THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY
PO BOX 1838 WOLLONGONG NSW 2500

MAY 1982

MEETINGS ARE HELD ON THE SECOND MONDAY OF EACH MONTH (EXCEPT JANUARY) AT 7.30 P.M. IN THE CONGREGATIONAL HALL, CORNER OF COOMBE AND MARKET STREETS, WOLLONGONG. VISITORS ARE WELCOME TO ATTEND MEETINGS.

THE MAY MEETING

The May meeting of the Illawarra Amateur Radio Society will be held on Monday 10th May 1982, at 7.30 p.m. in the Congregational Hall, Wollongong. It is hoped to have a visiting speaker for this meeting, and as usual a raffle will be held .... so bring your money with you.

Tea, coffee and biscuits will be served at the conclusion of the meeting.

LAST MONTH'S MEETING

There was a good turnout of members for the meeting, which featured a most interesting talk by Ray O'Grady (the International Chairman of Satcom), on Police Communications. He proved to be a very entertaining speaker. The raffle of a set of screwdrivers was won by Mike VK2VXS, second prize of a multiple power outlet being won by Jock VK2JT. An auction of gear from VK2MT was conducted by our auctioneer Denis VK2DMR.

REPEATER DAMAGE

A sudden sharp storm at Robertson about 3.0 p.m. on Sunday 25th April has resulted in the Mt. Murray repeater being temporarily off the air. The violence of the storm can be gauged by the fact that the ten inch R.S.J. was bent, allowing the mast to fall. The antenna was broken when it hit the ground.

It is intended to re-erect the original pipe mast as soon as possible as a temporary measure until permanent repairs can be made. The Repeater Committee has this in hand.

APOLOGIES

These are due to Dave VK2PBP, for mis-spelling his name in last month's Propagator. Sorry Dave, now we know it's MYERS without the extra E and we hope to eradicate the error in future. Also sorry Paul VK2DZJ for the wrong callsign.

NEWS FROM THE WEST

VK6FH has advised that D.O.C. permission has been granted for the use of 3530 KHz as well as 146.6 MHz for the retransmission of news. He goes on to advise that there have been more reports of reception of the 3.5 MHz transmission than that of 146.6 MHz transmission, which would indicate that a number of RTTYers in Western Australia find the news transmission of interest. Congratulations are in order for the initiative taken. It is good also to be able to report interstate news items. Please let us have more.

The above paragraph is from the weekly broadcast of the Australian National Amateur Radio Teleprinter Society, VK2TTY. Further extracts from the broadcast elsewhere in this issue of the Propagator.

FROM THE WEEKLY BROADCAST OF VK2TTY THE OFFICIAL STATION OF THE AUSTRALIAN NATIONAL AMATEUR RADIO TELEPRINTER SOCIETY. VK2TTY OPERATES ON THE FOLLOWING FREQUENCIES AND AT THE FOLLOWING TIMES UNLESS CIRCUMSTANCES DEMAND OTHERWISE.

FREQ.(MHZ)	TIME (UTC)
3.545	0930
7.045	0030
14095 (WEST)	0030
14.090 (NORTH)	0030
21.095 (NORTH)	0130 (DX NEWS AND SATELLITE REPORTS ONLY)
146.600	0030, 0930

CORRESPONDENCE SHOULD BE ADDRESSED TO
A.N.A.R.T.S.,
P.O. BOX 860,
CROWS NEST N.S.W. 2065

FOR A QSL CARD FROM VK2TTY PLEASE SEND A COPY OF THIS BROADCAST TO THE BROADCAST OFFICER AT THE ABOVE ADDRESS, STATING THE FREQUENCY AND THE TIME OF RECEPTION.

THIS IS VK2TTY WITH NEWS BULLETIN NR 820418/4 FOR APRIL 18TH 1982.

31 METRE BAND

AS LONG AS SO FEW CW AND RTTY OPERATORS ARE USING THE BAND OR AT LEAST THATS HOW IT SEEMS IN SYDNEY, THE CALL THAT IT SHOULD BE USED EXCLUSIVELY FOR RTTY AND CW HARDLY WARRANTS THE SUPPORT THE PROPOSITION IS GETTING. AS REPORTED SOME TIME AGO THE BAND IS AN EXCELLENT ONE BOTH FOR RELIABLE DX AND ALSO FOR INTERSTATE CONTACTS. EUROPEANS AND AMERICAN STATIONS ARE HEARD AT THE SAME TIME.

****

FOR SALE

YAESU SHACK SELL-OUT

FT-101ZD Transceiver,with Fan and YD:148 microphone and full set of spare valves $700
FL-2100Z 1200 watt lin ear amplifier $460
FC-107 Antenna Tuner $150

All excellent condition.All 12 months old.With original boxes,and receipts
All with WARC Bands.
The lot for $1200,including patch cords,etc. All prices negotiable.
Legitimate and urgent need to sell.

Phone 84 1386, ask for Robert.

FOR SALE

FT207R Synthesized 2m hand held transciever,with battery charger. $150
Hygain TH6DXX 6 element tri-band yagi,with balun.Partly assembled but never used. $200
S.B.E. converted CB covers 28.340Mhz to 28.630Mhz U.S.B. and C.W. $80

Phone 322844 or 289311 (leave message)

Choose the right f.e.t.

Blind use of any old f.e.t. can result in disastrous circuit performance and possibly catastrophic failure of a device. These notes should help you select an appropriate device for the six applications illustrated.

by T. Jones

Siliconix Ltd

Constant current source

In one of the lesser-used applications, the f.e.t. approaches the ideal current source. Operation in the pinch-off (see Fig. 1) region results in virtually-constant I_D for large variations in V_{DS} and constant V_{GS}. This is due to the low output conductance (g_{oss}) of the f.e.t. defined by $\Delta I_D/\Delta V_{DS}$. It is related to the more commonly used term "dynamic impedance" (Z_D) of a current source by $Z_D = 1/g_{oss}$. For good regulation g_{oss} should be as low as possible.

Fig. 2 shows a basic current source. Resistor R_S is used to set the value of V_{GS} and thus the value of constant I_D. For a given I_D, the required value of V_{GS} is

$$V_{GS} \approx V_p\left(1-\sqrt{\frac{I_D}{I_{DSS}}}\right)$$

which enables R_S to be calculated from $R_S = V_{GS}/I_D$.

If R_S is made variable, a wide range of V_p and I_{DSS} values can be accommodated provided $I_{DSS} \not< I_D$. However, if a nominal I_D is required and trimming of R_S is not practical, choose an f.e.t. with small "data sheet" spreads of V_p and I_{DSS}.

The resultant dynamic impedance of Fig. 2 is

$$Z_D = \frac{1+R_S G_{fs}}{g_{oss}}$$

and therefore high g_{oss} devices are desirable.

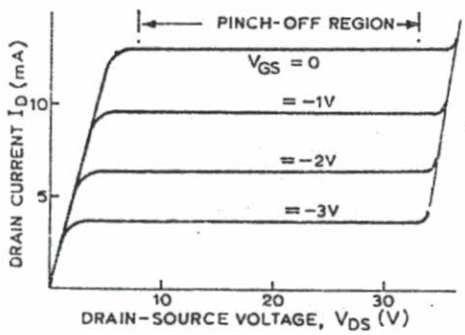


Figure 1

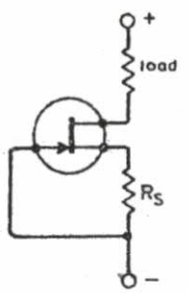


Figure 2

Another requirement for good regulation is that the drain-to-source voltage V_{DS} is maintained above the pinch-off voltage, otherwise g_{oss} will be greatly increased (and dynamic impedance reduced). Ideally V_{DS} should be at least twice the value of V_p. Therefore, for correct operation the total voltage across the f.e.t. and R_S should be a minimum of $2V_p + V_{GS}$.

In certain circumstances the permitted voltage drop across the current source may be limited. If so, choose an f.e.t. with a low V_p.

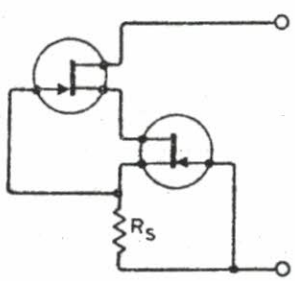


Figure 3

Fig. 3 shows an improved current source using two cascaded f.e.ts. The resulting dynamic impedance is

$$Z_D = \frac{g_{fs}(1+R_S g_{fs})}{g_{oss1} g_{oss2}}$$

Analogue switch

Figure shows an n-channel junction f.e.t. in a basic analogue switch configuration. The on-resistance r_{DS} should be as low as possible if a significant error in the sampled voltage is to be avoided. The error due to r_{DS} (at low frequency) is

$$e_{in.}\frac{R_S+r_{DS}}{R_S+R_L+r_{DS}},$$

where R_S is the signal source impedance and R_L the load impedance.

In the off condition, the f.e.t. exhibits a certain amount of drain-to-source leakage current ($I_{D\,off}$) which gives rise to an error voltage developed across R_L. The error due to $I_{D\,off}$ at low frequency is $I_{D\,off}.R_L$. For this reason, $I_{D\,off}$ must be correctly specified.

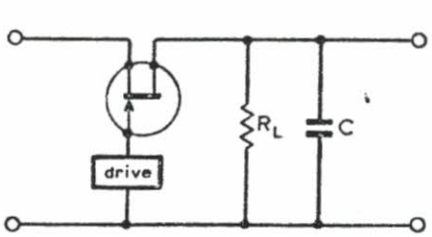


Figure 4

To turn the f.e.t. off, the gate must be driven negative with respect to the source by at least the value of V_p. Thus the required drive voltage is

$$V_{G(min)} = V_p + V_{analogue(pk)}$$

If the available drive voltage is limited, use low V_p devices.

Voltage-controlled resistor

Where operated with very low values of V_{DS}, f.e.ts exhibit predictable changes in R_{DS} for given changes in V_{GS}. Under such conditions, f.e.ts can be considered as a resistor whose value is determined by the value of the applied V_{GS}. Hence the term voltage-controlled resistor.

This characteristic makes the f.e.t. an ideal candidate for potential divider, attenuator and a.g.c. applications. Circuit shows an n-channel junction device used in a basic potential divider. Here, the R_{DS} should be significantly lower than R_L. The R_{DS} can be defined as $R_{DS0}/(1-V_{GS}/V_p)$, where $R_{DS0} = R_{DS}$ at $V_{GS} = 0$.

As can be seen in the graph, the output characteristics are extremely linear in the region $|V_{DS}| \ll |V_p|$. This bilateral characteristic can be used to advantage for the a.g.c. of low-level a.c. signals. If, however, V_{DS} exceeds $0.1\,V_p$, the output characteristics becomes markedly non-linear.

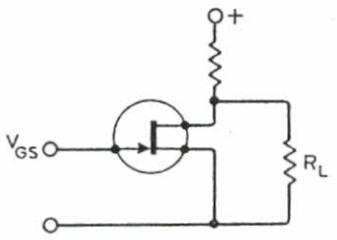


Figure 5

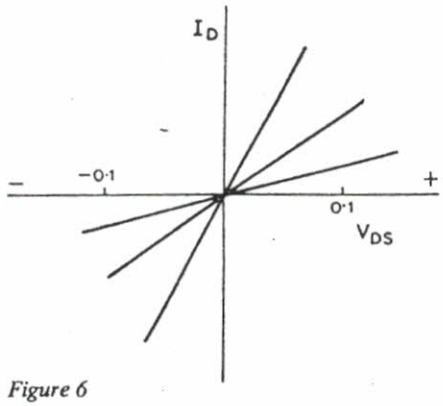


Figure 6

Low frequency amplifier

Under normal amplifier operation, the gate/source junction is a reverse-biased diode which presents a high impedance to the input signal. It is this high input impedance which makes the f.e.t. superior to its bipolar counterpart if loading of the input signal is to be avoided. The input impedance can be characterized by the gate current I_G which should be specified at the V_{DG} and I_D required for normal operation.

Circuit shows the basic common-source amplifier. The gain is

$$\frac{g_{fs}.R_L}{1+g_{fs}.R_S}\ .$$

and if R_S is decoupled at the frequencies in question by a suitable capacitor, it becomes $\approx g_{fs}R_L$.

Graph shows a typical transfer characteristic. As g_{fs} is the slope of the characteristic at any given point, g_{fs} is a maximum when $V_{GS} = 0$. The g_{fs} at any other point on the curve can be found from $g_{fs} \doteq g_{fs0}(1-V_{gs}/V_p)$ or $g_{fs0}/\sqrt{I_{DSS}/I_D}$, where $g_{fs0} = g_{fs}$ at $V_{gs} = 0$ and $I_{DSS} = I_D$ at $V_{gs} = 0$.

Drain current decreases with increasing temperature by approximately 0.7% degC. This phenomenon can result in undesirable variations in stage gain. Fortunately, this drift can be minimized by another effect which causes the effective V_{GS} to decrease by approximately 2.2mV/degC. This latter phenomenon causes I_D to increase with increasing temperature. Minimal d.c. drift will occur at the point where the two effects cancel each other. This point can be defined as $I_{DZ} = I_{DSS}(0.63/V_p)^2$, where $I_{DZ} = I_D$ for zero d.c. drift. High-V_p devices must be biased to low values of I_D, with a resultant drop in g_{fs}.

For low-noise applications, care should be taken in specifying the noise performance of the device. The major contribution of noise is from $1/f$ noise. This is normally characterized by manufacturers as "en" (short-circuit equivalent noise voltage in $nV/\sqrt{Hz}$) at various spot frequencies. However, for high signal-source impedances, the effect of noise current (i_n) becomes significant; since, at low frequencies, i_n is a function of gate leakage current, low I_G is desirable. Both i_n and I_G should be specified at the operating values of $V_{DS}+I_D$.

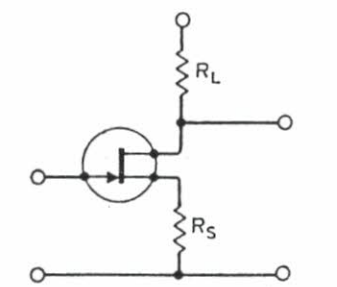


Figure 7

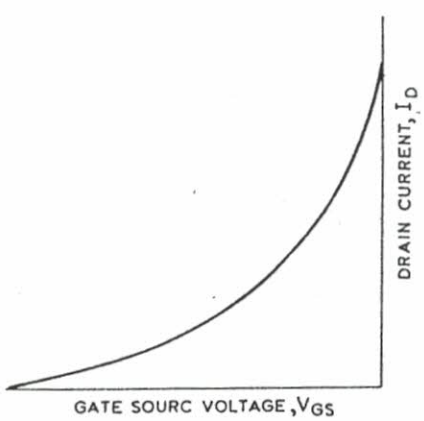


Figure 8

Electrometer circuit

The high input impedance of the f.e.t. makes it the ideal choice for electrometer applications. The basic electrometer circuit shown uses two and an inexpensive operational amplifier. Transistor Tr_1 is a source follower with Tr_2 acting as a dynamic source impedance. Resistor R_f sets the measuring range and R_1 through R_3 provide intermediate scaling. Choose Tr_1 to have low I_{GSS}, and the I_{DSS} of Tr_1 and Tr_2 to be matched as closely as possible; although R_4 will null some mismatch in addition to nulling the offset of the op-amp. Typically, Tr_1 and Tr_2 would be a dual f.e.t.

The value of the feedback resistor (R_f) is the reciprocal of the measuring range, with a scaling factor of unity.

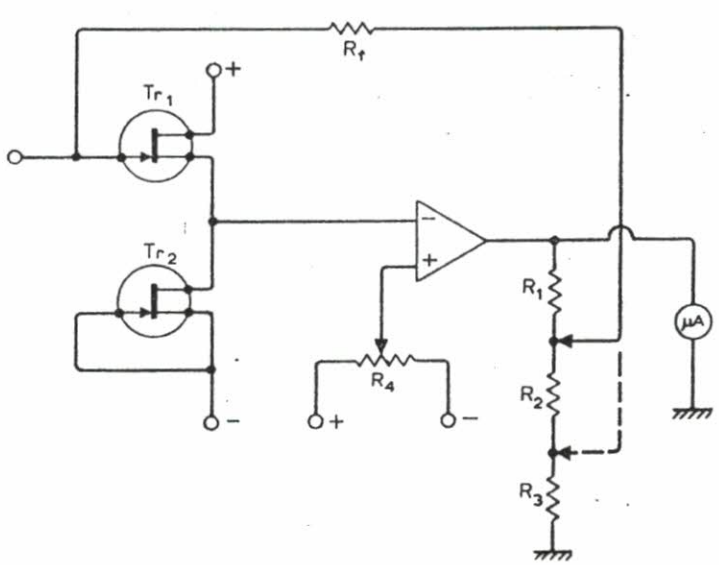


Figure 9

ILLAWARRA AMATEUR RADIO SOCIETY

CASH FLOW STATEMENT

PERIOD ENDING 28.2.81			PERIOD ENDING 28.2.82	
	456.35	CASH BOOK BALANCE AT START		952.01
		PLUS RECEIPTS FOR PERIOD		
627.00		Newsletter Subscriptions	564.00	
1,062.29		Sales - Components and Publications	1,074.19	
665.91		Raffles	554.10	
130.00		Auction Sale Commission	346.00	
22.00		Donations	5.00	
-		Hargraves Award	58.60	
20.00		Unpresented Cheque	20.00	
-		Cash payment for supper	57.99	
	2,527.20			2,679.88
	2,983.55			3,631.89
		LESS PAYMENT FOR PERIOD		
249.95		Newsletter Printing	546.19	
159.89		Newsletter Postage	225.92	
150.00		Printing Machine	-	
432.20		Purchase of Resale Items	898.50	
118.57		Repeater Costs	695.15	
-		Hargraves Award	334.96	
482.00		Raffle Prizes Costs	201.73	
92.60		Conference of Clubs	25.00	
-		Q.S.L. Costs	73.50	
15.00		W.I.A.		
24.00		Licences	47.00	
27.00		WICEN	-	
159.50		Hall Hire	250.00	
92.73		Supper Costs	57.99	
6.60		Bank Charges	11.38	
21.50		Other Items	109.75	
	2,031.54	TOTAL PAYMENTS		3,477.07
	$952.01	CASH BOOK BALANCE AT END		154.82

G.B. CUTHBERT VK2ZHU
TREASURER

ILLAWARRA AMATEUR RADIO SOCIETY

INCOME STATEMENT

PERIOD ENDING 28.2.81			PERIOD ENDING 28.2.82	
		GENERAL INCOME		
627.00		Newsletter Subscriptions	564.00	
665.91		Raffles	554.10	
22.00		Donations	5.00	
130.00		Auction Sale	346.00	
-		Hargraves Award	58.60	
20.00		Unpresented Cheque	20.00	
		Cash For Supper	57.99	
	1,464.91	TOTAL GENERAL INCOME		1,605.69
		LESS EXPENSES		
399.95		Newsletter Printing	546.19	
159.89		Newsletter Postage	225.92	
482.00		Raffle Prizes	201.73	
118.57		Repeater Costs	695.15	
159.50		Hall Hire	250.00	
279.43		Miscellaneous	324.62	
		Hargraves Award	334.96	
	1,599.34	TOTAL GENERAL EXPENSES		2,578.57
	-134.43	NET GENERAL INCOME		-972.88
1,062.29		Sales From Store	1,074.19	
432.20		Less cost of Purchases	898.50	
	630.09	NET PROFIT ON SALES		175.69
	495.66	NET INCOME		-797.19
		VALUATION OF STOCK		
		Stock (At Cost)		
1,709.80		At Start of Period	1,145.32	
432.20		Cost of New Purchases	898.50	
	2,142.00			2,043.82
	996.68	Cost of Stock Sole		977.51
		Stock (At cost)		
	1,145.32	At End of Period		1,066.31

NOTE 1: "Cost of stock sold" is "Sales from store" x 0.91 to allow for our 10% profit on sales.

NOTE 2: A Stock Take is recommended to adjust value of stock on hand.

G B Cuthbert VK2ZHU
TREASURER

AXIOMS

Amateur Radio and the War.

If anyone wants an interesting book to read, I would have to recommend "Most Secret War" by R. V. Jones (first published 1978 by Hamish Hamilton; my copy is the paperback Coronet edition, 1979). It is an account of British Scientific Intelligence between 1939 and 1945, with particular reference to radionavigation systems, radar, and the V weapons. Some of the material in the book appeared in the T.V. series "The Secret War".

The book contains, in its 702 pages, two references to Amateur Radio, and both should be of particular interest to politicians and amateurs alike.

On the British side, Jones says "One day I was talking to a relative newcomer to Signals Intellignece, Flight Lieutenant Rowley Scott-Farnie... an enthusiastic radio amateur, he had joined the R.A.F. Signals Intelligence Service at the outbreak of war. Incidentally, our community of radio amateurs in Britain was to prove an invaluable reserve, both in Signals Intelligence and in Signals proper, as well as furnishing many of the staff for our rapidly increasing number of radar stations."

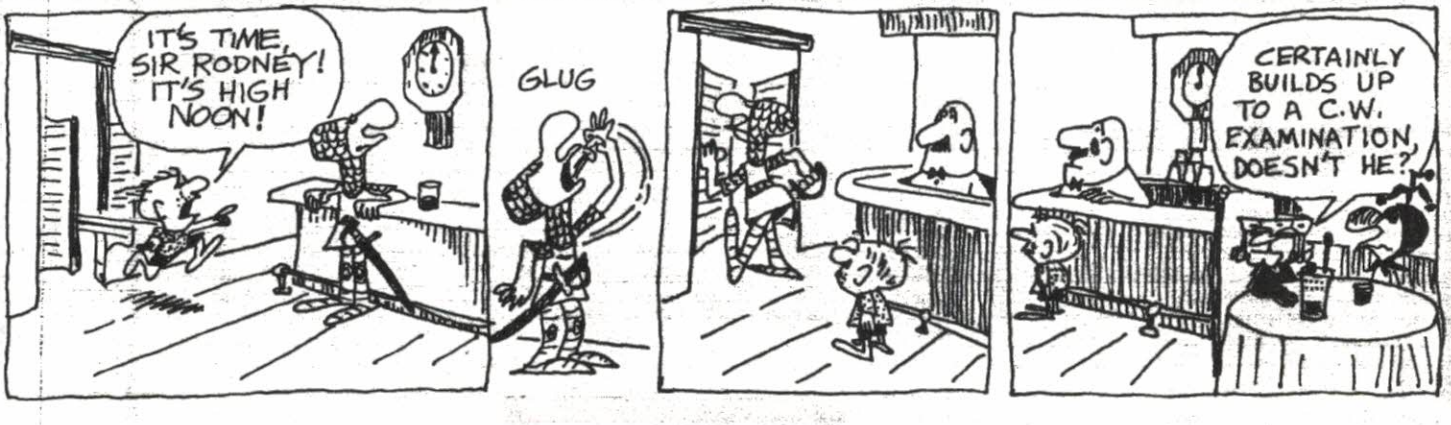
The other reference refers to the German side. On 28th February 1942, a German radar station on the French coast at Bruneval was successfully raided, and much of the equipment together with two German prisoners was returned to England for investigation. Jones says: "The Bruneval booty was... obviously much better engineered than our own radar equipment, a fact which was readily admitted by our own radar men in their final report. We took some of it out to discuss it with the operator who had been taken prisoner, and who was very co-operative. We were disappointed that despite his readiness to help, his technical competence was far lower than that of any of our own operators. The low technical ability of the operator and the high engineering standard of the equipment were not altogether dissociated. When I met General Martini, the Head of German Air Signals and Radar, after the war, I told him that these two factors had surprised me, and he pointed out that he had a very low priority in demanding personnel and had to make do with those who were deemed unsuitable for other duties. He had no skilled reserve to draw upon among radio amateurs, as we had, because Hitler had banned amateur radio before the war since it might provide communication links for disaffected organizations. Martini had therefore to ensure that the equipment was so well made, and so easily replaceable if any part broke down, that the system could be operated by relatively unskilled personnel."

The February issue of "Zero Beat", the newsletter of the Youth Radio Scheme, contains an interesting passage from a footnote in "The Secret War", the book of the T.V. series:

Hermann Goering (commenting on Western technical superiority, in March 1943):

"The main blame belongs to Ohnesorge (Minister of Posts) - he never wanted to relax his grip on anything. We smashed up the amateur radio "ham" clubs and wiped them out, and we made no effort to help these thousands of small inventors. And now we need them."

73, Brian VK2AXI.



Differential amplifier

The circuit below uses three junction devices in a differential amplifier configuration. The I_{DSS}, g_{fs} and V_{GS} of Tr_1 and Tr_2 should be matched as closely as possible; the V_{GS} match should be specified at the operating value of I_D. If good matching is ensured, the gain is

$$\frac{g_{fs}R_L}{1+g_{os}R_L}.$$

Using low g_{os} devices, this approximates to $g_{fs}R_L$.

In practice, Tr_1 and Tr_2 may be either a matched pair of discrete devices or a dual f.e.t. Dual f.e.ts tend to be cheaper than their matched-pair equivalent and, with the increasing use of monolithic duals, are inherently more reliable. Also, with the two semiconductor elements in close proximity in the same package, either two-chip or monolithic, thermal behaviour is more predictable.

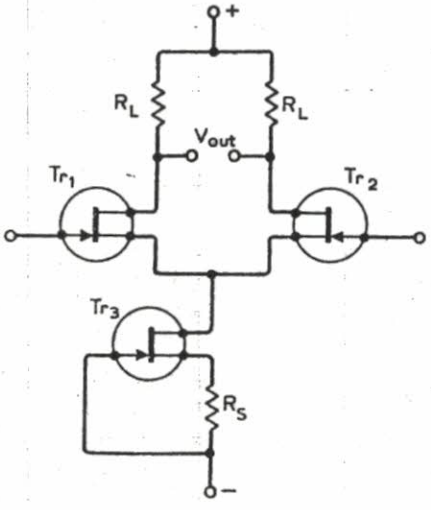


Figure 10

The common-mode gain of the differential stage is approximately

$$\frac{g_{fs}R_L}{1+2Z_sg_{fs}}$$

assuming perfect matching of the f.e.ts and load resistors, and where Z_s is the source impedance.

Therefore inclusion of Tr_3 as a current source presenting a high dynamic source impedance greatly reduces the common-mode gain. The minimum I_{DSS} of Tr_3 must be the sum of Tr_1 and Tr_2 bias currents.

Further reading

Siliconix application notes Field Effect Transistor Current Source, by J. S. Sherwin
FETs As Analogue Switches, by Shelby Givens
Biasing FETs For Zero D.C. Drift, by Lee L. Evans

"Wireless World"
August 1974

FOR SALE

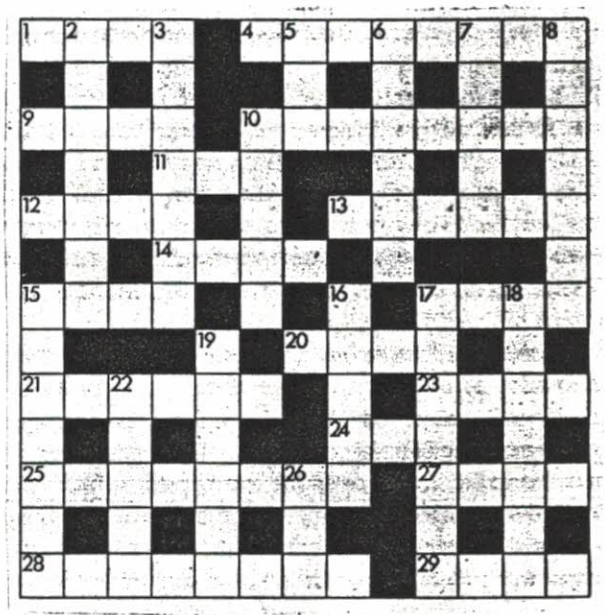
PEARSCE - SIMPSON
For 10meters FRX Range 28.245 to28.685
40 Channel Switch 10KHz Slide + 10KHz
Up and Dowen Switch

PRICE $ 150

Contact VK2EMV
2 Chenhall St. Woonona

or at Meetings

HAM PUZZLE



ACROSS

1 Should I scan about a record? (4)
4 Wet trees damaged h.f. loudspeakers (8)
9 Pinky recorded in tyro sync! (4)
10 Only agree about me making a coil? (8)
11 See 3 Down
12 A unit of the core of stem filaments? (4)
13 Make a crossing to wipe a tape? (6)
14 First man in farad amplifiers? (4)
15 Ringing tone on an old record? (4)
17 They turn on some signalling methods? (4)
20 Sound component that may need adjustment (4)
21 Not as selective around a curtain hanging (6)
23 Short course in maths (4)
24 Tune in this manner? (3)
25 What a charge for so small a part! (8)
27 True guarantee written into a thermionic? (4)
28 Alpine sound transmitter (8)
29 A backwater in bed dynamo production (4)

DOWN

2 Mighty atom active in radio! (7)
3 & 11 Across A sparkling receiver in the right spot (7, 3)
5 Go to court for half the speaker? (3)
6 The first group in the game (6)
7 Get away with oriental pole switches? (5)
8 Sorry state of Edna's rebuilt vessel (7)
10 High fidelity on a short instrument? (5)
15 Package deal in the power game (7)
16 Italian specialist from antenna centre (5)
17 Ted fore round with such a valve? (7)
18 Like a book on circuits? (7)
19 Learnt about the borrowing fee? (6)
22 M.p.h. or r.p.m.? (5)
26 No receiver has crude metal connections? (3)

ANSWERS NEXT MONTH

PENSION CONCESSIONS for membership renewals have been discussed by Council and the pensioner rate for 1982 is $20. WIA membership fees are made up of the Federal charge of $20 and the Division's charge of $7 - for a full member. Federal are not prepared to allow a concession on their charge. While this Division has charged pensioners less than the Federal charge in past years, it has been decided that pensioner members of this Division shall be charged the full Federal rate. This does mean however that we forgo our state share and offer pensioner WIA members a worthwhile concession of $7. Please inform club members of this situation.

10 MHz BAND. Yes. Its now available to Australian full call amateurs as of the 1st of January, 1982. Amateurs should avoid the frequency of 10.1415 MHz +/- 4 KHz as this is allocated to an Australian service. You might draw the attention of club members to the insert in December Amateur Radio concerning operations on this new band.

WIA CAR BADGES are now available. These are a quality item in the traditional WIA design ie. wings superimposed on an outline of Australia of metal construction, with fittings for attachment to a car grill. Cost is $10 each and an additional $1- if postage is required.

NOTE IF ENOUGH MEMBERS ARE INTERESTED IN THESE CAR BADGES OUR CLUB CAN OBTAIN THESE AT BULK DISCOUNT PRICES.

SUBSCRIPTION TO THE ILLAWARRA AMATEUR RADIO SOCIETY

Attached is $7.00 in payment for membership for the period April 1982 to March 1983. $4 PENSIONERS & STUDENTS.

NAME: .....

ADDRESS: .....

.....

POST CODE: .....

CALL SIGN IF ANY: .....

WIA MEMBER: YES ☐ NO ☐

DO YOU WANT TO JOIN WIA YES ☐ NO ☐

WANT QSL CARDS AT MEETING YES ☐ NO ☐ WIA MEMBERS ONLY

NB. Receipts will be available for collection at following meeting. If postage is required please enclose SAE

Please send to: The Honorary Treasurer
Illawarra Amateur Radio Club,
PO Box 1838,
WOLLONGONG NSW 2500

QSL INFORMATION

To users of the facilities of the VK2 QSL Bureau, you are again reminded of the following:

1 Cards that do not comply with postal regulations will be returned to sender. Cards containing more than five words of a personal nature do not comply. The Australian Post Office does not classify QSL cards as greeting cards.

2 For sorting purposes, please arrange outgoing cards in alphabetical order. Call of station being sent to should be on right-hand top corner on back of card. Information side is considered front of card. Cards that do not comply will be returned to sender.

3 Size and weight of card - recommended standard size 140 mm x 85 mm (5½" x 3½"). Large cards get damaged easily and small cards get lost. Card weight - 180 grams per square metre.

4 Costs to non-WIA members who wish to use QSL Bureau facilities - Incoming and Outgoing $0.05 per card. For heavy DXers it would be less expensive to join WIA.

Further QSL information in "Australian Call Book".

Please remember that your cards will be sorted many times before reaching their destination so your attention to the foregoing would greatly assist QSL personnel, who are working on a voluntary capacity not hired help.

VK2 EXN

On the first night of their honeymoon, the 80-year-old newlyweds got into bed, the husband reached out for his bride's hand and she reached out for his. Holding hands, they went peacefully to sleep. On the second night, too, they held hands lovingly. On the third night, he reached out for her hand, and she said brusquely: "Not tonight, dear — I've got a terrible headache."

FROM IMBC NEWS

ONES FOR THE ROAD

Wollongong police stopped a car at two in the morning and asked where the driver was going in such a hurry. "I'm on my way to a lecture," replied the motorist.

Naturally curious, the police asked where the lecture was being held. The man gave an address identical to the one on his driving licence. "And just who will be giving this lecture?" inquired one constable.

The driver looked at him sadly and said, "My wife."

★ ★

BANKING

The British newspaper, The Sun, has reported that Mrs Zoya Davis, of London, applied to her bank for a $1,500 loan to finance an extension but was refused when the bank learned that the money was for a breast-enlargement operation. The manager of her local Barclays Bank told The Sun that she could have a loan for a house extension but "in the case of bust enlargement, we could hardly seize the assets if the person fell behind in the repayments." (SMH)

AMATEUR RADIO TO THE RESCUE

Amateur Radio comes to the rescue of many people in many differnt ways and all amateurs could tell their own stories of providing assistance with communications at the site of an accident or incident.

Here is a brief account of a situation involving "routine" emergency traffic.

It was very late in the evening of Friday 16th April, the location 12 miles east of Orange, N.S.W., on the Lewis Ponds Rd., the weather overcast and cool after recent rains.

Peter VK2TK was taking a walk outside his home QTH where the road descends a long hill towards a bridge and sharp curve at its base. Peter's son John, had just arrived home when another car came down the hill, and the driver lost control. The car overturned several times near the corner.. . One passenger (without safety belt), was thrown onto the road and suffered extensive facial lacerations, and broken fingers. T he other passengers were shocked but mainly unhurt.

Peter drove quickly to the site of the accident, appraised the situation and decided that both the Police and Ambulance were required. He made contact almost immediately on Channel 6650 Repeater (Mt. Bindo) with Ross VK2BRC who was returning to Orange from Sydney, and was fortunately within minutes of the Bathurst Police Station.

Ross noted the details and informed Bathurst Police. His bona fides as an amateur operator were accepted without question, and the Orange Police were informed immediately through the Police VHF Radio network.
Ambulance and Police were promptly despatched from Orange.

Bruce VK2FD took over communications and phoned the relations of the people concerned in the accident.

All ended satisfactorily.

Without amateur communications it would have taken perhaps another ten minutes to make phone calls. In more serious circumstances, these minutes could have made the differnce between life and death.

Peter VK2TK is to be commended for his quick actions, and presence of mind in establishing protection on both sides of the accident and in tending to the injured person.

It was appropriate that all amateurs involved were trained members of WICEN.

This is only one example of incidents that are probably a regular occurrence without publicity.

Do you know your procedures well enough to operate calmly, efficiently and effectively in an emergency?

Your help could be needed to-morrow ..... even to-day.

Submitted by Ross VK2BRC

REPEATER NEWS

A WORKING BEE WAS HELD AT THE MOUNT MURRAY REPEATER SITE ON SUNDAY 18 APRIL. THE TRANSMIT TOWER WAS DE-RUSTED AND PAINTED AND GENERAL CLEANING UP AROUND THE CUBICLE WAS DONE.
THE BROADCAST LINK RECEIVER SWITCHING WAS MODIFIED SO THAT THE MAIN RECEIVER IS SWITCHED OFF DURING W.I.A. BROADCASTS.
THIS MEANS THAT THE REPEATER IS NOT AVAILABLE AND CANNOT BE TRIGGERED WHILE THE BROADCAST IS ON THE AIR. IT TAKES AROUND TWO MINUTES AFTER THE BROADCAST FINISHES BEFORE THE REPEATER RETURNS TO NORMAL.
THIS MODIFICATION IS A TEMPORARY MEASURE AND WILL REMAIN SO UNTIL THE INTERFERENCE SOURCE HAS BEEN TRACKED DOWN AND ELIMINATED.
THE INTERFERENCE IS IN THE FORM OF A CONTINUOUS SIGNAL VERY CLOSE TO THE INPUT FREQUENCY OF 146.25MHz IT IS VERY WEAK, AND APPEARS TO BE MODULATED WITH FAST RISE TIME PULSES. IT HAS THE STABILITY OF CRYSTAL CONTROL, AND CAN ONLY BE HEARD WHEN IT IS BEATED WITH A WEAK INCOMING SIGNAL. THE MUTE ON THE REPEATER HAS BEEN SET SO AS TO EXCLUDE THIS SIGNAL FROM TRIGGERING IT, AND THEREFORE MAKES THE REPEATER A BIT 'DEAF' ON WEAK SIGNALS.
THIS SIGNAL WAS RESPONSIBLE FOR THE INTERMITTENT NOISE WHICH USED TO OCCUR DURING THE BROADCAST. EVEN THOUGH NOT TRIGGERING THE REPEATER UNDER NORMAL CONDITIONS, IT WAS BREAKING THE MUTE OF THE MAIN RECEIVER WHEN THE TRANSMITTER WAS TRIGGERED ON BY THE BROADCAST LINK RECEIVERZ. HENCE THE REASON FOR THE MODIFICATION.

ANOTHER FORM OF INTERFERENCE HEARD ON CHANNEL 5 (6850) REPEATER OVER THE LAST FEW WEEKS IS THAT OF A COMMERCIAL VHF BASE STATION WHICH HAS DEVELOPED A SPURIOUS EMISSION. MESSAGES OR PARTS OF MESSAGES ARE HEARD , AND WE HAVE BEEN REQUESTED BY THE DEPARTMENT OF COMMUNICATIONS TO LOG THE TIME AND CONTENT OF THESE SIGNALS TO ASSIST THEM IN DETERMINING THEIR ORIGIN. IT APPEARS THAT THE OPERATOR AT THE OFFENDING STATION IS NOT USING HIS CALLSIGN AS OFTEN AS HE SHOULD, AND THIS MAKES IT DIFFICULT TO IDENTIFY HIM.

A THIRD TYPE OF INTERFERENCE WHICH SHOWED UP AS A SQUEALING NOISE AFTER THE REPEATER WAS TRIGGERED, AND CAUSED HAVOC WITH WEAKER SIGNALS HAS DISAPPEARED SINCE THE ANNOUNCEMENT ON A W.I.A. BROADCAST THAT A FAULT IN THE TELECOM PAGING TRANSMITTER AT DURAL WAS REPAIRED. APPARENTLY THE PAGING SYSTEM WAS INTERFERING WITH THE 2 METRE REPEATERS AT DURAL AND HIGH RANGE.

THE DEPT OF COMMUNICATIONS ARE AWARE OF THE FIRST TWO INTERFERING SIGNALS AND HAVE INDICATED THEIR WILLINGNESS TO HELP IN ELIMINATING THEM. IF ANYONE HAS ANY INFORMATION WHICH MAY HELP, PLEASE CONTACT GRAEME VK2CAG OR ANY MEMBER OF THE COMMITTEE WHO WILL PASS IT ON

SUBLIME POINT.
PROCESSING OF PAPERWORK RELATING TO OUR APPLICATION IS GOING SLOWLY. THE W.I.A. REPEATER COMMITTEE HAS [illegible] ASSURED US THAT OUR APPLICATION FOR A TWO METRE AND A 70CM ALLOCATION HAS BEEN ACKNOWLEDGED AND FREQUENCIES ARE BEING HELD FOR US WHEN THE LICENCE FINALLY COMES THROUGH. WE ARE LUCKY THAT WE APPLIED WHEN WE DID AS THERE HAS BEEN AN INFLUX OF APPLICATIONS FOR REPEATERS SINCE OURS AND FREQUENCIES HAVE RUN OUT ON TWO METRES.
THE EQUIPMENT. THE 70CM REPEATER IS UP AND RUNNING, REQUIRING ONLY AN IDENT BOARD TO MAKE IT COMPLETE. IT IS THE ORIGINAL PHILIPS SC9 UNIT THAT USED TO BE OPERATING AT VK2ZQT'S QTH. IT HAS INPUT FREQUENCY 433.725 AND OUTPUT 438.725.
THE TWO METRE REPEATER IS HOMEBREW. THE RECEIVER IS BUILT AND WORKING . THE TRANSMITTER IS IN THE DESIGN STAGES. THE CONTROL UNIT IS ALSO ON THE DRAWING BOARD. THE INPUT IS ON 147.875 AND OUTPUT IS 147.275.

DE-SOLDERING BRAID

Don't throw away those short lengths of co-ax or screened cable, it's quite easy to turn the screening braid into de-soldering wick. Here's how.

First extract the braid and flatten it by pulling it round a drill shank or similar. Dissolve a small piece of resin (as supplied in a p.c. etching kit) in methylated spirits and dip the braid in the solution, then hang it up to dry. And there you are, all set to get the goodies off the surplus circuit boards!

Note, I've found that only the untinned copper braid is effective, the silvered sort not absorbing the solder.

Ken, VK2DOI

Have YOU a handy hint to pass on? If so, let's hear about it, we'll type it up and put it in the Propagator.

Puzzle This One Out!

$3 = 2 + 1$

Let $a = 3$, $b = 2$, $c = 1$

$\therefore a = b + c$

Mult. both sides by $a - b$

$a(a-b) = (a-b)(b+c)$

$\therefore a^2-ab = ab+ac-b^2-bc$

Move ac to the left:

$a^2-ab-ac = ab-b^2-bc$

Factorise:

$a(a-b-c) = b(a-b-c)$

$\therefore a = b$, and $3 = 2$!!!

VK2DOI

Ten Commandments for those on tour

THOU shalt not expect to find things as thou hast them at home, for thou has left home to find things different.

Thou shalt not take anything too seriously, for a carefree mind is the beginning of a fine holiday.

Thou shalt not let other tourists get on thy nerves, for thou art paying out good money to enjoy thyself.

Remember to take only half the clothes thou think thy needs — and twice the money.

Know at all times where thy passport is for a person without a passport is a person without a country.

Remember that if we had been expected to stay in one place, we would have been created with roots.

Thou shalt not worry, for he that worrieth hath no pleasure — few things are ever fatal.

When in Rome thou shalt be prepared to do somewhat as the Romans do.

Thou shalt not judge the people of a country by the one person who has given thee trouble.

Remember thou art a guest in other lands, and he that treateth his host with respect shall be honoured.

(Composed by an American pastor, to guide a flock of first-time travellers to the Holy Land).

SYDNEY MORNING HERALD

Quotable quotes: ' If it doesn't fit - FORCE IT! If it breaks, then it needed replacing anyway.'

VK2VAV