



ZR6FD Jubilee logo!

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# WATTS

05 - 2005

Year 75+5m

Monthly newsletter of the Pretoria Amateur Radio Club  
Maandelikse nuusbrieff van die Pretoria Amateur Radio Klub.

✉ PARC, PO Box 73696 Lynnwood Ridge 0040, RSA

web <http://www.gsl.net/zs6pta>

Bulletins : 145,725MHz 08:45 Sundays / Sondag

Relays : 1840, 3700, 7066, 10135, 14,200 MHz

depending on season

✂ Swapshop: After bulletin 2m and 40m (also on-line)

## Mega Vlooiemark weereens 'n sukses

## Mega Flea Market again a success



### In this issue

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### Next Meeting

Date: 12-05-2005  
Time: 19:30 for 20:00  
PARC Clubhouse,  
South Campus,  
University of Pretoria.  
SE cnr University and  
Lynnwood roads.

## Management team / Bestuurspan Aug 2004- Aug 2005:

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<b>Sekretaris,</b> Tydrenne, Jakkalsjag	Johan de Bruyn	ZR6JHB	<a href="mailto:johandbr@absa.co.za">johandbr@absa.co.za</a>	012-803-7385 082-492-3689
<b>Treasurer,</b> Clubhouse, Database	Richard Peer	ZR6CK	<a href="mailto:peerrk@safrica.com">peerrk@safrica.com</a>	012-333-0612 082-651-6556
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<b>Awards,</b> Historian	Tjerk Lammers	ZS6P	<a href="mailto:zs6p@iafrica.com">zs6p@iafrica.com</a>	012-809-0006

Co-opted / Geko-opteer:

<b>Auditeur</b>	Egbert Begeman	ZS6AZG	<a href="mailto:begeme@unisa.ac.za">begeme@unisa.ac.za</a>	012-347-1905
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<b>Tegnies</b>	Johan Lehmann	ZR6ANF	<a href="mailto:jlehmann@csir.co.za">jlehmann@csir.co.za</a>	083-300-8677
<b>Repeater Custodian</b>	Hans Gurtel	ZR6HVG	<a href="mailto:adele123@absamail.co.za">adele123@absamail.co.za</a>	082-940-0623
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<b>Klubfasiliteite,</b>	Willie Greyling	ZR6WGR	<a href="mailto:willie@up.ac.za">willie@up.ac.za</a>	082-940-2490 083-653-2101

## Editorial

I am not in the mood for political commentary and prefer to express my satisfaction at seeing so many of us from far and wide converging on our Mega-Fleamarket to sell - or inspect and buy those very desirable items that were hidden away for so long... The goings-on at Loftus Versveld deterred no-one's mission but must have frustrated some that needed parking. By 9:00 we already had a bumper crowd and it was good to see so many hams also socializing and exchanging whatever they exchange. A thank-you to the organizer Almero ZR6RY and Willie ZR6WGR, helpers, the Van Wyk family for providing the eats, Richard ZR6CK and Molly ZR6MOL for vending the cool drinks and ZS6TIM's auction services. By being there, all of us must have gained something in more ways than one.



## Redaksioneel

Ek is nie lus vir 'n politieke kommentaar nie en verkies om my tevredenheid uit te spreek dat so baie van ons van heinde en ver saamgekom het by ons Mega-vlooiemark om te verkoop - of te bekyk en te koop van die baie begeerlike items wat al so lank weggesteek was... Die gebeure by Loftus Versveld het niemand van koers afgehou nie maar moes sekerlik die wat parkering gesoek het, gefrustreer het. Teen 9:00 het ons alreeds 'n groot skare gehad en dit goed om te sien dat so baie ook gesellig verkeer het en gewissel het wat hulle ook al wissel. 'n Dankie aan die organiseerder Almero ZR6RY en Willie ZR6WGR, helpers, die Van Wijk familie wat eetgoed beskikbaar gemaak het, Richard ZR6CK en Molly ZR6MOL vir koel drankverkope en ZS6TIM se se opveildienste. Deur om daar te wees, moes almal van ons sekerlik op meer as een manier iets bekom het.



**Magda Burgers, Piet Boerewors en Liewe Lizette was al drie baie in aanvraag**

## Minutes of the monthly club meeting of the Pretoria Amateur Radio Club held at the South Campus of the University of Pretoria on 14 Apr. 2005

**Welcome:** Hans ZS6KR declared the meeting open and welcomed all who attended.

**Attendance:** The meeting was attended by 25 members and 4 visitors.

Apologies were received from Hal ZS6WB, Joe ZS6TB, Almero ZR6RY, Johan ZR6ANF and Harry ZS6HRD.

**Personal Matters/Lief en leed:** Agnes, ZS6BAV sw of Ivan ZS6AUT is not well at the moment.

Bertha, sw of Hans ZS6KR still in a nursing home.

**Matters arising from previous minutes:** None.

**Minutes of previous meeting:** The minutes of the previous meeting as published in Watts were approved.

Proposed by Sander ZR6SW and seconded by Willie ZR6WGR.

### Club Activities

**Rallies/Tydrenne:** Johan ZR6JHB reported on the Total Rally 5 – 7 May 2005. Comms from Warburton to Badplaas is a problem on 2m . Various options discussed.

**DF Hunt/Jakkalsjag:** Johan ZR6JHB reported that the next Foxhunt will take place on Saturday 16<sup>th</sup> April .Starting time 14h00 at the Botanical Gardens in Silverton. Vince ZS6BTY will be the fox. Everybody is welcome to participate and afterwards a bring & braai will be at the home of Johan ZR6JHB.

**Social/Sosiaal:** May 15th at PMC in Silverton. Day in the Sun/Old Timers Day Details to be discussed – braaipacks etc. Johan needs to know how members will attend. Members who would like to attend can phone him on cell: 082-492-3689 or home 012-803-7385.

**Finance Report/Finansiele verslag:** Richard ZR6CK reported that the club's finances are in good shape.

**Projects/Projected:** Sander ZR6SW – Battery charger project still an ongoing project.

**Repeater/Herhaler:** – Busy investigating interference on 2m. Cavities retuned – antenna to be replaced – currently running more power on the QD repeater. – also looking at new sites for the 2m repeater.

**Contests/Kompetisies:** Pine ZS6OB – we need to know if there are enough members interested in UHF/VHF contesting.

**Fleamarket/Vlooiemark:** Volgende Vlooiemark vind plaas op Woensdag 27 April 2005 – PARK klubhuis vanaf 9:00 – Kontak Almero ZR6RY vir tafels.

**Ham Diary/Dagboek:** The meeting was informed of local, national and international happenings up to 12 May.

**SARL Feedback:** Hans ZS6KR gave a brief, but very informative feedback on the SARL AGM.

**General/Algemeen:** Hans ZS6KR – ZS75PTA QSL cards now available – please contact him if you need QSL cards

**Presentation/Aanbieding :** Paul ZS6BOO – Tactical Communications – Thanks Paul for an informative and interesting presentation.

**Next meeting.Volgende vergadering:** 12/05/2005.

**Closing/Sluiting:** Die vergadering het 21h50 verdaag.

ZR6JHB

**Jubilee Year history page**

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# ZS 75 PTA

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**1930-2005**

See below what Dave Williams ZS6JW (Johnny Walker) was up to... Dave is currently one of our oldest members with an impressive 58 concurrent years of Pretoria Branch- and Club membership as well as an equal number of years as an SARL member. He obtained his license in 1946 and, at 81 years of age, Dave is still active today even on HF mobile. In the old days when SSB was still not legal, he was reprimanded for using that mode!

## SOUTH AFRICAN RADIO LEAGUE SUID-AFRIKAANSE RADIOLIGA

BRANCH  
P.O. BOX 1259  
PRETORIA



TAK  
POSBUS 1259  
PRETORIA

4. 1.54.

The Under Secretary ,  
Telecommunications,  
G.P.O.  
Pretoria.

Dear Sir,

With reference to your letter of the 9th. December, '53, Ref 26/66393/46, re complaint of Interference to Broadcast reception, I wish to advise you that the complaint was investigated.

Mr. Smith was fully justified in his complaint, the receiver was picking up the transmissions from ZS6JW. It appeared that the receiver was at fault, as no trouble was experienced by the inhabitants of the remaining eight flats.

The obvious remedy would have been to suppress the receiver with wavetraps, but due to the attitude of Mr. Smith, this was not possible as he did not want the receiver interfered with.

Mr. Williams was then asked to fit Mains Suppressors to his transmitter, and also to run his aerial in another direction so as to minimise the amount of radio ~~fre~~ frequency energy in the receiver.

Mr. Williams Co-operated and was able to report that he had greatly reduced the amount of interference. Trusting that this will meet with your approval,

Yours Faithfully,

Chairman.

## Birthdays

## Verjaarsdae

Mei



- 01 Amanda, dogter van 'JB' ZR6YV
- 01 Hannie ZR6JMP
- 06 Suzette, dogter van Magda ZS6MVW en Pieter ZS6PVW
- 07 Casper ZR6CVZ
- 09 Diana, sw van Louie ZR6LVW
- 09 Heilie, daughter of Melvyn ZS5MF
- 10 Roy ZR6RV, son of Roy ZS6MI
- 11 Wally ZS6WP
- 14 Johannes ZS6BPB
- 14 Pieter ZS6PVW
- 16 Corrie ZR6XXX
- 17 Vince ZS6BTY
- 18 Karen, daughter of Frank ZS6GE and
- 20 Dawid ZS6DSG

May

## Anniversaries Herdenkings

- 04 Ronel en Pieter ZR6PSR ( )
- 28 Edna and Peter ZS6RX (50)

- 22 Otto ZR6ZRO
- 22 Arnaldo ZS6-2505
- 23 Lily, sw of Harry ZS6AMP
- 25 Tjerk ZS6P
- 26 Vitor ZS6VG
- 27 Eben ZR6EDT
- 31 Egbert ZS6AZG
- 31 Dave ZS6JW

## Sick Parade | Krukkelys



We heard that Agnes ZS6BAV sw of Ivan ZS6AUT, is still unwell.

## PARC Diary | Dagboek

- |             |           |                                |
|-------------|-----------|--------------------------------|
| <b>May</b>  | 01        | Worker's Day                   |
|             | 02        | Public holiday                 |
|             | 06        | Ascension Day                  |
|             | 08        | Mother's Day                   |
|             | <b>12</b> | <b>PARC Club Meeting</b>       |
|             | <b>15</b> | <b>PARC 'Day in the Sun'</b> → |
|             | 28-29     | CQWW WPX CW Contest            |
| <b>June</b> | 04-05     | IARU Region 1 CW Field Day     |
|             | <b>09</b> | <b>PARC Club Meeting</b>       |

### Sunday 15 May from 11:00

#### PARC "day in the sun" at the PMC grounds.

!Special invites to our old-timers to celebrate our 75<sup>th</sup> anniversary. Free Braaipacks are free of charge to Club members. Members of other clubs are also welcome.

### Sondag 15 Mei vanaf 11:00

#### PARC "dag in die son" by die PMC gronde.

!Spesiale uitnodigings aan ons ou kerels om ons 75e bestaansjaar te vier. Braaipakke is verniet aan Klubede. Lede van ander klubs is ook welkom.

**Besprekings / bookings >> Johan 012-803-7385 082-492-3689**

## Snippets | Brokkies

- **HF Field Day results:** PARC came 3<sup>rd</sup> in the first leg multi-op Club category. Club standings are as listed:
  - East Rand ARC ZS6ERB/p4 7 798 points
  - Sasolburg ARC ZS4SRK/p 6 615 points
  - Pretoria ARC ZS75PTA/p 5 035 points
  - Cape Town ARC ZS1CT/p 3 789.5 points
  - Bloemfontein RAC ZS4BFN/p 2 135 points
  - West Rand ARC ZS6WR/p 2 019.5 points
  - Hibiscus Coast ARC ZS5HAC/p 1 911.5 points
  - Secunda ARC ZS6SRC/p 1 706.5 points
- **Technical discussions on-air:** Every **Monday evening 20:30** is the time to listen or join in on our repeater when current projects or technical problems brought up by yourself or others can be discussed. Other participants or listeners may have the expertise to give advice and steer you towards a solution. Various people have already benefited from these discussions and it is also a forum to stimulate technical activity into new and useful projects.
- **Pine ZS6OB** is ons spanleier van **ons tegniese program** om onder andere ons herhaler-diens op te gradeer. Hy sal dit waardeer as daar nog van ons lede is wat kan bystand gee as veldwerk by herhaler persele gedoen moet word. Bel asb vir Pine en **maak jouself beskikbaar as reserwe**. Hy is by 082-447-7823. Was jy al by 'n herhaler-perseel en weet jy wat alles betrokke is? Kom help en kry die ondervinding.
- The **ZS75PTA call sign** was used by **Ivan ZS6CCW** on HF until 30 April. He made around 2500 contacts. Om **Bill ZS6KO** surprised the QRP gang one morning with the same call sign. The field is now wide open from now on for any one to use the call sign. Please let Hans ZS6KR know when, how long and which bands you want to use it. QSL cards are available free of charge.

# Modern HF Receiver Dynamic Range Comparisons

ZS6KR

A compilation of [www.w8ji.com](http://www.w8ji.com) and [www.sherweng.com](http://www.sherweng.com) as well as other publications of independent lab tests with emphasis on close-in dynamic range. Only base stations are listed below.

Measurements are generally stated for 14.2MHz using a 500Hz IF filter.

## DEFINITION OF PARAMETERS:

The Minimum Discernible Signal **MDS** is a measure of sensitivity: -135dBm is more sensitive than -125dBm. This number does not particularly matter because the real test is to hear a very noticeable noise increase when you connect an antenna to the receiver. *If you hear an obvious noise increase over a dummy load, your receiver is sensitive enough!* Always check sensitivity at the quietest time with the narrowest selectivity you use on every antenna you use. *Contrary to folklore there isn't a receiver sold today that can dig into noise more than one based on sensitivity.*

If you read a review that claims a receiver made weak signals appear from nowhere, you better keep a wary eye on the rest of the review. It is possible for a receiver to be abnormally bad, but it is not possible for a receiver to work better than other properly working receivers based on sensitivity. Exceptions are that increased selectivity will reduce noise and poor AGC design or detector problems can cause mixing of signals AND noise.

The Blocking Dynamic Range **BDR** is the range to a point where a stronger signal either 2kHz or further away starts to make your receiver lose sensitivity. The bigger the number the better, ESPECIALLY at 2kHz spacing. 80dB or more is a good figure if you live in a reasonably quiet location but you will need more if there are close-by transmissions.

The Intermodulation Dynamic Range **IMDR** is the single most important number when comparing receivers. This is where two or more strong close-frequency signals mix and generate new phantom signals in an adjacent frequency even within your passband. The measurement is made just at the point where the phantom signal level is high enough to interfere with the weakest signal your receiver can detect. *IMDR is a measure of how badly your own receiver causes problems you might blame on the other people.* Bigger numbers mean better receivers. *It is most important that the 2kHz figure be good.* The 10kHz-20kHz figure means much less as almost any radio is good there.

Model Modified radios are excluded. Pre-amps are off unless stated otherwise	MDS	BDS		IMDR		
		2kHz	10kHz	2kHz	10kHz *=5kHz	20kHz
Ten Tec Orion ( 1KHz roofing filter)	-129	98	100	92	92	96
Elecraft K2	-131			~80	*88	98
Ten Tec Orion (20kHz roofing filter)				79		96
IC751 A	-140	83,5	98	79	91	
IC7800	-127	80	98	78	*88	102
IC756 Pro III						
Ten-Tec Omni 5				76		89
IC775				76		103
Ten Tec Omni 6+				75	*86	97
FT1000MP note 1	-135	73,5	84	75,5/62	80/70,5	94
IC781				75		96
IC765				73		95
FT1000D note 2	-134	68	85	72	81	94
IC756 Pro (Pre-#1 on)	-136	74	78	71	77	95
IC756 Pro II				70		96
IC746				70		99
IC746 Pro				70		97
FT1000MP MkV note 2	-131	74	86	70	77	98
FT1000MP MkV Field				69		90
TS570(D)				68	*72	97
FT847				67	*73	93
TS870 (ARRL test)	-129			63		97
TS2000 (Radcom test)				63	79	98
FT980				63		96
Ten-Tec Argonaut 5				59		84
FT920				58		98

**Note 1 :** The Yaesu FT1000MP, FT1000(D) have an inherent noise-blanker design problem that leaves a FET active despite the front-panel controls being off. In the MP model the NB level control also affects the IMD performance. The higher figure is with NB gain = min. and the lower with NB gain = max. In all cases the NB on/off switch was off.

**Note 2 :** Yaesu copied the same NB from the FT1000D and the above also applies. The figures are for NB gain set at a minimum.

## Is Your Logic Somewhat Fuzzy?

Spend a moment to understand logic definitions:

Almost 40 years ago electronic logic building blocks made their debut and a complete new art of reasoning evolved to effect quite complicated custom functions using TTL (transistor-transistor logic) integrated circuits. The usage of Boolean algebra, de Morgan's theorem and Karnough mapping came into full swing.

We will however only deal with the basics, so relax!

### Conventions

1. A logic high (usually 5V) is a "1" or a normal letter character
2. A logic low (almost 0V) is a "0" or a normal letter character with a solid line above it. Also referred to as 'not one'

## Is Jou Logika Ietwat Wollerig?

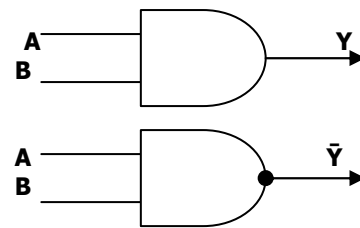
Bestee 'n oomblik tyd om logiese stellings te verstaan:

Byna 40 jaar gelede het elektroniese logika-boublokke hulle verskyning gemaak en 'n geheel en al nuwe redenasiekuns is ontwikkel om heel gekompliseerde met TTL (transistor-transistor logika) te verkry. Die toepas van Boolese algebra, de Morgan se stelling en Karnoughkaarte kom toe in volle swang.

Ons sal egter net die beginsels bespreek – ontspan!

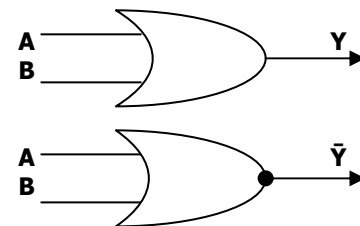
### 1. (Logical product) AND / NAND

A	B	$Y = A \cdot B$	$\overline{Y} = \overline{A \cdot B}$
0	0	0	1
0	1	0	1
1	0	0	1
1	1	1	0



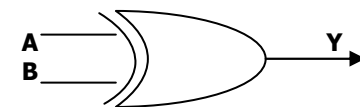
### 2. (Logical sum) OR / NOR

A	B	$Y = A + B$	$\overline{Y} = \overline{A + B}$
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0



### 3. (Coincidence) Exclusive OR

A	B	$Y = A (+) B$
0	0	0
0	1	1
1	0	1
1	1	0



### 4. Some ground rules

	$\overline{0} = 1$	$\overline{1} = 0$	
	$0+0 = 0$	$0 \cdot 0 = 0$	
$0+A = A$	$0+1 = 1$	$0 \cdot 1 = 0$	$0 \cdot A = 0$
	$1+0 = 1$	$1 \cdot 0 = 0$	
$A+A = A$	$1+1 = 1$	$1 \cdot 1 = 1$	$A \cdot A = A$
$1+A = 1$			$A \cdot 1 = A$
$A+\overline{A} = 1$			$A \cdot \overline{A} = 0$

### 5. Check your retention:

$$(A \cdot B) \cdot C = A \cdot (B \cdot C)$$

$$A + (A \cdot B) = A$$

$$A + (A + B) = A$$

$$(A + B) + C = A + (B + C) = A + B + C$$

$$A + \overline{A} \cdot B = A + B$$

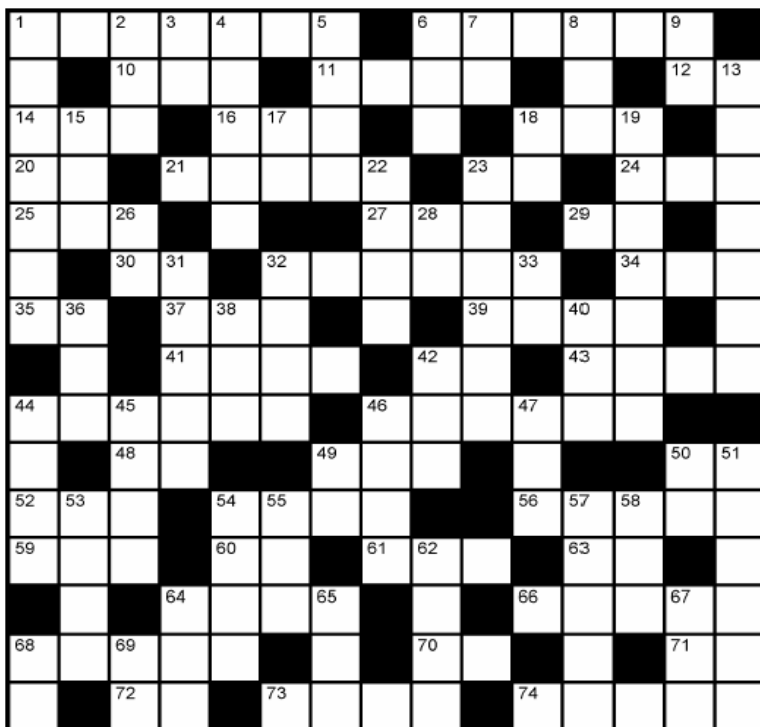
$$A + (B \cdot C) = (A + B) \cdot (A + C)$$

$$A \cdot (\overline{A} + B) = A \cdot B$$

# The Amateur Radio Crossword Puzzler

By H.Ward Silver, NOAX

April 2, 2004



## Across

1. Distance between channels
6. W7 state with a trail named after it
10. Certification for awards (abbr)
11. Unruly groups such as in a pile-up
12. Electromagnetic (abbr)
14. Standard time (abbr)
16. Manufacturer of digital voice modem
18. System of traffic nets (abbr)
20. Vertical angle (abbr)
21. Sub-audible tone system (abbr)
23. Trademarked synonym for 21 across
24. Makes a nice battery with lithium
25. Type of display (abbr)
29. Often confused with FM (abbr)
30. Next to
32. Makes a ducky antenna
34. The switch that speaks (abbr)
35. Shortwave band (abbr)
37. Surprised laughter
39. Large inland sea between UN and UJ
41. FET control element
42. Add 'E' to get a big solar disturbance
43. Equipment
44. Operate while moving
46. Communicate on two frequencies
48. Largest land continent (abbr)
49. First digital logic family (abbr)
50. Greek letter meaning 'micro'
52. Digital squelch system (abbr)
54. Opposite of WBFM (abbr)
56. Collection or team
59. Add 'IO' to get Old Macdonald
60. Collector current (abbr)
61. Radio Regulations (abbr)
63. CW prosign for 'and'
64. Leave out
66. Standard for digital characters (abbr)
68. Narrow filter
70. The band below AM broadcast (abbr)
71. Add 'U' to get a coffee pot
72. Often confused with NH (abbr)
73. The set of test questions
74. Antennas aligned vertically

## Down

1. Circuit that mutes RX audio
2. Keeps volume constant (abbr)
3. Unit of volume (abbr)
4. Really mad
5. Big brother to FRS
6. Official station that relays bulletins
7. Russian satellite prefix
8. Older term for 14 across
9. One of the compass points
13. Listen to
15. Gentle attention (abbr)
17. The watery continent (abbr)
18. Postal code for VO1
19. Communicate on one frequency
22. Replacements (abbr)
23. Increases sensitivity of a receiver
26. Logarithm ratio (abbr)
28. Information carriers in an AM sig.
31. Parasitic beams
32. Speed of digital bit transmission
33. Repeated roger (abbr)
36. Swings with 'to'
38. Intelligent computer in 2001
40. Length of life
42. See you again (CW abbr)
44. Type of modulation
45. Fixed station
46. Two-tone signaling standard
47. Periodic type of antenna
49. Frequencies higher than audio
50. Metal that shields magnetic fields
51. Radio path to the satellite
53. Italian goodbye
54. Highest energy rechargeable battery
55. Interference from broadcast stns
57. Start again
58. Signal source (abbr)
62. Your radio ID
64. Base-8 (abbr)
65. Binary base
67. Postage coupon (abbr)
68. Where Lewis & Clarke spent winter
69. Idiot box (abbr)

# Swap shop 1940 style

**WILL TRADE SIX BRAND NEW 32x6 truck tires for 110 volt AC factory built communications receiver and transmitter. Modern equipment only please. O. Link, High Bridge, Wisconsin.**

**HAVE USED RADIO PARTS, tubes, etc. Will trade for Rider's Manuals or what have you? Needles Distributing Co., 1024 Worden Ave., Missoula, Mont.**

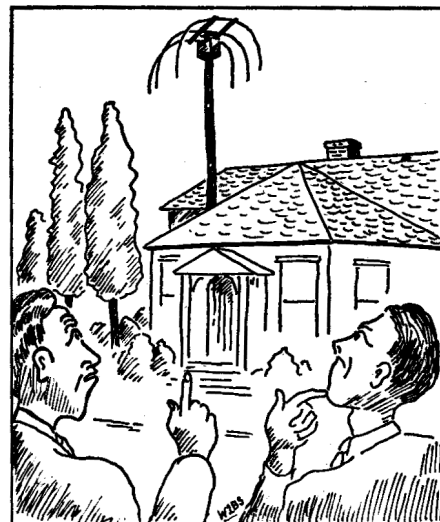
**TRADE NICE FLUTE IN ROUND mahogany and pearl case, used in Civil War by Major Parry, for pair of Binoculars or something of value for a boat. Wm. Ussler, Jr., 356 W. Allens Lane, Phila.**

**WANTED: CR 18 OR R.E.L. 192 with coils, Luck, Oakland, N. J.**

**HAVE 5 BAND SUPERHET, complete, can be used by Ham. Also parts, tubes and stamps. Wanted SW-3 or? J. Weiss, 547 E. 105th St., Cleveland, Ohio.**

**HAVE RADIO SERVICE MAGAZINES, 0-2 Mils. 3" Jewel Meter, Zenith ABC Power Pack, over 250 old U. S. Stamps, also vacuum cleaner motor. Want typewriter, shortwave receiver, transmitter, or? M. Salant, 2082-60th Street, Brooklyn, N. Y.**

**WESTERN-ELECTRIC, RACK-PANEL, power supply; W-E cradle telephone; Winchester .22; crystal record-player; many ham parts, tubes, etc. Want: Photo equipment; canoe, binoculars. My list for yours. Dean Cooper, South 17th, Fort Dodge, Iowa.**



"Funny thing, it did that with 1 KW!"