

Z E R O B E A T

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LAST MONTH'S MEETING The new meeting season of our club started off with a bang--the bang of the auctioneer's gavel at the auction, on Friday, Sept. 12th. The auction attracted well over 100 members and friends. Several groups from neighboring clubs were there with gear to auction and cash to spend. Financially the auction was a great success in that it provided \$40.00 in sorely needed funds for the treasury. Bob Gordon did a masterful job as the auctioneer. A few unwary bidders hesitated too long with their bids and found out why Bob is called "Guillotine Gavel Gordon". A refreshment committee under the guidance of Norm Forest handled the feeding of the mob and managed to make the credits equal the debits on the refreshment expenses. According to the survey of members taken last year the most popular meeting is an auction and this meeting told why. Let's have more auctions.

OCTOBER MEETING The next club meeting will be held on October 3, 1958 at the old United Church in Wilbraham, starting at 8 P.M. The feature of the evening will be a talk by VP Dick Stevens, W1QWJ. Dick will speak on "Pepping Up Old Receivers" and will try to reduce some of the problems and fears that many of us have about tackling receiver repair and modification. Dick will also have on hand the modified BC342 that he now uses and will explain its advantages. If possible he will also have his teletype lashup using the converter shown recently in QST. The refreshments will be handled by Chet Balicki, W1IVK, and his crew of volunteers.

TECHNICAL ARTICLES FOR ZERO BEAT Starting with this month's issue, we are going to try to publish a series of articles on technical subjects and construction features. This will continue as long as the interest holds and the ideas for articles we can use are in evidence. The first article will be found on a later page in this issue. While we are not trying to replace QST, we feel we may be able to help some of the members to get a little bit more out of their hobby.

CLUB BADGES The new LARGE club badges are now available from the treasurer for the nominal sum of 35¢ to cover the cost to the club. Get yours at the next meeting.

YOUR ARRL DUES Pay your ARRL dues the smart way--through the club. It will save you check and mailing costs and will put 50¢ in the club treasury at no extra cost to you. This arrangement is a result of our affiliation with the League. By the way, the League is your representative and in numbers there is strength. Let's get those non-members into the fold--then they will stop borrowing your QST's.

FOR One standard six foot enclosed rack. Call Romeo Vadna's at
SALE WMAS for price and details.

500 watt 2-meter rig using a pair of 4E27's. Complete with meters (3) built in filament transformer, and a spare pair of 4E2's. Rig can be driven at 500 watts by an 829 or pair of 6146's. Price is \$100. Call Lyle Luce at RE3-8726.

AT-1 w/cathode modulator. Yorke Phillips, K1BXE, ST 2-2867.

ARRL HUDSON The official ARRL Hudson Division convention will
DIV. CONVENTION be held this year on October 10, 11, and 12 in Albany. Further information is available to those interested by writing Wm. J. Barnes, W2CM, at P.O. Box 573, Albany, New York.

WORCESTER AREA The tornado that hit the Worcester area in June
EMERGENCY WEATHER 1953 prompted the establishment of a volunteer
NET SERVICE weather warning service to help avert as serious a disaster as that area suffered at that time. The amateurs and amateur service have been requested to help in this as they did so spectacularly after the 1933 tornado. They have requested that some of us to the west of their area help them in this work. For more information a message to A. D. McKerrrow, W1SPF, at P.O. Box 398 in Rochdale, Mass., will bring full details to you.

WACE NEWS The general manager of WACE, Ralph Robinson, W1ICW,
SERVICE tells me that the activities of our membership will be covered by WACE at any time. Just phone the station and they will be glad to air your news. With W1ICW, W1MOK, and W1JEG over there we can be sure of co-operation. Incidentally, in last month's issue of Zero Beat we incorrectly credited a piece of amateur coverage to a station other than WACE when that was the obliging station. Sorry as all get out OM, but your editor never could spell well in CAPITELLS.

EXCHANGE In keeping with the custom of many club papers, we are
PAPERS exchanging papers monthly with several clubs. Recently added to these have been the "Podunk Radio Club" of No. Brookfield whose paper we have yet to receive, and the paper "Key Klix and Splatter" of the Monachusett Amateur Radio Club of Fitchburg.

VHF CONTEST Much activity was noticed on the VHF bands during this
SEPT. 20-21 contest with a greater emphasis on 220 and 432 mc. operation than ever before. At last count, heard on the air, Bill Rosner, W1RFU, had 18 contacts on 220 mc. with 11 sections. Two meters was much in evidence with at least one station, K1CUC/I, working 15 sections including Quebec. The surprise of the contest was the strong use of the lowest 100 kc of the 2 and 6 meter bands by several of the proponents of the use of cw exclusively in those areas. One would think that if they felt so strongly about the advisability of legislation they would avoid am in these areas and give a good example to others. Or are they really thinking about those section multipliers after all?????

Words From The Workshop

By Dick Stevens, W1QWJ

Many of us are using pre WW2 or surplus receivers. The receivers are for the most part single conversion with an IF of 455 Kc. Some receivers in use have a 910 Kc IF, BC 348 type.

One great trouble in these receivers is the pulling effect on strong or moderately strong signals. Another item goes hand in hand with this trouble, and is poor stability, which often gives a rough note on c.w. This is mostly noticed on 20, 15 and 10 meters.

These troubles are caused by the use of an oscillator-mixer combination in one tube, 6K8, 6SA7, etc. In receivers using a separate oscillator-mixer tube, the effect is not as pronounced but is still present to some degree.

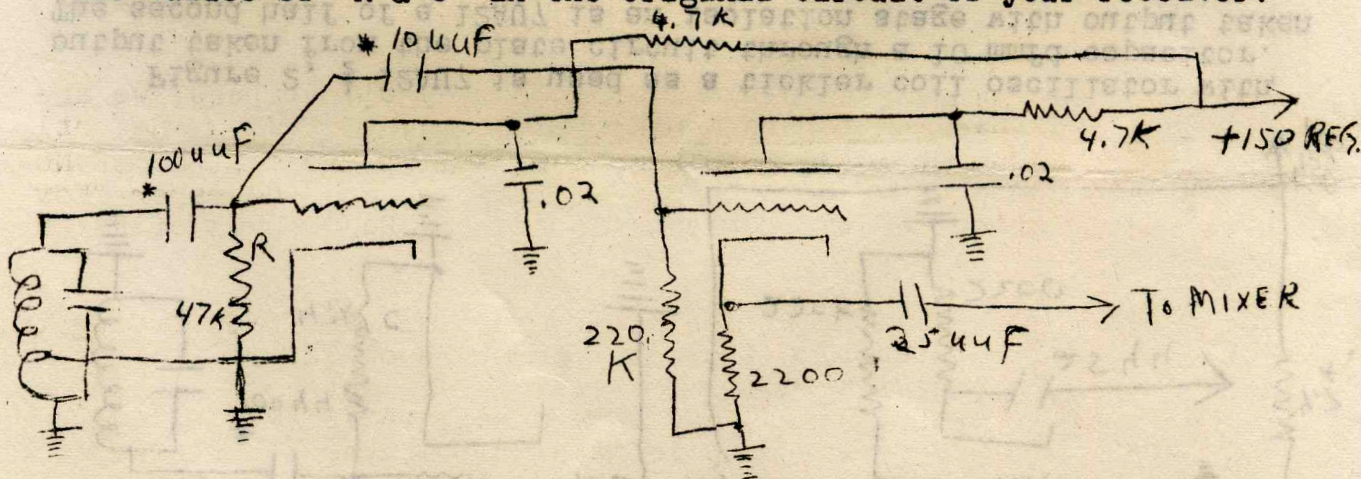
The solution to this problem is to:

1. Use separate oscillator-mixer tubes
2. Provide isolation between oscillator and mixer.

This month's issue of Zero Beat will tackle the oscillator problem and discuss the mixer in Nov. Zero Beat.

Looking about for an oscillator tube the twin triode seems a natural. The first half can be used as an oscillator and the second half as an isolation stage. Two type oscillator circuits are in general use, the Hartly tapped coil or the tickler coil oscillator.

Figure 1 shows a 12AU7 as a Hartly osc. and class A isolation stage and figure 2 shows a 12AU7 as a tickler coil osc. and a class A isolation stage. The values of "R & C" will give satisfactory operation in most circuits. We have yet to find a circuit that wouldn't work with these values of "R & C". It was found that some oscillators use a tube with slightly higher transconductance than a 12AU7, in this case a 12AT7 could be used. It would be best to use the values of "R & C" in the original circuit of your receiver.



In fig. 1, $\frac{1}{2}$ 12AU7 is a Hartly oscillator. Output from the grid circuit is coupled through a 10mmfd capacitor to the second half of the 12AU7 which is an isolation stage. Output is taken from the cathode. The capacitors marked with a * should be silver mica.

#2

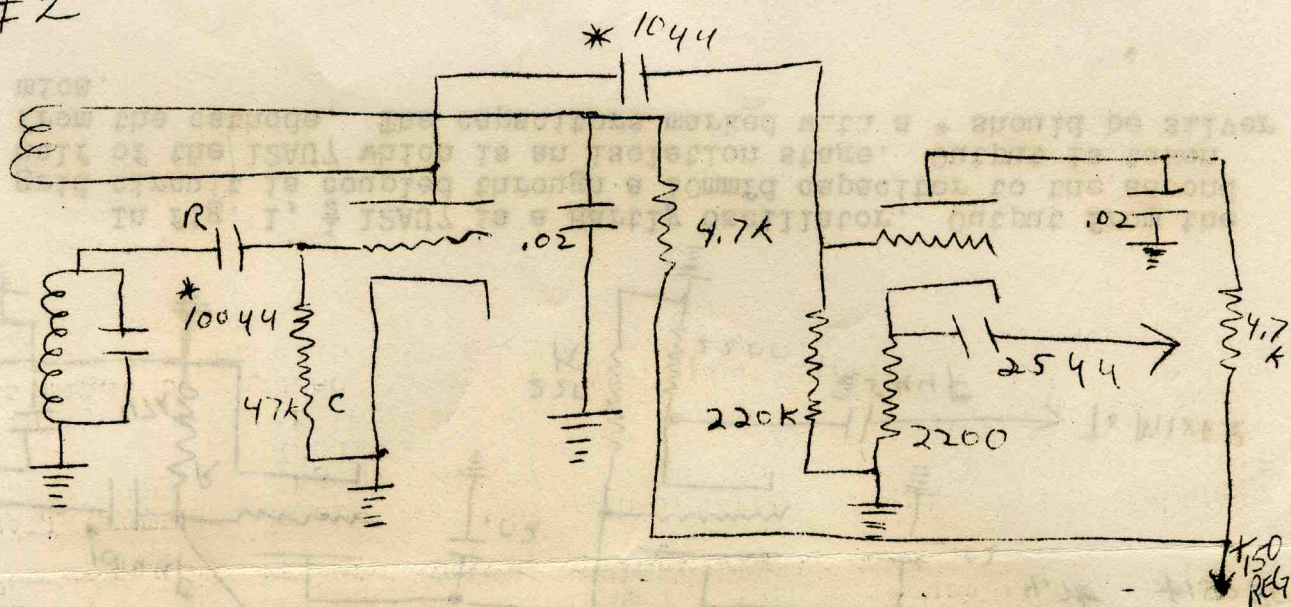
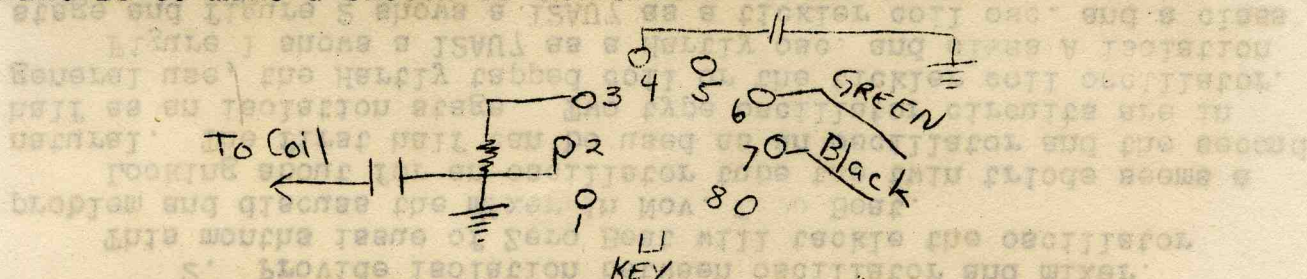


Figure 2, $\frac{1}{2}$ 12AU7 is used as a tickler coil oscillator with output taken from the plate circuit through a 10 mmfd capacitor. The second half of a 12AU7 is an isolation stage with output taken from the cathode.

If you plan to make these changes mark and identify the leads corresponding to grid, plate and cathode in the original wiring. At times the resistors and capacitors will be in the oscillator coil compartment, and at times right on the tube socket pins. Another hint is to make a sketch of the bottom of the socket.



Such a sketch might appear as above. After this has been done, make a small plate and mount a 9 pin socket for the 12AU7. The socket and plate will mount in place of the old socket. Connect up the grid, plate, and cathode leads to the 12AU7, connect up 2nd half of the 12AU7 as an isolation amp. and away you go.

It is difficult to give a step by step procedure in a general way that will work for all Model receivers. Look over your problem make a sketch of the original wiring and you will find it not too difficult.

Alignment is a problem. The changes discussed will cause a change in oscillator frequency. Not as large a change as you might think. If you have a 100 kc oscillator, use this to set the frequency. If you have access to a BC-221 this will do.

NOVEMBER
MEETING

Just an advance blurb of our November meeting to whet your appetite. The program chairman advises me that he has scheduled Byron Goodman, Technical Editor of QST to give a talk on his new receiver design soon to appear in QST. By has 35mm slides of phases of construction and we hope to have the completed receiver there.

PUZZLER'S The answers to last month's queries:

CORNER #1. The most coins and bill smaller in value than a twenty dollar bill that you can have and yet not be able to change a twenty dollar bill is \$24.19. You would have a ten, a five, and four two dollar bills, three quarters, four dimes and four pennies.

 #2. To bring back 7 gallons using only the 5 and 9 gallon cans---Fill the 5 and empty it into the 9. Fill the 5 and from it fill the 9 leaving one gallon in the 5. Empty the 9 and put the one gallon into the 9 from the 5. Fill the 5 and put it into the 9. Fill the 5 and from it fill the 9 leaving two gallons in the 5. Drain the 9 and put the two gallons into it. Fill the 5 and add it to the two in the 9. Net-----7 gallons.

And now to this month's attempts. We have one old timer and one relatively new one. First to the oldy--

 #1. A man has a fox, a goose, and a bundle of grain when he comes to a river to cross. Available is a boat large enough to carry himself and one of his possessions at one time. He must cross with the fox, the goose, and the grain but must not let the fox alone with the goose else it will eat the goose. Also he must not let the goose with the grain or the grain will be eaten. How does he get them across unharmed?

 #2. This problem in visualization was sent in by Bill Rosner, W1RFU, with his answers to last month's problems. Shown are the top and front views of a solid object. Draw the side view. It contains no curves or dotted lines (they would represent hidden edges of lines).



Top View



Front View



Side View

Mail your answers and any problems for future issues to the editor, Tom Shea, 383 El Paso Street, Springfield 4, Mass.

CALL LETTER There has been much interest of late in the purchas-
LAPEL PINS ing by members of lapelpins with call letters on them.
 Inquiries to several dealers brought forth an oppor-
 tunity to save on their cost if they are bought in a quantity such
 as might be ordered through a club. Chet Balicki, W1IVK, is taking
 orders for the club and would be pleased to give you all the
 details at the meeting.