gardens.
CNRA, Moncton, Can. (Atlantic, 313), 8:30 p. m., Mrs. J. Clyde Stevens, soprano; Mrs. Fred Ward, planist; Roy Metzler, tenor; James Sparanza, banjoist; duet, Mrs. H. N. Price, Roy B. Metzler; Mrs. H. N. Price, contralto; popular music, Joe Mazzieo and his Rainbow Melody boys.
CNRR, Regina, Can. (Mountain, 420), 8 p. m., weekly bedtime travel tales; Saint Mary's concert.
KOKA, East Pittsburgh, Pa. (Eastern, 309.1), 6:15 p. m., dinner concert; 7:30, cbildren's period; 8:30, concert; 11, Pittsburgh Post studio concert.
KFOM, Beaumont, Tex. (Central, 315.6), 8 p. m., uselal program, members of Magnolia Petroleum company.
KFI, Los Angeles, Calif. (Pacific, 467), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, speaker; 7-8, program, Hills Bros, presenting dinner music; 8-9, Acolian residence pipe organ studio, Dan McParland, organist; 9-10, Examiner, Long Beach Municipal band; 10-11, Packard Ballad bour, Rhue Gill and Bess Rudisill, the melody girls.
KFOA, Seattle, Wash. (Pacific, 455), 6:45-8:15 p. m., Rhodes' Department store; 8:30-10, Times dance music, Toots Bates Partition orchestra; Harold Weeks, song composer; 10:05-11, Olympic hotel dance music.
KFOA, Seattle, Wash. (Pacific, 278), 6:30-7:30 p. m., children's hour with Harry James Beardsley (Cousin Jim); Eugene Lamb, pianist.
K60, Oakland, Calif. (Pacific, 300, 8, p. m., Antonio de Grass i violinist. Wathen Cow planist: 10-11, Earl Grasy and his orchestra. WGY, Schenectady, N. Y. (Eastern, 375.9), 6:30 p. m., New Kenmore hotel orchestra; 7:30, Rice string quartet, Rose Mountain, contralto; 9, Brunswick hour of music; Third National music memory contest; 11:15, Stephen E. Boisclair, organist.
WHAS, Louisville, Ky. (Central, 399.8), 7:30-9 p. m., concert, Carl'Zceller's melodists; chapter of the "Billy WSB, Atlanta, Ga. (Central, 429), 5-6 p. m., songs and bedtime story, Bonnie Barnhardt; 8-9, Vick Myers' Melody artists; 10:45, program, Bess Merrill, mezzo-soprano, director.
WTAM, Cleveland, Ohio (Eastern, 390), 6 p. m., Maurice Spitalny's Hotel Statler orchestra.
WTAY, Oak Park, 111. (Central, 250), 6:15-6:30 p. m., Maurice Spitalny's Hotel Statler orchestra. Briggs, humorist; Famous Four; Al Phillips, tenor; Joe Ward's Banjo Phiends, banjo sextet; Wally John-son and Ed. Walsh; David Krueger, violinist; Amer-lcan trio; 12-1:30, Pirate Ship.
WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, William Penn botel; 7:30, Uncle Kay-bee; 7:45, special feature; 8:30, Gold Dust twins; 9,

# FRANCIS MACMILLEN, AMERICAN

# Where to Hear Concerts

# Central Standard Time

HESE are the stations for music lovers to dial, and you can hear, pro- $T_{\rm viding\ you\ dial\ correctly\ and\ read\ the\ programs\ carefully,\ everything\ }$ from jazz to opera.

#### Popular

Saturday, February 14: 6, WMAQ; 6:30, KDKA; 7, WBCN, WQJ; 7:20, WLS; 7:30, WNYC; 8, KYW, WBCN; 8:30, WCCO; 9, WBCN, WEBH, WJZ, WMAQ, WTAY; 9:15, WGBS, WJZ, WTAY; 9:35, WGBS; 10, KGO, WBCN; 10:30, WQJ; 10:45, WSB; 11, WBCN, WEBH, WQJ; 11:30, WQJ; 12, WBCN, WQJ; 1, KNX, WQJ; Sunday, February 15: 6:20, WEEI; 7, WEBH; 8, WBCN; 9, WBCN; 9:30, WFAA; 10, KHJ; 11, KNX, WBAP, 12, WBCN.

WFAA; 10, 1110, 24, 1111, 24, 1111, 121, WBCN. Monday, February 16: 6:15, WEAF; 6:45, WOAW; 7, WBAV; 7:15, WGR; 7:30, WEAF, WHO; 8, WLW; 8:25, WNYC; 8:30, WCCO; 9, WGR, WOAW; WYYC; 8:30, WCCO; 9, WGR, WOAW; 9:30, WBAP; 10, KFI, KNX, WOC, WOI; 11, KFI

**Tuesday, February 17: 6:15, WEEI; 6:30, WGY, WTAY; 7, WBAV; 7:30,** WCAE, WEAF, WEEI, WFI, WNYC; 8, WBCN, WCAE, WEAF, WHB; 8:45, 6, WBON, WCAE, WEAF, WHB; 8:45, CFAC; 9, CKY, KFI, WBCN, WEAF, WEBH; 10, KHJ, KNX, KYW, WBCN, WQJ; 10:40, WLW; 11, KNX, WBCN, WEBH, WMC, WQJ; 12, KFI, KNX, WBCN, WQJ; 1, WQJ. Wednesday, February 18: 6:45, WCAE; 7, WHB; 7:15, WGR, WLIT; 7:30, WBAP, WHO; 8, WBCN, WHO; 9, WBCN, WEBH, WEEI, WTAY; 9:30, KFI, WEEI, WTAY; 9:45, KYW, 10, KHJ, KNX, WQJ; 10:30, KYW; 12, WQJ; 12:15, WTAY; 12:30, KYW; 1. WQJ.

Thursday, February 19:6:30, WTAY; 6:45, WCAE, WEAF; 7, AT9, WHB, WLW; 7:15, WIP; 7:30, WNYC; 8, KSD, WBCN, WFI; 8:15, WREO; 8:20, KYW; 8:30, WFAA; 9, CFCA, WBCN, WEBH; 10, KFI, KHJ, KYW, WGN, WQJ, WSAI; 10:30, WBCN; 11, KFI, KHJ, KNX, WEBH, WLW, WQJ; 11:30 WBCN; 12, WBCN, WQJ; 1, WQJ.

**Friday, February 20: 6,** WWJ; 6:30, WTAY; 7, WBCN, WEAF; 7:30, WEAF, WEEI, WHO, WJY; 8, WBCN, WCCO, WDAF, WEAF; 8:30, KTHS; 9, KYW, WCCO, WDAF, WEBH, WOAW; 10, KFI, WGN, WQJ; 11, KYW, WEBH, WMC, WQJ; 12, KNX, KYW; 12:20, WQJ; 1, KYW, WQJ.

#### Classical

Clas Saturday, February 14: 6, KGO, WBCN, WGN, WLW; 6:15, WTAY; 6:30, CKAC, KDKA, KFNF, WBZ, WGN, WLIT, WTAY; 6:45, WOAW; 7, CNRO, KYW, WBBR, WEBH, WEAF, WGY, WNYC; 7:15, WBZ, WJZ; 7:25, WEAF; 7:30, CKAC, KDKA, KFI, PWX, WCAE, WHAS; 7:50, WEAF; 8, KHJ, KSD, WEAF, WGN, WMC, WSB; 8:05, WBZ; 8:30, KTHS, WFAA; 8:45, KFOA, WBBR, WEAF, WGBS; 9, WOAW; 9:05, WBZ; 9:30, KNX, WBZ, WEAF; 9:45, WEAF; 10, KFI, WIP; 10:15, WGY; 11, KFQX, WFAA; 11:30, KYW, WOAW. WOAW.

 KFQX, WFAA; 11:30, KYW, WOAW.
 Sunday February 15: 6, WORD;
 6:30, WGY; 7, KYW, WBBR, WBCN, WJZ, WLS; 7:30, WFAA; 7:45, WGY;
 8, WCBD, WNYC, WQJ; 8:10, WBBR;
 8:20, WEAF; 8:30, KHJ, KTHS, WIP, WJZ; 9, KFSG, KGW, KHJ, KNX, WOAW, WQJ, WSUI; 9:05, WBBR;
 9:15, WCCO; 9:30, KTHS, WOAI, WOC; 10, KFI, KNX; 12, KFSG.
 Monday, February 16: 6, WGN, WMAQ, WOAW; 6:30, KFNF, WEEI, WFAA, WGN, WGY, WMAQ, WOAW;
 6:45, WCAE, WNYC; 7, CHNC, KFKU, WBBR; 7:30, KDKA, KFI, WCAE, WCX, WLIT, WEAF; 7:40, WBBR; 7:45, WCAE; 8, CHNC, KFDM, WCAE, WCBD, WGR, WHAZ, WHO, WJZ, WOC WORD; 8:15, WEMC, WREO; 8:25, WLIT; 8:30, KNX, KTHS, WFAA, WMC; 8:45, KFOA, WORD; 9, KOA, KSD, WEAF, WGST; 9:30, KFKX; 10, KGW, WCAE; 10:30, KFOA; 11, KFOA;
 11:15, WHO. 11:15, WHO.

11:15, WHO. Tuesday, February 17: 6, KGO, KSD, WEAF, WGN, WLW, WMAQ, WRC, WWJ; 6:15, WTAY; 6:25, WOAW; 6:30, CKAC, WCAU, WCCO, WFAA, WGN; 6:45, WCAE, WEAF; 7, KYW, WBAV, WBCN, WEBH, WEEI, WHB, WQJ; 7:10, WRC; 7:15, WIP, WJY; 7:30, KDKA, WBAP, WCX, WHAS, WLW, WSAI; 8, KYW, WEEI, WFI, WGN, WGY, WIP, WJZ, WLBL, WMAK, WMAQ, WOPD, WPC; 8:15, CKY: 8:30, KNX; WORD, WRC; 8:15, CKY; 8:30, KNX,

KTHS, WFAA, WOAI; 8:45, KFOA, KYW; 9, KSD, WCAE, WOAW, WRC;

KTHS, WFAA, WOAI; 8:45, KFOA,
KYW; 9, KSD, WCAE, WOAW, WRC;
9:10, WSAI; 9:15, WJZ; 9:30, WBAP;
10, KDKA, KFI, KGO, KHJ, WCAE,
WLW; 10:15, WGY; 10:30, KGW; 11,
KFI, KFQZ, WFAA.
Wednesday, February 18: 6, KGO,
WEAO, WGN, WKAQ, WLW, WMAQ;
6:30, KFNF, WEAF, WGN, WOO,
WTAY; 7, KYW, WBCN, WEBH,
WGY, WQJ; 7:15, WCAU, WEAF;
7:20, WEAF, WEAO; 7:30, KDKA,
PWX, WCAE, WCX, WEEI, WHAS;
7:45, KNX, WCAU; 8, KHJ, KYW,
WDAF, WEEI, WGN, WJZ, WLW,
WOC; 8:15, WEMC; 8:30, KTHS,
WMAQ; 8:45, CFAC, KFOA; 8:50,
WEMC; 9, KFMX, KNX, KOA, KTHS,
WCCO, WEAF, WHZ, WHO, WJZ;
9:20, WEMC; 10, KGW, WEEI; 10:15,
WGY; 10:30, KFOA; 11, KFQX; 11:30,
WCCO; 12, WTAY.
Thursday, February 19: 6, KGO,

WCCO; 12, WTAY. Thursday, February 19: 6, KGO, WGN, WLW, WMAQ, WORD; 6:15, WEEI, WTAY; 6:30, KFNF, WCCO, WFAA, WGN, WKAQ, WRC; 7, AT9, KDKA, KFKU, KYW, WBCN, WEBH, WEEI, WGST, WGY, WQJ; 7:15, WJY; 7:30, CHNC, KDKA, WBAP, WCX, WHAS; 7:40, WJZ; 7:45, KNX; 8, CKY, KHJ, WCBD, WEAF, WGN, WHB, WIP, WMAO; 8:15, WOI: 8:30, 8, CKY, KHJ, WCBD, WEAF, WGN, WHB, WIP, WMAQ; 8:15, WOI; 8:30, CNRM, KTHS, WJZ, WMC, WORD; 9, WCAE, WEAF, WHB, WOAW; 9:15, WMAQ; 9:30, KFKX, KTHS, WBAP; 10, CFAC, KDKA, KGO, KJS; 10:03, WLW; 10:30, KTHS; 11:15, KFSG; 12, KFI, KFSG. Friday, February 20: 6, KGO, WGN

KFSG; 12, KF1, KFSG.
Friday, February 20: 6, KGO, WGN,
WMAQ; 6:15, WTAY; 6:30, KFNF,
WCCO, WEEI, WFAA, WGN, WJY,
WOAW, WOO; 6:45, WEAF; 7, KYW,
WBAV WEBH, WEEI, WHB, WQJ;
7:30, CNRT, KDKA, KFI, WBAP,
WCAU, WCX, WHAS, KNYC, WOO;
7:45, KNX; 3, CFAC, KFDM, KHJ,
WEEI, WGN, WHO, WOC; 8:15, CKY;
8:30, WCAE, WFAA; 8:45, KFI,
KFOA; 9, WBCN, WEMC; 9:03, WOO;
9:15, WMAQ; 9:30, WBAP, WMC;
9:45, WEMC; 10, KNX, KOA; 11, KFI,
KFQX; 11:15, KFSG; 12, KFI, KFSG.



- WBAP, Fort Worth, Texas (Central, 475.9), 7.30-8:30 p. m., Jordan sisters, "Boots, Coots and Wren;" 9:30-10:45, dance program, Jim Riley's Texas hotel orchestra.
  WBBR, New York, N. Y. (Eastern, 272.3), 8 p. m., Watchtower orchestra; 8:20, "The Earth to Ba Made an Everiasting Paradise," H. H. Biemer; 8:45, Watch-tower orchestra.
  WBCN, Chicago, III. (Central, 266), 6-6:30 p. m., juvenile period, Luella Drew Wilson; 7-8, L. Chris-tensen, Danish baritone; Julia Logan, contraito; Nina Campbell, sopranc; Weber trio; 8-9, Amber Furniture company: Harry "Dream Daddy" Davis, baritone; Berger Wedberg, tenor; Midway Dancing Gardens orchestra; Florence Tenney, blues singer; Southtown Harmonizers; 9-10, Englewood Overland company popular program, Midway Dancing Gardens orchestra: Les Cameron, tenor; Englewood string quintet; Harry J. Mapp; George Deli, baritone; "Big Boy" Yagle; 10-10:15, Midway Dancing Gardens orchestra.
  WCAE, Pittshurgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, William Penn hotei; 7:30, Uncle Kaybee; 7:45, special feature; 8:30, one-act play and concert, students of Byron W. King's School of oratory.
  WCAU, Philadelphia, Pa. (Eastern, 278), 6:30 p. m., Meycr Davis' Hotel Pennsylvania concert orchestra, direction Lon Chassy; 7:30, talk; 8:15, Breyer Leaf concert; students of Byron W. King's School of oratory.
  WCCO, Minneapolis-St. Paul, Minn (Central, 417), 5:30 p. m., children's hour, Alpha Stalson; 6, sports talk; 7, Central Park M. E. church, Rev. W. C. Sainsbury, pastor; 9, Minneapolis Letter Carriers' band, J. M. Barrett, director; 10, tha Original George Obson's Nicollet hotel orchestra; 11:30, organ recital, Eddle Dunstedter.
  WCX, Detroit, Mich. (Eastern, 516.9), 4:15 p. m., musical program: 6 dinner concert. Book-Cadliac

- Michiel Vichel Vicheland, Mich, Gastern, 516.9), 4:15 p. m., Musical program; 6, dinner concert, Book-Cadiliac hotel; 8:30, musical program.
   WDAF, Kansas City, Mo. (Central, 365.6), 6-7 p. m., piano tuning-in number on tha Duo-Art; address, speaker, auspices Health Conservation association; ad-dress, speaker, Meat Council of Greater Kansas City; the Teil-Me-a-Story lady; music, Trianon ensemble; 8-9:15, varied musicol program.
   WEAE Now York N. V. (Esstern 491.5), 12-12:30
- 8-9:15, varied musicol program.
  WEAF, New York, N. Y. (Eastern, 491.5), 12-12:30 p. m., chapel services, Columbia university; 4-4:40, Larry Funk and his Mori orchestra; 4:40-5, children's stories; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, services, United Synagogue of America; 7:30-7:50, Marie Thomas, Welsh contraito; 8:20-10, New York Philharmonic concert from Carnegie Hall; 10-10:40, Opera quartet; 11-12, Meyer Davis Lido Venice orchestra.
- WEAO. Columbus, Ohio (Eastern, 294), 8 p. m., chimes concert, Prof. A. P. McManigai; 8:15, Radio taik, A. M. Rose; 8:20, musical program.
- A. M. Rose; 8:20, musical program.
  WEAR, Cleveland, Ohio (Eastern, 390), 7 p. m., Hotel Cleveland orchestra, Ivan Francisci, director.
  WEBH, Chicago, III. (Central, 370.2), 7 p. m., Oriole orchestra; talk on books of the day, Liewlyn Jones; H. J. Clement, bass; Elsie Clement, planist; 9, Langdon Brothers, Hawalian guitarists; Oriole orchestra; Maria Kelly, reader; Frederick Agard, tenor; 11, Edna Solomon; Oriole orchestra; Langdon Brothers, Hawalian guitarists; Nick Lucas; Marie Kelly, reader; Nubs Allen, soloist.
  WEEI, Boston, Mass. (Eastern, 475.9), 6:30 p. m., big brother club; 7:45, Harry Einstein; 8, Traveler Shoe orchestra; 8;30, M. B. Cohan's haif-hour musicale; 9, Gillette Safety Razor opera compony; 10, Mary Dyer and William Hughes; 10:30, Jack Griffith, Eddie Mc-Ginjey; 11, Loyd G. Del Castillo, organist.

Charlie Wellman (left), "The Prince of Jazz," directs the Saturday after-noon frolics of KHJ, Los Angeles, and is Chief Lost Angel of the midnight Lost Angels club of this same station. Lost Angels club of this same station. John Irwin, official organist of KPO, San Francisco, is shown at the con-sole of the great Wurlitzer organ. Mrs. Ethel O. Hawes (right) has won so many kiddies' hearts through her bedtime stories at WHK, Cleveland, that she receives many love letters from her tiny listeners.

Moines theater symphonic orchestra, Leon A. Dashoff,

- Moines theater symphonic orchestra, Leon A. Dashoff, director.
  WIP, Philadelphia, Pa. (Eastern, 509.9), 6:05 p. m., Benjamin Franklin hotel concert orchestra; 7, Uncla Wip's bedtime stories.
  WIZ, New York, N. Y. (Eastern, 454.3), 10:20-10:30 a. m., "Suppose Your Boy Were Homeless," New York Health Speaking service; 4-4:30 p. m., David H. Santrey, barltone; 9-10, New York university glea club; 10-10:15, Dr. H. D. Lingren, plantst.
  WKAQ, San Juan, P. R. (Intercolonial, 340.7), 8-10 p. m., Munielpal band.
  WLIT, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., daily almonac; 12:02 p. m., Stanley theater organ recital; Arcadia cafa concert orchestra; 2, Arcadia cafo concetr orchestra; 10:03, Arcadla cafe dance orchestra.
  WLS, Chicago, III. (Central, 344.6), 6:30 p. m., Raiph Emerson, organist; 6:50, Senate studio; 7, idulay time, Ford and Glenn; 7:15, WLS Tribe Lone Scouts; 7:40, Thora Martins, contralto; 7:50, Biii Parks, plandst: 8, Ralph Emerson, organist; Ford and Glenn; 9. Nathanial Christensen, artist from Norwegian opera; 9:10, dramatic hour, Wallace Bruea Amsbury; 9:30, Gienn's cornhuskers; 9:40, Senate symphony; 10, Garrett male quartet; 10:30, Isham Jones and his orchestra; 10:40, Ford and Glenn time.
  WLW, Cinelinnati, Ohio (Central, 423), 6 p. m., dinner hour concert.

- tra; 10:40, Ford and Glenn time.
  WLW, Cincinnati, Ohio (Central, 423), 6 p. m., dinner hour concert, Selinsky instrumental quintet; 8, concert, Milnor trio; Clifford Lang, pianist; Cincinnati conservatory orchestra, Raiph Lyford, director; Formica orchestra, Walter Esberger, director.
  WMAQ, Chicago, III. (Central, 447.5), 6 p. m., Chicago theater organ; 6:30, stories for the children, Georgene Faulkner; 8, weekly lecture, Northwestern university; 8:30, Madama Sturkow-Ryder, pianist; 9, WMAQ players.
- players.
  WNYC, New York, N. Y. (Eastern, 526), 8:30-9:45 p. m., "Appreciation of Music," Dr. Henry T. Fleck at Hunter college; 9:45-10:30, dance program.
  WOC, Davenport, Ia. (Central, 483.6), 7 p. m., sandman's visit, Val McLaughlin; 8, organ recital, B. J. Polmer residence, Erwin Swindell; Mr. McGregor, barltone.
- baritone.

8, Ws

Weei, 9:30, Wip, Wgn;

11,

Wed 18: Wilt;

- 17			and William Hughes; 10:30, Jack Grimth, Eddle Mc-	WOO, Philadelphia, Pa. (Eastern, 509.9), 7:30 p. m.,	Wdaf ;
1			Giniey; 11, Lloyd G. Del Castillo, organist.	A. Candelori's ensemble from Hotel Adeiphia; 8:15,	Kgw,
		company; 6-6:30, Art Hickman's Biltmore hotel concert	WEMC, Berrien Springs, Mich. (Central, 285.5), 8:15 p. m., Arlcne Burdick, violinist; 8:30, "Keeping That	concert from WEAF; 11, Vincent Rizzo's Hotel Syl- vania dance orchestra.	Wed
		orchestra, Edward Fitzpatrick, director; 6:30-7:30,	Schoolgirl Complexion." Dr. O. R. Cooper: 8:50, Louis	WOS, Jefferson City, Mo. (Central, 440.9), 8 p. m.,	18: 8
	Wednesday, February 18	stories American history, Prof. Walter Sylvester Hert- zog; Dick Winslow, juvenile reporter; 8-10, program.	P. Thorpe. saxophonist; 9:05, 'Go Getters," Lyndon	address, Russeil Mumford, John Hombs; Neison Memo-	Wlit;
	weunesuay, rebruary 10	American Society of Engineers; 10-11, Earl Burtnott's	Skinner; 9:20, Martha Hutchinson, soprano.	riai church.	Wlit;
		Biltmore hotei dance orchestra.	WFI, Philadelphia, Pa. (Eastern, 395), 6:30 p. m.,	WQJ, Chicago, III. (Central, 448), 11-12 m., "Should	
		KNX, Hollywood, Calif. (Pacific, 337), 5:45-6:15 p. m.,	Meyer Davis' Bellevue Stratford concert orchestra; 7, Sunny Jim.	Homa Laundry Ba a Drudgery or a Sciantific Process?"	Kfqx,
	(Continued from page 11)	Wurlitzer pipe organ studio, Sid Ziffs, sports talk; 7-8, Amhassador hotel concert orchestra, Josef Rosen-	WGN, Chicago, III, (Central, 370.2), 6 p. m., organ	Mrs. Wilbur E. Fribley; talk, Mary Hala Martin, home economics specialist; travel talk, Mrs. E. Tolman East;	Weaf,
	KFI. Los Angeles, Calif. (Pacific, 467), 5:30-6 p. m.,	fold. director; 8-9, program, Carson-Baruch Baking	concert, Lyon and Healy artists; 10-11, Don Bestor	3-4 p. m., 'Seventh Lesson—Domestle Science Course,"	12, Ki
	Examiner's musical haif hour; 6:45-7:30, detective	company; 9-10, program, Gordon and Harrison; 10-12.	Drake danca orchestra.	Helen Harrington Downing; "Butter and Eggs,"	Knx;
	stories, Nick Harris; 7:30-8, program, Goodwin-	Hollywoodland dance orchestra.	WGR. Buffalo, N. Y. (Eastern, 319), 10:45-11 a. m.,	Martha Logan; 7-8, dinner concert, Ralph Williams	The
	Klinger-McKay company, presenting a malo quartet;	KOA, Denver, Colo. (Mountain, 322.4), 8 p. m., dramatic sketch from "Madame Butterfly," onc-act play, "A	Gold Medal home servico talks, Betty Crocker; 12:30-1	and his Rainbo Garden orchestra; Mace Gordon, so- prano; Robert Metzler, Parisian planist; 10-2 a. m.,	8:15,
	8-9, Evening Herald, program, Dr. Marian Tracie Whiting; 9-10, Examiner, Wampus movie night, pre-	'Trick of the Trade,'' KOA players; vocal solos, Mme.	p. m., Hotel Statler concert ensemble; 2:30-4:30, Radlo Dealers' musical program; 6-7:30, dinner music; 8:15-	Ralph Williams and his Rainbo skylarks; Merrie Boyd	
	senting many famous stars and baby stars; 10-11.	Elsa Weffing-Welker; Florence MacKay, planist; Ella	10:15, musical specialtics, including the N. Y. Phil-	Mitchell, soprano; James Mitcheli, baritona; Rev. Kari	
	Patrick Marsh's dance orchestra, Belty Marsh, soloist.	Blanchette, reader; "Avoiding Risks in Investments,"	harmonic concert, jointly with WEAF; 11-1 a. m.,	Chworowski, pianist; Rogers boys, Larry and Billy;	
	KFMX, Northfield. Minn. (Central, 336.9), 9 p. m.,	Claude K. Boettcher. KOB, State College, N. M. (Mountain, 348.6), 7:30-	supper-dance music. Vincent Lopez' Hotel Statler dance	Claronce Theders, tenor; Alfred Tweed, harmonica and guitar soloist; melodlans, Laurie, Eddie, Bennie;	Wcco,
	Carleton Girls' glec club; French horn quartet; Marie Sloss, planist; Ernestine Donaldson, violinist.	8:30 p. m., international code course, lesson 7. Dean	orchestra, Harold Glescr, director.	George Little, Larry Shay, song writers; Fred A.	10:30,
	KFNF, Shenandoah, Iowa (Central, 266), 6:30 p. m.,	R. W. Goddard,	WGY, Schenectady, N. Y. (Eastern, 375.9), 6:30 p. m.,	Jacobson, monologuist; Zeiglar sisters, Pauline, Sorab.	Wfoa,
	Rathe brothers.	KSAC, Manhattan, Kan. (Central, 340.7), 7:20 p. m.,	children's program; 6:45, adventurc story; 7, Strand theater orchestra.	WSB, Atlanta, Ga. (Central, 429), 5-6 p. m., songs and	11:45,
	KFOA, Seattle, Wash. (Pacific, 455), 6:45-8:15 p. m.,	collego beli and music; 7:30, "A Proposed Farm of Organization," L. E. Conrad; "Why Build of Perma-	WHA, Madison, Wis. (Central, 535.4), 9 p. m., Uni-	bedtimo story, Bonnia Barnhardt; 10:45, Ritz Harmony	Khj,
	Hopper Kelly company studio program; 8:30-10, Or-	nent Materials," H. E. Wicher.	versity School of music, Sigma Alpha Iota; "Oppor-	boys' dance orchestra.	Frid
	KFQX, Seattle, Wash. (Pacific, 238), 7:15-8 p. m., hed-	KTHS, Hot Springs National Park, Ark. (Central, 375).	tunities for Religious and Spiritual Cultura at the	WTAM, Cleveland, Ohio (Eastern, 390), 6 p. m., Guy Lombardo's Royal Canadians orchestra; 8, program ar-	8, W0
	time story, Aunt Vivlen; 8-9, Earl Gray and his	8:30-9 p. m., Prof. Jack Renard, violinist; 9-10, Meyer	University of Wisconsin," C. V. Hibbard.	ranged hy the Cleveland Plain Dealer: "Another Night	9:03.
	Hotei Butler orchestra; 9-10, concert hour; 10-11,	Davis-New Arlington ensemble, Jack Renard, director; 10-11, Charles L. Fisher and his 11-pieco Eastman	WHAS, Louisville, Ky. (Central, 399.8), 7:30-9 p. m.,	in Dixie;" Original Bessia Brown of plantation days;	W00;
	Earl Gray and his orchestra.	hotei orchestra.	Keith Kannard and his Kentucky ramblers; chapter of the "Billy and Jane" stories, James Speed.	Maxweli quartet.	
	KFSG, Los Angeles, Calif. (Pacific, 278), 6:30-7:30 p. m., children's hour, with itelen Edwina and Mary	KYW, Chicago, 111. (Central, 535.4), 6:35-7 p. m., chil-	WHB, Kansas City, Mo. (Central, 365.6), 7-8 p. m.,	WTAY, Oak Park, III. (Central, 250), 6:30-7:30 p. m.,	Wgn,
	Elizabeth Hughes, Mrs. Rose, pianist.	dren's bedtime story, Uncle Bob; 7-7:30, dinner con-	musical program, Pekin cafe; original pooma, Wait	Welcome Kirby, pianist; Petersen sisters; 9.9:15, organ, Parthenon theater, Al. Mildgard, organist; 9:15-10,	
	KGW, Portland, Ore. (Pacific, 492), S p. m., concert,	cert, Congress hotel; 8-8:30, Hazel O'Neil, soprano; William Hoke, tenor; James R. Keyes, baritone; Vietor	Fiikin; Rhea Sheldon, the lullaby iady, Harmony girls.	Xylophona Harmony kings; Melody giris; Laster	Wdaf
	Mu Phi Epsilon; 10, Multnomah hotel strollers.	Hatlield, poet; Susle Hatfield, planist; 8:30-8:45.	WHK, Cleveland, Ohio (Eastern, 273), 6:15 p. m., news	Kelsey, tenor; Ray Kroc, planist; 12-12:15 a. m.,	12:05:
	KHJ, Los Angeles, Callf. (Pacific, 404), 12:30-1:30	around the town with KYW; "Income Tax." Archibaid	items, music; bedtime story, Ethei O. Hawes.	Parthenon theater organ; 12:15-1, popular program.	1, Kn
	p. m., Coy Barkley and his Palace bailroom orchostra; 2.30-3:30, matines musicale, Pacific States Electric	Harris; 9:45-1 a. m., midnight revue; 1-2, midnight sons, Coon-Sanders Original nighthawks,	WHO, Des Moinas, Iowa (Central, 526), 6:30-0:45 p. m.,	WWJ, Detroit. Mleh. (Eastern, 352.7), 6 p. m., dinner	
	2.00.0200 mariles monicale, racine prates mocile	soush Coon canders or Runar InRuthewse,	Rosso-Hughos orchestra; music, "Elks' Carnivai;" Des	concort; 7, Dotroit News orchostra.	

# LINIST, RETURNS MONDAY TO KSD



ery 14:

8:15,

, Kfi.

9:30, s; 10,

Kths,

Wgn. Kfoa : 11:30, f; 12, Kgw, 12:05, y 16:

Wgst; Wcco.

Kfoa, Wreo,

11:45. Kfqx. Knx. y 17: wf;9,

Wre; Wex. Kfqx.

Woaw:

11:45,

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8:30. 9:03, ; 10,

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ry 19:

Woe, 9:30.

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Woc:

Kgo,

20:

Wnyc; Cnrt.

Wben, 10:30,

11:45. Khj:

Kgw;

# Thursday, February 19

Thursday, silent night for: CHNC, KFAE, KFDM, KFMX, KFOA, KGW, KOA, KOB, PWX, WBAV, WCAU, WEAO, WEMC, WHA, WHAZ, WHO, WJY, WLBL, WOO, WOS, WSUI,

WLBL, WOO, WOS, WSUI,
AT9, Fort Bragg, N. C. (Eastern, 435), § p. m., program of old southern songs, McFadyen Music company: String band; harmonica and guitar aolos, McFadyen and Smith; vocal solos, Lacy Graham; Lucy Currie, accompanist.
CH1C, Toronto, Can. (Eastern, 350), 8:30 p. m., Toronto conservatory trio, Frank Blachford, violinist; Leo Smith, cellist; Dr. Harvey Robb, planist.
CKAC, Montreal, Can. (Eastern, 425), 8:30 p. m., ('anadian National Railway's program, Fort Garry hotel.
CNRC, Calgary, Can. (Mountain, 450), 9 p. m., bed-time travel tales; Aeolian quartet; David Morgan, tenor; George MacReth, bass; C. A. Davis, planist; M. Weill, fluist; J. T. Dunn, violinist; H. B. Davis, cellist.

Murray Whitman midnigbt serenaders. WMAQ, Chicago, III. (Central, 447.5), 6 p. m., Chicago theater organ; 6:25, Hotel LaSalie orchestra; 6:50, Daddy; 8, to be announced; 8:15, Boy Scout hour; 8:35, to be announced; 8:50, University of Chicago lecture; 9:15, program, Mrs. Louise H. Crum, aoprano. WMC, Memphis, Tenn. (Central, 499.7), 8:30 p. m., mu-sical program, Bower's Stores corporation. WNYC, New York, N. Y. (Eastern, 526), 7:35-7:45 p. m., sports talk, Thornton Fisher; 8:30-9:30, program ductor; 7:30, children's period; 8, National Stockman and Farmer studio program; 8:30, concert; 11, Pittshurgh Post studio concert.
KFI, Los Angeles, Calif. (Pacific, 467), 5:30-6 p. m., Examiner'a musical half hour; 6:45-7, Y. M. C. A. speaker; 7-8, dance orchestra; 8-9, Standard Oil company of California, presenting a musical comedy; 9-10, Examiner, program, League of American Penwomen; 10-11, all vocai recital.
KFKU, Lawrence, Kan. (Central, 275), 6:50 p. m., plano tuning-in numbers; 7, music; 7:15, "Planting for Winter Reauty," Prof. W. C. Stevens; 7:30, basketball game, K. U. vs. Drake U.; 8:30, "From Coal Tar to Dyes," Dr. Raymond Q. Brewster; 8:45, educational psychology, lesson VII, Dean R. A. Schwegler.
KFNF, Shenandoah, Iowa (Central, 266), 6:30 p. m., concert, Verden, Ben H. Schobor, director.
KGO, Oakland, Calif. (Pacific, 300), 8 p. m., program, San Francisco Chamber of commerce; address, Rubert Newton Lynch; Charles F. Buiotti, tenor; Ansts, Robert Newton Lynch; Charles F. Buiotti, tenor; Ansts, Borna, Granada, Imperial, Loew's Warfield theaters; 10-1 a. m., Henry Halstcad's orchestra.
KFSG, Los Angeles, Calif. (Pacific, 278), 7:30-9:15 m., sport. of music. WOAW, Omaha, Nebr. (Central, 526), 6 p. m., every child's story hour, Grace Sorenson; 6:20, music; 6:45, Randall's Royal Fontenelle orchestra; 9, program, aus-pices Hannan-Van Brunt company, Ford and Lincoln dealers; 10:30, Frank W. Hodek, Jr., and his Omaha uightingales. WOAI, San Antonio. Texas (Central. 394.5), 9:30 p. m. Jimmie Joy'a Hotel St. Anthony orchestra. WOC, Oavepnort, Ia. (Central, 483.6), 7 p. m., sand-man's visit, Val McLauglin; 7:20, educational lecture; 9. Schuster Sisters' California orchestra; 11, Lonis Connor and his LeClaire hotel orchestra; Jack Little and Paul Small, entertainers. KFSG, Los Angeles, Calif. (Pacific, 278), 7;30-9:15 p. m., auditorium service and acrmon, Aimee Semple Metherson, pastor; 9:15-10, studio program, Silver band, G. N. Nichols, director; 10-11, organ recital, Esther Fricke Green. orchestra. WEAR, Cleveland, Ohio (Eastern, 390), 7 p. m., Austin J. Wylio's Golden Phcasant-Vocalion recerding orches-WOI, Ames Iowa (Central, 270), 8:15 p. m., music. WOO, Philadelphia, Pa. (Eastern, 509.9), 4:45 p. m. organ recital, Mary E. Vogt. tra: 8. studio program, orchestral numbers. WORO, Batavia, III. (Central, 275), 7 p. m., I. B. S. A. choral singers; 7:15, Florence Smith, planist; 7:25, John T. Read, bass; 7:35, I. B. S. A. choral singers; 7:50, lecture, Judge J. F. Rutherford; 8:30, Marvyl L. Larson, soprano; 8:40, I. B. S. A. trio; 8:50, I. B. S. A. choral singers. tra; 8, studio program, orcnestrai numbers. WEBH, Chicago, III. (Central, 370.2), 7 p. m., Oriole orchestra; Margaret Fitzgerald, contraito; musical bits, Riviera thcater; 9, Belle Forbes Cutter, soprano; John Stamford, tenor; Oriole orchestra; 11, Loos Brothers; Oriole orchestra; Banks Kennedy, pianist; Nick Lucas. Esther Fricke Green. KHJ, Los Angelos, Calif. (Pacific, 404), 12:30-1:30 p. m., program, Locw's State theater; 2:30-3:30, pro-gram, Pacific States Electric company, Cbeck Seal tric; 6-6:30, Art Hlckman'a Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, atories American history, Prof. Walter Sylvester Hert-zog; bedtime story by Uncle John; 8-9, program, Morris, the tailor; 9-10, Piggly Wiggly girla' tric; 10-11, Earl Burtnett's Biltmore hotel dance orchestra. WEEI, Boston, Mass. (Eastern, 475.9), 6:30 p. m., big hrother club; 7:15, Aipha ladies' trio; Mrs. Jessie Whitworth, soprano; 7:55, Pathe News flashes; 8, New York A. choral singers.
WQJ, Chicago, III. (Central, 448), 11-12 m., "Choose for Lenten Meals," Erna Bcrtrams; "The New Styles for Spring," Mrs. Eleanor Chaimers; "Ice Cream Gossip," L. L. Jones; 3-4 p. m., "How They Cook It in Dixle," Josephine Naylor; "Light and Life," William Foulks; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Mrs. Lydia Lochnor, contralto; Edith Buckmaater, accompanist; 10-2 a. m., York program. WFAA, Oallas, Texas (Central, 475.9), 6:30-7:30 p. m., vospor recital, Jack A. Davis and his orchestra; 8:30-9:30, A. & M. College of Texaa; 11-12, Frank Daven-port and his orchestra. 15, Los Angeles, Calif. (Pacific, 293), 8-9:30 p. m., instrumental program of chamber music. KJS, KNX, Hollywood, Calif. (Paelfie, 337), 5:45-6:15 p. m., (Continued on page 14)

Battome.
 WBAP, Fort Worth, Texas (Central, 475.9), 12:05-12:30
 p. m., musical program; 7:30-8:30, musical program,
 J. W. Westbrook, director; 9:30-10:45, concert, artists of Texas Christian university, Prof. H. D. Guelick, director

Jirector. **3BR**, New York, N. Y. (Eastern, 272.3), 9:10 p. m., Vatchtower trio, Cari Park, Malcolm Carment, Chester augh; 9:25, Kay Macrae, Joloratura soprano; 9:35, nternational Sunday school lesson, S. M. Van Sipma; 10, Kay Macrae, coloratura soprano; 10:15, Watchtower WĔ

10, Kay Macrae, coloratura soprano; 10:15, Watchtower trio.
WBCN, Chicago, III. (Central, 266), 7-8 p. m., classical hour, Bethany Reformed Church of Roseland; 8-8:30, Billy Waldron, tenor; Archer Farrell, plantist; Midway Dancing Gardens orchestra; 8:30-9, Walton School of Commerce; 9-12, Elmer Jordan and company jamboree; Midway Dancing Gardens orchestra; Leona Fay, violinist; Larry Loaer, tenor; Lindsay McPhail and Henrietta Holmes, plantis; Florence Eastman, mezzo-soprano; Madrid Duo; Mort Green and Ralph Norrls; Louis Clark, tenor; Al. Phillips, tenor; Rosemary Hughes, soprano; Al. Phillips, tenor; Merianist; Louis Clark, tenor; Al. Phillips, tenor; Merianist, Soprano; Al. Phillips, tenor; Merianist.
WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m.,

planist. WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, William Penn hotel; 7:30. Uncle Kay-bee; 7:45, special feature; 8, Moores' Cafeteria Radio review, E. T. Moores, manager; 9, concert, Atwater-Kent orbestre

MMAK, Lockport, N. Y. (Eastern, 265.5), 12 midnight, Murray Whitman midnight serenaders.

# Where to Hear Talks

Central Standard Time

TALKS, instructive, serious, humorous and even frivolous, are Radiocast daily and below are listed the stations.

Saturday, February 14: 6, WDAF, WEAF, WOAW; 6:15, WBZ; 6:30, WEAF, WGY, WOAW; 6:45, KDKA, WGY; 7, WCAE, WJZ; 7:15, WEAF; 7:30, CNRO; 8, WCCO; 8:15, WBBR, WCCO; 8:30, KHJ, WGBS, WJZ, WMAQ; 8:45, KFI; 9:05, KYW; 9:15, KYW; 9:45, KFI, KHJ; 10, KNX. Sunday, February 15: 8:20, KSAC

KYW; 9:45, KFI, KHJ; 10, KNX. Sunday, February 15: 8:20, KSAC; 8:35, WBBR; 8:45, KFI. Monday, February 16: 6, WCCO, WDAF; 6:35, WNYC; 7, WEAF; 7:15, KDKA, KFKU; 7:20, WSAC, WBBR, WOC; 7:30, KDKA, KFKU, WHA; 7:45, KFKU, WGR, WJZ; 8, WCCO, WOS; 8:15, CFAC, WCCO; 8:30, KOB; 9:35, WNYC: 10, KGO.

WOS; 8:15, CFAC, WCCO; 8:30, KOB; 9:35, WNYC; 10, KGO. Tuesday, February 17: 6, WDAF, WOAW; 6:50, WLIT; 7, WCAU, WIP, WRC; 7:10, WJZ; 7:15, WCAU; 7:30, CKY, KSAC, WCCO, WRC; 7:45, WCCO; 8, WMC; 8:20, KYW; 8:30, KHJ; 8:45, KFI; 9, WJY, WJZ, WSAI;

9:15, CFCA; 10, KGW; 11:05, KYW. Wednesday, February 18: 6, WCCO, WDAF; 6:30, WCAU, WGY; 6:35, WNYC; 6:45, WGY; 7:15, KDKA, WEAO; 7:30, KSAC, WNYC; 8, WMAQ, WOS; 8:15, CFCA; 8:30, KHJ, KOB, KYW, WEMC; 8:45, KFI; 9, WMAQ; 9:05, WEMC; Thursday, February 19: 6, WDAF; 6:30, WEAF, WGY, WRC; 6:45, WGY; 7, WDWF, WEAF. WIP; 7:20, WOC; 7:30, CKY, KSAC, WCCO, WEAF; 7:33, KYW; 7:45, WCCO; 8:30, WBCN; 8:45, KFI, KHJ; 8:50, WMAQ; 9:15, KYW.

KYW.

**Friday, February 20:** 6, WCCO, WDAF; 6:30, WCAU; 7, WDWF, WHB, WLIT; 7:10, WLIT; 7:15, KDKA, WOAW; 7:20, WOC; 7.30, CKY, KSAC, WCCO; 8, WMAQ, WOS; 8:30, KHJ, KOA, WMAQ; 10, KGW, KHJ KHJ.

- WFI, Philadelphia, Pa. (Eastern, 395), 6:30 p. m., Meyer Davis' Bellevue Stratford concert orchestra; 7, Sunny Jim; 9, Atwater-Kent Radlo artists.
  WGN, Chicago, III. (Central, 370.2), 6 p. m., organ recital, Lyon and Healy; 6:30-7, Drake concert en-semble, Blackstone string quintet; 8-9, Mable Sharp Herdlen, soprano; 10-11, Drake dance orchestra; Ned and Chess.
  WGR, Buffalo, N. Y. (Eastern, 319), 12:30-1 p. m., Hotel Statler concert ensemble; 3:30-4:30, Radio Dealers' musical program; 6-7:30, dinner music, Hall-pryd string quartet; 8-9, Adam, Meldrum & Anderson concert; 9-10, Atwater-Kent concert with WEAF.
  WGST, Atlanta, Ga. (Central, 270), 7-8 p. m., Frances Woodberry, soprano; Mrs. C. R. Prescott, contraito; Helen Schaid, planist; Mrs. Mary Miller Trownsell, riolinist; "Chivalry in the Old South," Edwin H. Folk.
- Folk.sc, Christip III and Old Sold Sold III and III
  WGY, Schenectady, N. Y. (Eastern, 375.9), 6:30 p. m., Hotel Ten Eyck orchestra; 7:30. new books, William F. Jacob; 7:45, "Manors of New York," Ernest C. Brown; 8, concert, Mendelssohn club. Dr. Frank Sill Rogers, director; 11:15, Stepben E. Boisclair, organist.
  WHAS, Louisville, Ky. (Central, 399.8), 7:30-9 p. m., Happy Hooster harmonist; four-minute digest of in-ternational Sunday school lesson; four-minute welfare talk.

- Wi AS, Louisville, Ky. (Central, 399.8), 7:30-9 p. m., Happy Hoosier harmonists; four-minute digest of in-ternational Sunday school lesson; four-minute welfare talk.
  WHB, Kansas City, Mo. (Central, 365.6), 7-7:30 p. m., dinner music, Pekin cafe; 8-10, old-time music, pro-gram, M. R. Hays, director; "Past and Present," Dr. James W. Fifield.
  WHK, Cleveland, Ohio (Eastern, 273), 6:15 p. m., news litems, music; 7:30, farm hour; Al Dister's orchestra; Alex Worth, tenor; Mrs. Miriam Ward, contralto; Dean Smith, planist; concert program arranged by the Cleve-land Press.
  WHO, Oes Molnes, Iowa (Central, 526), 11-12 midnight, Melo-Blue orchestra.
  WIP, Philadelphia, Pa. (Eastern, 509.9), 6:05 p. m., Beniamin Franklin concert orchestra; 7, Uncle Wip's bedtime stories; 8, "Heatib Work in the Schools," Dr. Waiter S. Cornell; 8:15, Laserow quartet; 9, Phila delphia Quartet club concert; 11, Harvey Marburger and his vaudeville dance orchestra.
  WJY, New York, N. Y. (Eastern, 405.2), 8:15-10 p. m., Mendelssohn Club Male chorus of Albany, from WGY, Schenectady; 10:15-11:15, Pierre's orchestra.
  WIZ, New York, N. Y. (Eastern, 454.3), 4-5 p. m., The Melodians; 8:25-8:30, St. Paul's Cathedral ad-dress; 8:30-9:30, Pan-American program from WRC; 9:30-10:30, Church Club Annual dinner direct from Waldorf-Astoria.
  WKAQ, San Juan, P. R. (Intercolonial, 340.7), 8:30-10 p. m., concert, Restaurant "La Cafetera."
  WLJ, Philadelphia, Pa (Eastern, 395, 4:30 p. m., Miriam J. Willeco, soprano; Michael Luizzi, accom-panist; Blanche Brunswick, pianist; 7:30, Dream Daddy's bedtime stories.
  WLS, Chicago, III. (Central, 344.6), 6:36 p. m., Ralph Emerson, organist; 6:50, Senate studio artists; 7, lui-laby time, Woodshed theater, Ford and Glenn; 7:20, Radio operetta.
  WLW, Clincinnati, Ohio (Central, 423), 6 p. m., dinner hour concert, Selinsky instrumentai quintet; 7, Golden

Radio operetta.
WLW, Cincinnati, Ohio (Central, 423), 6 p. m., dinner hour concert, Selinsky instrumental quintet; 7, Golden Jubilee program, class of 1917, A. A. S. R. from Hotel Gibson; McMillan Masonic orchestra, soloists: Robert S. Alter, Vox-Ferro (hand saw); Prof. Frank Simon, George Dieterle, vocalist; A. K. Thomas, vocal-ist; Ed. G. Pfilferline, planist; address, A. L. Hehy-mer; 10, three-minute message, United States' Civil Service department; 10:03, concert program, Cooper corporation; quartet, orchestra; 11, Doherty Melody boys; fourth in series of concert, Eta Chapter of Sin-fonlan fraternity; vocal solos, John Crosby and Leland Sheehey; Margaret Quinn, planist; violin solos, Ray Baumgartner.
WMAK, Locknorf, N. V. (Eastore concert)

Ralph Williams and his Rainbo skylarks; June Lee, comedienne; Axel Christensen, pianist; Hill, Hirsch, Gorney, Three Musketeers; Rosemary Hughes, soprano; James J. Whalen, tenor.
 WRC, Washington, D. C. (Eastern, 469), 6:45 p. m., children'a hour, Pergy Albion; 7, Lee Rouse trio; 7:30, Latin American night, auspices Pan American union; address, Dr. Julius Klein, director; United States army band; Army band string quintet; Fred East, baritone; Ethel Holtzelaw Gawler, soprano; Estrella Amores, soprano; Arsento Ralon, violinist; Madame Mertzaga Hanenfeidt, pianist; 10:45, Club Deauville orchestra; Reo Male quartet; Raymond Lyon Bowers, tenor; Kenneth Euckingham, baritome.
 WREO, Lansing, Mich. (Eastern, 285.5), 8:15-9:45 p. m., Reo orchestra; Reo Male quartet; Raymond Lyon Bowers, tenor; Kenneth Euckingham, baritome.
 WSA, Cincinnati, Ohio (Central, 325.9), 10 p. m., Romany Reed and string guartet; Charles W. Partington, accordion soloist; Earl Whiting, clarinetist; Eugene Perazzo, violinist; David Brinkmoeller, planist; Sam Pusateri, baritone; Ann Cockburn, planist; Earl Whiting, clarinetist.
 WSB, Atlanta, Ga. (Central, 429), 5-6 p. m., Vick Myers' Melody artists; bedtime story, Bonnie Barnhardt; 8-9, Atlanta Music club chorus; 10:45, Dr. Charles A. Sheldon, organist.
 WTAM, Cloveland, Ohio (Eastern, 390), 6 p. m., Guy Lombardo's Royal Canadians orchestra.
 WTAM, Cloveland, Ohio, (Eastern, 350.7), 3 p. m., Detroit News, orchestra; 6. dinner concert; 7. Deriot News orchestra.

WWJ, Detroit, Mich. (Eastern, 352.7), 3 p. m., Detroit News orchestra; 6, dinner concert; 7, Detroit News or chestra; 10, dance music, Jean Goldkette's Victor Re-cording orchestra; 11:30, Detroit News orchestra.

# Friday, February 20

Friday, silent night for: CFCA, CKAC, CHNC, KFKU, KFKX, KFMX, KGO, KJS, PWX, WBBR, WBZ, WCBO, WOWF, WEAO, WF1, WGST, WHAZ, WIP, WKAQ, WLBL, WOAI, WMAK, WOI, WORO, WSUI.

WSUI.
CKY, Winnipeg, Can. (Central, 450), 7:30 p. m., university lecture; 8:15, atudio concert.
CNRA, Moncton, Can. (Atlantic, 313), 7:30 p. m., bedtime stories, Uncle Alf; 8:30, musical program, Moneton Baptist church choir, Prof. C. H. Wright, choir master; address; popular music, Jee Mazzieo and his Rainbow Melody boys.
CNRE, Edmonton, Can. (Mountain, 517), 7:30 p. m., children's bedtime story; 8:30, violin solos, pupils, Giadys Flint; E. J. Caseley, bass; Rita Swain, soprano; May Aspinall, mezzo-soprano.
CNRT, Toronto, Can. (Eastern, 400), 6:30-8 p. m., Luigi Romanelli and bis King Edward hotel concert orchestra; 8:30-10, Canada male quartet; Jessie Archer, soprano; Harold H., Frost, planist; 9, address; 10:30-12, Luigi Romanelli and his King Edward botel dance orchestra.

KOKA, E. Pittsburgh, Pa. (Eastern, 309.1), 6:15 p. m., concert, Charlie Gaylord's orchestra; 7:30, children's period; 8:15, address, University of Pittsburgh studio; 8:30, concert.

KFDM, Beaumont, Tex. (Central, 315.6), 8 p. m., Refinery band.

M. W. Gill, flutist; J. T. Dunn, violinist; H. B. Davis, cellist.
CNRM, Montreal, Can. (Eastern, 425), 8:30 p. m., H. M. Canadlan Grenadier Guards band; R. Maillet, cornetist; J. T. Livingstone, guitarist; address, H. H. Melanson.
CNRW, Winnipeg, Can. (Central, 450), 8:15 p. m., bedtime story, Margaret Sharpe, pianist; 8:30, Hazel Mills, soprano; Mrs. J. H. Waugh, contralto; Rev. R. Katsunoff, tenor; Ronald W. Gibson, planist; Frank Redlich, cellist; F. D. Bradbrook, banjoist; "The Canadian Government Merchant Marine;" 10, Frank Wrigbt's Country club dance orchestra.
KDKA, East Pittsburgh, Pa. (Eastern, 309.1), 5 p. m., special concert being broadcast for South Afrlea; 6:15, KDKA Littlo Symphony orchestra, Victor Saudek, conductor; 7:30, children's period; 8, National Stockman and Farmer studio program; 8:30, concert; 11, Pittshurgh, Post studio concert. dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, special feature; 8, Moores' Cafeteria Radio review, E. T. Moores, manager; 9, concert, Atwater-Kent orchestra.
WCBO, Zion, Ill. (Central, 344.6), 8 p. m., J. D. Thomas, baritone; tenor and aoprano solos, Mr. and Mrs. R. M. Steel; Mrs. Beem, contralto; Mrs. Crowe. contraito; G. W. Mason, cornetist; cornet and trombone duet, Mason and Mason; Mary Sweeney, soprano; tenor and baritone solo, Bull and Paxton; Mrs. Charles Ramsdell; 6:30, concert, Dick Long's Nankin cafe orchestra; 7:30, lecture; 7:45, bealth talk; 8, 'Beef Cattle Outlook,' J. S. Montgomery, Sife, 'Feed Lot Problems,' W. H. Peters; 10, Dick Long's Nankin cafe orchestra; 7:30, lecture; 7:45, bealth talk; 8, 'Beef Cattle Outlook,' J. S. Montgomery, 8:15, 'Feed Lot Problems,' W. H. Peters; 10, Dick Long's Nankin cafe orchestra, Cetlo Burton; address, series of book talks, Louis Mecker; bedtime story; music, Trianon ensemble; 11:45-1 a. m. Merry Old Chief, Plantation players.
WOWF, Providence, R. I. (Eastern, 491.5), 4-4:20 p. m., 'These Eventful Years,'' Franklin H. Hooper; 4:20-4:35, Helen Muller, mezzo soprano; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, services, Federation of Greater New York churches; 7:30-7:45, Art talk; 7:45-8, Moelier tric; 8:30-9, talk, Packard Motor Car company; 9-10, Atwater Kent Radio artists from Stations WEAF, WEEL, WJAR, WGR, WFI, and WCAE; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra. finery band. KF1, Los Angeles, Calif. (Pacific, 467), 5:30-6 p. m., Examiner's musical half hour; 6:45-8, Acolian resi-dence pipe organ recital, Dan McFarland, organist; 8-9, Evening Herald, Janet Macdonald's Syncopating Co-eds; George Herbert Happ, baritone; Juanita Russ. soprano; 9-10, Examiner, vocal program, pupils of Thomas Taylor Drill; 10-11, Jay Plowe flute ensemble with vocal soloists. KFNF, Shenandoah, Iowa (Central, 266), 6:30 p. m., KFOA, Seattle, Wash. (Pacific, 455), 6:45-8:15 p. m., Sherman Clay and company; 8:30-10, Times studio pro-gram, Nelle Duffy, Faith Rossiter; 10:05-11, Olympic botel dance music. KFQX, Scattle, Wash. (Pacifio, 238), 7:15 p. m., bed-time story, Aunt Vivien; 8-9, Earl Gray and his Hotel Butler orchestra; 9-10, concert hour; 10-11. Earl Gray and his orchestra. Lari Gray and his orchestra.
K FSG, Los Angeles, Calif. (Pacific, 278), 7:30-9:15
p. m., young people's night at Angelus templo, scrmon, Aimee Somple McPherson, pastor; 9:15-10, concert, Silver band, G. N. Nichols, director; talk on Radio, N. E. Brown; 10-11, organ rocital, Roy Reid Brignall.
K GW, Portland, Ore. (Pacific, 402), 8 p. m., iecture, University of Oregon Extension division; 10:30, Hoot Owls. Owls.
KHJ, Los Angeles, Calif. (Pacific, 404), 12:30-1:30
n. m., Perry's orchestra; 2:30-3:30, matinee musicale, Pacific States Electric company; 6-6:30, Art Hickunan's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, little stories American history, Prof. Waltor Sylvester Hortzog; Richard Headrick, screen starlet and Unclo John; 8-10, a trip through Orango County, California, presented by Orange County Farm burean; 10-11, Eari Burtnott's Biltmore hotel dance orchestra.
KNX. Hollywood, Calif. (Pacific 337), 5:45-6:15 dance orchestra.
KNX, Hollywood, Calif. (Pacific, 337), 5:45-6;15 p. m., Wurlitzer organ recital; sports talk, Sid Ziff; 6:30-7:30, dinner hour music; 8-9, program, Columbia Ont-fitting company; 9-10, program, Eastern Outfitting com-pany; 10-11, amatcur hour; 11-12, Abo Lyman's Cocca-nut Grove orchestra from Ambassador hotol.
KOA, Denver, Colo. (Mountain, 322.4), 6:40 p. m., Book of Knowlodgo; 8, studio program, oratorio "St.

# FRANCIS MACMILLEN, AMERICAN VIOLINIST, RETURNS MONDAY TO KSD

- Conte Sea Mora Till

DANCING (ani Tipe)

Ere, Ers, Knz; I., Knz, Twoth February 17: 5, Wal, 200, Wohr! (o. Wret, W.; 9:15, Wre; 9:36, Ctz, Chy, Wre; With, Wal; 10, Kfuz, Wra; 163, Kfos, Wrow; 11, Wh. Mine; 11:15, Wuhf; II, Kfor, Erco, Kjrr, Eu; 12:05, Kfos,

Mmc: 11:43. Kfqz, Kro. 12:05. Kfos.

# Where to Hear Concerts

#### Central Standard Time

THESE are the stations for music lovers to dial, and you can hear, providing you dial correctly and read the programs carefully, everything from jazz to opera.

Papular

Papa Satarday, Tebraary 14: 6. WMAQ: Satarday, Tebraary 14: 6. WMAQ: WAQ, WTAY: 9:16, WGN, WGY, 7:39, WAQ, WTAY: 9:16, WGNS, WJZ, WTAY: 9:35, WGNS: 10, KGO, WCS, 10:30, WQJ; 10:45, WSB, 10, WCS, 10:30, WJZ, 11:30, WGS, WCS, 10:30, WJZ, 11:30, WGS, WCS, 10:30, WJZ, 11:30, WGS, WCS, 10, KHZ, 11, KNX, WGA, WCS, 10, KHZ, 11, KNX, WSB, WCS, 10, KHZ, 10, KNZ, 10, WSB, WSB, WSB, WSB, 10, KNZ, 10, WSB, 10, KNZ, 10, WSB, WSB, 10, KNZ, 10, WSB, 10, KNZ, 10, WSB, WSB, 10, KNZ, 10, WSB, 10, KNZ, 10, WSB, WSB, 10, KNZ, 10, WSB, 10, KNZ, 10, WSB, WSB, 10, KNZ, 10, WSB, 10, KNZ, 10, WSB, WSB, 10, KNZ, 10, WSB, 10, KNZ, 10, WSB, WSB, 10, KNZ, 10, KNZ, 10,

Classical

FURCE, WQJ; T, WQJ.
FURCE, WQJ; T, WQJ.
FURCE, WQJ; T, WQJ.
FURCE, WGA, WAN, YEN, WYAN, WY

H. KFQX, WFAA: 11:30, KYW.
 WDAW.
 Sunday February 15: 6, WORD;
 B:30, WGY: 7, KYW. WDBR. WBCN.
 B:30, WGAP: 8:30, KILL KTHS. WIP.
 B:20, WGAP: 8:30, KILL KTHS.
 WOAW. WGJ. WGAP: 8:00, WEBR;
 WOAW. WGJ. WGAP: 8:00, KTHS. WDAP.
 S:16, WCCCF, KNX: 12, KFSO.
 Mondsy, February 16: 8, WGN.
 WMAQ. WGAP. WSO. KTHS. WDAP.
 MONDSY, WOAD, WNYC: 7, CHNC.
 G:45, WCAP, WSO. WNYC: 7, CHNC.
 G:45, WCAP. WSO. WNYC: 7, CHNC.
 KYDA. WGAP. WAP. 7:40, WCAP. 10, CAP.
 WHAP. YNCAP. WGAP. WIAP. 7:40, WGAP. WIAP. 7:40, WGAP. 11, KYDA.
 KYDA. WOID: 9, KDA. KSO, WEAP. 10, KGW.
 WGAP. 2:00, KFNY. WAAP. 7:40, KGAP.
 WYGAP. 2:00, KFNY. 10, KGW.
 WGAP. 2:00, KFNY. 10, KGW.
 WGAP. 2:00, KFNY. 11, KYDA: 11:16, WGAP.
 WGAP. February 17: 6, KGQ.
 WSAP. WGAP. WIAP. WMAP.

# Wednesday, February 18

#### (Continued from page 11)

 empany: 6.65.30. Art Hitchman's Ellingto barel concett or hering. Edward Phymitrik, Alexandrowski, 6.30 Hart and the state of the state of the state of the state and the state of the state of the state of the state and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of the state of the state of the and the state of the state of th (Continued from page 11) He Las accies. Cail. (Peelfe, 467). 230-6 p. rs., Kusather's anniell haft hum: 0.435-730, intenditie https://www.com/accienter/a

Hathen brothers (FOA, Seattle, Wash, (Parifie, 435), 0:15-8:15 p. nr., Honner, Kutha contracts stilling program; 8:30-10, 0r.

K POA. Section. The section of sections? Sub-IL Or-phone sectors (Section). Sectors and the sector of sectors of the sectors of the sector of sectors of the sectors of the sectors of the sectors of the sectors of the FSG. Los Angels. Call. (Partic, 273), 6 30-730 the sectors of the sectors of the sectors of the FSG. Los Angels. Call. (Partic, 273), 6 30-730 the sectors of the sectors of the sectors of the Haldren the sectors of the sectors of the sectors of the sectors of the sectors of the sectors of the Haldren the sectors of the sectors of the sectors of the sectors of the sectors of the sectors of the Haldren the sectors of the sectors of the sectors of the sectors of the sectors of the sectors of the Haldren the sectors of the sectors of the sectors of the the sectors of the sector

Wednesday, **Yebruary 18: 6:45**, WCAE: 7, WHR: 7:15, WCR. WL1T: 7:30, WBAP, WHO: 8, WBCN. WHO: 9, WHCN. WEBH, WEBI, WTAY: 9:30, KFI, WFEEL, WTAY: 8:45. KYW, 10, KHJ, KNX, WQJ; 10:30, KYW; 12, WQJ; 12:16, WTAY; 12:30, KYW; 1, WQJ.

Threadsy, Pebruary 19:8:30, WTAY; 6:46, WCAE, WEAF: 7, AT3, WHB, WI.W; 7:15, WTF; 7:30, WNYC: 8, KS0, WECN, WFI: 8:15, WRISO 8:20, KTW; 8:30, WFAA: 9, CFCA, WRCN, WCBH; 10, KFI, KUI, KTW, WCN, WOJ, WSAI; 10:30, WECN; 11, KFI, KIJ, KNX, WEBH, WLW, WQJ, SI:10 WBCN; 12, WBCN, WQJ; 1, WQJ.

**Fridey, February 20: 6.** WWJ; 6:30, WTAY: 7, WBCN, WEAF: 7:30, WEAF, WEEI, WHO WJY: 8. WBCN, WCCO, WDAF, WEAF: 8:30, KTHS; 9, KYW, WCCO, WDAF, WEBH, WOAW: 10, KPI, WGN, WQJ: 11, KYW, WEBH, WMC, WQJ: 12, KXX, KYW; 12:30, WQJ; 1, KYW, WQJ.

Charlie Weilman (left), "The Frince of Jaza," directs the Saturday after-noon froilce of KHJ. Los Angeles, and is Chief Lost Angel of the midnight Lost Angels club of this some station. John Irwin, official organist of XFO. Sen Francisco, is Shown at the com-sole of the great Wurlitzer organ. Mrs. Elhol O. Howes (right) has won a batting stories at WHX. Clean and that the reactives may love lotters from her tiny listeners.

thester employee orchester Loop & Durboff

 Meines Braiter symplente orchestra. Leon A. Davhaf,
 WiP, Philadeshia, P.a. (Eastern, 350.0), 6.05 p. m.,
 Braijann Franklin nois cancert orchestra: 7. Unicol Wirk, S. M. (1998). Second Statern, 1998.
 Wirk, S. M. (1998). Second Statern, 1999.
 Wirk, S. (1999) (1999) Sarries, Forbury 14; §. (Da Winer; R15, Karl J.R. Worz; R. H1, Wer; J.G. Wile; 920) Chr. 54h, Wile; 102 (Fr. 54, For, Karr, Wer, Karres; H. 300, Kens; H. Wer, Ware; H. 300, Kens; H. Wer, Ware; H. 301, Fr. 301, Fr. Karl, F. K. 1931; 12:35, Karl, F. Schwarz, 16, Kia: L A0]. Note: February 18: 8. Was Wear: 9. Weat: 9.52, Wa: 9:30, Wero, Weit, 74; 10, Kfoa, Niha Wr. What, Wreo, Wait: 11 Class 11:15, Wide: 12, Kfi, Kiaz, Kgo, Xrs, Knz; 1, Knz,

Yuck Pullharasonic concert from Carnetic Hall; 10-13-41, Open rustret; 11-12. Merer Data Ellio Venico encleata.
 WEAO, C. D'Rot, A. D. Metaminati, Elli, R. Radio Isik, M. Buoi: S.O. musical postron.
 WEAO, C. D'Rot, A. D. Metaminati, Elli, R. Radio Isik, A. M. Buoi: S.O. musical postron.
 WEAO, C. Metaminati, Elli, R. Radio Isik, M. Buoi: S.O. musical postron.
 WEAO, C. Martin, J. M. Martin, J. S. Mattin, J. M. Buoi: S.O. musical postron.
 WEAO, Cartes, H. C. Cont, H. Say, Loudon, J. P. m. Hold Clevitind orchestra, Jan Franchel, director.
 WEM, Classel, H. C. Cont, H. Say, Loudon, J. D. S. Mattin, J. Thurstin, guilaristic, Coldo archettar, Mart Relly, Contant, S. Mattin, S. Charason, J. Mattin, J. Mattin, Pullaritas, Nick Lucas: Nation Release States: Nubi-archettar, 253, S.J. K. Charas, Martin, S. Taravier, Non-entreteria, 253, S.J. K. Charab, hashben, Peterstinn of churches; 145, Taray Elastich, S. Mattin, Addio Mattin, Schurt, S. J. Mattin, K. Castlan, S. Mattin, S. Buist T. Methar Guil, J. Mattin, S. Mattin, S. Buist M. C. Barrien Barda, multicht, S. G. Contan, A. S. S. Schurt, C. S. Mattin, Mattin, S. Barst M. Mattin, Buster; 10:30, Jack Orithu, Addio Mattin, Kattarri, C. S. Mattin, Mattin, S. B. S. Buist T. Mattin, Buster, 2013, J. K. Gortinel, 2835, 1835 M. Mattin, S. Mattin, Mattin, S. Buist M. Mattin, R. S. Mattin, Mattin, S. Buist M. Mattin, Relama, Mattin, G. Contan, M. W. Mattin, M. Bardan, M. M. Gortinel, 350, 250 M. M. Mattin, M. Bardan, M. M. Gortin, Mattin, Mattin, M. Schurr, D. S. Mattin, Mattinala and Mattin, J. Mattin, J. Mattin, M. Mattin, M. Mattin, Mattin, M. Mattin, M. Mattin, M. Mattin, M. Mattin, Mattin, M. M

blayers, secure outgrow styter, planist; 9, WNIAQ WNYC, New York, N. Y. (Eastern, 526), 8:30-9:19 D. m., "Appreciation of Justic." Dr. Rawty T. Tieks at Bunler college: 9:15-10:30, dance program. WOC, Osrespert, is: (Control, 48.3), r. D. Cital, R. J. Definer isoldence, Envin Swindon; M. Liegercor. barlanet.

barltone. WoO, Philtdeiphla, Pa. (Eastarn, 509.5), 7:30 p. m., A. Candelorl'a casemble from Hotel Adelphia: 8:15, concert from WEAP: 11, Vincent Rizzo's Hotel Syl-tanus dance erobeirs. WoS. Jefferson City. Mo. (Castral, 440.5), 8 p. m., schreis, Russell Minnford, John Homber, Nelson Mccao-rial church, Nussell Minnford, John Homber, Nelson Mccao-rial church, Statusell Minnford, John Homber, Statusell Minnford, John Homber, Statusell Minnford, John Homber, Statusell Minnford, John Homber, Nelson Mccao-rial church, Statusell Minnford, John Homber, Statusell Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, Minnford, John Homber, John Homber, Minnford, John Homber, John Homber, Minnford, John Homber, John

Krs. AD: 1-00, E100, Weiser: February 18: JH Weau: 3-30, Will: 14 Weau: 9-03, Will: 15 Weau: 9-03, Will: 18, Weau: 10, Krs. E2, Webe: 10, Krs. E2, Webe, Web, 12, KR, Dir. Krw. Khj, Kos: 1, Krw. existers, Russell Alimatori, Join Horabet, Nelson Memo-rial church.
 WOJ. Chiesso, III. (Coniral, 448), 11-13. m. "Should lines Ennorgy Fra Draderby or a Finda Marbachar Construction of the Control of the Control of the Control of the method of the Control of the Control of the Control construction of the Control of the Control of the Control of the method of the Control of the Cont Convers, Layon and Involy atthiss [0-1], Don Beeler Drale demo orthesita. WGR, Burlais, N. Y. (Easter, 195), 10-15-11. a. m. [1-6] Nuller encoder: 2006-430, Radio Feature musical program, 5-330, litter duals, 213-Larroute court, John Vin Win Win NY, 11-3. a. m. uncertainty, Public Vin Win NY, 11-3. a. Surveyer success music Vincent Lasses [10-16] Matter duals activity. Burley Concern, Litter Statistic duals activity. Burley Concern, Statistic duals and the statistic activity. Burley Concern, Statistic duals and the statistic activity. Burley Concern, Statistic duals and the statistic activity. Burley Concern, Concern, Statistic duals and the statistic activity. Burley Concern, Concern, Statistic duals and the statistic activity. Burley Concern, Concern, Statistic duals and the statistic activity. Burley Concern, Concern, Statistic duals and the statistic activity. Burley Concern, Concern, Statistic duals and the statistic activity. Statistic duals and the statistic duals and the statistic activity. Statistic duals and the statistic duals and the statistic activity. Statistic duals and the statistic duals and the statistic activity. Statistic duals and the statistic duals and the statistic activity. Statistic duals and the statistic duals and the statistic activity. Statistic duals and the statistic duals and the statistic activity. Statistic duals and the statistic duals and the statistic activity. Statistic duals and the statistic duals and Katt L 209. Toronts February 19: 615 Kat 2, Kft, Woe 161 Kat 2, Kft, Woe 161 Kat, Wirt: 10, Wen, ud. Wirt, Whit: 102, Mirs, Wuil: 11, Martin Wirth, Wee; 114, Katt: 124, Kat.

secletata, Hurodd Glever, director. Word, Schaerdardy, N. Y. (Esstera, 375.9), 0:30 p. m. ebilitewic program; O IS, sub-estate story; F. Mirand litester exchanges, G. (Central, 335.4), 0 p. m., Uni-tersita Nikari of mard, Riffma (Online at the Unitersity and Winsonska, C. Y. Hibbard, Dimitersity and Winsonska, C. Y. Hibbard, beiling story, Bonnie Barmeurs, soon, 6 p. m. Goy boys' dance enrientra. WTAM, Cirveland, Ohle (Esicro, 390), 6 p. m. Goy Lombardo Rogal Canadians orbeitaris, 8, procram ar-ransed by the Circeland Fisin Dealet; "Another Nisbi ransed by the Circeland Fisin Dealet; "Another Nisbi Pinhereith ei Wilsonvia," C. V. Hibbart, WHAS, Leulvellis, K.Y. (Caratal, 390-8), 7:30-0 p. m., Keith kannaril and bis kenucky ramblers; chapter of line "Billity and Jane" startes, Janes Reed. WHB, Hassas City, Ma. (Central, 365,6), 7:8 p. m., mutcal program, Ivalin cafe, ortistral porms, Wall Fillary, Rices Netolon, Die Unluby tody, Narmons strik-Fillary, Rices Netolon, Die Unluby tody, Narmons strik-strikary, Rices Netolon, Die Unluby tody, Narmons strik-

Barweil quartet.
 WTAY, Oak Park, HI. (Central, 230), 6-30-7:30 p. m., Weisoms Khöy, planti; freeren alters: 9-9:15, erste.
 Pitthcono Devate, AL. Mildard, grantific, 9-2:15, erste.
 Pitthcono Devate, AL. Mildard, arguments, 9-2:15, erste.
 Pitthcono Locale argument, 9-2:15, popular program.
 WW, Ostroit, Mich. (Essier, 33.7.), 6 p. m., dimer consert: 7. District News criming and product program.

EN. EX Fride. Frismary 20: S. We & Wear, Whye: S. We & Waar, Whye: S. B. 197, When, Wear, W. Wai; 10.30, Kran, Waar; B. 1.45, Waar; Kran, Kibi; Waar; Kran, Kibi; B. 40, Day, 12.30, Kaw; 1. Sar, Thua,

WHA Civeland, Ohle (Eastern, 273), 6:15 p.m., news Hend, Eveland, Ohle (Eastern, 273), 6:15 p.m., news Hends, matter fedition alory, Eller D. Bawes. WHO, Oas Molnes, Iowa (Centrel, 5261, 6:30-9:45 p.m., Rester Hugnes orthogenetics; music, "Elker Cansial," Des

Where to Hear Talks

#### Central Standard Time

TALKS, instructive, serious, humorous and even frivolous, are Radiocast daily and below are listed the stations.

Gaily and below are listed the stations.
 Saturday, Pobraary 14: 8, VD14P, WEAF, WOAW: 815, WEAF: Wednesday, February 18: 6, WCCO, WEAF, WGY, WOAW: 645, KDKA, 7:30, CNRO; 8, WCCO: 815, WEAF: WOA: 6:40, WOY: 7:15, KDKA, WOA: 6:45, KFI, KJY, KJY, WEAF: WAAG, WOS, 8:15, CPCA: 8:30, KKAC, 8:35, WBBR; 8:46, KFI.
 Bunday, Tebruary 15: 8:20, KSAC; Binday, Tebruary 15: 8; WCCO; Biss, WKBR; 8:46, KFI.
 MWAG: Biss, WKCC, WBAF; WOCC: 7:30, KOKA, KFKU, WHA; 7:45, KFKU, WGR, WJZ; 8; WCCO; Biss, WKYC: 10, KGO.
 Theday, Tebruary 17; 8, WDAF; Biss, WKYC: 10, KGO.
 Theday, Tebruary 17; 8, WCCO; Biss, WKYC: 10, KGO.
 Theday, Tebruary 17; 8, WCCO; Biss, WKYC: 10, KGO.
 Theday, Tebruary 17; 8, WCCO; Biss, WKW; 7:45, WCCO; 8:30, WHCN; WCCC; 8:15, CPAC, WCCO; 8:30, KBH, WCC; 8:15, CPAC, WCCO; 8:30, KBH, Biss, WXYC: 10, KGO.
 Theday, Tebruary 17; 8, WCCO; Biss, WKW; 7:45, WCCO; 8:40, WHA; Biss, WXC; 10, WGC, WCCO; 8:40, WCCO; Biss, WXC; 10, KGO.
 Theday, Tebruary 20; 8, WCCO; Biss, WKW; 7:40, WCCO; 7:40, WHA; Will, WIL; 7, WDWF, WHA; Will, WIL; 7, WDWF, WHA; WAW; 7:40, WCC, 7:40, WHA; WIL; 7:40, WCCO; 7:40, WCC, 8:40, WIL; 7, WDWF, WHA; WIL; 7:40, WCCO; 7:40, WCC; 8:40, WIL; 7, WDWF, WHA; WIL; 7:40, WCCO; 7:40, WCC, 8, WLC; 8:40, WYF, WHA; WIL; 8:40, WCCO; 7:40, WCC; 8:40, WCC, 8; 9, WIX; 8:40, WCC, WHA; WIL; 7:40, WCCO; 7:40, WCC, 8, WLC; 8:40, WCCO; 7:40, WCC, 8, WLC, 8:40, WYF, WCC, 8:40, WIL; 7, WDWF, WCC, 8:40, WIL; 7, WCAU, WYF, WCC, 8:40, WIL; 7, WCAU, WYF, WCC, 8:40, W

Friday, February 20

Ocaumant. Tax. (Contral, 315.6), 8 p. m., 11e

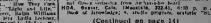
Raigh Williess and his Solub, Aylastr. June Lee.
 Raigh Williess and his Solub. Aylastr. June Lee.
 Ward S. Willies and S. Salastra and Salastra and Sal

Fiday, silant sight for: CFCA, CKAC, CHNG, KFKU, KFKX, KFWX, KGD, KIS, FWX, WINI, WUZ, WCBG, WOFF, WFAO, WI), WORT, WIAZ, WI WCBO, WOFF, WFAO, WI), WORT, WIG, WORO, WSUI.

ordenie (1996) and the state of Berry Dand, HFI, Les Angeles, Callit. (Paetfic, 437), 5:31-5 p. 11. Ktatilow? auxilial ball heart; 0.15-8. Acalitar roat deve pipe agreen releate. Data Mi-faither corrects 5:3, Encoding Ucasila, Japet Mechanistic Stylicity and Soptanci. 9:40, K. ravinder, Forei parateria, pupila ad Tomora Tarber Datilit. 10-11. Jey Flowe Buile cus-nife with toral autolata.

Millaumastrict, Vangarei tjuhn, priniti; violin solar, lisy liaumastrict, N. Y. (Estern, 255.3), 13 midniful, Morry Williama (Londers 14, 47.3), 5 p. m. Chirasa their oran; 6.33, Hissi Lasvillo erderisis 6:50, Deddy; B. to ho snouved; 8:18, Morris V Actual Beddy; B. to ho snouved; 8:18, Morris V Actual Beddy; B. to ho snouved; 8:18, Morris V Actual Beddy; B. to ho snouved; 8:18, Morris V Actual Wild, Mengahi, Tran. (Estern, 4597), 13:30 p. m. mu-ital proxime, Hose's Riore organism. WNC, Mengaha Naho (Castern, 538), 7:37-745 p. m., Iteria Islk, Thornian Fisher; 8:38-326, program WOAW (Gaster, 350), 15:30 p. m. mu-tal apparator, Loss's Riore organism.

HENF, Shanandesh, Jawa (Castral, 260), 0.50 p. m.



# Kithi C. Co, G. K.F.J. St. Co. Control 1990. C199 p. m. responses of the control of the Thurnday, ellent night far: CHNC, NFAE, KFOM, KFAX, KFOA, KGW, KOA, KOG, PWX, WBAY, WCAU, WCAO, WCAO, WHA, WHAZ, WHO, WY, WEBL, WOO, WOS, WSUI. A79, Fort Brange, N. C. (Castern, 43), 6 p. m., pro-rram of old souliern sonas, McFadern Nuels company Bitling Lund: hortmanics and Garakern Nuels company accompany. Control of the source of the company of the source of the source of the company of the source of the source of the source of the source of the source of the company of the source of

WCAE. Fullbarden, Gaussen, Statussen, Stat

K18, Los Angeles, Cellf. (Parifis, 233), 8-9:30 p. m., instrumental program of chamber music.

eoursti, HFOA, Seattle, W

of murit. WOAW, Onnaha, Nabr. (Csatrel, 326), 0 p. m., every child's sivey hour, Grave Normons, 6:20, muric: 0:18, Itandall's Doyal Pomerenila orchesters, 5, preservo, sur-desters; 10:30, Frank W. Houlek, Jr., and hie Omeha mightingsing.

Priorite any a Hold NL Anthony orchestor. WOC, Oscientari, La (Combal, 433,63,7 p. m., asthl-man's sisti, Yal Micfauglin; 7 20, educational lectura; J. Schuster Nister's "Fillionnia orchestra; H. Loddi Connor enti fit Lec'laire basic orchestra; Jeck Littia and Taul Readit, moretainers.

RTI, Left Analyse, Calif. Grains, AMA, 172361 v. Davids Marses. Electric company 6-402, Art. Hilduare basel monets extension for the Marses. Hilduare basel monets extension for the Marses. HTML, Walter Astrone Harton, Marses. How on the entropy table and Invis Astron. File, a Marses. HTML Walter Astrone Harton, 1997 For all entropy tables and Invis Astron. File, and the Thermal Press Interface. 1991. Last Instant's Efficient base Asses and the Marses. WOI, Amas Inve (Costral, 270), 5:15 p. m., mult. WOIO, Phileitshia, Pa. (Entra, 59-9), 4:45 p. m., workan reality, Jung Ya, Yast. WorkD, Battoria, HI, Gostarda, 273), 7 p. m., H M Ann T. Berd, Dwar, 7:35, 1 B. M. A. chemi integra-io, intrar, Judge J. P. Rutterford / 3:6, Miarry L. Larren, worken: 3:60, 1 B. M. A. trice, 8:50, 1 B. M. WOI C. Chemi, HI, Canada Add, 1 to 1 200, intrace HI, Canada Add, 1 to 1 200, and 1 B. M. A. trice, 8:50, 1 B. M. A. trice, 8:50, 1 B. M. MOI C. Chemi, HI, Canada Add, 1 to 1 2 M. C. Chemi, HI, Canada Add, 1 to 1 2 M. C. Chemi, HI, Canada Add, 1 to 1 2 M. C. Chemi, HI, Canada Add, 1 to 1 2 M. C. Chemi, M. Canada Add, 1 to 1 2 M. C. Chemi, M. C. Stardov, 1 M. Stardov, 1 2 M. C. Chemi, M. C. mi, 1 2 M. C. Chemi, M. Chemi, 1 2 M. C. Chemi, M. C. Stardov, 1 2 M. C. Chemi, M. Chemi, 1 2 M. C. Chemi, 1 2

datase excitence. Hux, Hellwend, Callfe, (Paulfa, 337), 5:15-4:15 p. m., Worlfitzer waren ertial; strolt fab, Mr. Xiff, 6: 4 7:10, stanse bent wulle, 8: 4; crotrain, Calmina Lina Gring costaars; 5:16, perrafe, Kallern (tuffitige vor-pars) field, marter lower (1:12, Ann Eparami's Etc. a auf (fires writerlas (from 4-base), bed HoA, Granter, Cole. Meentin, 2224), partners, ""

Las Anasire, Calif. (Parific, 404), 12:50-1 0 n. Perry e neclesia; ; Mi-J Ju, nasilnee multi te Parific Parific International (M. 20. 2011) [https://www.sci.



baiel, Calgery, Can. (Meuntain, 450), 9 p. m., bed-timm trarel inter: Arolian quarter: Devid Morgan, tram: George MacReth, bess; C. A. Davis, pienki; M. W. Gill, flufist; J. T. Dunn, violinist; H. B. Davis, cellist; cellist. CNRM, Monireal. Can. (Eastern. 425), 9:30 p. m., H M. Canadian Granadiar Guarala bund: R. Maille compliat; J. T. Liringstone, guilarist; address. H. H

Thursday, February 19

9, WDAF; 5, WGY; 0, WOC; WEAF; 4, KYW, WBCN; Q; 9:15,

WCCO, WDWF, F; 7:15, C; 7.30, 2, WOS; ), KGW,

# arks; June Lee, ; Hill, Hirsch, Lugbes, soprano;

3), 6:45 p. m., see Rouse trio; Pan American lirector; United ; quintet; Fred awler, soprano; Zalon, violinist; it; 10:45, Club

i), 8:15-9:45 p. Raymond Lyon baritone. .9), 10 p. m., 'les W. Parting-clarinetist; Eu-moeller, pianist; n, pianist; Earl

-6 p. m., Vick , Bonnie Barn-cus; 10:45, Dr. , 6 p. m., Guy

~

3:15-6:30 p. m., ly Luebr, bari-osher Parmenter,

3 p. m., Detroit Detroit News or-tte's Victor Re-orchestra.

. 7 20

CHNC, KFKU, WBBR, WBZ, WHAZ, WIP, WOI, WORD,

:30 p. m., uni-

, 7:30 p. m., usical program, C. H. Wright, c, Joe Mazzieo

), 7:30 p. m., 1 solos, pupils, tita Swain, so-6:30-8 p. m., rd hotel concert ; Jessie Archer, ldress; 10:30-12, ard hotel dance

.1), 6:15 p.m., 7:30, children's ttsburgh studio; , 8 p. m., Re-

, 5:30-6 p. m., , Aeolian resi-, rland, organist; , Id's Syncopating , one; Juanita Russ, , orgoram, pupils of Jay Plowe flute ensemble

				., Jay Plowe flute ensemble
be We N W K K P N V V M W K K K	<ul> <li>Examiner's musical half hour; 6:45-7, Y. M. C. A. speaker; 7-8, dance orchestra; 8-9, Standard Oil company of California, presenting a musical comedy; 9-10.</li> <li>Examiner, program, League of American Penwomen; 10-11, all vocal recital.</li> <li>KFKU, Lawrence, Kan. (Central, 275), 6:50 p. m., piano tuning-in numbers; 7, music; 7:15, "Planting for Winter Beauty," Prof. W. C. Stevens; 7:30, basketball game, K. U. vs. Drake U.; 8:30, "From Coal Tar to Dyes," Dr. Raymond Q. Brewster; 8:45, educational psychology, lesson VII, Dean R. A. Schwegler.</li> <li>KFNF, Shenandoah, Iowa (Central, 266), 6:30 p. m., concert, Verden, Ben H. Schober, director.</li> <li>KGO, Oakland, Calif. (Pacific, 300), 8 p. m., program, San Francisco Chamber of commerce; address, Paui Shoup; Olga Petrova, stage and screen actress; address, Robert Newton Lynch; Charles F. Bulottl, tenor; Austin Sperry, baritone; Uda Waldrop, pianist; music. California, Granada, Imperial, Loew's Warfield theaters; 10-1 a. m., Henry Halstead's orchestra.</li> <li>KFSG, Los Angeles, Calif. (Pacific, 278), 7:30-9:15 p. m., auditorium service and sernon, Alimee Semple McPherson, pastor; 9:15-10. studio program, Sliver band, G. N. Nichols, director; 10-11, organ recital, Esther Fricke Grcen.</li> <li>KHJ, Los Angeles, Calif. (Pacific, 404), 12:30-1:30 p. m., program, Loew's State theater; 2:30-3:30, program, Pacific States Electric company, Check Seal trio; 6-6:30, Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, storles American history, Prof. Walter Sylvestor Herizog; hedtlime story hy Uncle John; 8-9, program, Morrils, the tailor; 9.16, Pleeply Winery erig' trids tride</li> </ul>	<ul> <li>hotel: 8:30, musical program.</li> <li>WDAF, Kansas City, Mo. (Central, 365.6), 6-7 p. m., piano tuning-in number on the Duo-Art; readings, Cecile Burton; address, series of book talks, Louis Mecker; bedtime story; music, Trlanon ensemble; 11:45-1 a. m., Merry Old Chief, Plantation players.</li> <li>WDWF, Providence, R. I. (Eastern, 440.9), 8 p. m., educational talks, Brown university.</li> <li>WEAF, New York, N. Y. (Eastern, 491.5), 4-4:20 p. m., "These Eventful Years," Franklin H. Hooper; 4:20-4:35, Helen Muller, mezzo soprano; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, services, Federation of Greater New York churches; 7:30-7:45, Art talk; 7:45-8, Moeller trio; 8-3:20, Columbia university lecture course; 8:30-9, talk, Packard Motor Car company; 9-10. Atwater Kent Radio artists from Statlons WEAF, WEEL, WJAR, WGR, WFI, and WCAE; 10-10:15, Miriam Klyne, soprano; 10:15-10:30, Leon Kowicik, baritone; 10:30-10:45, Harry Jentes, planist; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra.</li> <li>WEBH, Chicago, III. (Central, 370.2), 7 p. m., Oriole orchestra; Margaret Fltzgerald, contraito; musical bits, Riviera theater; 9, Belle Forbes Cutter, soprano; John Stamford, tenor; Oriole orchestra; 11, Loos Brothers; Oriole orchestra; 11, Loos Brothers; Oriole orchestra; Banks Kennedy, planist; Nick Lucas.</li> <li>WEEH, Chicago, Mass. (Eastern, 475.9), 6:30 p. m., big hrother club; 7:15, Alpha ladies' trio; Mrs. Jessle Whitworth, soprano; 7:55, Pathe News finshes; 8, New York program.</li> </ul>	<ul> <li>WMC, Memphis, Jenn. (Central, 499.7), 8:30 p. m., muslcal program, Bower's Stores corporation.</li> <li>WNYC, New York, N. Y. (Eastern, 526), 7:35-7:45 p. m., sports talk, Thornton Fisher; 8:30-9:30, program of music.</li> <li>WOAW, Omaha, Nebr. (Central, 526), 6 p. m., every child's story hour, Grace Sorenson; 6:20, music; 6:45, Randall's Royal Fontenelle orchestra; 9, program, auspices Hannan-Van Brunt company, Ford and Lincoln dealers; 10:30, Frank W. Hodek, Jr., and his Omaha nightingales.</li> <li>WOAI, San Antonio, Texas (Central, 394.5), 9:30 p. m., Jimmie Joy's Hotel St. Anthony orchestra.</li> <li>WOC, Davepnort, Ia. (Central, 438.6), 7 p. m., sandman's visit, Val McLauglin; 7:20, educational lecture; 9, Schuster Sisters' California orchestra; 11, Lonis Contral statistic And Paul Small, entertainers.</li> <li>WORD, Batavia, III. (Central, 275), 7 p. m., I. B. S. A. choral singers; 7:35, I. B. S. A. choral singers; 7:55, I. B. S. A. choral singers; 7:50, lecture, Judge J. F. Rutherford; 8:30, Marryi L. Larson, soprano; 8:40, I. B. S. A. choral singers; 7:50, I. B. S. A. choral singers, 7:50, I. B. S. A. choral singers, 7:50, I. B. S. A. choral singers; 7:50, I. B. S. A. choral singers, 7:50, I. B. S. A. choral singers, 7:50, I. B. S. A. choral singers, 7:50, I. B. S. A. choral singers, 7:50, I. B. S. A. choral singers, 7:50, I. B. S. A. choral singers, 7:50, I. B. S. A. choral singers, 7:50, I. B. S. A. choral singers, 7:50, I.</li></ul>	<ul> <li>KFNF, Shenandoah, Iowa (Central, 266), 6:30 p. m., concert.</li> <li>KFOA, Seattle, Wcsh. (Pacific, 455), 6:45-8:15 p. m., Sherman Clay and company; 8:30-10, Times studio program, Nelle Duffy, Faith Rossiter; 10:05-11, Olympic hotel dance music.</li> <li>KFOX, Seattle, Wash. (Pacific, 238), 7:15 p. m., bed-time story, Aunt Vivlen; x-9, Earl Gray and his Hotel Butler orchestra; 9-10, concert hour; 10-11, Earl Gray and his orchestra.</li> <li>KFSG, Los Angeles, Calif. (Pacific, 278), 7:30-9:15 p. m., young people's night at Angelus temple, sermon, Aimee Semple McPherson, pastor; 9:15-10, concert, Silver band, G. N. Nichols, director; talk on Radlo, N. E. Brown; 10-11, organ recital, Roy Reid BrIgnall.</li> <li>KGW, Portland, Ore. (Pacific, 492), S p. m., lecture, University of Oregon Extension division; 10:30, Hoot Owls.</li> <li>KHJ, Los Angeles, Calif. (Pacific, 404), 12:30-1:30 p. m., Perry's orchestra; 2:30-3:30, matince musicale, Pacific States Electric company; 6-6:30, Art Hickman's Biltmore hotel concert orchestra. Edward Fitzpatrick, director; 6:30-7:30, iittle storles American history, Prof. Walter Sylvester Hertzog; Richard Hendrick, screen starlet and Uncle John; 8-10, a trip through Orange County California, presented by Orange County Farm bureau; 10-11, Earl Burtnott's Biltmore hotel dance orchestra.</li> <li>KNX, Hollywood, Calif. (Pacific, 337), 5:45-6:15 p. m., Wurlitzer organ recital; sports talk, Sid Zlff; 6:30-7:30, oldnner hour music; 8-9, program, Columbia Out-fitting company; 9-10, program, Eastern Outfitting company; 10-11, amateur hour; 11-12, Abe Lynan's Cocoanut Grove orchestra from Amhassador hotel.</li> <li>KOA, Denver, Cole. (Mountain, 322.4), 6:40 p. m., Book of K.nowidgoi &amp; studio Program, Cotarotio</li> </ul>
	KNX, Hollywood, Calif. (Paelfie, 337), 5:45-6:15 p. m.,	9:30, A. & M. Collego of Texas; 11-12. Frank Daven- port and his orchestra.	and his Rainbo Gardon orchestra; Mrs. Lydia Lochner, contralto; Edith Buckmaster, accompanist; 10-2 a. m.,	

# Friday, February 20

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#### (Continued from page 13)

Paul," quartet, choir, orchestra, Grant Avenue Mctho-dist Episcopal church, Militon P. Givens, organist.
KOB, State College, N. M. (Mountain, 348.6), 7:30-8:30 p. m., readings, Mrs. Hugh M. Milton; popular science course, lesson 5, member of engineering faculty, KSAC, Manhattan, Kan. (Central, 340.7), 7:20 p. m., college bell and quartet; 7:30, principles of insect control, J. W. McCulloch; 7:40, Radio college quartet; 7:50, "Control of Tomoto and Cabbage Diseases," E. A. Stokdyk.

A. Stokdyk.
KTHS, Hot Springs National Park, Ark. (Central, 375), 8:30-10 p. uv., minstrel show and frollc, Elks club.
KYW, Chicago, III. (Central, 535.4), 6:35-7 p. m., chli-dren's bcdtime story, Uncle Bob; 7-7:30, dlnner con-cert, Congress hotcl; 8-10, mldnight revue; 11-1 a. m., mldnight revue; 1-2, frolic, mldnight sons, "Night Court" for the delinquents.
WBAP, Fort Worth, Texas (Central, 475.9), 7:30-8:30 p. m., Jim Rilcy's Texos hotel orchestra; 9:30-10:45, concert, Euterpron club.
WBAV, Columbus, Ohio (Eastern, 294), S p. m., old-time songs, Columbus Musle burcau, arranged by R. C. Rether.

tlme songs, Columbus Music burcat, arranged by R. C. Relther.
WBCN, Chicago, III. (Central, 266), 7-9 p. m., Becker, Ryan and company progrom; Will Rossiter, tenor; Eleanor Masquect, blues singer; Zender and Robln-son; Roy Miller, tenor; Casey and Gervals; Lee Darnelle, banjoist; Edna McGuffin, planist; Midway Dancing Gardens orchestra; "Big Boy" Yagie, planist; 9-10, W. G. Tegtmeier and company classical program; 10-10:30, Mildway Dancing Gardens orchestra, WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, Willio Menn hotel; 7:30, Uncle Kavbee; 8:30, program, talent Knights of Pythlas.
WCAU, Philadelphia, Pa. (Eastern, 278), 6:30 p. m., Mayer Davis' flotei Pennsylvania concert orchestra, direction Lon Chassy; 7:30, talk; 8:30, recital.
WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 5:30 p. m., children's hour, Court of Gold Medal; 6, sports talk; 6:30, Dick Long'a Mankin cafe concert orchestra; 7:36, "Interest Bearing Debt," Ray P. Chose; 7:45, "Interest Duplex," John Briggs; S. musical program, Sigma Alpha lota sorority; 9, the F. & R. family.

S. musical program, Sigma Alpha lota sorority; s. ure F. & R. family.
 WCX. Detroit, Mich. (Eastern, 516.9), 4:15 p. m., musicol program; 6, dinner concert, Book-Cadiliac hotcl; 8:30, musical program.
 WDAF, Kansas City, Mo. (Central, 365.6), 6-7 p. m., piano tuning-in number on the Duo-Art; address, speaker, Kansas City Children's bureau; the Teli-Me-a-Story lody; music, Trianon ensemble; 8-10, popular program; 11:45-1. Merry Old Chief, Plantation players.
 WDWF, Providence, R. 1. (Eastern, 440.9), 8 p. m., lectures ond talks of interest, faculty of Brown uni-versity.

- WEAF, New York, N. Y. (Eastern, 491.5), 4-4:10 p. m., Mayme Anderson, soprano; 4:10-4:25, French lessons, Columbia university; 4:40-5, children's stories; 5-5:20, Milton Katz, pianist; 6-7, dinner music, Wal-dorf-Astoria hotel; 7:30-7:45, children's stories, G. R. Klinney Shoe company; 7:45-8, Ruth Morgan, soprano; 8-8:30, Happiness Candy Boys; 8:30-9, Hohner Harm-ony Hour; 9-10, Spear and Company Home Enter-tainers; 10-11, Emeraid Ball at Waldorf-Astoria hotel; 11-12, Meyer Davis' Lido Venice orchestra.
  WEAR, Cleveland, Ohio (Eastern, 390), 7 p. m., Vincent H. Perey, orgonist, recital from Cleveland Public Auditorium.
  WEBH, Chicago, III. (Central, 370.2), 7 p. m., Origle
- H. Perey, orgonist, rettai, itsu, Auditorium.
   WEBH, Chicago, III. (Central, 370.2), 7 p. m., Oriole orchestra; Dan Russo, violinist; Ted Florito, cellist soloist; musical bits, Riviera theater; 9, Rita McFawn, soprono; Oriole orchestra; Frederick Agard, tenor; 11, Three Musketers; Orloie orchestra; Nick Lucas.
- Three Musketecrs; Orloie orchestra; Nick Lucas.
   WEEI, Boston, Mass. (Eastern, 475.6), 6:30 p. m., big brother club; 7:30, Charles W. Williams, tenor; Kathryn Sampson, accompanist; 8, program, Neapolitan lee Cream company; 8:30, Gitchrist quartet; 9, All Saints' choir, George C. Phelps, organist.
   WEMC, Berrien Springs, Mich. (Central, 285.5), 9 p. m., sacred music, Radio Lighthouse choir; Charles Garber, saxophonist; 9:30, Bible chat, H. B. Taylor; 9:45, Mrs. H. B. Taylor, soprano; Mrs. Gertrude Han-son. contralto.
- p. m., Garber, san 9.45, Mrs.
- Son, contralto.
  WFAA, Dallas, Texas (Central, 475.9), 6:30-7:30 p. m., resper recital, Lone Star five's orchestra; 8:30-9:30, Mrs. Bon Sory Robertson.
  WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis' Bellevue Stratford concert orchestra; 3, piano solos, Caroline Hoffman; 6:30, Meyer Davis' Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddies' nal.

solos, Caroline Hoffman, 5.30, Meyer Davis Echevic Stratford concert orchestra; 7, Sunny Jim, the kiddlies' pal.
WGN, Chicago, Ill. (Central, 370.2), 6 p. m., organ recitai, Lyon and Healy; 6:30-7, dinner concert; Drake concert ensemble, Blackstone string quintet; 8-9, Illinois Bell Telephone company; 10-11, Don Bestor Drake dance orchestra.
WGR, Buffalo, N. Y. (Eastern, 319), 10:45 a. m., Gold Medai home service talks, Betty Crocker; 12:30-1 p. m., Hotel Statler concert ensemble; 2:30-4:30, Radio Dealers' musical program; 6-7:30, dinner music, Hallpryd string quartet; 8:30-8:55, recital by John' F. Gunderman, Jr., and associates; 9-10, Knell's Tokyo dance orchestra; 10-11, the Larkin string orchestra, of twelve pieces, John Lund, director; 11-1 a. m., supper-dance music, Vincent Lopez' Hotel Statler dance or-chestra, Harold Gieser, director.
WGY, Scheneetady, N. Y. (Eastern, 375.9), 6:30 p. m., International Sunday school lesson; 7, Strand theater orchestra; 7:30, heaith talk; American trio; 7:45, "Some Common Faults in Spoken English," Theodore Baird; Glovanni Trombini, ccliist; WGY players; 8:15, drama, "Harvest," WGY players; WGY orchestra; 10:30, America trio, Lillian Rosenthal, soprano.
WHA, Madison, Wis. (Central, 535.4), 7:45 p. m., autor's readings of the translations of the old English Beowulf verse, Prof. William Ellery Leonard.
WHAS, Kansas City, Mo. (Central, 365.6), 7-8 p. m.,

- contraito.
  WHB, Kansas City, Mo. (Central, 365.6), 7-8 p. m., Radio seance, Zenola the Mystic; musical program, Pekin cafe; 7-8, address, "Conservation of Vision," auspices of K. C. Optometric association.
  WHK, Cleveland, Ohio (Eastern, 273), 6:15 p. m., news items, music; bedtime story, Etbel O. Hawes; Emerson Gill's Bamboo Garden orchestra; 7:40, Y. M. C. A. Radio extension course, Mr. Leathem, instructor; or-chestra.
- chestra. WHO. Des Moines, lowa (Central, 526), 7:30-9 p. m., Willlamson brothers; Mrs. Harry Treviliian, soprano; program, direction of Salvation army. WIP, Philadelphia, Pa. (Eastern, 508.2), 1 p. m., Gimbel tea room orchestra; 4, talk, "Dickens' Queer People as an Alienist Scog Them." Dr. Chas. W. Burr: 6:05.

sport events, Ivan L. Gaddis; 9, program, Omaha College club, auspices Chicago, Burlington & Quincy Railroad compony; "Seeing by Radio Territory Corered by the Burlington Route," Dr. G. E. Condro.
WOC, Davenport, Ia. (Central, 483.6), 7 p. m., sandmark: visit, Vol McLoughlin; 7:20, "Farmer and Banker—Their Mutuol Interest," Frank Yotter; 8, musical; R. C. Hainlinc, Congregational church quartet, Clinton, Ia.
WOO, Philadelphia, Pa. (Eastern, 508.2), 7:30 p. m., A. Candelor's ensemble from Hotel Adelphia; 8:30, recitol, Horriette G. Ridley, planist; 9, WOO orchestro; 10:03, organ recital, Mary E. Vogt; 10:30, Vincent Ritzcis dance orchestra.
WOS, Jefferson City, Mo. (Central, 440.9), 8 p. m., "Shorthorn Cattle in Missouri Since the Civil War," John Ashton: "Poems of Optimisu," LeRoy H. Kelsey; musical program, School of Fine orts.
WQI, Chicago, III. (Central, 443, 7-3 p. m., dinner concert, Ralph Williams and his Rainbo Gardens orchestra; Elsle Orr, soprano; Ann Burrows, occompanist; Herman J. Techantine, baritone; Edith Phillips Heller, planist; 10-2 a. m., Ralph Willioms and his Bainbo skylarks; Rogers boys, Lorry, Billy; West brothers, steel guitarists: Nubs Allen, contralto; Zelgier sisters, Pauline, Sarahi, Louretta Giles, soprano; Monogram trio; Nate Coldwell.
WSB, Atlanta, Ga. (Central, 429), 5-6 p. m., garden talk, William B. Deckner; songs and bedtime story, Bonnie Barnhardt; 8-9, Stanley trio; 10:45, Dr, and Mrs. Gibbs Fowler, the honeyanoon duo.
WTAM, Clevcland, Ohio (Eastern, 350.7), 6 p. m., Maurice Spitalny's Horte I Statier orchestra.
WTAY, Oak Park, III. (Central, 250), 6:15-6:30 p. m., Al Mildgard, orgonist; 6:30-8, Atlas night, Black Cat orchestra.

Cat orchestra. WWJ, Detroit, Mich. (Eastern, 352.7), 3 p. m., Detroit News orchestra; 6, dinner concert; 7, Detroit News or-chestra; Anne Campbeli, Detroit News poet.

# Vernier and Shield Combined

The simple piece of apparatus shown in the illustration will no doubt meet the approval of any Radiophan who is troubled with body capacity effects; also it furnishes a vernier adjustment so that you can tune your set more sharply and get those long distant stations.

The device shown consists of a large brass gear, a little larger than the dial you wish to use, with fine teeth, also a small gear whose teeth mesh with those of the larger gear. A piece of fiber tubing is fastened onto the shaft of the in-strument you wish to attach the vernier adjustment onto (variometer, condenser, coupler). On the other end of the fiber tubing is fastened a short piece of brass rod to complete the shaft. The two shafts being connected in this manner must not make any electrical connection. Two set screws are used to fasten the two shafts to the fiber tube.

The small brass shaft extends through the panel and has the dial and knob at-

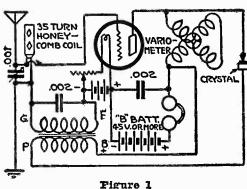
tached onto it. Just back of the panel the large gear wheel is fastened onto the same shaft. The smaller gear wheel is fastened stationary to another smaller shaft, and this is located so that the small gear meshes with the large one. Between the small gear and the panel is located a copper soldering lug a spring being arranged on the shaft to keep the small gear press-ed against the lug so as to make an electrical connection with it. A wire is soldered to the copper lug and led to the ground lead so that the capacity effects will be grounded. The apparatus to work properly, the small knob on the vernier adjustment when turned should move the large dial very slowly .- Evermount Fisel, Lebanon Junction, Kentucky.

# Cleaning Wire for Soldering

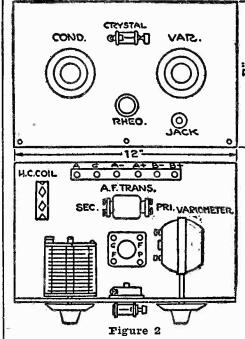
# **EXPERIMENTAL REFLEX CIRCUITS**

The circuit shown in figure 1 is ideal for those living more than ten miles from a large station. With a 43-plate condenser and a 35-turn honeycomb coil on a 100foot aerial it will reach all wave lengths between 275 and 550 meters. A 23-plate condenser with a 35 and 50-turn coil will work well. This set is very stable and reliable and is very easy to operate, the condenser having complete control over the wave length, the variometer merely acting as a Radio frequency control.

Use a good crystal. The transformer may be any good make and ratio. I have tried about six makes ranging from 10 to 1 to a 3 to 1 and all work well. I have used 201-A, WD-12, WD-11 and 199 tubes, and for best results, combined with economy, the 199's have given me most satisfaction.



Anyone having a storage battery should use the 201-A tubes with 45 volts on the Almost every fan has an extra plate. variometer, a 23-plate or a 43-plate condenser and tube accessories around the home and I would advise them to get an audio transformer and try this circuit. I have used cheap parts as well as good parts and I find it invariably gives good results. Figure 2 shows the plan and panel layout.

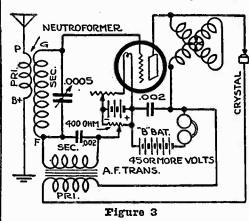


The circuit figure 3 is advisable for those who live near a large station, as it is very selective, making use of the neutrodyne unit in the aerial circuit. With good 23-plate condenser this set will

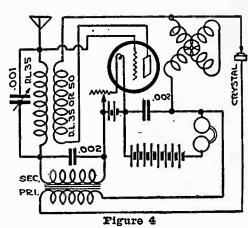
tune from 250 meters to 550 meters. Any neutrodyne unit will work well, also good results may be obtained by winding 60 turns of number 24 wire, single or double covered wire on a 3-inch tube and placing around this winding a piece of note paper, then winding on about 12 turns of number 18 wire over it for the primary.

I find it necessary to use a potentiometer in the

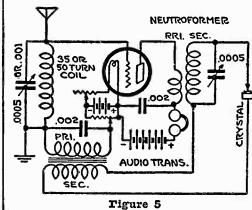
The circuit figure 4 was evolved from circuit figure 1 by trying to load up the variometer with a 50-turn honeycomb coil,



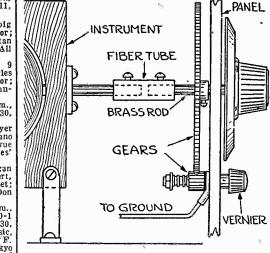
as the volume on the higher wave lengths / was less than on the lower wave lengths. The desired results were obtained thereby, and it was found that if placed in inductive relation with the coil in the aerial circuit the regenerative effect increased the volume quite perceptibly, in fact, a 199 tube would not carry it on semi-local stations, but also caused violent oscilla-tions, even when brought 6 inches from the aerial coil. When placed about 8 inches away the results are very satisfactory. Anyone trying the circuit figure 1 should try placing a 35 or 50-turn coil between the plate terminal of the socket and the variometer.



The circuit figure 5 combines selectivity and volume, but it is not quite so easy to operate, owing to its tendency to oscillate. The variable Radio frequency transformer in the plate circuit may be a neutroformer or a wound coil, such as described in circuit figure 3, wherein the aerial circuit with a 23-plate condenser across the secondary was described. It is best to use a potentiometer across the A battery for a stabilizer. I have never picked up distance with this circuit as I have with the others but it is very selective for nearby stations.



The same arrangement of parts on base and panel may be used in all of these cirsubstituting



as an Alienist Sces Them, Dr. Chas. W. Burr; 6:05,		meter in the grid return circuit to stabil-	
songs, Mark Fisher and Joe Burke; 6:15, Harvey Mar- burger and his vaudeville dance orchestra.	clean enameled Litz wire, small oxidized		
WJY, New York, N. Y. (Eastern, 405.2), 7:30-8:30 p. m.,	copper parts and the like for soldering is	on account of the low resistance of the	figure 5 and adding the neutroformer in
Guaranteo Trust coorai society; 8:30-9:30, Philharmonic	as follows:	grid circuit. This circuit works very	place of the coil in the circuit figure 3
string quartet.	At the bottom of a wide mouth vial	well with an electric light socket aerial.	Arthur Buesing, Chicago, Ill.
WJZ, New York, N. Y. (Eastern, 454.3), 4-4:15 p. m.,	about 2 inches high by 1 inch in		<b>3</b> , <b>3</b> , <b>3</b> , <b>3</b> , <b>3</b> , <b>3</b> , <b>3</b> , <b>3</b> ,
Doris Makstein, soprano; 8:10-8:20, "Psychology," N. Y. U. Air college; 8:40-9:30, Wanamaker program;	diameter place a ½-inch layer of absorb-		
9:30-10:30, U. S. navy night.	ent cotton which has been moistened with	Constal Cat II I.	A Dattaura Attaution
WLIT, Philadelphia, Pa. (Eastern, 395), 7:30 p. m.		Crystal Set Hook-up	A Battery Attention
Dream Daddy's bedtime stories; 8, book review, Arnold Abbott; 8:10, Sam Wingfield, humorist; 'Historicai	wood alcohol. The vial is kept corked	In my experience with crystal sets I	The cost of operation can be cut if a
Sldelights of United States Mint," Frank G. Stewart;		have obtained the best results with the	few simple directions are followed with
10:03, Arcadia cafe dance orchestra; Morning Giory	Separate the strands of whe slightly,	hook-up shown in the illustration. The	
cluh.	fan-wise, and heat gently in a gas flame	nook-up shown in the mustration. The	in our partiery. Considerable power is los
WLS, Chicago, III. (Central, 344.6), 6:30 p. m., Raiph Emerson, organist; 6:50, Senate studio artists; 7,	until the enamel is burned off. At this	parts required are a variometer, a variable	alson compared a compartient. The better
luilaby time, Ford and Glenn; 7:15, musical program,	point and while the wires are still a dull		clean corroded connections. The batter
Walther icague: 9 Ann Williams Konnoth Clash	red, quickly insert the hot wires into the	$\nabla$	terminals may easily be kept clean by
Ford and Glenn; 9, Helen Wile Burkhart; 9:10, Radlo	vial down close to the surface of the		polishing them occasionally with fine sand
drama; 9:30, Syivia Platt, pianist; 9:30, Senate syn- copaters; 9:50, Glenn's cornhuskers; 10, Senate sym-	moist cotton, but not touching it. The		paper and the same should be done to the
phony: 10:10, Garfield Park mixed quartet: 10:30.	fumor of clockel will instantly negues		terminals of the battery leads. The top
Asian state and the statestray route, route and Greini	tumes of alcohol will instantly reduce		of the battery should be kept free from
time. WIMAQ Chicago III (Control 447.5) c -	the oxidized surface to a clean metallic		acid and water as the presence of either
WMAQ, Chicago, 111. (Central, 447.5), 6 p. m., organ recitai, Chicago theater: 6:30. Hotel LaSalle orchestra	surface which is ready for soldering in		one will cause the current to leak from
recitai, Chicago theater; 6:30, Hotei LaSalle orchestra; 8, weekly wide-awako ciub, Mrs. Frances M. Ford;	the usual way. If the first trial is not		one cell to the other. Only distilled water
8:30, musical geography, Mr. and Mrs. Marx E.	successful, try again as there is no harm		should be used in filling the battery and
Oberndorfer; 9:15, musicai program, Hydo Park Trebie giec ciub.	done by repeated treatments. When a		
WMC, Mempsic, Tenn. (Central, 499.7), 8:30 p. m.,	clean surface is obtained, do not remove		enough should always be present to come
concert, Britling's Novelty orchestra, Frank Bracciante	wires at once but allow a few seconds	7	at least 1/4 inch above the top of the
director; 11, mldnlght frolic, University of Tennessee	cooling in the vial.	condenser and a good detector. An ordi-	plates.
doctors. WNYC, New York, N. Y. (Eastern, 526), 7:35-8 p. m.,	Badly ovidiged connor north such as		(
resume of meeting of Board of Estimate and Appor-		nary fixed condenser can be used across	Copper Wire Best Aerial
tlonment; 8:30-10, concert program, vocal and instru-	lugs, etc., have been cleaned up in this	the phones. With a good aerial and	
mentai artists; 10-10:30, dance program. WOAW, Omaha, Nebr. (Central, 526), 6 p. m., story		ground you will be surprised with results	
hour, Dorls Ciaire Secord; 6:30, Harry Brader, violn-	and medal medice by the use of actus of	from this hook-up. — Garvin Mullins,	
ist; Frenk Strawn, planist; 7, planist; 7:15, current	abrasives.— F. J. Seiter, Chicago, Ill.	Kemp, Texas.	num wire is not recommended.
ist; Frank Strawn, planist; 7, planist; 7:15, current	abrasives. F. J. Seiter, Chicago, III.	Kemp, Texas.	num wire is not recommended.

February 14, 1925

The symptoms described by the many

readers in connection with unsatisfactory operation indicate that the oscillator has

not been wired correctly to the rest of

the set. In part two which was published

out the wires from the oscillator coil so

that they would be in a convenient posi-

nected as follows: The end of the coil

minus A terminal on the oscillator tube

socket which is two or three inches to

edge of the tube to the right connects to

binding post Z which is the plus B. The

end of L5 which is nearest the center connects to the P binding post on the os-

cillator tube socket and also to the rotor

plates of the seven plate condenser. Con-

nected in this way the tube will oscillate

easily over the entire wave length range

but if these connections should be re-

# 15

# Construction of the Six Tube Hetduogen

More Details About the Circuit

# By C. E. Brush

NROM the letters which have come in versed on either coil there may be no os- frequency amplification works O. K., much change the voltage of the combination, but Real that the writer was not explicit enough in describing the con-nections to be made to the oscillator coil. cillation at all. Binding Post Connection

There seems to be some doubt in the minds of readers as to the connections of binding posts U, V, W, X, Y and Z at the rear edge of the sub-panel. Binding post W is the negative A, X is the plus A, Y is the plus 45 B and Z is the plus 90 B. U and V are the antenna and ground connections.

in the January 3rd issue the writer was very careful to tell readers how to bring Referring to figure 10 it will be noticed that there is a lead from the P binding post on the socket in the upper left hand corner to the secondary of the filter tion when mounted as shown in figure 10 in the January 17th issue. When the coupler and this connection is also not oscillator coil is secured to the sub-panel it should be so rotated that the leads from the inductances L4 and L5 come out as clear as it possibly should have been. It was presumed that with figure 2 and at the bottom and they should be configure 10 before them, readers would understand that this wire went to the threaded brass rod running through the filter coupler, as this rod is connected to L4 nearest the edge of the tube to the left in figure 10 is to be connected to the the copper segment of the semi-variable condenser on the end of the filter secondthe left of the oscillator coil. The end of L4 nearest the center is to be connected ary. As described under the construction of the filter coupler the tin foil segment to the G binding post on the oscillator tube socket which also goes to the stator plates on the seven plate condenser. The end of inductance L6 which is nearest the connects to one end of the filter secondary so the copper must go to the plate of the second detector tube to secure regeneration.

A typical letter from the many coming in is as follows: "Radio Digest, I fin-ished my hetduogen on Thursday last (Jan. 22nd) and got locals fine that eve-It was not until last evening (Jan. ning. 24th) that I got on to the trick of tuning, and then, Oh, boy! how they came in. It has a much better tone quality than my neutrodyne and the third stage of audio

to my surprise. It is surely some trick

to tune, but when you get it, you've got something."—E. T. B., Cleveland, Ohio. Through typographical error in the list of parts, readers were asked to do the impossible and place an outfit 10½ inches deep in a 10-inch cabinet. Several read-ers have called the writer's attention to the fact that 11/2 inches is to be left between the rear surface of the front panel and the front edge of the base panel and that the base panel is 9 inches wide; thus there must be 10½ inches depth inside the cabinet. The list of parts specified a cabinet 10 inches deep and it is, of course, impossible to place a set built according to the above specifications in such a cabinet. The list of parts should have given the cabinet a  $10\frac{1}{2}$ -inch depth dimension but if readers have difficulty getting such a cabinet, no harm will be done by moving the base panel  $\frac{1}{2}$  inch to  $\frac{3}{4}$  inch nearer the front panel.

# Battery Consumption

A battery on a 0.25-ampere tube operating to an end point of 1.0 volt under usual intermittent service will give over 100 hours of service; two batteries in parallel will give approximately 250 hours. In other words, two batteries connected in parallel will give more than double the

service of a single battery. Batteries are connected in parallel when the positive terminal of one is connected to the positive terminal of the other. This method of connecting batteries does not drill. Dress up with a half-round file.

increases the energy delivered; or, in other words, the hours of service.

Batteries are connected in series when the positive terminal of one is connected to the negative terminal of another. When connected in this way the voltage of the combination is equal to the sum of the voltages of the individual batteries. Thus, a 4.5-volt A battery is composed of three individual A batteries connected in series, each cell having a voltage of 1.5.

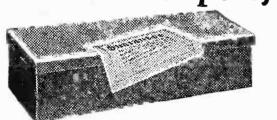
# **Pigtail Connections**

The connections to movable parts of a Radio set are made by either a pigtail or a friction contact. The latter consists of a bearing or a spring washer that will make contact to the shaft of the rotating member

Pigtail connections are made by soldering a flexible wire to the movable part of the device. The pigtail connection is the most efficient method of making this type of connection because it is positive, whereas with the friction contact the bearing or washer begins to wear and in time it will become loose, therefore making a poor connection. If rotating parts of your receiver have friction contact it can be improved by soldering on a pigtail or flexible wire.

To cut a large circular hole in a panel drill a circle of holes, close, but not uncomfortably close together, with a number 27 drill, then drill out with a number 19

For Circuit Supremacy— **CIR-KIT** and **Supereflex** 



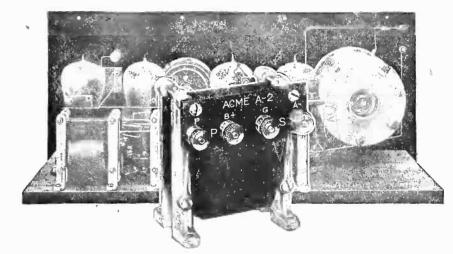
Erla Supereflex-new epoch in circuits. Not just a "wave" of popularity, but the permanence of basically superior principles, just as advanced today as when Erla introduced the circuits still rated more powerful, tube for tube.

Expressing the best of Erla science, Supereflex circuits also are so easy to own! Not only because of extreme economy in first cost and operation, but also because Erla CIR-KIT enables any experimenter to produce these greater circuits flawlessly. CIR-KIT provides every needed item of Erla Precision Radio Apparatus-exclusively responsible for matchless Erla range, volume, clarity, sensitiveness and remarkable ease of control.

CIR-KIT also provides full-size blueprints; stenciled baseboard; and drilled, lettered panel, so that every step must be correct. Assuring lasting supremacy in circuits; the pride of a truly professional hook-up; and incomparable entertainment, CIR-KIT is outstanding in radio today.

# **Electrical Research Laboratories**

# You can give your set this big advantage—



# **Amplification without Distortion**

# How to make sure of getting everything loud and clear

YOU can make your set so that it will reproduce clearly and distinctly without distortion. The real pleasure in radio comes when you can understand and enjoy what you hear—voices that are natural—music that is clear in tone. In order to hear clearly and distinctly you want to be sure that you are using amplifying transformers that amplify the sound without distorting it.

Give your set this big advantage—Amplification without Distortion. Whether you have a neutrodyne, superheterodyne, regenerative or reflex, the addition of the Acme A-2 Audio Amplifying Transformer will make it better. make it better.





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hsformers in the s bu build. Insist on the

The amplifying transformer is the Magnifying Glass of Radio

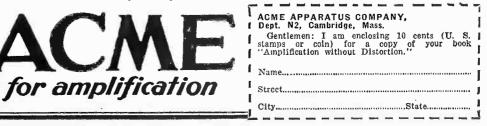
The Acme A-2 has become famous among radio owners for increas-ing the volume of sound without distorting. If you are bothered by distortion, try an Acme A-2 and note the difference.

Each transformer is tested and carries a guarantee tag. If you want Amplification with-out Distortion use Acme Transformers in the set you build and insist on

them in the set you buy. (That's one of the big reasons why the Acmeflex Kit-set gives such good results — it uses A c m e Transformers.) Send for our 40-page booklet which explains how to get the best re-sults by proper ampli-fication and also contains a number of valuable wiring diagrams. It will help you build a set. Mail the coupon with 10 cents.

ACME APPARATUS COMPANY Transformer and Radio Engineers and Manufacturers Dept. N2, Cambridge, Mass.

Have the fun of making your own radio set





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E. C. RAYNER, Publisher

Eastern Office, Park Lexington Building, 247 Park Ave. New York. Telephone Bryant 4909, 10462.

Member of the Audit Bureau of Circulations

241 PUBLISHED WEEKLY

SUBSCRIPTION RATES

Yearly in U. S. and Possessions and Canada, \$5.00 Foreign postage, \$1.00 additional. Single copies, 10 cents

Vol. XII Chicago, Saturday, February 14, 1925 No. 6

# "The Machine Wreckers" Revised

By "Steve" Trumbull, Chief Announcer of KYW **E**RNEST TOLLER, imprisoned German play-wright, wrote a play called "The Machine Wreckers." The situation used in the piece was that of the alarm among the weavers when the first piece of machinery was brought into England.

Mass meetings were held in the dead of night. The machines would deprive all of their livelihood. There were bloody riots, and the first machines were destroyed.

That is the play of Herr Toller. But somehow, the years that followed saw readjustments. More ma-chines came. The workers used them. The cries of alarnı died away.

A 1925 version of that very same plot was staged just a few nights ago in New York. Theatrical pro-ducers, actors, stage hands, musicians and artists gathered in solemn assembly. The gauntlet was thrown down and open war declared upon the machines-upon Radio.

William A. Brady arose before the alleged-to-beenlightened audience. Prefacing his remarks with the assertion that the theater, the phonograph, and the Radio were in combat to the death he added:

"Don't let our actors and actresses, by entertaining for nothing, aid the building up of a process that in the long run may prove their own destruction." The multitude marveled. Down with the machines!

"Who wants to hear disembodied voices playing dramatic scenes?" demanded Louis Wolheim. "Resist what will injure your livelihood," demanded Frank McGlynn. "That livelihood is hard enough to get now." Further, Mr. McGlynn pictured actors thrown from their jobs by this Radio demon, and

chopping wood—actually chopping wood! Perhaps there are cases where that misfortune would actually be hailed with relief by a suffering public-but this is beside the point. Let us rather, on a basis of plain facts and experience, tell what has been the experience of the Westinghouse station at Chicago with the theaters.

There are two theater pieces in Chicago that are in their second season, "No, No, Nanette," and "Abie's Irish Rose." Both have been broadcast.

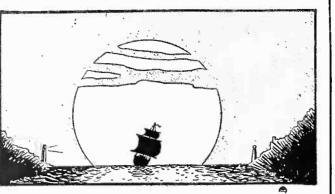
Next in the line of long runs comes "Applesauce" and "White Cargo." Both of these have been microphoned by KYW

Then there was the matter of the Duncan sisters, who threatened to become as permanent an institution in Chicago as the Art Institute. They fitted out a Radio studio at their own expense, and broadcast a regular program. There was never a hint of wood chopping around their box office!

Is all of this mere coincidence? Hardly that. At least the managers of these shows fail to believe it.

# **RADIO INDI-GEST**

Indi's Expedition Now on the High Seas



Due to the bravery of Capt. Oneoar, master of the good ship "Kanoofis," the long-heralded expedition originated by Indi-Hisself, is at last under way for the beautiful little island of Walla Walla. As the ship was about to sail last week, mutiny

broke out among the crew, but it was nipped in the bud by the Captain, who chased the mutineers off the ship. To give the readers of this column an idea of the initiative of Capt. Oneoar in a crisis of this sort, we will describe in detail just how he accomplished this unusual feat.

Standing in the middle of the ship, he hurled defiance at the crew and dared them to try and subdue him. Accepting the challenge, the crew rushed as one man towards him, but Capt. Oneoar had not sailed the seven seas for nothing and, using a trick which he picked up in the Fiji islands, he slipped from them and ran ashore.

The crew seeing the captain run off the ship, chased after him. They were soon lost from sight. About an hour later the captain came around the corner of one of the buildings with an entirely new crew. What happened to the other crew no one knew. But Capt. What Oneoar promised to tell the story as soon as the ship had started on its way for Walla Walla. Just as the sun was sinking in the West, the "Kan-

sailed down the bay and headed for the open oofis" sea, adventure, mystery and everything else you don't read about in this column. Each week a story will appear here telling the progress that the expedition is making. This will be an exclusive Indi-Gest feature. Be sure to order your copy of Indi-Gest each week so that you don't miss an installment of this thrilling, heart throbbing story.

#### And Tune in from Jail

Ray: "I hear WBZ is giving information on how to fill out your income tax report next March." D. Owe: "But what if my set can't tune in WBZ?" Ray: "Why--don't fill out a report!"

SPIDER WEBB.

# May Blessings Rest Upon His Head

May blessings rest upon his head, The man who keeps his signal down, Though yet he lives and is not dead-May blessings rest upon his head!

May blessings rest upon his head, The man who keeps his set in place, Who never lets her rant 'er tear— Does not pollute his neighbor's air, God bless his face!

May blessings steep his worthy dome, Who's satisfied to hear from home, Who's mit does not slap on the juice In reaching out for something loose, He's something great!

May blessings rest upon his head, The man who keeps his signal down, Though yet he lives and is not dead— May blessings rest upon his head! RUSSELL LEWIS.

# No!—They Are Modest (in Walla Walla)

Dear Indi: If that proposed expedition is not for 'Stags Only"-book first-class and ample reservations for my little typewriter and me. In this day of boyish bobs and girlish giggles you

men can't drag us around by the hair. I want to be appropriately attired. Are shredd wheat skirts still being worn in the South seas? MAMA HAYMES. Are shredded

Why? HHH HHH HEY! YOU SHOULDNT STAY AT HOME, AND LISTEN IN, YOU SHOULD COME TO OUR SHOWS



# Condensed **By DIELECTRIC**

If you sometimes feel that you would like a little Russian music other than the Song of the Volga Boatmen, tune in on some of the Los Angeles stations and try to locate the Calmon Luboviski Trio. This distinguished trio has found its Russian numbers meeting with great favor and they do play as few stringed trios can play. The dull throb of the melancholy strains that you find in many of the Russian works, affects the Anglo-Saxon mind strangely and Mr. Luboviski knows how to bring the effect out with his magic bow. And if Claire Forbes Crane will only play a piano solo, the evening is complete.

There are dance orchestras and dance orchestras. Dance music wherever you turn. But do you ever listen to KNX broadcasting by remote control from the famous Cocoanut Grove at the Los Angeles Ambassador hotel? The Grove is the stamping ground for the movie colony and in addition to listening to the snappy music of Abe's famous Brunswick record-ing orchestra, you will hear him sing out many famous names of the screen as parties enter the Grove. Tues-day nights the Town Crier snatches many of them away from the dance floor and practically forces them to make short speeches between numbers. Truly a treat for the movie fan who is also a Radio bug!

There was one evening when WTAM was on the air with all of the old reliable tango and fox trot pieces-not one missing-and it's a sure bet they couldn't accommodate in their studio all those who were tripping the light fantastic to the music. On with the Radio dance!

More and more the greater singing artists are being heard by Radio until eventually, it is hoped, we may have them all listed. WOR put on a special concert presenting Spanish talent with the expectation of reaching Europe. The singing of Madame D'Alvarez was as natural as though she were on the concert stage, where it is well known.

While a goodly number of us listeners have been hugging the warm spots in our homes while listening in, there came the comforting news of real warm weather from WMBF at Miami Beach. Much more than that has left the mike 'way down in Florida to give the rest of us pleasure: orchestras, soloists and the usual Radio features, but with the stamp of "choice" upon them. Everything, so far, has been of that class.

rank P. Gozollo, veteran theatrical man, wrote to KYW following the broadcasting of "Abie":

"Never in my twenty-five years' experience as a theatrical manager have I known of a single venture bringing in such returns at the box office. In the forty-eight hours, by actual count, 2,876 people bought tickets who had heard the play from your station.

These are just a few of the facts. There is another angle, too. The Chicago Civic opera just announces a deficit of \$400,000 for the past season. The opera was not broadcast this year. Last year it was--and the deficit was nothing near as high as \$400,000.

Another coincidence, perhaps!

Just the other day there was a party of down-state callers in the KYW studio. Invited to return to witness the evening broadcasting they replied that "they were going to take in a chere."

"they were going to take in a show." "What show?" we asked. "Applesauce," was the answer, "We heard it down home on the Radio. We could even hear the audience laughing. It must be a funny show."

Just a few more facts, facts that might aid in answering the Messrs. Brady, McGlynn and Wolheim ---and other 1925 "Machine Wreckers."

Radio rests its case. Let the jury of the public retire to deliberate.

# "Paging Eddie Squires!"

Dear Indi: For the last few months I've been listening on my Radio to nothing else but these "missing person" songs, such as "Where's My Sweetie Hiding?" and "I Wonder What's Become of Sally."

However, I have a more important question to ask you than either of them and it is, "Where the Heck is Eddie Squires gone to?" Eddie was one of KDKA's many announcers and he sure was the microphone's garters. I ain't heard Eddie's voice for a long, long time, and I certainly would like to know where he vanished to. Maybe you or some of your pals (including Mrs. Partlngton) can solve this riddle. GLOOMY GUS.

# Indi's Non-Radio Eclipse Test Observations

Roosters that started crowing at dawn and ceased at totallty of the eclipse, didn't have time to go to roost during the brief space of total obscuration of the sun, observers reported, and quickly resumed their crowing.

The great flock of seagulls which pass the winter days feeding along the Chemung river, near Elmira, N. Y., were fooled by the eclipse. As the moon blotted out the sun and darkness fell, the thousands of gulls rose from the river and started for Watkins, twentytwo mlles distant, where they roost nightly.

Before they were out of sight of ElmIra the shadow began to leave the sun and the gulls turned back to the river.

WHAM has the good fortune to include in their list of entertainers the Eastman orchestra, which is a well trained musical organization. They play equally well the heavier classical numbers and those in a lighter key. Following the usual evening concerts there is given a competent and pleasing resume of the works to be heard succeeding evenings. There is a feature never disappointing to the music lover.

To anyone with a predilection for harp music, a treat was presented through our school of chiropractic station, WOC. Mr. Baumgrass, the skillful harpist, presented selections of considerable merit in a way to please the most critical. Perhaps a return engage-ment can be arranged. Certainly a large audience was tuned to his playing.

In most cases we hear "Tommy Lad" sung by male voices, but WBAV offered that familiar song as rendered by a soprano. Both this number and others on her program were acceptable and aid in raising our esteem of this Ohio Radiocast station.

# How to Make the Two Tube Knox Reflex

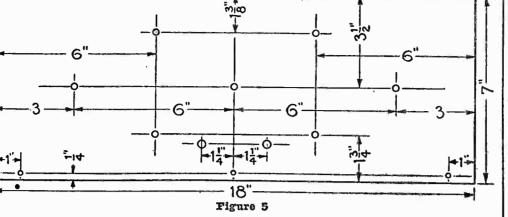
Part II-Assembly of Panel and Baseboard

By W. H. H. Knox

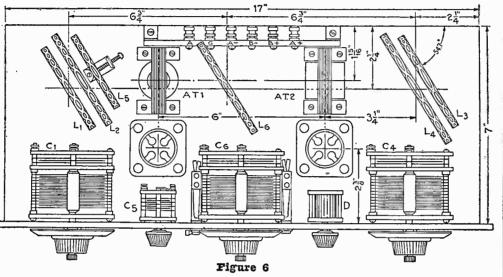
N THE first article which appeared last week the data for winding coils was given so that the reader could contruct his coils while waiting for the rest f the parts if it were necessary to order nese by mail. Assuming that the parts iven in the list included as part of the rst article are now at hand, and the coils nished, we are ready to lay out the set. he panel drilling layout is shown in figre 5 and this is to be enlarged on a sheet ! paper to full size so that it may be sed as a drilling template. The small dividual templates which accompany the fferent units to go on the panel are to : pasted on this full size template in eir proper positions. The usual con-inser template shows one hole for the aft and three for mounting the instruent itself, so it will be necessary to nter the shaft holes on the small temates exactly on the shaft holes indicated the layout. The same is true of the eostat templates as the average rheoat requires a shaft hole and two small les for 6-32 machine screws. If a oden baseboard is used, the three holes ross the bottom of the panel as shown figure 5 will be necessary, but if a kelite or hard rubber sub-panel is utied, to be supported by angle brackets, builder will have to figure out just ere the holes should go for the brackets.

**Identifying Panel Holes** The three .0005 mfd. variable condensers to be mounted behind the three holes own on the horizontal line midway the ght of the panel. It will be noted that re are two holes 1% inches from the of the panel, which are for the midget denser and the adjustable crystal de-tor. The detector goes in the hole to right. The two holes exactly below se and 1% inches from the bottom e are for the rheostats. Slightly bethese last two holes and nearer the ter are two larger holes, one of which or the filament switch and the other the phone jack. The filament switch s to the left and the phone jack to right.

he full size drilling layout may now company the apparatus.



either be pasted or clamped to the panel Assembly of Baseboard and the holes center punched for drilling, after which the numerous holes can be The baseboard layout is shown in figure 6, and the placing of the apparatus



drilled with the proper size drills as in-| will be the same whether a wooden basedicated on the small templates which acboard is used or one of bakelite or hard rubber. While slight deviation from the

layout shown may be done on most of the apparatus, the placing of the coils should not be altered from that shown. Other positions for the coils and other distances between them have been tried and it was found that best results were secured when the coils L1, L6 and L4 are centered as shown. Any method of supporting the coils on the baseboard which suits the builder's individual fancy or material on hand, may be used, with the single exception of L5, which requires a variable support shown in figure 7. This support may be constructed of a strip of heavy brass or aluminum ½ inch wide and 111/16 inches long. It is to be bent as shown 5% inch from one end. A threaded nut or washer is to be soldered near the top of the %-inch length and is indicated as item B. A long machine screw indicated as item D is inserted through this washer or nut so that it will through this washer of hut so that it will bear against the spring, item A. This spring is attached to the right angle strip by one of the screws which holds the strip to the baseboard. This spring may be either an old piece of clock spring or spring brass, and the other end of this spring is attached to a small piece of bakelite or hard rubber inserted into one of the openings in coil L5. L5 is to be varied in its relation to L2 only when a change of tube is necessary, as once this relation is adjusted for a tube it does not need to be changed.

Coils L1 and L2 should be mounted so that their windings are in the same direc-tion and they should be about  $\frac{1}{16}$  to  $\frac{1}{14}$  inch apart. Coil L5 is to be secured in such a way that its windings will be in the same direction as those of L2. Coils L3 and L4 should be so mounted that their windings are in the same direction and they should be  $\frac{3}{16}$  to  $\frac{1}{4}$  inch apart.

The binding post strip shown at the rear edge of the baseboard may be of a strip of bakelite or hard rubber ½ inch to 1 inch in width and  $7\frac{1}{4}$  inches long. Its thickness can be  $\frac{1}{8}$  inch,  $\frac{3}{16}$  inch or  $\frac{1}{4}$ inch, depending on the material which the

(Continued on page 18)



"Never use any of the messy soldering pastes. This is quite impor-tant, because it causes a lot of noise in your reception. The only material to use is rosin. Suitable strip solder can be obtained with a rosin core which makes the task of soldering a simple one." Not only has Kester Radio Solder won the approval of the leading



# Just use ordinary tools on this panel—built to order for radio

 $\mathbf{Y}^{\text{OU don't need special tools to do}}$ **Y** a good job on a Radion Panel. Just the usual tools found around any house will give you clean-cut, workmanlike results. You need not have the slightest fear of chipping.

Radion is the easiest of all to cut, drill and saw. It was developed to order by our engineers to meet the demand of radio set builders. There is nothing quite like it for real results. Highest rating as radio-frequency insulation

You can see that Radion is different by looking at the finish. But that high-polished, satin-like surface is not for beauty alone. It's useful, too. Moisture and dirt cannot gather to cause leakage and leakage noises.

Radion resists warping. It's strong. It's moisture proof. It comes in sizes and two kinds, iteen stoc Black and Mahoganite. Radio dealers have the exact size you want for your set.

17

radio engineers and laboratories, but it has also won the approval of thousands of users. Listen to what one of these fans says about it:

"I find Kester Radio Solder so good that I refue tans says about it: "make. I wired an 8 tube Super-Het. with your solder and it worked perfectly. I am now using my third can, and have recommended it to several of my friends who have been using inefficient and harmful "soldering pastes and fluids of various kinds. They report much pleas-ure and satisfaction by changing to Kester Radio Solder." Kester Radio Solder has a pure rosin flux inside of itself which makes abouted non-correcive ionits and prevent dielectric losses

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makes absolutely non corrosive joints and prevents dielectric losses. It requires only heat. By using a good hot iron and having it touch the parts to be soldered, a neat, clean job quickly and permanently afe is the result.

Insure safely soldered joints in your set by purchasing a can from your dealer today, or sending this coupon to u

CHICAGO SOLDER COMPANY 4238 Wrightwood Avenue Chicago, U. S. A.

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RADIO BROADCAST

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POPULAR RADIO



Authoritative laboratory tests give Radion the highest rating as radiofrequency insulation. This means that losses from surface leakage and dielectric absorption are exceptionally low. And low losses mean clearer reception, more volume and more distance.

#### Send for booklet "Building Your Own Set"

Our new booklet, "Building Your Own Set," giving wiring diagrams, front and rear views, showing a new set with slanting panel, sets with the new Radion built-in horn, lists of parts and directions for building the most popular circuits — mailed for ten cents. Mail coupon today.

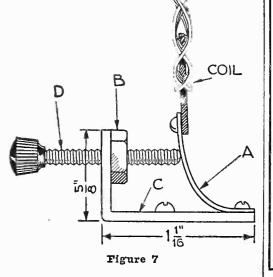
AMERICAN HARD RUBBER COMPANY, Dept. J2, 11 Mercer St., New York City Chicago Office: Conway Building Pacific Coast Agent: Goodyear Rubber Co., San Francisco - Portland

RADION The Supreme Insulation	American Hard Rubber Company Dept. J2, 11 Mercer St., New York City. Please send me your new booklet, "Building Your Own Set" for which I enclose 10 cents (stamps or coin).
<b>PANELS</b> Dials, Sockets, Binding Post Panels, etc.	Name

#### 2 TUBE KNOX REFLEX

(Continued from page 17) builder may have on hand. It is supported vertically by means of two right angle brackets placed as shown at each end of the strip. The arrangement of binding posts shown, to be used as aerial, ground, A minus, B minus, B plus and A plus will be found convenient for the wiring. Their order may be changed to suit the individual builder, but the one shown is very convenient.

Assuming now that all of the parts



have been assembled on the panel and on the baseboard, and the baseboard attached to the panel either by screws or with brackets, we are ready to commence the wiring. The wiring diagram shown in figure 2 of part one is to be used, the only item not shown in that diagram being the filament switch. This is to be inserted in the circuit in the plus filament lead between the plus A binding post and the point about  $\frac{1}{2}$  inch above it where a wire branches off to the right going to the second filament. Bus bar will be found excellent for wiring this set as this receiver lends itself readily to the right angle method of wiring. Particular care should be taken in this work and the usual reflex precautions observed. Be especially careful that grid and plate leads are not parallel and are kept as far apart as pos-sible. Be sure that all soldered connec-tions are actually soldered and not just stuck together with soldering paste.

j

This man .



#### **Coil Connection Important**

The connections to the coils arc as follows: The inside cud of coil L1 connects to the antenna binding post and the outside end connects to the ground binding post. The inside end of coil L2 connects to the F minus end of the audio frequency transformer AT1 and the stator plates of C1; the outside end of coil L2 connects to the inside end of coil L5 and the minus A binding post. The inside end of coil L5 also connects to the rotor plates of the .0005 mfd. condenser C1. The outside end of L5 connects to rotor plates of

L6 connects to the P binding post of the AT1 and labeled C2 has a capacity of .001 primary side of AT2 and the outside end mfd., the condenser across the primary goes to the P binding post on the socket. By following the diagram the balance of the wiring will be found easy, but the con-nections of the coils must be adhered to strictly as described or the set will not labeled C8 has a capacity of .0001 mfd. work correctly.

When wiring this receiver it will be found an excellent plan to go over each wire on the diagram with a red or blue pencil, as that wire is placed in the set, so that no wires will be omitted nor the same connection made twice, which can

February 14, 1925

of AT2 and labeled C3 has a capacity of .006 mfd., the condenser across the pri-

(In the next issue Mr. Knox will go into the adjusting and tuning of this unusual refiex so that readers can duplicate the exceptional sharp tuning and strong volume which the author obtains in Los Angeles. -Editor's Note.)

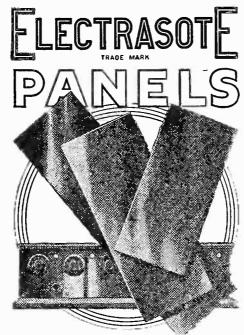
denser shunted across the secondary of device is higher than that of the battery.

Correction The wiring diagram of the Knox Re-flex was shown as figure 2 in Part 1 of this series of articles. No connection to ground was indicated in that diagram so this cor-rection dia-gram is gram is shown that readers may a d d t h e g r o u n d symbol and connection to figure 2.

midget condenser C5. The inside end of coil L3 connects to the B plus post of the primary side of audio transformer AT2 and the outside end connects to the plus B battery binding post. The inside end of coil L4 connects to the rotor plates of C4 and the P binding post on the primary side of AT1, while the outside end connects to the stator plates of C4 and the crystal detector. The inside end of coil

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A superior panel will increase the efficiency of your reception through reducing surface leakage. You can be certain of this if your set is built with-



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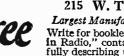
Absolutely safe-no danger of shock or fire. Approved by Insurance Un-derwriters everywhere. Beautifully finished in mahogany and gold. May be used right in the finest living room. Price, \$18.50 complete for all currents.

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change color. They are scientifically constructed to reduce surface leakage to a minimum, hence assure increased efficiency of the set.

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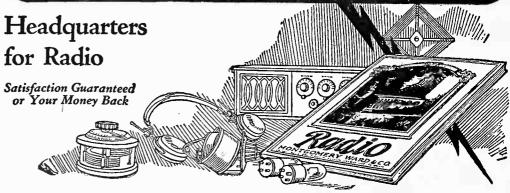
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# Broadcast Listener's Reference Library

Part II—Distance and Reception Limitations

By Edward Thomas Jones, A. I. R. E.

F COURSE crystal set owners are not interested in questions such as these: How far can I receive? Facts about fading? What constitutes results? The truth about static. They very seldom ever bother about static be-cause they are (necessarily) so close to the broadcasting station that the broadcaster's signals are more powerful than the static. But, to the broadcast listener making use of any other type of receiver, these are very vital subjects and are the things which he should know a little about.

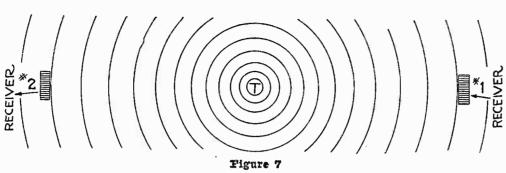
There is an absolute need for a clear explanation regarding the facts which determine the distance a receiving set can pick up broadcast news, music and other interesting matter. With this in other interesting matter. With this in mind I will endeavor to bring to light the very factors upon which good reception depend.

To begin, it might be said that a receiving set itself cannot receive any further than the box or cabinet it is installed in. From this, it should be clear that the transmitted waves must reach the receiving station's antenna.

#### Sensitivity

Many have asked why it is that they could hear Pittsburgh or even Detroit several hundred miles distant and yet they could not hear another station operating but seventy-five miles away. The waves of the smaller stations operating seventy-five miles away did not reach their receiving antennas, consequently there was no reception to be had.

The foregoing conclusion brings up the question often asked regarding the sensi-tivity of a receiver. The larger the facilities of the manufacturer and the better the engineering skill, the more sensitive will the receiver be. Such a receiver is apt to respond to waves which barely reach the receiving antenna, while a less efficient one will not record the presence of the waves in that vicinity. This is the only difference between receiving sets today. Their inherent ability to pick up broadcast stations thousands of miles away is due to the skill, workmanship,



engineering ability and overall efficiency of the manufacturer or builder.

In figure 7 two receivers of different construction are shown. The waves from the broadcasting station T barely reach their antennas (this is the point of practically zero current) no response is had at receiving station number 1 even though the same number of tubes are in opera-tion. At station number 2 reception is being had from the broadcast station because the receiver, while using the same number of vacuum tubes has been con-structed along engineering lines, and every precaution was exercised to build an efficient receiving set.

Striking examples of the above come from inexperienced constructors who have built their own sets. They want to know why it is that they cannot receive as far as their neighbor who has in use a set manufactured by one of the large manufacturers, or a set he constructed himself along the lines mentioned.

#### Weather

Then, we also have the weather conditions to take into consideration. Con-sider that an efficient receiver is being employed for the reception of concerts being sent out by the most prominent and powerful stations in this country. We do not hear Memphis or St. Louis as loud as we had them last night. The first thing one is apt to think is that the receiver has gone wrong. Not so! A change in weather conditions will alter Radio receiving conditions and you must

Then there are the fading problems when the signals walk in—and walk right out again. This condition cannot be helped at the receiving end—and as far as we know—not at the sending end either. Nothing that you can do to or with your receiver will help. It seems to be a condition due to change of atmospheric conditions between the sender and receiver. Therefore, if you have a certain receiver. Therefore, if you have a certain station tuned in well, do not try resetting the dials when the statlon begins to weaken. You only make matters worse, simply because it is harder to tune in the station with diminished signal strength, and if the signal gets too weak you may lose the station entirely

If "fading" is very pronounced on any particular station, try tuning in some sta-tion in another direction. Conditions between you and that station may be en-tirely different. That accounts for the variable results obtained each night from a given number of broadcasting stations.

Static-(the misnomer-for it is not at "rest," and according to Webster. It is moving just a trifle too much for us). Several devices have been used to good advantage in eliminating a good portion of this interference—and for one the author's underground system. However, the real solution is very powerful broadcasting stations permitting detuning of the receiver, that is, losing the static and

still retaining the broadcasting station, because of its greater strength.

(Antennas and grounds, being a source of much of the discouraging results fans meet, are taken up next week by Mr. Jones .- Editor's note.)

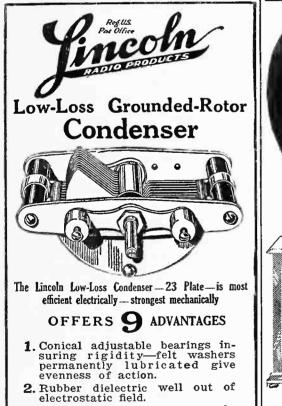
#### Harmonics and Meters

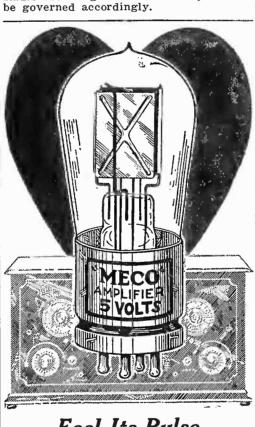
Harmonics of a broadcasting wave are the higher frequencies, representing exact multiples of the fundamental frequency. For example, suppose a station is sending on a wave length of 600 meters, which is a frequency of 500 kilocycles. This is then the fundamental wave (for frequency). But if the antenna arrangements are bad, or for many other reasons, the wave actually sent out may contain also a frequency of twice 500 kilocycles, or 1000 kilocycles, which corresponds to 300 meters. This is the first harmonic. Similarly there might be also a frequency of 3 times 500 kilocycles, or 1500 kilocycles, corresponding to 200 meters. This would be the second harmonic. There would be a third at 2000 kllocycles or 150 meters, a fourth at 2500 kilocycles or 125 meters, and so on. Of course, all broadcasting stations try to keep their sending wave as "pure" as possible, that is, to avoid producing these harmonics.

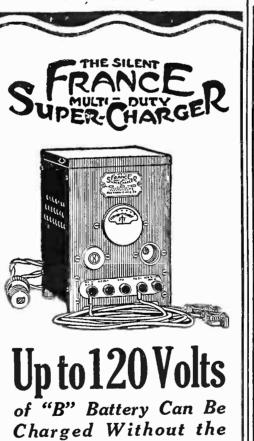
# Directional Properties of Loops

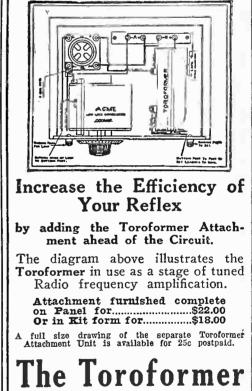
The directional properties of a loop are altered by the presence of magnetic materials sltuated near it. The steel frame-work of a building has a detrimental effect on the directions of a loop. The buildings have the characteristic of casting shadows across the loop aside from distorting the directional properities. This condition is particularly true of pancake loops

It is wise to keep the loop away from metal stairways and radiators. It is poor practice to place the loop too near receiver, because interaction may result. Then, again, placing the loop too far away from the set will also cause trouble.









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# RADIO DIGEST—Illustrated

The Reader's View

#### Simplifying Station Call Letters

In a recent issue of your excellent magazine a contributor published an article on the need of simplifying Radiocast station call letters so they could be understood by listeners in, and suggested the substitution of a code, which he stated was used with success by the signal corps during the war in the trans-mission of Radio telegraphic communications.

I agree with the writer that there is a dire need of some arrangement whereby a fan may be able to distinguish between such letters as B, C, D, E, G, P, T, V, Z, when pronounced by the announcer of some small station and even the larger distant stations, but substitution of the code suggested would be impractical as it would simply mean that every purchaser of a set would first of all have to memorize the code.

A much simpler arrangement would consist of simply grouping the letters of the alphabet according to their sound, then eliminate all but one letter from each group and use just one letter representing each sound group. A division of the alphabet according to sound, would be as follows: A, H, J, K; B, C, D, E, G, P, T, Z; F, L, S, X; I, Y; M, N; O; Q, U; R; W.

Selecting the letters from these nine groups which are most distinct and which would probably carry best, we would have A, E, L, I, M, O, U, R, W.

Owing to the fact that the international agreement assigns the letters K and W to the United States and these two are used as the first initial of all broadcasting stations, it would be necessary to use K in this list instead of A, as the first letter of a call, but A could be used to better advantage than K as the second, third or fourth letter.

A few minutes with a pencil and a sheet of paper will reveal that the letters  ${\bf I}$ suggest will give perhaps twice as many letter combinations as there are call Radiocast stations in this country, with no two combinations sounding anything alike.

In fact, I believe that by using K and W as the first letters of stations, as is now done, and designating one of the others to be used as a second letter in the call to represent the various Radio districts, the fans would be able to tell which district a station was in as soon as the call was heard.

For instance: WAAM, WAAO, WAEA, WAEE, WAEU, WAER, WAEO, WAEO, WAEU, WAER, WAEW, WALA, WALE, WALI, WALM, WALO, WALU, WALR, WALW, WAIA, WAIE, WAII, WAIM, WAIO, WAIU, WAIR, WAIW, WAMA, WAME, WAML, WAMI, WAMM, WAMO, WAMU, WAMR, WAMW, WAOA, WAOE, WAOI, WAOL, WAOM, WAOO, WAOU, WAOR, WAOW, WAUA, WAUE, WAUL WAUM, WAUM WAUD WAUE WAUL, WAUL, WAUM, WAUL, WAUE, WAUI, WAUL, WAUM, WAUO, WAUR, WAUU, WAUW, WARA, WARE, WARI, WARM, WARO, WARU, WARR, WARW, WAWA, WAWE, WAWI, WAWL, WAWM, WAWO, WAWU, WAWR, WAWW, are four letter combinations representing Radio district number 1, for instance, and ten three letter combinations starting with WA can be added to this list, also quite a few four letter combinations which I have probably missed in running through the list.

Calls starting with WE could represent

ROICE

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Type 02 5-watt Transmitters, \$3.00

All Tubes Guaranteed

to give best results in Radio Frequency. Also for high-powered circuits such as Neutrodyne, Reflex and Super-heterodyne sets.

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4-Tube Receiver

A wonderful little set.

4-Tube Cabinet Receiver.

Easy to tune-long distance-selective.

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A very high grade receiver - very

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This we believe to be the best 6-Tube

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Economical and Powerful CUT your tube expenses in HALF. Here's "Roice," an efficient and durable tube that greater satisfaction. Power-ful; increases range and volume with maximum clear-ness. We sell direct only. You save by this plan; that enables us to sell "Roice" at this low price. Type 00-5 Volts, 1 Ampere Detector Tube Type 01A-5 Volts, .25 Am-pere Amplifier and Detector Type 99-3-4 Volts, .06 Am-pere with Standard Base Am-plifier and Detector Type 12-11/2 Volts, .25 Am-pere Platinum Filament Am-plifier and Detector ALL

Newark, N. J.

...\$32.50

WAAE, WAAL, WAAI, WAAU, WAAR, WAAW, WAEI, WAEL, WAEM, WAER, WAEW, WALA, WAER, WAEW, WALA, out for that district, and so on through combinations starting with WF for the third district, etc. Getting into western territory K could be used as the first letter, and another group of several hundred call letter combinations arranged, in fact there would be twice as many groups or combinations possible as there are Radio districts and if there are too many stations in one district for one distinctive letter to suffice, two letters, to be used as the second initial of the calls for that district, could be assigned.

could be done very quickly by the department of commerce and which would cause confusion for but a very few days .--- M. F. Hoyle, Hollister, Calif.

I.C.S. **RADIO** HANDBOOK

codes, etc.

Name.

Address.

This plan would of course necessitate the reassignment of call letters, which

Solder should be flowed on a joint, not brushed on. The equipment for doing a good soldering job is small—an electric or plain heat iron, some strip solder and a small quantity of flux is all that is necessary. But in order to make a perfect joint, there remain several things which are also necessary. First, the iron must be clean. Second, the iron must be hot, not warm; with a semi-warm iron you can hope for nothing more than a brushed-on solder job, which will not hold. One tea-spoonful of powdered rosin to ten teaspoons of alcohol makes the ideal soldering flux for Radio work.

Soldered Joints

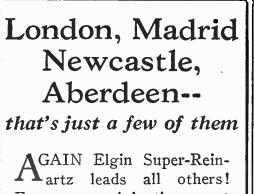


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Effarsee Portable Antennaecurtain shaped — solves the problem wherever it is difficult or impossible to put up an outdoor aerial. If you have an outside Antennae Effarsee connected in the Antennae circuit will greatly increase your volume. You can hang it anywhere indoors or out and install it in a minute.

It is better than an outdoor aerial because it brings in less static and noise and increases selectivity. It gives excellent volume on either local or distance, and can be used on any set-from an eight tube superhetrodyne to a crystal. Dealers find it excellent for demonstrating sets designed to work on outdoor aerials. It is much better than a loop.



Every trans-Atlantic report investigated was found to be ABSOLUTELY authentic ! Many happy owners of Elgin sets again tuned in the European stations.





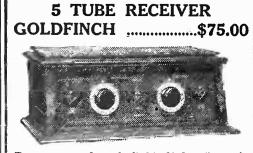
will give you the selectivity and distance it has given others. And you can save \$50.00. Let us tell you how-

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Mail the coupon TODAY for the com-plete working drawings of the famous Elgin Super-Reinartz, the set that gets the distant stations. They are free—no obligations, just a stamp for postage, please!

# tear out this





Bronze panel and Gold dials—Beauti-ful Mahogany Cabinet with space for B Batteries. This set looks and per-forms like a Million Dollars. We can-not offer anything better not offer anything better.

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The

Half-Moon Shape

Fits Over the Pipe

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The experience of set manufacturers and service stations shows that 50% of the trouble with radio sets comes from a faulty ground. It is not enough to wrap a piece of wire around a pipe. The contact must be firm and perma-nent. The Ekko Clamp insures a good ground. The half-moon shape makes it easy to attach anywhere and a turn of the screw fastens it securely. The hardened point bites through paint or rust. The connection is made tightly so corrosion cannot form and ruin it. Sold by radio dealers everywhere.

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If your dealer can't supply you, order direct. Money back if not Satisfied.

The Fishwick Radio Company 512 Edwards Building Cincinnati, O.



# **B** Battery Read With 10-Volt Meter

# High Voltage Read on Low Scale Instrument

It is a comparatively simple matter to adapt your A battery voltmeter to read your B battery voltage. All that is neces-sary is to add the proper resistance. A

# WORKSHOP KINKS EARN A DOLLAR-

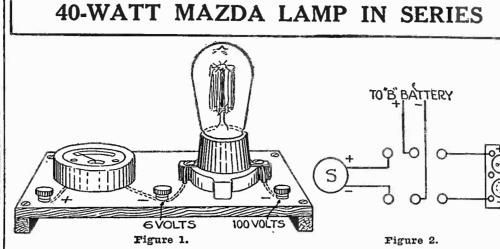
HERE are many little kinks worked out at home that would aid your fellow Radio worker if only he knew about them. There are new hook-ups, new ways of making parts and various unique ways of operating sets that are discovered every day. Radio Digest is very much interthem in with full details, including stamped envelope, so rejected copy may be returned. The work must be entirely original, not copied. RADIO KINKS DEPARTMENT

Radio Digest, 510 North Dearborn St., Chicago

25-watt or 40-watt mazda lamp placed in series with one meter lead will give just about the right deflection of the meter on full B voltage.

The meter and lamp may be mounted cn a small piece of panel, as shown in figure 1, and three binding posts provided so that either A or B voltages can be read, as desired.

To calibrate the meter, use the circuit shown in figure 2. A reasonably accurate voltmeter of proper scale can probably be parison voltmeter S. This is connected to one side of a double-pole double-throw switch, and the new meter connected to the other side. Leads from the blade of the latter is varied by changing the number of cells in the circuit and the two meters read for each value of the voltage



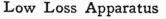
which should cover most of the scale of the meter.

The readings taken are plotted in the form of a curve, which will be similar to that shown in figure 3. The values given

S NGS 5 ( ADI 4 3 E E C SCAL 10 20 30 40 50 60 70 80 90100 ACTUAL VOLTAGE Figure 3.

there are those actually obtained in calibrating a meter such as is described here. By means of such a curve the actual voltage for any scale reading may easily be determined.-Louis L. Matson, Nela Park, Ohio.

WD-11



Low loss apparatus means coils and inductances free from great masses of di-electric surrounding them. If a tube or form on which the coil is wound must be used it should be very thin and nonabsorbent. Closed metal paths should be avoided in the vicinity of inductances either as a part of the form, or of the mounting. Self-supporting coils don't mean anything where great daubs of "dope" are used. The wire itself can be heavy enough to give support and merely a thin layer of collodion used, if necessary anywhere, for protection against moisture.

# Soft and Hard Tubes

A soft tube that contains a lower degree of vacuum is more sensitive as a detector in a Radio set. The hard tubes function best as amplifiers, however, while soft tubes are not as suitable for this use.

# SOLVED! -The "B" Battery Problem

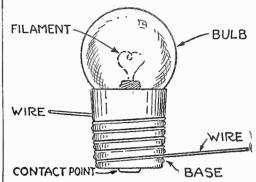
Throw away your "B" Batteries and install a Kellogg Trans-B-former. It gives you "B" Battery current direct from your electric light socket at the trifling cost of onefifth of a cent per hour. Gives better reception-no interferences. Write for details.

**KELLOGG** SWITCHBOARD & SUPPLY CO. Trans-B-Former 1066 W. Adams St., Chicago, Ill.



# Flashlight Bulb Makes **Dry A Battery Tester**

Procure a small pocket flashlight bulb and wrap or solder a small piece of wire around the base as shown. • Bus or aerial wire will do. To test a 1½-volt dry cell



press the contact point of the electric bulb on the positive or center post of the battery and the wire on the negative or outer post. If the batteries will not light the bulb they should be discarded .-- O. J. Miller, Cleveland, Ohio.

Stop Loud Speaker from Rattling To stop rattling in your loud speaker unit drop a bit of shellac on the pin joint in the middle of the diaphragm. A narrow disc of blotting paper placed in-side the cap so it laps over the edge of the diaphragm also will help.





**NOMPARISON** is a stringent test—but MAGNATRONS have thrived on it. Comparison is the force behind the everincreasing MAGNATRON popularity. Comparison has convinced thousands and thousands of radio fans that MAGNATRONS have no superiors in the field of vacuum tubes.

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# **Ouestions and Answers**

#### Short Range Transmitter

(11711) RCP, Owen, Wis. We are thinking of putting a small broadcast station in our church, and I have been asked to get some information on the cost of such an outfit. We would like a set with about a 200-mile average range, and as simple as possible.

Can power transformers be used for studio. The average upkeep of these stavoice broadcast or would a motor generator have to be used? This for plate volt-000 a year. age

We have 110-volt AC and can get 220-volt. If you have any hook-ups of something simple in a transmitter which would give good quality of phone transmission, we would be pleased to have them to look over.

voltage by means of a transformer and then attempt to rectify it. A.-We must advise that there is no such thing as a 200-mile average range. power transmitters which probably would The distance over which any transmitter can be heard varies every evening due to be heard occasionally at a distance of atmospheric conditions and the range is 1.000 miles on a five tube set but which at governed very largely by the sensitivity the same time could not be heard deof the receiver. The smallest practical receiver today for reception around 200 miles is a single tube regenerative rependably over a distance of 200 miles on RADIO LOG BOOKS. Used with any set. Satisfaction guaranteed. Postpaid 25c. Dealers wanted. Roy Stacy, Rockford, Ill. ceiver and there are probably more of this type of set in use than any other. In order that these single tube sets might reliably hear programs every day over a distance of 200 miles it would be necessary to install a broadcasting station

Raulf Radio Consoles. The ideal radio cabinet, built in genuine mahogany or walnut. Send for descriptive circular. Raulf Manufacturing Company, 564 Ved-der St Chicago III der St., Chicago, Ill.

Men to build radio sets in spare time. Leon Lambert, 501-H Kaufman Bldg., Wichita, Kansas.

It's your money and you can spend it for tubes or batteries if you want to; but I can show you how to bring distant stations in on a simple crystal set. Same plans increase range of tube sets also. Copyrighted plans \$1.00. Complete parts for long distant crystal sets \$5.00. Leon Lambert, 501 Kaufman Bldg., Wichita, Kansas

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dlal settings. Postpaid, 25c Copy PATENT ATTORNEYS PATENTS. Bookletfree. Highest references. Best results. WATSON E. COLEMAN, Patent Lawyer, 644 G Street, Washington, D. C. PATENTS. RADIO CLUB PINS Pine shown designed especially for RADIO CLUBS. Words "Radio Club" cannot be chenged. Other lettering con, only name must not exceed 8 letters. Silver plate, 226 e., \$2.50 doz. Sterling silver, 406 ee., \$4.00 doz. SEND FOR FREE CATALOG 603 Bastian Bidg., Rochester, N. Y. BASTIAN BROS. CO. **REAL FIXED DETECTOR** withdrawn. For Crystal and Reflex Sets or Can Be Operated 808 Washington Blvd. RADETEC As a crystal set in itself. Stands battery current, lasts Indefinitely, because of readjustment feature and does away with bothersome catwhisker and hunting for Hot Spot. You can depend on it being always "Hot." Can be mounted in any position or connected without mount-ing. Save A and B battery and Tube life, get better detection than Vacuum Tubes. Get a RADETEC and know the joy of real reception. Packed in box with Brackets and instructions prepaid for \$1.00. Dealers Write for Discounts TOWNER RADIO MFG. CO. Victor St. Kansas City, Mo. 2620 Victor St. Mailing Lists Send for FREE cetalog giving county and for FREE cetalog giving county and for group best prospective divide-tive brogen based on the divide-tive based on the divide based on the divide-tive based on the divide based on the divide-tive based on the divide based on the divide-tive based on the divide based on the divide based on the divide the divide based on the divide based on the divide based on the divide the divide based on the dide based on the divide based on the divide based on the divid AGENTS DEALERS oposition ic e

WHAS, WMC, WHO.

These transmitters are purchased from the Western Electric company, the price being about \$10,000, with additional

charges for installation and decoration of

tions runs anywhere from \$25,000 to \$85,-

Power transformers cannot be used as

the 50-watt tubes require 1,000 volts on

the plates and the larger tubes require

anywhere from 2,000 to 4,000 volts on the

plates. It has been found much better

to use a motor generator than to raise the

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rated at 500 watts output. This is the a single tube set. We shall be glad to rating of most of the class B stations in supply you with diagrams of 10, 20 and use at this time, among these being WQJ, 100-watt transmitters if you decide to use one of such low power, but we want to make it clear that such transmitters. cannot be heard regularly over 200 miles on the average set.

> Glass awning rings are tough and will stand enough strain to make them good aerial insulators.

# PATENTS



faction or return of your money with-out any ifs nor ands. Complete sample cell 35c prepaid. 8-page illustrated folder of instructions showing simple folder of instructions showing simple putting together, making charger and charging free with all orders. Com-plete manufactured "B" battery char-ger \$2.75. Order direct or write for my literature, guarantee, and testi-monials. Same day shipments. **B. D. SMITH** 

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# Radiophone Broadcasting Stations Corrected Every Week-Part III

# FIND MISTAKES AND YOU'LL GET DOLLAR

NE DOLLAR will be paid to the Radiophan reader of Radio Digest submitting the most errors in any one station's listing in the Directory of Radiophone Stations, which appears in five parts, serially continuously on the next to last page. Letters must reach Radio Digest's office not later than one week from date of issue corrected. Readers are not limited to correcting one station, but such corrections must be verified by the stations themselves, and NOT by comparison to other so-called accurate Radio directories or lists. Turn in corrections for as many stations as you can find—if you can find errors! Use separate sheet of paper for each station submitted and place name and address on each sheet. In case of tie, duplicate awards will be made.

(Owing to the temporary adjustments in reallocating wave lengths of many stations errors in wave lengths will not be considered eligible for the dollar offer until further notice. Once the changes are made permanent this ban will be removed.)

#### United States (Cont'd)

NOTE.-The third part of the schedule iist appears below. The fourth part which consists of the remainder of the list will appear next week.

- WDAY, Fargo, N. D. 244 meters. 50 watts. Radio Equip. Corp. Announcer, K. M. Hance. Slogan: "The Biggest Little City in the World." Daily ex Sun, 10 am, 11-12:30 pm, markets, news: 2, markets; 5, music, news. Tues, Thurs, Sat, 7:30 pm, entertain-ment. Sun, 10:30 am, church service; 4 pm, concert. Central.
- ment. Sun, 10:30 am, church service; 4 pm, concert. Central. WDBB, Taunton, Mass. 229 meters. 10 watts. A. H. Walte & Co., Inc. Announcer, Albert H. Walte. WDBC, Lancaster, Pa. 258 meters. 50 watts. Kirk Johnson & Co., Inc. Mon, Tues, Thurs, 8 pm. Esctor

- Walte & Co., Inc. Announcer, Albert H. Waite.
  WDBC, Lancaster, Pa. 258 meters. 50 watts. Kirk Johnson & Co., Inc. Mon, Tues, Thurs, 8 pm. Eastern.
  WDBD, Martinsburg, W. Wa. 254 meters. 5 watts. H. E. Burns. Announcer, R. W. Etris. Slogan: "We Do Better Daily." Temporarily off the air.
  WDBE, Atlanta, Ga. 278 meters. 100 watts. Gilham-Schoen Elec. Co. Announcer, E. E. Floyd. Slogan, "We Distribute Better Equipment." Tues, Sat, 9-10 pm, music. Central.
  WDBF, Youngstown, Ohio. 222 meters. 50 watts. Rob-ert G. Phillps.
  WDBH, Worcester, Mass. 268 meters. 100 watts. C. T. Sherer Co. Announcer, Chester Gaylord. Slogan, "The Voice from the Heart of the Commonwealth." Daily ex Sun, 11:30-12:30 pm, music, reports; 4-4:30, music, stocks. Mon, Wed, Fri, 7:15 pm. Tues, Thurs, Sat, 5:30 pm, "The Twinkle-Twinkle Story Teller." Mon, Wed, Fri, 8 pm. music. Eastern.
  WDBI, St. Petersburg, Fla. 226 meters. 20 watts. Radio Specialty company.
  WDBJ, Boanoke, Va. 229 meters. 50 watts. Richardson Wayland Elec. Corp. Announcer, Charles E. Stone. Slogan, "Roanoke Down in Old Virginia." Daily ex Sun, 12-1 pm, music; 5:30-6:45, music, news, weather. WDBN, Bangor, Me. 254 meters. 10 watts. Maine Electric Light & Power Co. Announcer, Paul Watson. "Bangor Radio Club." Daily 3-5 pm, 8-10. Eastern.
  WDBO, Winter Park, Fla. 240 meters. 50 watts. Superior State Normal School.
  WDBC, Salem, N. J. 234 meters. 20 watts. Morton Radio Supply Co. Announcer, Raymond B. Meader. Fri, 7:30-8:30 pm. Sun, 10:30 am; 6:45 pm, church services. Eastern.
  WDBC, Salem, N. J. 234 meters. 100 watts. Tro-mont Temple Baptist Church. Announcer, Raymond B. Meader. Fri, 7:30-8:30 pm. Sun, 10:30 am; 6:45 pm, church services. Eastern.
  WDBC, Dayton, Ohio. 275 meters. 150 watts. S. M. K. Radio Corp. Announcer, S. M. Krohn, Jr. Slogan, "Watch Dayton's Broadcasting Station." Tues, Thurs, Sat, 8-10 pm. Sat, 11:45-12:30 am, dance music. Central.
  WDBC, Hattiesburg,

- pm, m. Central
- Central. Central. WDBX, New York, N. Y. 233 meters. 5 watts. The Dyckman Radio Shop. Mon, Thurs, Sat, evening program. Announcer, Gene Delmar. WDBY Chicago, III. 258 meters. 500 watts. North Shore Congregational church. Announcer, Rev. J. C. O'Hair. Wed, Thurs, 7-8 pm. Sun, 11-12:30 pm; 3:30-5, 7:45-9:30. Central. WDBZ, Kingston, N. Y. 233 meters. 5 watts. Boy Scouts of America. Thurs, 8-11 pm. Sun, 2:30-4 pm. Eastern.

- WEAO. Columbus, O. 293.9 meters. 500 watts. Ohio State Univ. Announcer, Mrs. F. G. Cherles. Slogan, "When Stoucation Advances Ohio." Daily of Sun, Didge & College.
   WF6Z, Galesburg, Hl. 254 meters. 500 watts. Stranger State, J. 10, m. Weak, Stranger, J. M. Talker, Y. Daily of Sun, Talker, J. Sun, M. Sanders, J. Sun, M. Sanders, J. S. Sun, M. Sanders, J. Sun, J. Jan, M. Sun, M. Sanders, J. Sun, M. Sanders, J. Sun, J. Sanders, J. Sun, M. Sanders, J. Sun, J. Sanders, J. Sun, M. Sanders, J.

- Co. Announcer, Harry W. Fahrlander. 1008, 571, Central.
  8-10 pm, orchestra talks. Sun, 2-4 pm, orchestra. Central.
  WEBQ, Harrisburg, Ill. 226 meters. 10 watts. Tate Radio Co. Announcer, Joseph R. Tate. Slogan, "The Voice from Egypt. Dally ex Sun, 7:15 pm, news, weather. Tues, Fri, 8-10 pm. Sun, 3-4 pm. Central.
  WEBR, Buffalo, N. Y. 244 meters. 15 watts. H. H. Howell. Slogan, "We Extend Buffalo's Regards." Tues, Thurs, Sat, 8:30-11:30 pm. Sun, 12 m, 3 pm. Eastern.
  WEBT, Dayton, Ohio. 256 meters. 5 watts. The Dayton Coop. Industrial High School. Announcer, Irvin Snyder. Slogan, "Worthy Effort Brings Triumph."
  WEBW, Beloit, Wis. 268 meters. 500 watts. Beloit College. Announcer, W. E. Alderman. Tues, 8-9 pm, concert. Thurs, 7:30-8:30 pm, Fairbanks, Morse Co. band. Sun, 4:30-6 pm, vesper services. Central.
  WEBX, Nashville, Tenn. 263 meters. 50 watts. John E. Cain, Jr.
  WEBY, RosiIndale, Mass. 226 meters. 10 watts. Hobart Radio Co.
  WEEX, Savannah, Ga. 234 meters. 5 watts. Savannah Badia Comp.

- WEBZ, Savannah, Ga. 234 meters. 5 watts. Savannah Radio Corp.
- Radio Corp.
  WEEI, Boston, Mass. 475.9 meters. 500 watts. Edison Elec. Illuminating Co. Announcer, C. R. Emery. Slogan: "The Friendly Voice." Daily ex Sat. Sun, 7-12 midnight. Sun, 4 pm, organ; 7:20, from New York. Tues, Thurs, Fri, 9 pm, program from WEAF.

- Stogari : The Friendly voice. Daily et Sai, Sth., 7-12 midnight. Sun, 4 pm, orgam from WEAF. Eastern.
  WEMC, Berrien Springs, Mich. 285.5 meters. 500 watts. Emanuel Missionary Collège. Slogan. "The Raddo Lighthouse." Mon, Wed, 8:15 pm, music, iectures. Fri, 9-10 pm, sacred music. Sun, 11 am, chapel services; 8:15, chapel services. Central.
  WEV, Houston, Tex. 236 meters. 100 watts. Hulburt-Still Elee. Co.
  WEW, St. Louls, Mo. 248 meters. 100 watts. St. Louis Univ. Announcer, G. E. Rueppel. Daily ex Sun, 9 am, 10, 2, 5 pm, reports. Sun, Tues, Thurs, 7 pm, lectures, music. Central.
  WFAA, Dallas, Tex. 475.9 meters. 500 watts. Dailas News and Dallas Journal. Announcer, Charles T. Baker. Slogan: "Working for All Alike." Daily, 10:30 a.m. reports, 12:30-1 p.m. address; 2:30-3, 3:30-4, 4:30-5, reports, news; 5:30, bedtime story; 6:45-7, sports, news; 8:30-9:30, concert, weather (slient Wed). Tues, Thurs, Sat, 11-12 pm, music. Sun, 6-7 pm, Bible class; 9-11 pm, music. Central.
  WFAM, St. Cloud, Minn. 273 meters. 10 watts. St., Cloud Daily Times. Slogan: "Granite City of the World." Announcer, R. A. Cushman. Slogan, "The Home of the Cornhuskers." Daily ex Sun, 10 am, 12:15 pm, weather, news, road reports. Thurs, 7 pm, program. Sat, 11:30 pm. Central.
  WFBC, Knoxville, Tenn. 250 meters. 100 watts. Eureka college.
  WFBC, Knoxville, Tenn. 250 meters. 100 watts. Sun, 10:30 am; 7:30 pm, services; 3:30 pm, sacred music. Central.

- WFBD, Philadelphia, Pa. 234 meters. 5 watts. Geth-semane Baptist church. WFRE. Seymour. Ind. 226 meters. 150 watts. Van de

- WGBQ, Alemonthe, Wis. 234 models. 25 wates. Sour Institute.
  WGBS, New York, N. Y. 315.6 meters. 500 watts. Gimbel Brothers. Announcer, A. V. Liufrio. Daily ex Sun, 10-2:30 pm. entertainment; 3-7:30. Tues, 8:30-12. Thursday, 8:30-1 am. Sat, 7:30-12. Sun, 2:30-4:30 pm. Eastern.
  WGBT, Greenville, S. C. 236 meters. 15 watts. Furman university.

- 8:30-12. Thursday, 8:30-1 am. Sat, 7:30-12. Sun, 2:30-4:30 pm. Eastern.
  WGBT, Greenville, S. C. 236 meters. 15 watts. Furman university.
  WGI, Medford Hillside, Mass. 261 meters, 500 watts. Am. Radio & Research Corp. Slogan, "Amrad, the Voice of the Air." Daily ex Sun, 7:30-10 pm. Daily ex Sat, Sun, 12 m-1 pm, concert. Daily ex Sun, Mon, 6:30-7 pm, stocks. Sun, 4-5 pm, 8:30-10. Eastern.
  WGL, Philadelphia, Pa. 360 meters. 500 watts. Chicago Tribune. Announcer, Quin A. Ryan. Daily ex Sun, 9:31 am, time: 9:35.10, 10:30, 11, 11:30, markets; 11:35, time: 12 m, 12:10 pm, 12:30, 1, 1:15, markets; 1:35, 10, rocking chair time; 5. markets; 5:30-5:57, Skeezix time; 5:57, time; 6-6:30, Lyon & Healy; 6:30-7, concert. Daily ex Sun, Mon, 8-9, program; 10-11. Sun, 11:11:45 am, comies; 11:45-12:45 pm. concert; 1:2:30-5, Lyon & Healy; 9:10, music. Central.
  WGR, Buffalo, N. Y. 319 meters. 750 watts. Federal Telephone Mfg. Corp. Announcer, J. H. Persons. Slogan, "The Southern Technical Institution with a National Reputation." Mon, 9 pm. Thurs, 7 pm. Central.
  WGY, Schenetady, N. Y. 379. meters. 1500 watts. Georgia School of Technology. Announcer, J. H. Persons. Slogan, "The Southern Technical Institution with a National Reputation." Mon, 9 pm. Thurs, 7 pm. Central.
  WGY, Schenetady, N. Y. 379.5 meters. 1500 watts. Georgia School of Technology. Announcer, Kolin Hager. Daily ex Sun, 0:1:55 am, time; 12:30 pm, stock markets; 12:50, means there, Stol, 2:30 pm, stock markets; 12:50, pm. Atlanta, Co. 30, music, 7:30, envers Mon, 7 pm. Central.
  WGY, Schenetady, N. Y. 379.5 meters. 1500 watts. Density exploses. Fri, 6:30 pm, stock markets; 12:50, means there; 5:10, organ, 7:30, church service. Eastern.
  WGY, Schenetady, N. Y. 379.5 meters. 1500 pm. fance program, 11:20, organ. 2:30 pm. dance program, 11:20, organ. 2:30 pm. dance program, 11:20, organ. 2:30 pm. dance program. Sun, 11:30 pm. prof. 2:30 pm. dance program. Sun, 10:30-12 pm. stocks form. 5:30 pm. dan

- orchestra; 7:30-5:40, service, 5, orchestra from from
   WHA, Madison, Wis. 535.4 meters. 500 watts. Univ. of Wis. Mon, Fri, 7:45 pm, music, talks. Wed, 9-10 pm. Central.
   WHAD, Milwaukee, Wis. 275 meters. 500 watts. Marquette University. Milwaukee Journal. Daily ex Sun, 11 am, weather, news. Wed, 7:30 pm, studio program. Central.
   WHAC, Cincipneti, O. 233 meters. 100 watts. Univ.
- Central. WHAG, Cincinnati, O. 233 meters. 100 watts. Univ. of Cincinnati. Dept. of Elec. Eng. Announcer, W. C. Osterbrock. No definite schedule. WHAM, Rochester, N. Y. 278 meters. 100 watts. Univ. of Rochester. Rochester Times-Union, Demo-crat and Chronicle. Daily ex Sun, 3:30-4 pm, 5-6, 6:55, 7-7:30-7:30-7:30-8:30. Sat. 10:45 pm-12:30 am, dance music. Sun 3-15 Radio Chapel. Eastern.

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- 5:30 pm, chapel; 7:30-9, service; 9-10, concert. Esstern.
  WHN, New York, N. Y. 361.2 meters. 500 watts. Loew's State Broadcasting Station. Announcer, N. T. Grandlund. Slogan, "The Voice of the Great White Way." Daily ex Sun, 12-1 pm, 2:15-3:15, 3:45-5:30, 6:30-7:30. Mon, Wed, Sat, 7:30-12. Tues, Thurs, Fri, 9:30-12. Sun, 3-6 pm, 9:30-12. Eastern.
  WHO, Des Moines, Ia. 526 meters. 500 watts. Bankers Life Co. Announcer, N. Dean Cole. Daily ex Sun, 9:45-10:15 am, 12 m, 2 pm, markets, weather. Mon, Wed, Fri, 7:30-9 pm, concert. Mon, 11:15-12 midnight, Wed, 6:30-7:30 pm, chestra; 7:30-9, dance program; 9-9:45, orchestra, organ. Thurs, 11-12 midnight, dance. Sun, 11 am, church services; 4-5:30 pm, concert. Central.

- Wed, 6:30-7:50 pm, orchestra; 7:30-9, dance program; 9-9:45, orchestra, organ. Thurs, 11-12 midnight, dance. Sun, 11 am, church services; 4-5:30 pm, concert. Central.
  WIAC, Galveston, Tex. 360 meters. 100 watts. Galves-ton Tribune.
  WIAD, Philadelphia, Pa. 250 meters. 100 watts. Howard H. Miller. Slogan, "The Voice from the Birthplace of Liberty." Tues, Fri, 9 pm. Eastern.
  WIAK, Omaha, Neb. 273 meters. 250 watts. Daily Journal-Stockman. Announcer, Wm, Kotera. Daily ex Sun, 7:45 am, 9:10, 10:20, 12 m, 1:35 pm, 3:50, markets, weather. Central.
  WIAS, Burlington, Ia. 254 meters. 100 watts. Home Elec. Co. Announcer, Härry H., Waugh. Slogan, "Burlington, on the Mississippi." Tues, 8-9 pm. concert. Thurs, 7-8 pm, concert. Sat, 10:30-11 pm, organ. Sun, 10:30 am, church services. Central.
  WIK, McKeespert, Pa. 234 meters. 100 watts. K & L Electric Co.
  Wit, St. Louis, Mo. 273 meters. 150 watts. St. Louis Star and Benson Radio Co. Announcer, Billy Knight. Slogan, "A Wave Length Ahead." Mon, Wed, Sat, 10-12 midnight, Fri, 9-11 pm. Central.
  WIP, Philadeiphia, Pa. 508.2 meters. 500 watts. Gimbel Bros. Announcer, E. A. Davies. Slogan, "Watch It Progress." Daily er Sun, 1-2 pm, 3-4:30, 6-6:45, music; 6:45, markets, 7-7:30 pm, bedtime stories. Tues, Thurs, St. 8, 8-12 pm, concert. Sun, 11 an, 1:30 pm, 4:30-6:30, 9:30-12 mid, church services, concert.
  WiAK, McB, Lincoln, Nebr. 229 meters, 100 watts. Amer-

- music; 6:43, markets, 7-7:30 pm, bedlime storles. Tues, Thurs, Sat, 8-12 pm, concert. Sun, 11 am, 1:30 pm, 4:30-6:30, 9:30-12 mid, church services, concert. Eastern.
  WIAB, Lincoln, Nebr. 229 meters. 100 watts. Amer-lcan Elec. Co. Announcer, Jess Williams. Wed, Fri, Mon, 7 pm. Sat, 12 m. Central.
  WIAD, Waco, Tex. 352.7 meters. 500 watts. Jackson's Radlo Engineering Lab. Mon, Fri, 8:30-9:30 pm. Sun, 11-12 m; 7:30-8:30 pm. Central.
  WIAG, Norfolk, Nebr. 270 meters. 250 watts. Norfolk Daily News. Announcer, Kari Stefan. Slogan, "The World's Greatest Country Daily, and Home of Frinter's Dev7." Daily ex Sun, 12:15 pm. Sun, 3:30-6 pm, music. Central.
  WIAM, Cedar Rapids, Ia. 268 meters. 20 watts. D. M. Perham. Daily ex Sun, 9 am, 10:30, 1 pm, mar-kets, reports. Tues, Thurs, Sat, 6-6:30 pm, chil-dren's hour; 7:30-8:30, music; 9-10:30, Sun, 4 pm, vesper service. Central.
  WIAN, Peoria, III, 273 meters. 100 watts. Peoria Star, Slógan, "The Grandview City of Illinois." Dis-continued temporarily.
  WIAR, Providence, R. I. 305.9 meters. 500 watts. The Outlet Co. Announcer, J. A. Reily. Slogan, "The Southern Gateway of New England." Daily ex Sun, 1:05-2:15 pm, weather, reports, music; 7:30 pm, New York studio. Fri, 10 am, household hints; 10:45, style taik. Mon, Tues, 8 pm, music, taiks. Tues, 7:30 pm, baseball; 7:35, music. Suc, 7:20-9:15 pm, Capitol theater, N. Y.; 9:15-10:15, Skinner organ, N. Y. Eastern.
  WIAS, Pittsburgh, Pa. 275 meters. 500 watts. Pitts-burgh Radio Supply House. Pickering's Studio. An-

- bissolari, r.10, histo. 1015, Skinner organ, N. Y. Eastern.
  WJAS, Pittsburgh, Pa. 275 meters. 500 watts. Pittsburgh Radio Supply House. Pickering's Studio. Announcer, Bryan McDonald. Slogan, "World's Jolliest Aerial Station." Daily ex Sun, 7:30-11. concert. Sun, 2 pm, service. Eastern.
  WJAZ, Chicago, Ill. 268 meters. 20 watts. Zenith Radio Corp.
  WJD, Granville, O. 217.3 meters. 10 watts. Denison Univ. Announcer, Richard H. Howe. Fri, Sat, 5-6 pm, music, educational lectures. Athletics. Eastern.
  WJD, Granville, O. 217.3 meters. 10 watts. Denison Univ. Announcer, Richard H. Howe. Fri, Sat, 5-6 pm, music, educational lectures. Athletics. Eastern.
  WJD, Mosebeart, Ill. 302.8 meters. 500 watts. Mooseheart Radio Station. Announcer, Jack Nelson. Slogan, "The Call of the Moose." Daily ex Sat, Sun, Thurs, 3:30-4:30 pm, children's hour; 6:45-7:15, organ; 7:15-8:15. Mon, Fri, 11:30-12:30 am, organ. Sat, 9-12. mldnight dance. Sun, 7:45-8:40 am, Catholic services; 8:430-9:40, organ; 9:40-11, Protestant; 3-4 pm, Sunday concert. Central.
  WJY, New York City, 405.2 meters. 500 watts. R. C. A. Announcer, J. Lewis Reld. Tues, Thurs, N. 10-11 am, 1-2 pm, 4-6, entertainment; 7-11:30 pm, special program. Sun, 11. am 1 pm, cburch services; 2:30-5 pm, 7-10:30 pm. Eastern.
  WKAA, Cedar Rapids, Ia. 278 meters. 50 watts. H. F. Paar, Announcer, Mon, Wed, Fri, 5:10-6 pm, 8:30-9:30. Thurs, Sat, 12:30-2 am. Central.
  WKAF, Wichita Falls, Tex. 360 meters. 100 watts.

- WKAD. Base 1 fordence, A. A. 216 motors 16 motors with Charles Looff.
  WKAF, Wichita Falls, Tex. 360 meters. 100 watts. W. S. Radio Supply Co.
  WKAN, Montgomery, Ala, 226 meters. 15 watts. United Battery Service Co. Wed, Fr1, 8:30-9:30 pm, music, news. Sun, programs. Central.
  WKAP, Cranston, R. I. 234 meters. 50 watts. Duttle Wilcox Flint, Inc. Central.
  WKAP, Cranston, R. I. 234 meters. 50 watts. Duttle Wilcox Flint, Inc. State Confee Grows." Tues, 9-10:30 pm, orchestra, music. Wed, 8-9:30 pm, band; Thurs, 8:30-10 pm, music. Intercolonial.
  WKAR, East Lansing, Mich. 285.5 meters. 500 watts. Mich. Agril. College. Announcer, J. B. Hasselman. Slogan, "WKAR of Michigan." Mon, Fri, 7-8 pm. Wed, 8-9:15 pm. Sat, 12:30-2 am, dance music.

Eastern.

<ul> <li>WDB2, Kingston, N. 1. 253 meters. 9 watcs. Do. Bettern of America. Thurs, 8-11 pm. Sun, 2:30-4 pm. Eastern.</li> <li>WDM, Washington, D. C. 234 meters. 50 watts. Church of the Covenant. Announcer, Thomas J.</li> </ul>	WFBE, Seymour, Ind. 226 meters. 150 watts. Van de Walle Musle and Radio company. Announcer, Clifton M. Fishback. Mon, Wed, 9-10 pm. Fri, 9-10 pm. Central.	<ul> <li>music. Sun, 3-15, Radio Chapel. Eastern.</li> <li>WHAR, Atlantic City, N. J. 275 meters. 200 watts.</li> <li>Seaside House. Announcer, E. Dennisen. Daliy, 2-3</li> <li>pm. music; 7:30-8, news, markets; 8-9, music. Eastern.</li> </ul>	<ul> <li>WKAV, Laconia, N. H. 254 meters, 50 watts. Laconia Radio Club.</li> <li>WKY, Oklahoma City, Okla. 275 meters. 100 watts.</li> </ul>	
Williams. Sun, 11 am, church service; s pin, church service. Eastern. WDWF, Providence, R. I. 440.9 meters. 500 watts. Duten W Filter Inc. Sloran "Ouality First." Tues,	WFBG, Altoona, Pa. 278 meters. 100 watts. The Wm. F. Gable Co. Announcer, Roy F. Thompson. Slogan, "The Originai Gateway to the West." Daily ex Sun, Thurs 11:45 am. 6 pm. 7. Mon. Sat, 8 pm. Mon,	Journal and Louisville Times Co. Announcer, Harold A Salver Daily & Sun, 4-5 pm, 7:30-9, Sun, 9:57-	<b>LWLAD Toutentillo KV 275 Meters.</b> 20 Watta, $W_{A}$ Y	
<ul> <li>Butter U. 1998 A. /li></ul>	Tues, Fri, 8:30. Tues, 5:45 pm. Wed, Fri, 10 pm. Wed, 11, 11:30, 12. Sun, 10:30 am, 4 pm, 9. Eastern.	<ul> <li>A. Barger, Darly of burch service. Mon night, silent. Central.</li> <li>WHAV, Wilmington, Dei, 266 meters. 100 watts. Wil- mington Eleo. Spec. Co. Slogan, "The First Broad- mington Eleo. Spec. Co. Slogan, "The First Broad- First State."</li> </ul>	Jordon. Tues, Fri, 9:20-10 pm. Central. WLAX, Greenoastle, Ind. 231 meters. 10 watts. Green- castle Community Broadcasting Station. Announcer, C. W. Otis. Tues, Thurs, 8 pm. Sun, 7:45 pm.	Ĩ
quotations. Central. WEAA, Flint, Mich. 234 meters. 100 watts. Frank D. Faliain. Slogan, "The Vehicle City." Daily ex Sun, 7 pm, police broadcasts, music. Eastern.	course Radio Corp. Announcer, Alvin E. Hauser. Slogan: 'Voice of Central Park.'' Daily ex Sun, 11- 12 m. music. entertainment: 12 m. orchestra; 2-6 pm.	casting Station of the Alist City of the Later Wed, Sun, 9 pm. Eastern. WHAZ, Troy, N. Y. 379.5 meters. 500 watts. Rensselaer	church services. Central. WLB, Minneapolis, Minn. 278 meters, U. of Minn., Dept. of Elec. Eng. Wis 278 meters, 500 watte,	
WEAF, Blacksburg, Va. 360 meters. Polytechnol inst. WEAF, New York, N. Y. 491.5 meters. 2000 watts.	orchestra, entertainment. Wed, Thurs, Sat, 7 pm. Thurs, Sat, 11:30 pm. Sat, 10 am, children's hour. Sun, 9 am, church service; 5-7:30 pm, entertainment. Eastern.	Siogan, "Transcontinental and International Diseases of Station Located at the Oldest College of Science and Engineering in America," Club, R. P. 1. students. Engineering in America, ductional talks, features,	Wisconsin Dept. of Markets. Stogari, Wisconsin, Land of Beautiful Lakes." Daily ex Sun, 8:45 and 9:45, 10:15, 11:45, 12:30 pm, 1:45, markets. Tues, 9:45, 10:15, 11:45, Dept. "Enomies of Sleep." Central	ļ
A. 1. Daily ex Sun, 4-5 pm. Tues, Wed. Thurs, Fri, 11-12 m. Mon, Tues, 6-11 pm. Wed. Thurs, Fri, Sat, 6-12 midnight. Sun, 2-5:30 pm; 7:20-10:15. Eastern.	WFBI, Camden, N. J. 236 meters. 100 watts. Gaivin Radio Supply Co. WFBJ, Collegeville, Minn. 236 meters. 50 watts. St.	Second Monday of Month, 12-1.30 and, Incontact the test program. Eastern.	WLIT, Philadelphia, Fa. 594.5 meters. Lit Bros. Announcer, Harry E. Ehrhart. Club, "Morn- ing Glory," Daily ex Sun, 11:45-12:55 pm, music;	
WEAH, Wichita, Kan. 268 meters. 50 watts. Wichita Board of Trade. Announcer, Amos Dadisman. Siogan: "Kansas Grows the Best Wheat in the World." Daily ex Sun 10 am, 11, 12, 1 pm. markets. Daily ex Sat,	WFBK, Hanover, New Hampshire. 256 meters. 100 watts. Dartmouth College. Announcer, Robert Weinig.	Sweeney Auto & Electric School. Ambuncet, John L. Schilling. Slogan, "Heart of America." Daily ex Schilling. 8:25 am, 9:25, 10:25, 11:20, 12:15, 12:20, 12:35, Sun, 8:25 am, 9:25, 10:25, 11:20, 12:15, 12:20, 12:35,	10:50, entertainment; 1 am, Club. Eastern.	
Sun, 2, markets. Tues, Fri, 3-10 pli, music. Cornell WEAI thaca, N. Y. 254 meters. 500 watts. Cornell Univ. Irregular.	daga Hotel company. Announcer, Victor Henri Miller. WFBM, Indianapolis, Ind., 268 meters. 250 watts. Merchants Heat and Light company. Announcer, John	1:25, markets, weather 3:05 pm, weather; 3:05-3:20, 12 m, time; 2-3 pm, 3-3:05 pm, weather; 3:05-3:20, grain. Mon, Wed, Frl, 7-8 pm. Tues, Thurs, 8-10 pm. Sun, 9:45 am, 8-12. Central. WHBA, Oil City, Pa. 250 meters. 20 watts. Shaffer	buck & Co. Announcer, George D. 1137. Darl of farm 9 am, markets, weather; 11, markets; 12-1 pm, farm program; 1:30, markets; 3:45-4:45, homemakers' hour; 6:30-8 Dm.	
Univ. of S. D. Announcer, Stoley Parwey, 8-8:30 "South Dakota for South Dakotans." Wed, 8-8:30 pm, music; 8:30-9, talks, athletics; 10-11, popular	WFBN, Bridgewater, Mass. 226 meters. 20 watts. Radio Sales & Service Company. Fri, 9-12 pm. Sun, 1-3 pm. Eastern.	Music House. WHBB, Stevens Point, Wis, 240 meters, 50 watts. Hebal's	dance. Sun, 6:30-8 pm. Central.	
music. Central. WEAM, North Plainfield, N. J. 26i meters. 250 watts. Borough of N. Plainfield. Announcer, H. Blackford. Slogan, "America's Pioneer Municipal Broadcasting Station." Fri. 8-10:30 pm, concert, talks. Eastern. 00 watts	WFBR, Baltimore, Md. 254 meters. 100 watts. Fifth	<ul> <li>Store.</li> <li>WHDi. Minneapolis, Minn. 278 meters. 100 watts. Wm.</li> <li>Hood Dunwoody Industrial Institute.</li> <li>WHK, Cleveland, O. 273 meters. 150 watts. Radiovox</li> <li>WHK, Cleveland, D. 273 meters. 150 watts. Radiovox</li> <li>Company, Winton Hotel. Announcer, Ralph M. Rolan.</li> </ul>	Radio Corp. Announcer, Pred Sinch. 3. 4, reports. 10:45 am, 1:30 pm; daily ex Sat, Sun, 3. 4, reports. Mon, Wed, 8-10 pm, entertaintment. Tues, Thurs, 10:12 pm; music. Daily ex Sat, Sun, 12:15 pm.	
WEAN, Providence, R. I. 270 meters. 100 wates. Shepard Co. Announcer, R. Foster Reynolds. Daily Shepard Co. Announcer, R. Foster Reynolds. Con-	Spangied Banner." Announcer, H. J. Lepper. Integer lar schedule. WFBT, Pitman, N. J. 231 meters. 50 watts. Gloucester	Daily ex Sun, 12:30-1:30 pm, iuncheon concert; 5:10, dinner music; 6:30-7, beddime stories. Thurs, 7:30- 8:30, farm hour; 5:30-12 midnight, Cleveland Press	Sat. 3 pm. Sun, 9:30 am, 5:30 contestra. Central. 7:30 pm, church services; 8:30, orchestra. Central. (Note—The fourth part of the directory will appear	
ext. Wed, 10:45 pm, organ. Mon, Tues, Wod, Fri, 8-10, concert. Sat, 9-11 pm, dance music. Sun, 10:45- 11:80 sm, 7:30-8:45 pm, church service. Esstern.		program. Fri, 8-12, concert. Sat, 8-12 indusero, Rainbow club. Sun, 10:30 am, church service; 4:30-	Derr Medr'	