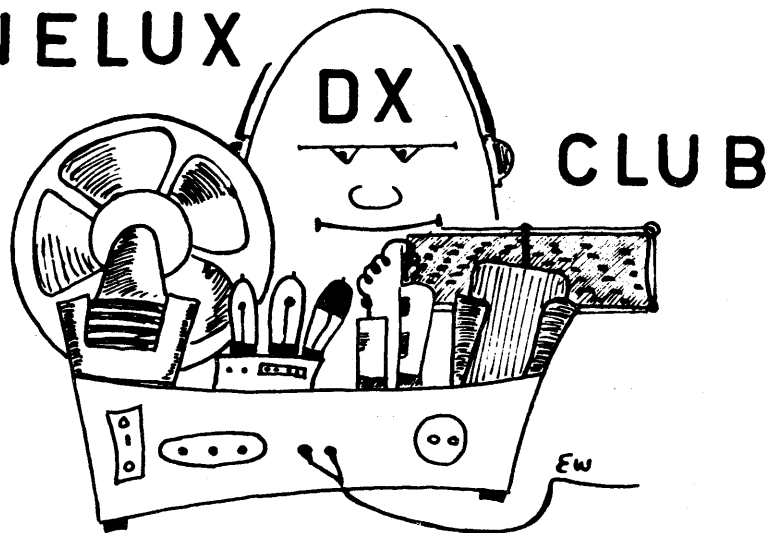


# BENELUX



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## OUR RECEIVER

Many people talk about the Q-multiplier without knowing what the gadget really is, how it works, where it is employed, or whether it can be added to a normal radio set. Well, a Q-multiplier is used to boost the "Q", or circuit quality of a circuit. If the peak of the resonance frequency of a circuit is made sharper, it also becomes much narrower. So with the help of a Q-multiplier we can obtain much greater selectivity, whilst it can also be used to amplify a narrow band of frequencies. Of course the drawback is a loss in audio quality, but in short wave broadcasting, for example, the undisturbed intelligibility is well worth it.

Installing a Q-multiplier means that some tuned circuit has to be boosted, and there is really only one choice as to which circuit it will be, because the receiver is equipped with a range of circuits tuned to a fixed frequency, called the IF or Intermediate frequency. Most IF-circuits are tuned in the immediate vicinity of 450 kilocycles, and so many Q-multiplier circuits are designed for operation in the 450 kc IF-range.

Now, how does it operate? Well, quite simply by making use of the well-known feedback principle. Imagine we have a normal mains receiver equipped with tubes. Now, the IF stage has the IF amplifier tube, and when we pick a small portion of the amplified signal from the anode of the tube, and bring it back to the input where it was originally injected, it will be given extra amplification.

Also well-known - apart from the so-called POSITIVE feedback employed in the Q-multiplier circuit - is the NEGATIVE feedback from the AVC (Automatic Volume Control) or AGC (Automatic Gain Control) circuits. NEGATIVE feedback decreases the amplification of the signal, whilst POSITIVE feedback results in extra amplification and ultimately - when too much signal is involved - in oscillation.

A simple way in which to achieve Q-multiplication and decrease of bandwidth is by fixing a wire to the anode of the IF amplifier. Bringing the wire in the vicinity of the control grid of the tube will give the desired effect, but is not easily made operational. A better method is to fix a 25 micro-microfarad (25 pf) ceramic capacitor between the plate and control grid of the last IF tube before the detector. Control of regeneration can be done by varying the cathode resistor of the tube, or by varying its screen grid voltage.

It is also possible to construct a loose unit to house the Q-multiplier. A tuned circuit is made regenerative - and by the way "regenerative feedback" simply means "positive feedback" - A tuned circuit is made regenerative to increase its "Q", and is coupled into the IF stage of a receiver. The frequency of the separate circuit can be varied slightly by using a variable capacitor, and regeneration can be controlled in the way already explained. Thus, the Q-multiplier will have two controls: frequency and regeneration. The frequency control enables us to vary the sharp peak somewhere in the 9 kc passband of the receiver.

Figure 1 on next page shows the principle of an IF circuit whilst figure 2 shows you the same circuit after modification.

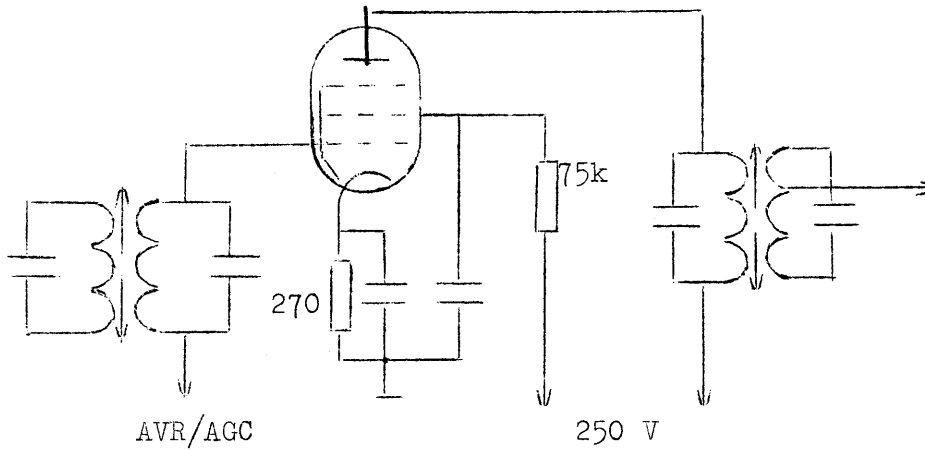


fig. 1

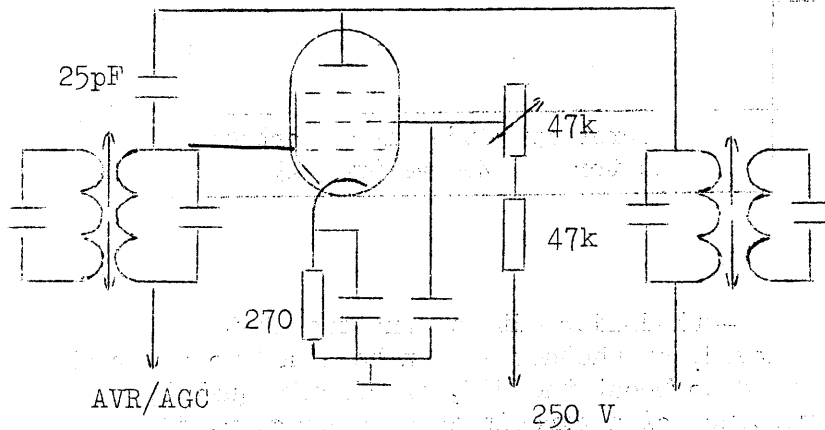


fig. 2

JV/BL

VISITING ... THE ORGANISATION DE RADIODIFFUSION ET TELEVISION FRANCAISE

Jochen Maurer

Recently I was able to pay a one-week visit to the french capital and thereby took the occasion to have a short (i.e. two-hours long) rendez-vous with the german speaking department. I say "german speaking", because half of the people there are french nationals or former germans. The ORTF-building was officially inaugurated at the end of 1963 and is situated at the avenue du President Kennedy (formerly Passy) not far from the banks of the Seine river. According to a french documentation it is the most important Radio-House of the world. The people in the building call it the "master piece". Here the programs of three different national channels, as well as those of the overseas and foreign language transmissions are prepared. However it is only a radio broadcasting house and you won't find television commodities and installations there except one or two studios, this because TV needs much more space.

The construction shape is like an omega (or sign of Ohm)-the opening though is filled out by the "salles publiques". There are three of them where amongst childrens' representations also opera and concert performances are staged, first class by the way and costing nearly nothing. In the outer ring of the building one can find the bureaus, annexed thereto - one storeyed and well protected against outdoor noise- the studios, thereafter the court accessible also for cars, and at last the annular part of the building with working places for the technicians and - not quite in the middle - the "tower of the collections". Here all the records and tapes are conserved.

There are 1100 bureaus and 2000 collaborators working according to their job at different times of the day and night. So the young german journalist who is to care for the daily political commentry arrives at 4 or 5 p.m. staying probably no longer than four or five hours at most. Yet one may not forget that his working schedule is not definitely fixed and that he has to read the head articles and political comments of all important at least german and french papers at home before coming to the ORTF.

Well, I was allowed to follow the whole german program in the control-room from where also

the tape broadcasts go directly on the air, while the announcing-room is next to it divided by a big window and - no door, but a bended passage with completely sound-proof walls. So not a single tone - not even a pistol shot - from the control-room can reach the microphone. For the German listeners it may be interesting to hear that I criticised the broadcast producers there for featuring a program for south German intellectuals only (hi). So I proposed 1) to bring the subjects of this broadcast on a broader basis, e.g. by introducing a DX-program and 2) to use as quickly as possible the far reaching short-waves again, as there is sometimes a terrible reception on the MW-outlet from Straszburg. By the way during and after the recent SW tests of the ORTF by far the most reception reports came from Germany which however seems not to be reflected in the results of the "lottery drawing".

I am sorry that I could not report on short-waves in particular, simply because I did not have more time at hand. As you know short-waves are not much popular in France itself, one reason as well why the program directors do not allow a DX-program. As I was told they regard it as wasting of time. My mind: here is a future task of a great DX-Club offensive, for a common campaign

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RADIO PROPAGATION FORECASTS

JV

Some standard frequency and time signal stations don't provide us only with the exact time and operate on exact frequencies, but also give us the so-called short term propagation conditions. Here now is the code for interpreting propagation warnings issued by the American WWV stations, which can be found on 2.5, 5, 10, 20 and 25 megacycles. Which of them is audible on an arbitrary moment depends on the listening time. Here in Europe, the 10 and 15 mc/s are regularly received well. Short term propagation conditions are issued four times a day, at 05.00, 12.00, 17.00 and 23.00 hours GMT.

These forecasts give estimates of radio quality over the North Atlantic transmission path, but are generally applicable to other paths, particularly during good propagation conditions. They are repeated every five minutes by WWV in morse code. The forecasts consist of a letter and number. The number is the forecast, while the letter indicates the quality of radio propagation conditions prevailing at the time the prediction is issued. The numbers are between one and nine. One is useless, nine is excellent, 3 is poor, 5 is fair, 7 is good.

The prediction itself can consist of a W, which means "Warning", disturbed conditions, or a U for "Unsettled" and at last a N which indicates "Normal" conditions.

These short term predictions can be very useful for DX-ers and short wave listeners making it a habit to control the prevailing general propagation conditions before actually trying to tune into a weak or distant station.

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EDITORIAL MISCELLANY

Special warning: to all DX-ers in the Americas and the British Isles.

It is my job to read a large number of reception reports every day. However it has struck me that since the English have British Summer Time and the American have Daylight Saving time many reports are given with a wrong GMT-time. So be sure you mention the exact GMT-time. To make it clear: BST = GMT +1; EDST = GMT -4; CDST = GMT -5; MDST = GMT -6 and PDST = GMT -7

Another photograph of a BDXC-member is to be found in Radio Japan News of June, 1965. It is our member Mr. L. Krijger, Emmalaan 8, Geldrop, The Netherlands

Many thanks to all contributors who helped us to compose this bulletin. Special thanks to Jochen Maurer, 58 Hagen-Haspe, Salzburger Str. 4. Germany for his article on the ORTF. Please keep in mind that none of us is a lay-outman by profession. Don't fear the critics of the public. It does not matter how you do this job, but you may reckon there will be critics. We hope many articles of your hand will follow.

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NEWS FROM RADIO NEDERLAND

There is not too much to tell you. Only a few frequency changes. Now the English and Dutch programmes relayed via Bonaire 2000-2050 and 2100-2220 respectively can be heard on a frequency of 15220 kc/s. It is expected that this frequency can be used for years together. The 2315 GMT Linktransmission now on 15380 and 9715 kc/s.