



founded 1970

THE BULLSHEET

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Texas DX Society
An ARRL Affiliated Club



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The Texas DX Society, P.O. Box 540291, Houston, Texas 77254-0291
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Officers and Directors

President:	NR5M, George DeMontrond	Bullsheet Editor:	K2TNO, B. Schrader
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Treasurer:	KG5U, Dale Martin	Field Day Chairman:	K5GB, Butch Barber
Contest Chairman:	K5GN, Dave McCarty	Conv. Chairman:	W5ASP, Joe Staples

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ANNOUNCEMENTS

MEETING NOTICE - The Texas DX Society meets the second Friday of each month except when changed by the Board of Directors. The September TDXS meeting will be held Friday, September 9 at 7:30 P.M., on the north campus of St. John's School. St. John's is located at the intersection of Buffalo Speedway/Clairemont Lane and Westheimer (name changes at the intersection). Enter the gates off Clairemont, just north of Westheimer. A brief board meeting will be held at 7:00 P.M.

WEEKLY DX & CONTEST NETS- Each Tuesday night at 9:00 p.m. the Club sponsors a net on 147.96/.36. Participation by non-members as well as members is welcomed. The purpose of the net is to facilitate the exchange of DX, contest, and Club information within the amateur community. The Club's Packet Cluster DX bulletin board is currently up and running on 144.95 using the call K5DX. Use AX25 level 2 protocol; it can be accessed via the ALD digipeater if not direct. Your active support of these activities is encouraged.

BULLSHEET MAILING LIST - It is the club's desire to provide the Bullsheet free to all amateurs in the area with an interest in DXing and/or contesting. Donations to defray the publication and mailing costs are appreciated. If you would like to receive our newsletter, simply send your name, call, and mailing address to the Texas DX Society, P.O. Box 540291, Houston, Texas, 77254-0291. Visitors at the regular club meeting can request the monthly newsletter by providing their mailing address on the sign-in sheet. Articles or other newsworthy items from club members and other interested amateurs are hereby solicited by your editor. Send articles via FAX (713-790-1275) addressed to "Dr. William Schrader."

The President's Corner
(by George DeMontrond, NR5M)

Did you feel that cool burst of air outside when you headed for your morning carpool Tuesday? A sure sign that fall is on the way and with it the new contest season. And this year we have something new to go along with the cool(er) weather, SUNSPOTS. Somewhere, way back in the past (I'm told by the old timers), there was once before (or twice maybe) an outburst by ol sol similar to that which we are now experiencing. But memories are short (at least mine) and I can't help but look forward to THIS contest season in a way different than I did those of the past several years. With increasing spots there is no longer an excuse for not joining the fun; a small tribander at 40' - 50' will net the owner many hours of operating pleasure this fall. And help your club in its efforts to boot. So get with it! Now's the time to get active again.

For those closet politicians in the club, Labor Day brings on the traditional (?) TDXS political race for the Presidency (and other, less coveted offices). The club secretary will accept written nominations for the four elected club offices (President, V.P., secretary, treasurer) during Friday's meeting. Make sure your candidate has the "right stuff" (draft protesters and the very rich need not apply!). He/she should be willing to endure both the grueling race and, if successful the subsequent challenges of public office. Nominations will remain open through the October meeting. Election ballots will be mailed out to coincide with that other (less important) election in November.

We'll be choosing up sides for sweepstakes at Friday's meeting. If you aren't there, you will have no control over whose team drafts you. But, then again, even if you ARE there you won't have much control over that. The smoke filled rooms have been cooking for the last three weeks and I've already traded K5YCP for a future draft choice and money (\$ 0.35).

Bill, K2TNO, and company are ready to display all the new H.F. rigs including the whiz-bang ICOM 781 complete with all the empirical jazz he and his home brew electronic gadgets can conjure up. If you ever wanted to see just which of the new solid-state H.F. rigs is really tops, then here's your chance. Everyone will get a hands-on chance to break each and every rig tested. So don't miss your chance to see the new stuff first hand.

The St. John's meeting room is available on a permanent basis for a reasonable charge. If you have input, this month's meeting is the place to voice it. So....see you at the meeting, dig?

CONTEST CORNER
(by Dave McCarty, K5GN)

September is the month for "gearing up." School starts, the weather begins to change and the "fall season" begins for all kinds of activities. That first good cool front came in this morning, and sitting here by the pool it feels less & less like summer and more and more like contest season.

We'll have some more hot days before the majors roll around. Time to make out the list of antenna projects to get done by the end of October. Get your fellow club members involved -- make it fun!

SHORT PATH

September Sepcials: The NA Sprint contests and the Can-AM contests. For the DXer, there is the phone end of the European contest, the Scandinavian activity contests, and one that is new to me, the S. African Radio League Contest which might coax out some of the rarer DXCC types. If your heart runs to the shorter wavelengths, the ARRL VHF QSO Party looks for the last of the summer sporadic E. If you're really into working them all, try the Wyoming QSO party. Yep, folks, the WYOMING QSO Party. I remember in SS last year I wanted to throw a party when I finally worked my only Wyoming QSO! The Short Path calendar is a new format this issue to highlight the different contest types.

<u>North American</u>	<u>DX</u>	<u>Special</u>
9/10-12		ARRL VHF QSO Party
9/10-11	WAEDC SSB	
9/11	<u>N. Amr. Sprint CW</u>	
9/17-18	SAC CW	
9/17	<u>N. Amr. Sprint SSB</u>	
9/24-25	SAC SSB	CQ WWDX RTTY
	<u>Wyoming QSO Party</u>	
9/25	SARL HF	
10/1-2	VK/ZL/Oceania SSB	
10/8-9	VK/ZL/Oceania CW	
	Radiosporting Championship	
10/9	RSGB 21/28 MHZ SSB	
10/9-10		Illinois QP
10/11		WIAW Code (40 WPM)
10/16	RSGB 21 MHZ CW	
10/22-23		ARRL EME
10/29-30	<u>CQ WW DX SSB</u>	

Other Planning Notes:

- The Sprints are here! Call me after the net on Tuesday 9/12 if you want to be on the SSB team. No one has volunteered to captain a CW team so I guess we won't have one. (W5ASP is now in the process of organizing one...pub.)
- Can-Am is an excellent SS tune up for stations and operators. At the October meeting, I'll buy the refreshments for the TDXS members which show me the best 2-hour scores in Can AM, each mode. (Show it to me before the meeting to quality.)

- The numerous small contests are useful for checking the progress of autumnal propagation and antenna preparation.

Long Path

I hear the rumblings of a good time coming up in the big events of the Fall season.

The Fall Majors

Oct. 29 - 30	CQ WW DX SSB
Nov. 5 - 6	SS CW
Nov. 19 - 20	SS Phone
Nov. 26 - 27	CQ WW DX CW

Start now & plan to get on the air!

SS/TDXS

If you were not present at the August meeting, you missed the unveiling of the plan for an intra-club team competition in ARRL Sweepstakes. Team scores will be the sum of its members' adjusted scores. Here's an example of how an adjusted score will be calculated:

1. Members' reported score:	85,000
2. Add incentive points:	
a. Signed up for 6 hours	
b. Operated 10 hours	
= made all 6 ---- 6 x 1000	<u>6,000</u>
	91,000
3. Multiply by handicap factor	<u>1.80</u>
4. Adjusted score	163,000

The handicap factor was calculated for each mode for each member to bring his better performances over the past 4 years up to 60% of the best score in TDXS at the time. CW handicap factors are 50% higher than SSB to make the scoring independent of mode.

The incentive bonus works like this. Each team member will be asked to commit ahead of time to a number of hours of on-the-air operating in the contest. If he makes his commitment, he will receive a 1,000 point bonus for each hour he committed to operating, up to a maximum of twelve hours. Separate commitments will be solicited for each mode. "Make the commitment" will be judged from the operating log. The log must show the operator maintained a rate of at least 25% of his overall average rate in each hour claimed as "on-the-air." All members will be included in the teams. If the teams are of uneven size, a normalization of score totals to the same number of members will be used.

Rumors

I'm somewhat out of touch due to the failure (again) of my 2M rig and the rough work load at the plant. I did hear of some dabbling done at NR5M in the WAE and perhaps in AA.

(From the NCJ)

Gagarin Cup '87 - N5EA #6 A/B (U.S.)

CQ-M '87 - N5EA #9 A/B (U.S.)

NA Sprint - Feb. 88

CW	-	K5GN	#3 (U.S.)	#1 TDXS	#1 (Texas)
		KG5U		#2 TDXS	#6 TX
		K5TU		#3 TDXS	#7 TX
		KN5H		#4 TDXS	#8 TX
		NT5D		#5 TDXS	#9 TX
		K2TNO		#6 TDXS	#5 NY
		W5ASP		#7 TDXS	#14 TX
		NZ5I		#8 TDXS	#15 TX

Phone	-	K5LZO	#4 (U.S.)	#1 TDXS	#1 (Texas)
		KR5M	#5 (U.S.)	#2 TDXS	#2 (Texas)
		NT5D		#3 TDXS	#3 TX
		KG5U		#4 TDXS	#4 TX
		N5RP		#5 TDXS	#5 TX
		K5RP		#6 TDXS	#7 TX
		WA9VLI/5		#7 TDXS	#8 TX
		NN5Q		(non-member)	#9 TX
		KN5U		#8 TDXS	#10 TX
		WB5N		#9 TDXS	#11 TX

TDXS was #1 team on SSB - #1 guys!

(From QST - 9/88)

CAN-AM

No TDXS members listed.

(From CQ 9/88)

CQ WW SSB

K5DX	#6 (W5)	A/B
KE5FI	#1 (W5)	#2 (U.S.A.) 10M S/B (not enough nippers)
(WB5RUS)	#3 (W5)	10M/SB
(K5NA/2)	#3 (W2)	M.O.S.T.
W5WMU	#2 (W5)	M.O.S.T. (beat NA)
K5RVK	#5 (W5)	M.O.S.T.
KN5X/J3	(incl. NT5D, WB5N)	2.8 MM M.O.S.T. (Only J3)
NR5M	#3 (U.S.)	#2 (W5) M.O.M.T. (lost to 'AU)

Locals(?) in the results: Do we know these guys?

Can we get them to our meetings?

WV5K, W5NR, K5BDX(?), KW5P, WQ5W, AA5BT, KN5S(?).

8877

We need captains for SS teams - see George before the meeting. Be thinking about getting on the air this fall - it's going to be fun!

'73

Dave

CQ WW and the TDXS DXer.

For the ture-blue DXer it is hard to think of a better contest to enter than the CQ WW contest. What makes a successful DXer? An ability to locate the rare one amidst the QRM and noise, pull the call out, get through and make the contest. The CQ WW DX tests have all the elements, especially in participation. Look at the SSB results in the September CQ. Countries like Togo, Zaire, Turkmen, Mellish Reef, Guinea, East Malaysia, British Military Cypress, over 150 countries that sent in logs. That doesn't include the casual ones that drop in just to join the tray. This fall would be an excellent opportunity to join the hunt for the rare ones in the granddaddy of all DX contests, the CQ WW.

With propagation on such a rapid rise, this year's editions should really be fun with a niche for nearly everyone's interest - low bands, 10M, whatever. Max Busick told me Saturday, "This is the best its ever been, with the good conditions and all the excellent equipment on both ends." He's right - don't miss it!

K5GN

DX ROUND UP
(by Jim Lane, N5DC)

Ever wonder about the Solar Flux, A-Index and K-Index Numbers? I always thought the higher Flux the better. George made a comment at the August Meeting "Why since numbers are high isn't 10 open?" Sharp replied "Don't confuse high numbers with MUF." As a result of that conversation I am copying an article from a 1985 NCJ article that will give you some insight into the WWV numbers.

When you listen to WWV at 18 minutes after the hour, do you wonder about the data that is reported and how to use it? NBS booklet #432 on NBS Time and Frequency tells what this data means and how the indices are formulated. Much of the time and frequency chart data is published in the ARRL handbooks, but information on how the solar indices are figured is not generally published.

The SOLAR FLUX or first figure broadcast from WWV is a reading of flux units measured at 2800 Mhz (sun radiation) at local noon, 1700 UTC at Algonquin Radio Observatory at Ottawa, Canada. Higher sun spot activity causes a rise in the flux figures. Example: a figure of over 200 gives generally good propagation up to 50 Mhz with good band openings. As the solar cycle decreases, the figures will drop to 100 or lower and even 10 meters will not be open.

The A INDEX (sometimes referred to as the Aurora Index) is derived from eight successive 3-hourly "K" indices and gives an indication of how disturbed the geomagnetic field (our signal reflective layer) has been over a 24 hour period (UTC). The index is that observed at a Fredricksburg, VA station. Figures higher than 20-25 will generally indicate that an Aurora can be observed at some place in the world.

The "K" INDEX is a quasi-logarithmic index of geomagnetic activity over a 3-hour period and ranges from 0 (very quiet) to 9 (very disturbed). It is obtained by determining the maximum deviation from the quiet day curve of the most disturbed component of the geomagnetic field. CO station. It is possibly the most useful for a quick observation, especially when the index is changing and you wonder what the bands are doing.

Following the WWV figures on a daily basis has been most interesting especially when solar flares occur and the geomagnetic field acts up immediately, followed by a storm level condition about 24 hours later. VHFers can look for Aurora DX conditions by being acquainted with what to look for in these figures. The weekly propagation bulletins broadcast on Mondays from W1AW will also tell you what's happened and predictions of things to come. Why not use this free information to help your communications?

For further information, or a copy of NBS special publication #432 contact:

National Bureau of Standards
Radio Station WWV
2000 East County Rd. 58
Fort Collins, CO 80524

The propagation information usually provided by WWV 18 minutes after each hour will evidently not be available until the end of September. There is a problem with "GEOGHRON." The information normally provided by WWV may be obtained by telephoning 303-496-3235.

Bulletin Browsing

BRUNEI	V85HG 14, 200-210 1000Z ALSO 1600Z QSL CBA
CANARY IS	EA8BAB 21,255 1430Z QSL WB3GPR
S. GEORGIA	21,355 1800Z
ETHIOPIA	HB9CVB/ET 14,235 1430Z QSL HOME CBA
GABON	TR8SA 14,200 1500Z-21,230 1800Z QSL F6FNU
MALTA	9H1ED 14,025-030 2330Z QSL CBA
SUDAN	ST2KR 14,034 0001Z QSL BOX 3552, KHARTOUM, SUDAN
PITCARIN	VR6ID 0300Z 14,240

Evie and I have been helping Irma Christian VR6ID obtain a new Icom 735. She meets her QSL Mgr. Rosemarn WH6BAO on Monday nights at the above time and frequency. Irma will take calls from other stations, but if you need VR6 try to wait till she has transacted her doings with Rosemarn. Irma will be up and running with a new 735 by mid November. Our thanks to Don at Madison for his assistance in obtaining the new rig for her.

See you in the pileups!

The rePeter Principle
(de Bill, K2TNO)

There is reason to believe that at long last the repeater may truly be fixed. There is also reason to believe that the terrible noise that has occasionally driven us crazy may also have been eliminated. This little story will be presented in abstract form and then expanded below for the nitty-gritty.

How the repeater got fixed.

Bob Moorman, K5VMX, who owns Aldine Communications had repaired the club GE Master II power amp board twice before. The last time, it failed and blew the final transistors. We removed the PA board over a month ago and replaced it with a borrowed brick amp from V-J Assemblies (alias K5GA, a.k.a. Bill). That brick came to be known affectionately as the mosquito for its cute little RF feedback whine.

Meanwhile, VMX got sufficiently mad to send the PA board back to GE. They updated it with twenty-four modifications (read: replaced) and returned it at no charge! On Wednesday, August 31, a troop of us re-installed the new PA (read: Brain, Bob's tech did it all - he knows what he's doing).

Facts collected during check out:

1. Transmit output frequency:
147.360 +0.000 MHZ
2. Power output
Maximum = 98.1 W
Chosen output:
Out of duplexer = 50W
into duplexer = 78W
Insertion Loss = 1.9 dB

3. Receiver sensitivity:
0.3 uV for 12 dB SINAD
4. Receiver desensing by transmitter: 1 db
5. DC current drain at full output:
25 AMP.
6. FM tracking in repeater mode:

Received signal
deviation (KHZ)

Transmitted signal
(repeated deviation (KHZ))

2
3
4
5

2
3
4
5

7. Quarts of water to refill emergency backup battery that we've ignored for two years: 2 1/2.
8. Number of cigars consumed at site by K5VMX during checkout: 2.
9. Number of feet of antenna currently missing from end: 2 (estimate).

How the intermod got fixed.

All transmitters must identify themselves occasionally (even W5JWM). One method for doing this is to devise a series of tone pulses whose length and pattern define various letters and numbers. For example, a short pluse interspersed between two long ones might sound like "dah-dit-dah" to a listener. This pattern could be called "K" for example (With me so far YCP?).

But I digress. The recent bout of intermod got really bad, and was affecting not only our machine on 147.36 but also 147.32 and 147.00. One morning I suddenly heard a burst of intermod noise, apparently sending its call sign at about 35 wpm! Years of 40 meter JA runs enabled me to get "KWU486" copied onto the back of my hand. A call to FCC engineer Steve Lee got him to check the licensee. It's a paging transmitter on 152.24 located in the vicinity of the Galleria. He agreed to go check it with a spectrun analyzer, while I called N5DU (our repeater chairman). Bob reached the station's manager who said they'd had a lightening hit at that site about three weeks ago (About when the intermod got bad again!).

That night TDXS's sly super-snooper scanner sleuths went into gear. About 2200 local, N5EA called and said he'd been listening to the pager, and concluded that it wasn't interfering until and unless another pager on 152.18 was also transmitting! A quick hand-calculator session by yours truly failed to reveal any obvious mixing scheme that would account for the problem.

I called the FCC guy the next morning to report N5EA's findings. He said "yes, I've already listened to 152.24 and found they don't cause the problem every time they're transmitting." (Pretty fast action, I think! - ed.)

Later that morning the intermod suddenly went QRT. Soon afterwards N5DU got a phone call: the pager system guys had replaced a power supply in their transmitter, and suddenly the problem was gone! He'd looked for a spur on his spectrum analyzer and hadn't see one, nor did the harmonic output change, but for

some reason the new P.S. fixed their machine. Voila! No hash, just beautiful silence on all the repeaters. Let's hope that the problem stays away for a while.

How NR5M nearly became a soprano in the Vienna Boys Choir:

On the evening of our triumphant repair of the repeater, elimination of intermod, etc. (see above) our beloved President fired up on the machine. We explained the day's events and were duly awarded two "attaboys" for our efforts. Then he couldn't quite restrain himself: "You know, now if you listen carefully you can still hear some interference of some sort way down in the background noise. Do you have any idea what's causing it?"

How EXXON company radios sometimes interfere and why not all the time:

Occasionally, a commercial FM mobile will suddenly appear on our repeater. It will come in through the receiver on 147.96, and sound perfectly fine. Pat, KJ5Y, noticed a familiar sound to a voice a few weeks ago - that of his box! Pat, who works for EXXON, realized that their company mobiles are on 49.32 MHz. So the third harmonic is 147.96. He tried to figure out why only some of the company mobiles interfered, and suddenly hit upon a curious fact: all the interfering mobiles were also hams with 2M rigs!

Pat did a few experiments and found out that if he removed his 2M whip the problem quit. In fact, it quit if he just detached the COAX from his 2M rig. A sharp strip line bandpass filter tuned to 147.96 cured the problem also.

Pat's diagnosis: The 49 MHz fundamental is being detected by diode TR switches in the 2M rig, and the third harmonic (produced by the diodes - not by the business band radio) is re-radiated by the 2M rig itself. So, the problem will occur whenever a car with both radios is close to the repeater.

The word on this problem has spread slowly - if it continues to be a problem we'll get going with a fix - otherwise let's just "grin and bear" this one!

News From the Multitudes
(de Bill, K2TNO)

- Item: GO/K5TU sends news he's now QRV on all bands with a vertical. Look for Kim at 00 and 06Z on 14020.
- Item: NM5M, Eric, was married this past weekend out in L.A.. We would have heard more about it but Eric forgot to mail in his logs.
- Item: K5GA, Bill Bradford, is now on hf mobile with a new TS-140 and Hustler whips.
- Item: NN50 was surprised when Don Search sent back a 6D4EE card filled out in ballpoint from 1972. Seems our ace barrister sent it in as an XF4 card even though nowhere on the card is that QTH ever mentioned! (Can't wait to see one of your pleadings to the IRS, Jim - ed.)
- Item: Line noise problems? Alan, WB5BIR, says the guy to call at HL&P is Dennis Dusek at their radio shop, 943-6555. All says he's very helpful, sometimes even same-day service. Call between 7:30 - 8:00 A.M.

Item: Buy a copy of the new ARRL Antenna book, a steal at \$18.95. No shack should be without this one, especially with the excellent mobile antenna article described therein.