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Radio Frequency (RF) Realying Facts (RF) and Redeeming Features (RF) to real Friends (RF) for a Rosy Future (RF).

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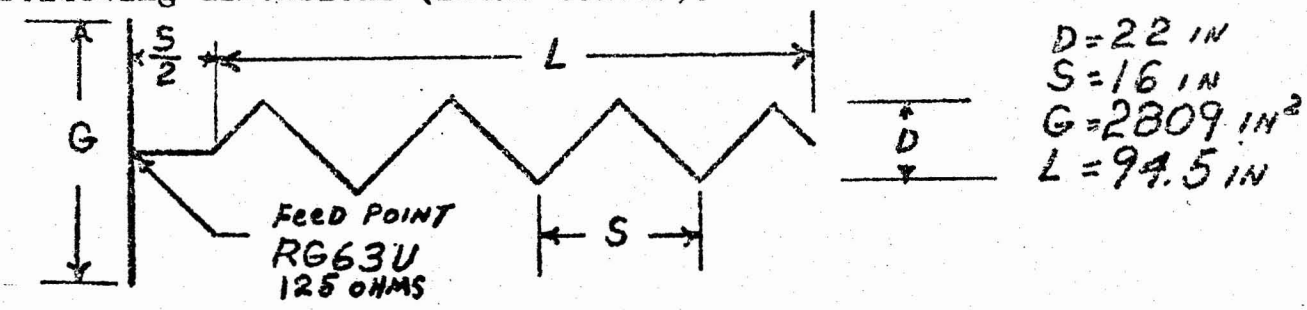
Due to technically inexperienced help , among other things, the article on antennae by K6BIG was just short of being legible. For that matter, the whole paper was in a like situation so we will reprint portions of it this issue. The antenna article is of particular interest.

HELICAL BEAM ANTENNAS

Most UHF and VHF antennas are either vertically or horizontally polarized (plane Polarization). However, circularly polarized antennas have interesting characteristics which may be useful for amateur work. A circularly polarized wave has it's energy divided equally between a vertically polarized component and a horizontally polarized component, the two being 90 degrees out of phase. The circularly polarized wave may be either left or right handed depending upon whether the vertically polarized component leads or lags the horizontal component. The direction of electrical twist (right or left handed) depends upon the direction in which the helix is wound. A circularly polarized antenna will respond to any plane polarized wave whether horizontally, vertically or diagonally polarized. Also a circular polarized wave can be received on any plane polarized antenna regardless of the polarization of the latter. On two meters this could reduce flutter and increase readability when working fixed station to mobile. When using circular polarization on both ends of the circuit, however, both must be right handed or left handed. This offers interesting possibilities with regard to reduction of QRM. To date there has been no standardizaion of the twist for amateur work. The simplest form for a directional beam antenna having circular polarization is the helical beam polularized by W8JK. The antenna consists of a helix working against a ground plane and fed with a coaxial line. When the dimensions are optimized the characteristics are such as to qualify it as a broad band antenna. An optimized antenna will show little variation of the main lobe, about 50 degrees, an a fairly uniform feed point impedance of about I25 ohms over a frequency range of I.7 to I with VSWR of I.7 to I.8 to I. The construction of the ground screen or reflector for the antenna can be made from galvanized wire or copper screen fastened to a metal or wooden frame. A small sheet metal ground plate equal to D/2 should be fastened to the center of the screen an soldered to it. The outer conductor of the feed line (RG65U) is fastened to this plate. The inner conductor goes through a hole in the plate and ties to the helix. The helix consists of six full turns of tubing. The

start of the helix is spaced a distance of S/2 from the ground screen to the start of the helix. It will be necessary to support the helix on two or four longerons to achieve sufficient strength. A highly useful VHF helical beam giving good gain over the complete frequency range from 144MC to 225MC may be constructed using the following dimensions (180MC center).




Tubing OD 1" (⅛" copper or aluminum tubing seems to work well). The D & S dimensions are to the center of the tubing. These dimensions should be held rather closely. On a 144MC the beam width will be about 60 degrees with a gain of approximately 11 db over a non directional helix.. For high band TV coverage the gain will be 12 to 14 db with a beam width of about 30 degrees. On the 220MC amateur band the beam width will be about 40 degrees with approximately 15 db gain. Ref: Radio Handbook 13th Ed.

QSX
by
Mae Dae

THE BIG WAIT..... Seems to me the hardest part of getting an amateur license is waiting for a small bit of paper. A small bit of paper that without which you can't turn knobs, flick switches, burn out tubes, check this and that, yak about the weather and signals and of all things you can't even try to send CQD's. The Big Wait goes so ethin like this.....1st week-goes by pretty fast 2nd week can't help but wonder...3rd week maybe someone was on the ball...4th week the mailman sees you every day .....5th week will the mail ever come and after it does, why did it?....6th week poor mailman starts getting hard looks and no smiles....7th week wonder why I ever paid my income tax. Can't tell you about the 8th week or the small bit of paper cause neither has arrived yet. Darn mailman! 33's for now Mae Dae

SUPER SIX
by
K6COE

Well, another month has rolled around and nothing very exciting happened. 50 mc has been pretty dead of late. It is interesting to note that when we don(t have much DX, the interest in the band drops off. Just let some DX come in and everyone is on. Another 50mc first has just been reported;W8LPD worked VO2PL and ZE2JP in Northern and southern Rhodesia respectively. Recieved a nice letter from Joe Burke (K6IBY). He is in Benton Penn. now and is having a good time but hasn't been working much DX. He is up on a high mountain and says he will be on 8 hours a day and will look for the gang out here at noon our time. He would like to hear from any of the gang--Joe Burke PO Box 311 Benton Penn. Would like to see more at the CD drills. 73 Bob

The next meeting of the Orange County Amateur Radio Club will be held March 20 at 1930 at 12502 Placentia, Orange. W6ICN will present a talk and demonstration on new National Guard Equipment. Refreshments and door prizes as usual.

RF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