

December 1996

FEEDBACK

The OFFICIAL Newsletter of the
Georgian Bay Amateur Radio Club Inc.

Sponsoring
VE3OSR FM REPEATER 146.940- OWEN SOUND
VE3IJD PACKET BBS 145.630 KEADY

REGULAR EVENTS

GBARC MEETINGS: 4th Tuesday of each month at the Billy Bishop Airport 7:30 P.M.

BREAKFAST MEETINGS: 2nd and last Saturday of each month at the Rockford Esso , 9:30 A.M.

GBARC INFORMATION: Information regarding membership should be directed to VE3NEM Tom Merner RR#4 Owen Sound, N4K5N6 371-0655

FEEDBACK: Submissions or letters to the editor should be directed to VE3TSA Tom St.Amand, 1232 3rd Ave . East, Owen Sound N4K2L5

Minutes of GBARC meeting 26 November 1996

The general meeting was called to order by president Bob Vary with fifteen members present and three guests. The minutes of the October meeting were reviewed and moved for acceptance by Jim VA3CJM and seconded by Walter VE3FFN. Bob VE3XOX gave the treasures report in the absence of Tom VE3NEM. Bob reported to the club that the current bank balance was \$570.85 with the insurance bill of \$405.00 already paid out. He also reported that the insurance coverage was for \$2,000,000.00 liability.

Bob also reported that the Santa Claus Parade was a success with 13 members turning out for the activity and that all involved ie: Kiwanis Club, City, Police, Fire Dept and Santa Claus were pleased with our performance. A nice surprise after the parade was that BRECKENBRIDGE-ASHCROFT FUNERAL HOME paid for a luncheon at the Grey Granite Curling Club for the amateur radio participants and a thank you card will be sent on behalf of G.B.A.R.C.

A discussion about the basic radio course was held making sure all knew of times and location. As a good will gesture Bob VE3XOX has donated some boy scout badges to be given to the scouts that achieve their basic licence.

Tom VE3NEM has donated a telephone patch and is willing to install it on a line at his residence. Further discussions are needed to sort out the clubs financial responsibilities regarding the patch.

A reminder that the December 10th meeting will take place at the HO WON restaurant across from the Heritage Mall at 7:30 pm with invited guests.

NEW BUSINESS

A vote on the motion regarding by-law # 3 Section C was deferred till either the December 96 or the January 97 meeting as there was not a quorum of members in attendance to conduct a vote.

The club repeater status was discussed and Bob VE3XOX spoke to the on going discussions of the removal of the past repeaters and all seemed to be informed and unobjectionable in the handling of the matter. Carl VE3PCK gave the club members a recap on what the repeater status is and what upgrades are in the process of happening or already occurred. He also offered to sell a duplexer to the club which will add to our enjoyment and complete the phone patch upgrade. The cost of the duplexer is \$200.00 and a motion to purchase the item was made by John VA3JRF and was seconded by Steve VE3XKM , this motion was carried.

Further discussion evolved around the status of 1) G.B.A.R.C. and Bit net renewals 2) A.R.E.S. and CANWARN 3) Warton airport project 4) HobbyMarket. These discussion were of a general nature only.

However it is once again time to think about "THE HAM OF THE YEAR AWARD" SUGGESTIONS AND NOMINATIONS WILL BE ASKED FOR SHORTLY.

A motion to show confidence in the club president was made be Marv VA3ACI and seconded by John VA3JRF and was unanimously passed.

The 50-50 winner for this month was SWL Stan Guzonas.

A motion to adjourn was moved by John VE3TXB and seconded by Tom VE3TSA and passed.

Minutes by Marv VA3ACI

Editorial Comment: From VE3TSA

Well here we are again, another year has come and past with 1997 soon to be rung in. I believe we have had another successful year, our HobbyMarket, Field Day, Santa Claus Parade, Jota, Terry Fox Run, Basic Licence Course just to name a few of our activities which bring us together in our common interestAmateur Radio.

I would like to extend a congratulations to all volunteers who helped out in any way in 1996. Without your contribution, GBARC would not be what it is today.

The Amateur of the Year Award will soon be bestowed to the Club Member who has contributed in an extraordinary way to GBARC and to Amateur Radio in general. Think about who you would nominate over the Christmas season, and we can vote on this at the January meeting.

In closing, I would like to remember those club members who are no longer with us and hope they are working great DX in the sky. A very Merry Christmas to all and the best for the New Year 73 Tom

What a good feeling From: VE3JJD

I just had a fellow stop by the house...his wife noticed my antenna farm. Turns out they're both hams, visitors from the USA, but carry PP8 callsigns. They have relatives that live just south of here a mile or two. Both of them work in the jungles of Brazil. They have a son who is also in Brazil, who works as a teacher. He too has a call. They haven't heard from each other for over a month.

So we meet each other and I invite them down to the shack...and shack it is. I take the KAM from the bbs off of the radio, point the beam south and fire up on 14.300 to the net that runs there. Put out a call for PP8ZBN ..bingo..first call,,good signals,,go up to 14.334 and carry on a one hour contact with their son and some friends in the jungles of Brazil. These folks are risking their lives just to help out fellow mankind,,they help out with medicine and even teach them their own language,,once they learn that, they are taught Portuguese so they may read and write the language of their country. Before they built a small runway near the village, it used to take 10 days by boat to navigate up a river to the camp. I'm going to try and set up schedules with these folks,,something that Jim VE3TFQ does all the time. What a good feeling to see the mom talk to the son,,who's wife is due with a grandchild.....

created 23:24Z 15-Dec ...Gene, 73

Kincardine (Barc) Christmas Party From Ray VE3RGL

This years Christmas party will be at the Embassy restaurant in Kincardine on Saturday, December 21st. There will be a delicious smorgasbord dinner served for \$12.95 plus tax. The time is 6:00 P.M. for social hour and 7:00 P.M. for dinner. Also, if you want to get back at somebody on your list, bring a wrapped gag gift and Santa will be sure to give it out that night. It doesn't have to be much, just so we have a lot of fun, I know I have a couple in mind. If I have missed you on my list and you know of someone else who wants to join in, give me a call at 396-4454. Everyone is welcome.

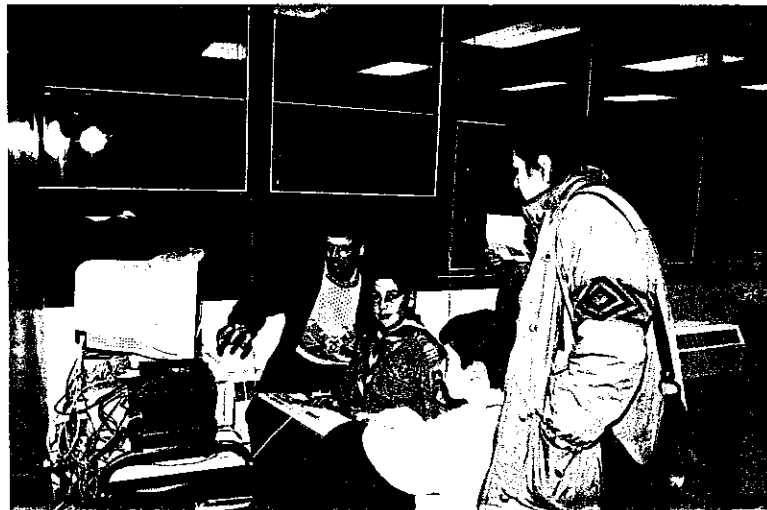
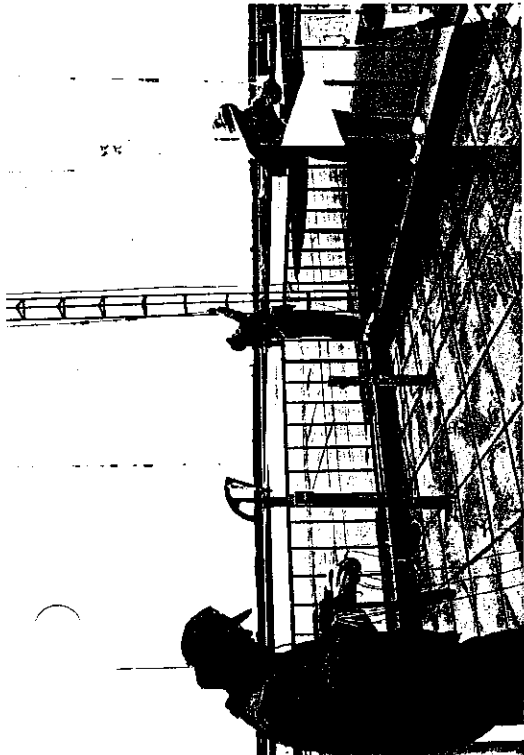
Thanks....Carol VE3IYY

New CDROM on Antennas! From: DJ2ZS @ DB0AIS.#HES.DEU.EU (Peter)

Hello! I would like to inform you of the existence of a brandnew CDROM entirely dedicated to antennas. 344.000.000 bytes contain 2.910 files - a bonanza for anybody interested in antennas. Highly recommended for a ham seriously working with antennas. Got my copy yesterday and like it very much. The CD's name is simply *ANTENNAS (September 1996)* and the ISBN is 1-57176-175-6.....73, Peter, DJ2ZS

1996 Jamboree on the Air

Fotos by John VE3TXB



1996 Jamboree on the Air

Photos by John VE3TXB



Challenge a thrill for 'hams'

Not all play for ham radio operators

The members of the Georgian Bay Radio Club just can't stop hamming it up.

Ham (amateur) radio operators have been around for a long, long time. It probably didn't take more than a few years after Marconi's famous experiment before the first hams signed on to the air waves, and they haven't stopped talking since.

The 56-member Georgian Bay club operates out of Owen Sound, and the members are proud to carry on the tradition, said president Bob Vary.

"The amateur radio hobby is such a learning thing for all ages," he said. "You learn about culture, language, a little bit of everything when you're on the air."

Ham radio is also completely unpredictable, Vary said. It's a bit like going fishing — you never know what you're going to catch.

"You could talk to someone down the street or across the continent," Vary said. "One minute you could be talking to England, next you could be talking to someone from South Africa. The radio is there to enjoy."

And there are lots of hams out there. In the Grey-Bruce area, there are about 300 amateur operators, and there are about 15,000 Canada-wide.

"It's a popular hobby, but not a well-known one," said Tom St. Amand, another club member.

Despite the rise of the Internet and other forms of new-fangled electronic communications, the members of the Georgian Bay Club remain fiercely attached to their radios.

"There are still a group of people out there who are radio and nothing else," St. Amand said. "With the Internet, you connect to a specific person or site. With amateur radio, there's a challenge in making the connection, and then being

able to carry on a conversation. That's what it's all about."

"And there are definitely some skills involved in setting up between countries. There's more than 300 you can contact by radio, and I know of only two people who have done it."

Getting started on a ham radio is not overly difficult, Vary said. The club offers courses in the fall, which he recommends, since a licence is required to operate on the ham bands under federal regulations.

"The amateurs pretty much police their own band," Vary said. "We know when there's somebody on the air who doesn't belong there, since we've taught most of them."

Interestingly, the ham radio system uses a different technology than cell phones, television stations or the official frequencies available to police and emergency response units. And that eliminates the dead-air zones caused by the Niagara Escarpment, St. Amand noted. That makes them ideally suited for their most important function as an emergency network.

"When the fiber-optic cable was sliced last summer, cutting phone service, we could have been up and running in about half an hour," St. Amand said. "We're also ready to respond in case of tornadoes or other weather emergencies. So it's not all play."

At the moment, the club is in search of a new home, and the Warton-Keppel Community Airport may be the new operations site.

"The airport has offered to station the club here," Vary said, "and suggested we install a tower. It'd be a good site."

Scouts ham up weekend

BY SHAWN GILCK
Sun Times correspondent

Local scouts got wired for the weekend in an on-air international jamboree held at the Warton-Keppel District Airport.

WIARTON

Poor weather put the 39th annual ham radio event behind schedule, but the 20 to 30 scouts and organizers were still full of enthusiasm as they assembled equipment Saturday morning.

The jamboree was organized by the World Scout Bureau in Geneva, said Jerry Auger, a leader with the 1st Warton scout troop.

"Historically this has always been run using short-wave radios," he said. "The scouts have been supported by the military and by private ham radio operators over the years."

The objective of the "Jamboree-on-the-air" is to improve communications among scouting groups throughout the world, he said, and that's been made much easier by the telecommunications revolution. Approximately 120 countries were to be represented during the two-day event.

Recently the scouts have added an Internet connection to the traditional radio operations. Most of the equipment and technical support was provided by the Georgian Bay Amateur Radio Club, as well as by Automated Business Equipment, BMI Internet and Microage Computer Centres.

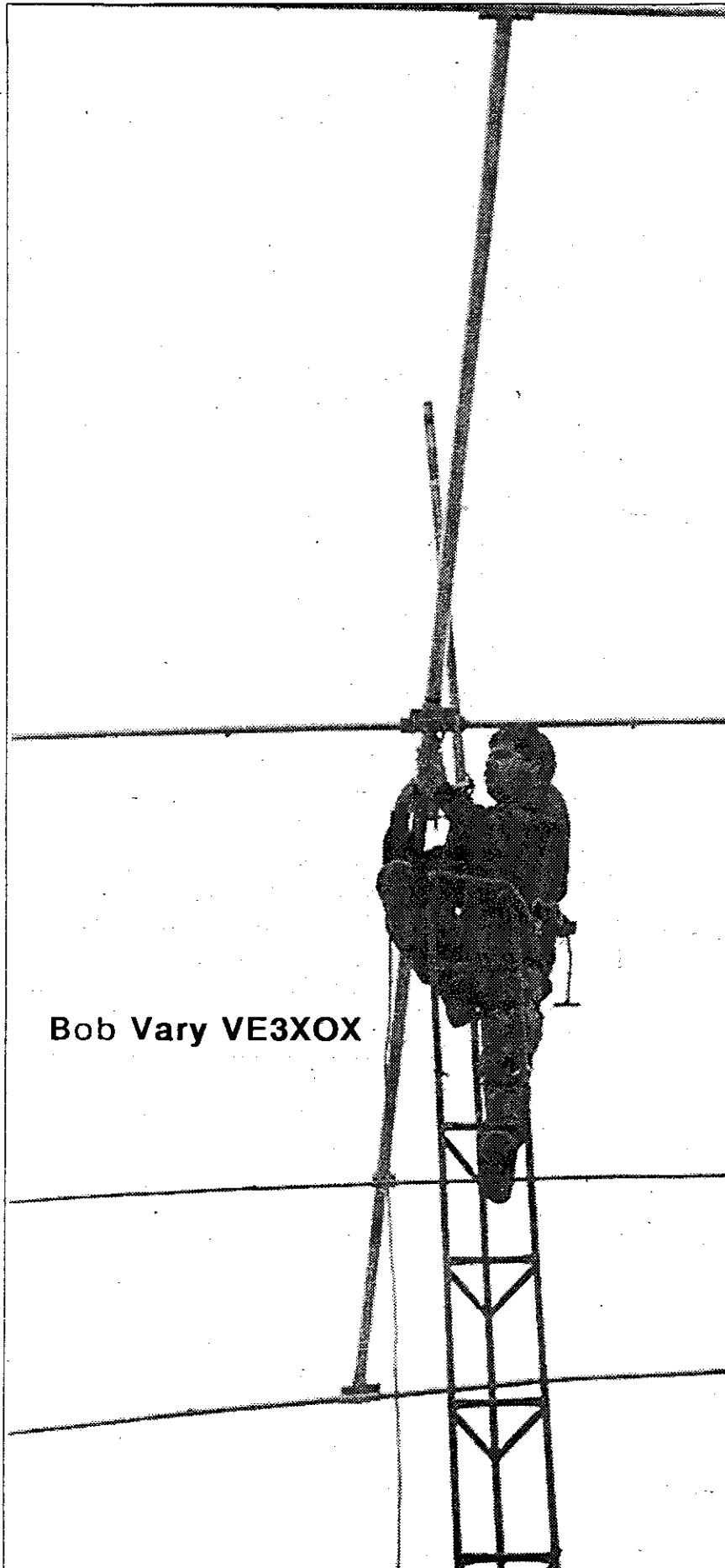
The management of the airport readily agreed to play host to the event, Auger added, and that meshed perfectly with the group's need to hold the jamboree in an unusual location.

Bob Vary, the president of the radio club, said he had been working for about a week to set up for the event.

"I've been talking for the last week with stations all over the world, getting them ready to look for us on the air," he said as he assembled the short-wave antenna. "I had originally planned to have it up Friday, but the weather was too poor."

Vary said the event was a real learning experience for the scouts.

"Using the radio is a lot like going fishing — you never know what you're going to catch. And it's not like the Internet. There's a challenge involved in making the connection and carrying on a conversation. We like to get the boys on the air and show them a little bit about the radio and they always enjoy chatting with other people around the world."



Bob Vary VE3XOX

Sun Times photo by Shawn Gilck

COILS - How to calculate

From: SMOVPO@SMOETV.STHLM.AB.SWE.EU

'Allo 'Allo everyone, it is I, LeClerc!!

Several people have asked me about determining the number of turns of wire for a particular frequency when building QRP radio projects. I have many times given the ROUGH "starting" point:-

$$\begin{aligned} \text{Capacitance(pf)} &= \text{Wavelength in meters} \\ \text{Coil (turns)} &= \text{Wavelength in meters} \end{aligned}$$

Naturally the size of the coil former you use will affect the turns needed for a particular frequency, so this "starting" point is very rough and is only intended to get you in the right vicinity. A GRID DIP OSCILLATOR is one of the most useful tools I possess, and I will describe one of these in another posting in the near future. To answer the first question for those who are interested in calculating coil turns, read on.

There are several formulas for calculating the number of turns required in any given application, but the results seem to differ quite a lot from one formula to another. I use two variants of Wheelers formula, one for single layer coils and another for multi-layer (pile wound) coils. I shall give the formulas twice, in case some of these "special" ASCII characters are printed as garbage on the text editor you use (I use XTGOLD).

The formulas assume that there is NO ferrite, or brass core to the coil. A ferrite core will reduce the number of turns by 10% to 25%, depending upon the size of the ferrite lump, and how far it is screwed into the former. A long ferrite rod can reduce the number of turns by as much as 50% to 60%. A brass tuning slug will INCREASE the turns required by typically 5% - 10%

Just in case you have forgotten, you can calculate the value of required inductance, capacitance and impedance with these formulas, but I will not insult your intelligence explaining them.

$$\text{Capacitive reactance (Xc)} = \frac{1}{2\pi f C}$$

$$\text{Incuctive reactance (Xl)} = 2\pi f L$$

$$\text{Tuned circuit frequency} = \frac{1}{2\pi \sqrt{LC}}$$

At resonance Xc = Xl

Tap inductors; Impedance ratio = turns ratio squared

SINGLE LAYER COILS

$$N^2 = \frac{L (9r + 10l)}{r^2} \qquad N \times N = \frac{L (9r + 10l)}{r \times r}$$

- where L = inductance in micro-henries
- l = length of the winding in inches
- N = the number of turns
- r = outside radius of the coil in inches

EXAMPLE. I want a coil to have 20uH inductance in an HF PA valve anode for 30 MHz. I shall use a toilet roll tube for a former (2 inches in diameter). I will space the coil out so that the winding length is one inch.

$$N^2 = \frac{20 \times (9 \times 1 + 10 \times 1)}{1 \times 1} = \frac{20 \times 19}{1} = \frac{380}{1}$$

$N^2 = 380$ therefore $N = 19.4935$ turns (20 turns)

Even 4mm Dia. Cu wire will allow 20 turns per inch, take your pick. If it burns when you apply power then use a thicker wire.

MULTI-LAYER COILS

$$N^2 = \frac{L (3a + 9b + 10c)}{0.2a^2} \quad N \times N = \frac{L (3a + 9b + 10c)}{0.2a \times 0.2a}$$

where L = inductance in micro-henries
 a = winding thickness + former diameter in inches
 b = length of winding in inches
 c = winding thickness in inches
 N = number of turns

EXAMPLE. I want a coil for a 1MHz medium wave QRP pirate-radio transmitter amplifier stage tuned circuit. The inductance I need is 200uH. I will use a plastic bottle-top former, 0.5" Dia. I can allow a total of 1.0" for the coil diameter, and, it must be 0.5" long.
 (L = 200, a = 0.75", b = 1", c = 0.25")

$$N^2 = \frac{200 (3 \times 0.75 + 9 \times 0.5 + 10 \times 0.25)}{(0.2 \times 0.75)^2} = \frac{200 (2.25 + 4.5 + 2.5)}{0.0225}$$

$$N^2 = \frac{200 \times 9.25}{0.0225} = \frac{1850}{0.0225} = 82222.222r$$

$N^2 = 82222.222r$ therefore $N = \sqrt{82222.2222} = 286.744$ turns.

This winding is .25" thick by .5" long. Total cross-sectional area of the coil is 0.125". I therefore need a wire thickness that will fit into this area = 2293.953 turns per square inch or thinner. 29 SWG (0.35mm Dia.) is the max thickness of wire I can use, according to the following table.

AWG	SWG	(mm)	t/i	t/i ²	Ω/100m	COPPER WIRE TABLE	
--	47	0.05	444	197000	894	AWG	= American Wire Gauge.
38	42	0.10	151	22900	224		
35	38	0.15	109	12000	99		
32	36	0.20	85.7	7300	55.8	SWG	= Standard Wire Gauge.
30	33	0.25	74.6	5550	35.7		
29	31	0.30	67.6	4550	24.8	(mm)	= Diameter of wire in millimeters.
27	29	0.35	56.5	3190	18.2		
26	27	0.40	51.5	2650	14.0		
25	26	0.45	46.5	2070	11.2		
24	25	0.50	42.4	1789	8.9	t/i	= Number of turns per inch.
23	23	0.60	38.3	1513	6.21		
21	22	0.70	29.2	852	4.54		
20	21	0.80	26.0	676	3.49	t/i ²	= Number of turns per square inch.
19	20	0.90	23.5	550	2.76		
18	19	1.00	19.7	388	2.26		
12	14	2.00	9.3	86	0.567	Ω/100m	= Ohms per 100meter length.
9	11	3.00	7.2	51	0.252		
6	8	4.00	6.1	38	0.142		

0.05 mm wire will handle 3 mA
0.10 mm wire will handle 12 mA
0.50 mm wire will handle 300 mA
1.00 mm wire will handle 1.25 amperes
4.00 mm wire will handle 20.10 amperes

Further reading:

1. "Radio and Telecommunication Engineers Design Manual" by R. E. Blakley (Pitman). [Quite detailed]
2. "Coil Design and Construction Manual" by B. B. Babani (Bernard Babani Publishing) [Simple presentation]
3. "The ARRL Handbook For Radio Amateurs" by the ARRL (ARRL) [Information a little limited].

Files RF-COILS.TXT (this file)

Have fun, de HARRY, Upplands Vasby, Sweden,

PS: This file is available from GOTLA's PMS. (Please allow a few days to get the files on the PMS)

Command SP REQFIL@GOTLA.GB7WRG.#19.GBR.EU
Message title: QRP\RF-COILS\RF-COILS.TXT@(your BBS)
Message text: /EX (or Ctrl-Z)

Secret Guide to Computers From: VE3RHJ

I'm trying to organize a group purchase of "The Secret Guide to Computers," a highly-regarded PC tutorial book. The latest edition is 639 pages and includes the Internet and Windows 95. In quantity, it costs US\$9 a copy (Cdn\$12.50), including shipping.... a lot cheaper than "DOS for Dummies"! If you want a copy, let me know by packet or at the Dec 10 club meeting. 73, Brad VE3RHJ

of Connects From: VE3IJD

Just had a look at the logs of the bbs for the past 3 days,,,these are total connections including forwarding connects..here's out they break down per day

Dec 1---162

Nov 30---126

Nov 29---135

Not bad for 3 days...over 400 connects,,some of which lasted over 1/2 hour..... created 00:35Z 02-Dec ...Gene, 73

Want to borrow: Camcorder

Have you a camcorder or video camera you can loan us for five Saturdays? We'd like to videotape the next Basic course, which runs each Saturday from January 11 to February 8. A tripod would be useful too. We'll provide the tapes, of course. Contact Brad, VE3RHJ, on packet, 2m net, 80m net, or 519-986-4266.

A Merry Christmas to all

author unknown

'Twas the night before Christmas and Santa's a wreck...
How to live in a world that's politically correct?
His workers no longer would answer to "Elves",
"Vertically Challenged" they were calling themselves.

And labor conditions at the north pole
Were alleged by the union to stifle the soul.
Four reindeer had vanished, without much propriety,
Released to the wilds by the Humane Society.

And equal employment had made it quite clear
That Santa had better not use just reindeer.
So Dancer and Donner, Comet and Cupid,
Were replaced with 4 pigs, and you know that looked stupid!

The runners had been removed from his sleigh;
The ruts were termed dangerous by the E.P.A.
And people had started to call for the cops
When they heard sled noises on their roof-tops.

Second-hand smoke from his pipe had his workers quite frightened.
His fur trimmed red suit was called "Unenlightened."
And to show you the strangeness of life's ebbs and flows,
Rudolf was suing over unauthorized use of his nose
And had gone on Geraldo, in front of the nation,
Demanding millions in over-due compensation.

So, half of the reindeer were gone; and his wife,
Who suddenly said she'd had enough of this life,
Joined a self-help group, packed, and left in a whiz,
Demanding from now on her title was Ms.

And as for the gifts, why, he'd ne'er had a notion
That making a choice could cause so much commotion.
Nothing of leather, nothing of fur,
Which meant nothing for him. And nothing for her.

Nothing that might be construed to pollute.
Nothing to aim. Nothing to shoot.
Nothing that clamored or made lots of noise.
Nothing for just girls. Or just for the boys.

Nothing that claimed to be gender specific.
Nothing that's warlike or non-pacific.
No candy or sweets...they were bad for the tooth.
Nothing that seemed to embellish a truth.

And fairy tales, while not yet forbidden,
Were like Ken and Barbie, better off hidden.
For they raised the hackles of those psychological
Who claimed the only good gift was one ecological.

No baseball, no football...someone could get hurt;
Besides, playing sports exposed kids to dirt.
Dolls were said to be sexist, and should be passe;
And Nintendo would rot your entire brain away.

So Santa just stood there, disheveled, perplexed;
He just could not figure out what to do next.
He tried to be merry, tried to be gay,
But you've got to be careful with that word today.

His sack was quite empty, limp to the ground;
Nothing fully acceptable was to be found.
Something special was needed, a gift that he might
Give to all without angering the left or the right.

A gift that would satisfy, with no indecision,
Each group of people, every religion;
Every ethnicity, every hue,
Everyone, everywhere...even you.

So here is that gift, it's price beyond worth...
"May you and your loved ones enjoy peace on earth."

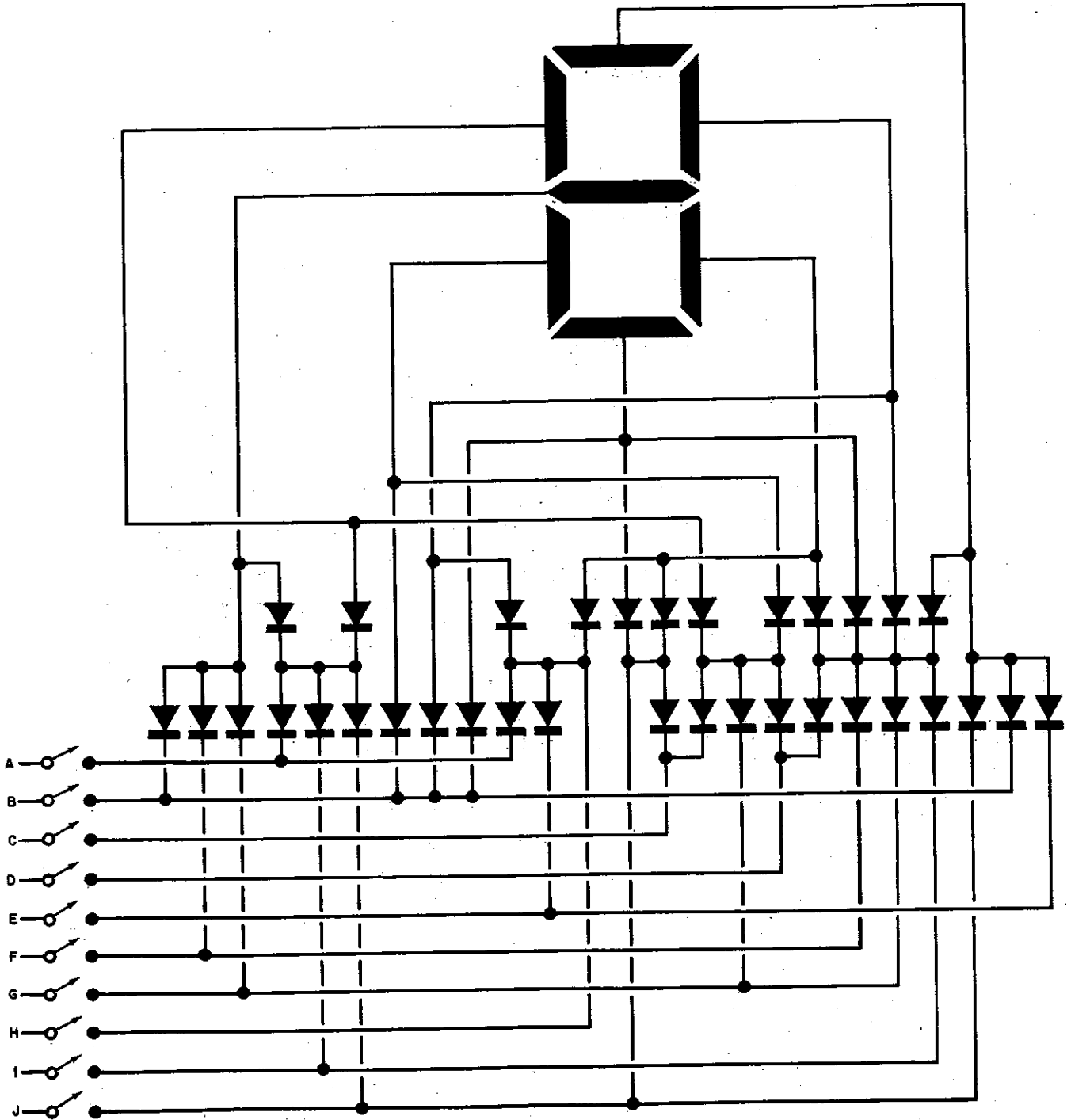
LED CIRCUIT QUIZ

BY ROBERT P. BALIN

The seven-segment LED digital read-out has become a popular and important addition to many electronic devices. But getting them to light up may not always be a simple matter.

For example, in the circuit shown

here, as each of the switches (A-J) is closed, providing the segments with the proper voltage, a different digit is displayed. To test your ability at circuit tracing, see if you can determine what the numbers will be.



J-5
I-9
H-1
G-8
F-3

E-7
D-0
C-6
B-2
A-4

Answers

8YR Solar Flux Prediction

Downloaded from Internet: gopher://proton.sec.noaa.gov:70/00/weekly/sc10
 Prepared by the U.S. Dept. of Commerce, NOAA, Space Environment Center
 OCT 15, 1996

SEC REGRESSION MODEL PREDICTION of SMOOTHED 10.7 CM FLUX
 Based on September 1996 Observed Data

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1997	72	72	73	73	74	74	75	76	77	78	80	81
	(3)	(3)	(3)	(3)	(2)	(2)	(2)	(2)	(2)	(2)	(3)	(4)
1998	83	86	90	94	98	104	109	113	118	122	128	134
	(4)	(5)	(7)	(9)	(12)	(15)	(18)	(20)	(22)	(22)	(24)	(26)
1999	140	147	153	158	162	164	167	170	174	178	182	185
	(28)	(32)	(37)	(42)	(42)	(42)	(43)	(43)	(45)	(47)	(47)	(49)
2000	188	190	191	192	192	195	197	199	198	197	196	196
	(54)	(56)	(56)	(58)	(59)	(62)	(64)	(65)	(65)	(66)	(69)	(68)
2001	196	195	193	194	195	194	192	192	192	193	194	194
	(65)	(61)	(58)	(57)	(58)	(57)	(55)	(53)	(53)	(53)	(52)	(50)
2002	192	191	190	189	186	183	181	179	177	174	171	167
	(48)	(45)	(43)	(40)	(37)	(33)	(31)	(29)	(26)	(22)	(19)	(19)
2003	164	161	157	152	147	144	141	137	133	129	125	122
	(20)	(22)	(22)	(20)	(17)	(17)	(18)	(18)	(18)	(17)	(15)	(11)
2004	119	116	115	115	115	115	114	113	111	109	106	104
	(6)	(5)	(9)	(12)	(14)	(15)	(15)	(15)	(14)	(15)	(15)	(15)
2005	103	101	98	95	92	89	87	85	84	83	83	***
	(15)	(14)	(13)	(12)	(12)	(13)	(14)	(13)	(13)	(12)	(11)	(***)

Top line is predicted value, second line (in parenthesis) is confidence limit.
 As of June 1996 the predicted values for solar cycle 23 are the mean of solar
 cycles 18-22.