



MAY 2002

No. 246

Newsletter of the Ben White Memorial Nets ~ founded 1938

MANAGER'S REPORT – HIT AND BOUNCE NET Sis WD8DIN

April report looks good despite the QRN, QSB, etc., Fifty-eight stations brought our totals to 444 pieces of traffic listed and 404 cleared. QNI 645 and average time per session 37.7 minutes.

Top traffic hounds for April, listing 17 or more were: K2BCL 62; NG1A 58; KA8WNO 55; K8KV 38; AA4AT 24; N4ABM 22; W8RTN and AA8PI 21 each; N3QA 20; W2MTA 17.

QNI toppers- Perfect attendance: K2BCL and WX4H; KA8WNO, W2MTA and WD8DIN 27; K8KV, WA2CUW, NR9K, KX8B, KK3F 21; K3NNI 20; W3JKX 19; N4ABM and WA3UNX 18; K8LJG 17; N1DHT 16; AA4AT and WØGRW 14; N9KHD 13; W8RTN, AA8PI KW1U and KA5NNG 12; K3RC, WB2RPW and K3MIY 11; NG1A, KB9IOT and KA8VWE 10.

Perfect attendance (weekenders): N3QA, W1KX, N3DE, W2EAG and WA3JXW.

To everyone who checked in, with or without traffic, your presence is very much appreciated and welcome.

73 ARF -Sis

FCC PROPOSES TWO NEW AMATEUR BANDS!

From ARLB028

Good news for ham radio this week! FCC has proposed going along with ARRL's request for a new domestic (US-only), secondary HF allocation at 5.25 to 5.4 MHz. The FCC also is ready to permit operation on a 136-kHz "sliver band" in the low-frequency (LF) region. And, in response to a third ARRL request, the FCC has proposed elevating Amateur Radio to primary status at 2400 to 2402 MHz.....The FCC voted unanimously May 2 to adopt the Notice of Proposed Rulemaking in ET Docket 02-98. The Commission released a Public Notice May 9, and the NPRM is expected to be released soon. A comment deadline will be announced as soon as it's available. The FCC said the new 5-MHz band would help amateurs "better match their choice of frequency to existing propagation conditions." The band, if approved, would be the first new amateur HF allocation since World Administrative Radio Conference 1979 gave amateurs 30, 17 and 12 meters--the so-called "WARC Bands."

Assuming the 5-MHz band eventually is authorized, it could be a few years before it actually becomes available. The League said its successful WA2XSY experiments demonstrated that amateurs can coexist with current users and that the band is very suitable for US-to-Caribbean paths. In comparisons with 80 and 40 meters, the WA2XSY operation also showed the 60-meter band to be the most reliable of the three.

The ARRL also argued that a new 150-kHz allocation at 5 MHz could relieve periodic overcrowding on 80 and 40. If allocated to amateurs on a secondary basis, hams would have to avoid interfering with--and accept interference from-- current occupants of the spectrum, as they already do on 30 meters. The band 5.250 to 5.450 MHz now is allocated to Fixed and Mobile services on a co-primary basis in all three ITU regions.

The ARRL asked the FCC for two LF allocations in October 1998--135.7 to 137.8 kHz and 160 to 190 kHz. The FCC said its action on one part of that LF request proposes changes that would enhance the ability of amateur radio operators to conduct technical experiments, including propagation and antenna design experiments, in the 'low frequency' (LF) range of the radio spectrum." Several countries in Europe and elsewhere already have 136-kHz amateur allocations. The first amateur transatlantic contact on the band was recorded in February 2001. Hams would be secondary to the Fixed and Maritime Mobile services in the 136-kHz allocation. The League said its engineering surveys suggest that hams could operate without causing problems to power line carrier (PLC) systems already active in that vicinity or to government assignments.

Unallocated Part 15 PLC systems are used by electric utilities to send control signals, data and voice. The FCC said its proposal to upgrade the Amateur Service allocation at 2400 to 2402 MHz to primary "seeks to protect current amateur use of this band." Hams have shared their other 2.4 GHz spectrum on a secondary basis with government users. Amateurs already are primary at 2390 to 2400 and from 2402 to 2417 MHz. The ARRL has said primary status in the intervening spectrum slice was needed "to provide some assurances of future occupancy of the band segments for the next generation of amateur satellites." The ARRL has

expressed its belief that hams can continue to accommodate Part 15 and Part 18 devices at 2.4 GHz.

>>>>>>News and Views<<<<<<<

Re: New Band Proposal (WA4DOX)

Excerpted from The ARRL Letter, Vol 21, No 20, dated May 15, 2002:

** FCC releases details on new band proposals*
The first new bands since 1979, this could be good!

FCC RELEASES DETAILS OF 5 MHz ...
A band between 80m and 40m, this could be really good!

The Commission announced in a Public Notice released May 9 that it would propose a new, secondary, domestic (US-only) HF allocation at 5.25 to 5.4 MHz ...
Sounds like the FCC is headed in the right direction!

The FCC has proposed letting amateurs operate at full legal limit on a new 5 MHz allocation, but it left open for further discussion whether to restrict the band to Amateur Extra Class licensees or make it available to General and higher class licensees.

Uh-oh - "full legal limit" - that means 1500W, splatter, and harmonic distortion with the potential to harm other non-Amateur services.

The FCC also invited further comment on whether the band should be broken down into mode-specific subbands.

Why, of course! 5.250 to 5.395 MHz, CW only, limited to 100 watts. The rest of the band could be used for phone, RTTY, digital, image, whatever, at "full legal limit".

The ARRL had proposed opening the entire band to RTTY, data (including CW), phone and image emission types.

Let's see, there must be a mathematical expression here somewhere: "Full Legal Limit" + "entire band" + "phone" equals zero probability that a CW station would be able to operate - abiding by Part 97 R&R. An alternate, more logical, mathematical expression might be: "Full Legal Limit" + "entire band" + "phone" equals zero probability that a CW station would even want to operate - abiding by his better judgement.

What really bothers me about the FCC proposal is the "full legal limit" statement. We use 80 meters at night for continental CW communications and the majority of operators enjoy reliable communications at power levels usually no greater than 100 watts. The same

can't be said for phone communications on 80 meters, where "full legal limit" is the norm and not the exception, whether needed or not. Why Radio Amateurs make the distinction between '80 meters' and '75 meters', is because many of them don't consider '75 meters' to be a viable part of the 80 meter band. It has nothing to do with the frequency, but with the power and the endless babble.

What really bothers me about the ARRL proposal is opening the entire band to all modes. 30 meters is an excellent example of a 'splinter band', i.e. 150 kHz, that works really well. With a power restriction of 200W PEP and only CW, RTTY and data modes allowed, on a shared-basis with fixed services outside of the US, 30 meters remains a popular band. Some might argue that 30 meters is not available to all Radio Amateurs, but that is not true. Even those with zero knowledge of CW can maintain excellent digital communications using RTTY and data modes. The 30 meter band is not restricted to CW-only communications.

By allowing full-band full-power use by phone modes, i.e. 1500 watts using AM and SSB, the 60 meter band could end up being nothing better than an extension to the '75 meter' band. Anyone who has any experience with the '75 meter' band understands very well what I am suggesting.

The FCC has invited additional comments regarding the proposed 60 meter band. Whatever your feelings on the issue are, you should take a few minutes and consider whether you wish to be a part of the decision making process, or whether you trust the ARRL and the FCC to make the right decision for you. It's been 23 years since we received any new spectrum and it will still be two or three years before we can hope to receive the 'splinter' allocation on 60 meters, but the time is now to make yourself heard on this issue. If you would prefer 60 meters to be an all-mode, "full legal limit" band, then you had better hurry up and write to the ARRL and the FCC, because I'm going to write to them and request that this new allocation be restricted to 100 watts and CW only!

That way your vote will cancel out my vote.
73, Obie

I carelessly forgot to include another, possibly more significant reason why I am bothered by the ARRL's proposal. With the change in the FCC's license structure, i.e. the elimination of the Novice license, and the non-distinction between codeless Technician and Technician Plus class licensees, the ARRL has already proposed to eliminate the Novice-Tech Plus CW-only subbands which are now employed on 80 meters, 40 meters and 15 meters.

The reason for the sub-bands was to provide a training area where Novice, and later Tech Plus, licensees

could meet to practice and improve their CW skills. These exclusive CW-only segments have also enjoyed a 200 watt power restriction, thanks to the FCC. The ARRL wants to eliminate the 'now-useless' Novice-Tech Plus sub-bands and farm these segments out to expand the HF phone bands. As far as power levels in the expanded phone bands, the jury is still out on this issue. They may remain the same, or they may change, based upon the ARRL's proposal and the FCC's action.

One example of how this will affect my operations is that the Virginia Net, a CW-only traffic net, which has for years enjoyed operation within this exclusive, CW-only, 200 watt restricted sub-band, will risk now having to compete with high-power phone operations. It is likely the ARRL will propose "full legal limit" phone operations and the FCC will likely approve such a proposal, thus this CW net, and many other CW nets may have to decide to relocate after years of isolation from domestic phone interference. Imagine living for years in a quiet neighborhood and then having to either put up with noisy neighbors or having to move since you now have no legal means to quiet the neighbors.

The Virginia Net is just one of many nets that have shared 'quiet' HF spectrum for years. Prior to realignment of the Novice-Tech Plus CW segment on 80 meters from 3700-3750 kHz to 3675-3725 kHz, the Virginia Net was not inside this exclusive CW-only, 200 watt restricted sub-band, yet it survived well since there was little in the way of competition for spectrum at that time. The Ohio Slow Net, the Hit-and-Bounce Slow Net, the FISTS Slow Speed Group, The West Coast Slow Speed Net and others may face relocation to avoid interference from the refarming efforts proposed by the ARRL.

So why does relocation bother me, you may ask? Well, being a 99.9% CW type of operator does have its drawbacks in this changing society of license classes, re-allocations, new allocations, and band farming. I worry that the proposed 60 meter allocation will become an all-band, all-mode, 'full legal limit' power HF allocation and that it may serve as an example and a precedent, for things to follow. If the ARRL is interested in refarming the Novice-Tech Plus segments to phone and high power, and the ARRL is interested in an all-band, all-mode, 'full legal limit' power 60 meter band, then it seems likely that the ARRL is also interested in an all-band, all-mode, 'full legal limit' power 80 meter band, ditto 40 meter band, ditto...ditto...ditto...any/all HF band(s).

That's what bothers me.

The future begins tomorrow.

The future begins an hour from now.

The future begins a minute from now.

The future begins a second from now.

The future is beginning.

The future has begun.

Soon, the future will have become history.

Act now, while the future is still ahead of us and not some dismal page from a dusty copy of FCC Part 97 Amateur R&R dated 2002. 73, OBIE

Commentary: RF, HF, SPARKS, ETC..

The lengthy diatribe which follows is mine, all mine - WA4DOX...

It's a funny thing, RF that is. For my needs and preferences, the most usable part of the RF spectrum lies way below the near-light spectrum that most of the public considers to be "usable", for their needs and preferences.

In the beginning, before HF was 'discovered' due to lack of oscillators that could produce a stable HF transmitted signal, we relied on 'spark' transmitters, tremendous brute-force devices which, intentionally or unintentionally, produced RF from near-DC to near-light. Aerials, as they were once known, were also tremendous brute-force devices, most containing multiple conductors in parallel or in a bird-cage fashion. Receivers were simple detectors, had no bandwidth limiting, had no RF amplification and relied on their aerial to produce a signal which was loud enough to be heard in their insensitive carbon-element headphones.

To be able to discriminate between one spark signal and another spark signal, the spark generating commutator at the transmitter was run at a particular rate, to produce a series of sparks at a fairly well regulated audio rate, thus the difference between one spark signal and another spark signal, in this simple detector, non-discriminating receiver, was the difference in the audio tone of the received 'buzz', which could not possibly have emanated from a microphone, but rather from a telegrapher's key, be it semi-automatic, a 'bug', or manual, a 'brass' key.

Radio Amateurs of that day, even prior to licensing, were few and far between. Hobbyists, they were. Many of them hopeful inventors, but all of them excited about the prospects and possibilities of wireless communication. Wireless in the sense that there were no connecting wires between the sending and the receiving station. Not-so-wireless in that each station was required to erect an aerial system to effect both transmission and reception. Often these aerial systems were the same for both sending and receiving; often as not they were different, but rest assured, either or both systems were tremendous brute-force devices and were pretty unsightly in their excesses.

As the hobby grew, modes of communication expanded from CW to voice to higher-speed digital, such as RTTY, to where it currently stands as an example of garage-based, i.e. homebrew, technology which has caused a revolution in the commercial communications

industry. While Radio Amateurs are not exclusively responsible for the current state-of-art in the communications industry, many of us are responsible for proving the effectiveness of one or another modes of communications, i.e. voice and digital; one or another designs in communications systems, i.e. VHF FM repeaters and autopatch; and one or another style or type of antenna systems, i.e. multi-band collinear vertical antennas. Modern Cellular systems are based upon many of these preceding well-tested, well-proven means and modes of radio communications technology.

While our involvement in RF has changed from near-DC to near-light, not in all cases - especially mine - but in many cases, the need for multiple-wire aerials has changed to require new tremendous brute-force devices, i.e. towers, to contain our array of 'aerials', if they can still be called that. For years, Radio Amateurs have suffered the anguish of relocating to a new QTH and then discovering that either an HOA or CC&R would prevent them from enjoying their hobby because it specifically disallowed any tremendous brute-force devices, whether simple wires or 200-foot towers.

Others, not subject to HOAs or CC&Rs, have still been prevented from doing so by zoning laws, set in granite, and feverishly upheld by their localities.

But times have changed. Having children of an age where they are now involved in competitive sports, we have driven thousands of miles, to out-of-the-way countrysides, to small cities, to large metros, through countless rural, suburban and urban localities. As we commute to and from these events, one thing stands out like a cancerous sore which is not only not getting better, but rapidly getting worse. What were once enjoyable vistas are now becoming eyesores. Mountaintops which once used to be gently sweeping peaks of green have become cluttered with towers to the point of becoming a distraction instead of a delight. Where billboards once littered the rural and semi-rural land alongside interstate highways, now 200-foot towers, littered with spikes of all sorts of antennas, have added a certain additional ugliness to accompany the proliferation of advertising signs. Hotels and older inner-city apartment building rooftops have become a welcome haven for short-tower cellular arrays. Water towers, grain silos, anything with any height has great potential to be a carrier of this disgraceful disease to our former nearly disease-free landscapes.

One would hardly think, in light of the obvious proliferation of cellular service and cellular-related service antennas, that no person, HOA, CC&R, local zoning ordinance, etc., could prevent a Radio Amateur from enjoying their hobby to the fullest extent, so long as their tremendous brute-force devices presented no worse to the eye, nor no worse to the environment, appearance and effect that commercial cellular towers

do. The same people who would decry a Radio Amateur's 70-foot tower would, at the drop of a hat, sue a cellular services company that didn't erect a tall enough tower to make sure that their cell-phone calls were 'clear and free', as the ads state.

Herein lies the dichotomy. Cellular service providers are legislated and encouraged to use as much space as possible, both in terms of acreage as well as in terms of verticality, to 'get the signal out'.

Radio Amateurs are legislated and encouraged to use as little space, especially in terms of verticality, but not limited solely to just verticality, as there are many legislative and non-legislative credos against any type of Radio Amateur's aerial, whether visible or not, whether exterior or interior to an existing habitable structure.

Herein lies the hypocrisy. Local, regional and federal statutes provide for the enjoyment of unimaginable profits by the cellular services industries, licensed to communicate by the FCC, by encouraging them to install and maintain a state-of-the-art cellular communications service, and to improve it as needed, without regard to the impact upon scenic vistas, the environment, etc. Local, regional and federal statutes prohibit the enjoyment of unimaginable communications opportunities by Radio Amateurs, licensed to communicate by the FCC, by discouraging them to install and maintain a state-of-the-art Radio Amateur Service station by placing restrictions on antenna existence, antenna placement, the erection of towers, etc.

What we need to let our legislators, i.e. Representatives to Congress, know is that it isn't a simple matter of restrictive covenants that is the problem, but a dichotomy and hypocrisy between what can be legally provided to profitable commercial cellular service providers and what can be legally denied to non-profitable Radio Amateur Service Operators.

I rest my case. -73, Obie

New stations QNI HBN: Please welcome **W9MQN**, Jim in WI and **WD9F**, Woody in IL. We are pleased to have you with us. [**Correction: Ron in PA is K3MIY**, not **W3MIY**, as I listed in the April issue. My apologies to Ron. -Ed.]

Ron is currently NCS of two traffic nets and has volunteered to be our HBN NCS on Thursdays, for which I am very grateful.

Change of address: WA4DOX, (Obie)

Joseph T. Price-O'Brien, P.O. Box 185, Pilot, VA 24138-0185.

WØUCE, Jack, formerly of NC, now living in Tokyo, is doing very well. We had a nice internet chat and he sends 73 to the Hit and Bounce members. No rig yet, but he is hopeful he will be back on CW soon.

N1DHT, George has rig trouble and is off the air for the time being (as of May 3). Hurry back, George.

BIRTHDAY LIST: Please add David, KB9IOT, DOB August 18.

ROOA -As time permits, I will be scanning the old editions of Morning Watch/Traffic Call, looking for certified arfers. If you have a certificate issued previously under another callsign and want it updated, please contact me. -Sis

Feedback:

EAN CHAUVINISM (April)

HMMPPHH! Got kinda attracted by that Hashifisti Headline on page 3 about EAN CHAUVINISM...hmm, what's the NTS done now to inflame someone out thar on Hit and Bounce?

I read on an wal wattaya know, tain't even about EAN, its about some poor guy a-starvin for traffic out in AR Land. All he seems to git is "junk mail."! Seems like he thinks us folks in HBN are "EAN"...guess we just gonna hafta WEAN him offn that...EAN is a net name in the NTS.

I'm an NCS on that NT System net Sunday nights...pshaw don't tell me that we don't know how to route message traffic! Why shucks, we even know what ARN stands for, an tain't Arkansas Radio Net!

- Bill W2MTA

Traffic Handlers April 27,2002

I do a lot of monitoring of Traffic Nets. It never ceases to amaze me that over the years that I have spent Involved in traffic handling as well as being an ARES DEC for many years also serving as an SEC of NTX for seven years plus my involvement in management positions at just about every level.

Many times I have just stood by, and observed the traffic being passed. What has brought about this response is I was listening to CAN Cycle 4, and followed a region rep off to send traffic to EAN. I had sent one myself at the Section level. I have heard many complaints about the content of a text being sent to various places. What I heard being sent back to KA1RMV, and VE3SCY was service type messages that text of their messages is being considered insulting to someone along the line of travel in NTS.

Anyone participating in NTS Nets especially at the Region, and Area level are not supposed to sit in Judgement of what traffic contains insulting words. If we are going to be liaison stations it is our responsibility to accept any legal third party traffic, and move it on towards its destination.

Now at the delivery level if the third party recipient hangs up on us because they either do not understand, or just do not want to be bothered should not be taken personally by the attitude of the receiving party.

Any amateur regularly taking part in any traffic net should be ready to take traffic for relay, or delivery.

Anyone participating in a formal traffic net should be there to handle traffic. If they are not there for that they should not participate in a formal traffic handling nets. If anyone gets to the point of letting something like this get to them then it might be time to take a break from regular traffic handling activities.

Remember a dedicated traffic handler should not set in judgement of the contents of a message as long as it does not violate FCC Rules. 73, Joe K5UPN
TCC Director CAN Cycle 1 and 2/Interim CAN Cycle 1 and 2 Manager

~Birthday Greetings~

MAY: 22 K8LJG; 23 AA4AT; 26 WA3YLO;
28 KA8WNO; 31 W8RTN.

JUNE: 8 KW1U; 8 KC1DI; 10 WB8SIW;
12 WØUCE; 18 WA4SRD; 29 K2BCL.

THE THEREMIN PROJECT

Some time early spring, my friend W4KFR became interested in acquiring a Theremin. For the benefit of any ARFers who don't know, the Theremin is an electronic musical instrument which utilizes the "beat frequency" or heterodyne effect to generate audio tones. It was invented circa 1917-20 by Leon Theremin.

For some years, I had been wanting to learn how to use Field Effect Transistors (FETs) in simple circuits, and decided that building a Theremin using FETs would be a good way to learn. Also, if it actually worked, Jim would have his Theremin to play with.

Before any actual design or construction could take place, it was necessary to find information about the characteristics of the original Theremin. Jim, having access to the WWW did that, and we finally settled on the RCA Theremin of 1929 as a basis and starting point. The RCA used eight vacuum tubes: (A UX-120, two UX-171A, a UX-280, a UY-224, and three UY-227). There were three RF oscillators. Two of the oscillators were operated at around 170 kHz, and their outputs were mixed together to generate a beat frequency in the audio range. One of these oscillators was connected to a small antenna. The musician, by placing his hand at varying distances from the antenna, caused that oscillator's frequency to shift, which in turn, caused a shift in the frequency of the audio output tone. The audio frequency output range was listed as 3-1/2 octaves, with the highest tone at around 1400 Hz. I guesstimated that the lowest tone would be around 132 Hz (the C below Middle-C). The third oscillator was operated at around 420 kHz, and was also connected to a small antenna. The musician, using his other hand in a similar fashion controlled the volume of the audio output from the instrument.

Jim's research also led him to a source for an audio CD of Theremin music played by Clara Rockmore. (The Art of the Theremin, available from Delos International, Inc. of Hollywood California. <http://www.delosmus.com>.) Jim bought a copy and then transferred some of it to cassette tape for me to use so that I could have an idea of what sort of tonal quality to match. Listening to that cassette, the Theremin sounded similar to a violin at the middle and upper frequencies, and a bit like a female human voice at the low frequencies.

Before this project, I had not given much thought to the tonal quality of musical instruments. That is, to why different instruments sound different even when they are producing the exact same note (frequency). It appears that the difference in tone is largely a function of the harmonic content of each particular instrument. (What musicians call "overtones" I think.)

While re-reading the chapter on Acoustical Phenomena in my well-worn copy of Sears & Zemansky, I came across a set of crude spectral charts for four musical instruments, and luckily, one was the violin. From that chart, I learned that a violin produces a quite strong second harmonic. The chart showed it as about half the amplitude of the fundamental. The third harmonic was also fairly prominent at about 20% of the amplitude of the fundamental. Based on that data, I decided to insert a sort of "notch" filter between the pitch oscillators and the mixer to reduce the amplitude of the fundamental so that the harmonics would be stronger relative to the fundamental. That did bring the resultant audio output tones much closer to the recorded "real" Theremin.

Because I was using only such component parts as I already had on hand, the Theremin that finally evolved used oscillators running at different frequencies than the RCA version. I put the pitch control oscillators at around 800 kHz and the volume control oscillator at around 1800 kHz. Despite those substantially higher frequencies, the oscillators were pretty stable. No doubt because there is much less heating of the coils and capacitors with solid state circuits.

The whole project took about six months to complete, and was worth the effort. I learned a little bit about how to use FETs, and also learned something about the Theremin. For those of you who are interested, and who have access to the WWW, there is apparently quite a bit of Theremin-related information out there that you might enjoy seeing (and on at least one site, hearing). 73, KA5NNG

SEALS

The following material about the U.S. Navy Seals was taken from the WWW at URL:

<http://www.chinfo.navy.mil/navpalib/factfile/personnel/seals/seals.html>

* NOTE: The text was not "down-loaded" but rather was hand-typed from a printout I got from a friend. The actual site also has some photos. Typographical errors, therefore, are mine. de KA5NNG



Today's SEAL (Sea, Air, Land) teams trace their history to the first group of volunteers selected from the Naval Construction Battalions (SeaBees) in the spring of 1943. These volunteers were organized into special teams called Navy Combat Demolition Units (NCDUs). The units were tasked with reconnoitering and clearing beach obstacles for troops going ashore during amphibious landings, and evolved into Combat Swimmer Reconnaissance Units.

The NCDUs distinguished themselves during World War II in both the Atlantic and Pacific theaters. In 1947, the Navy organized its first underwater offensive strike units. During the Korean conflict, these Underwater Demolition Teams (UDTs) took part in the landing at Inchon as well as other missions including demolition raids on bridges and tunnels accessible from the water. They also conducted limited minesweeping operations in harbors and rivers.

During the 1960s, each branch of the armed forces formed its own counterinsurgency force. The Navy utilized UDT personnel to form separate units called SEAL teams. January 1962 marked the commissioning of SEAL Team ONE in the Pacific Fleet

Please send material for Traffic Call by the 6th of each month. Email or USPS. Thank you.

and SEAL Team TWO in the Atlantic Fleet. These teams were developed to conduct unconventional warfare, counter-guerilla warfare and clandestine operations in both blue and brown water environments.

Concurrently, Naval Operations Support Groups were formed to aid UDTs, SEALs and two other unique units---Boat Support and Beach Jumpers--- in administration, planning, research and development. During the Vietnam war, UDTs performed reconnaissance missions and SEALs carried out numerous offensive operations. In 1967, the Naval Operations Support Groups were renamed Naval Special Warfare Groups (NSWGs) as involvement increased in limited conflicts and special operations.

In 1983, existing UDTs were redesignated as SEAL teams and/or SEAL Delivery Vehicle Teams and the requirement for hydrographic reconnaissance and underwater demolition became SEAL missions.

The Naval Special Warfare Command was commissioned April 16, 1987 at the Naval Amphibious Base, Coronado, Calif. Its mission is to prepare Naval Special Warfare forces to carry out their assigned missions and to develop special operations strategy, doctrine, and tactics.

SEALs (Sea, Air, Land) teams go through what is considered by some to be the toughest military training in the world.

Basic Underwater Demolition/SEAL (BUD/S) training is conducted at the Naval Special Warfare Center in Coronado. Students encounter obstacles that develop and test their stamina, leadership and ability to work as a team.

Treasurer's Report

Ole, N4ABM, Treasurer

Balance Apr 9/02 25.72
 Apr 11/02 AA4AT 15.00
 Apr 15/02 VE3DTR 10.00
 Balance Apr 23/02 50.72
 April 22/02 N3DE 20.00
 Balance May 9/02 70.72

Unpaid Bills: Feb TC 76.90
 Mar TC 63.37
 Apr TC 82.61

When making contributions, please make checks payable to **Merritt W. Olson, 12106 Stirrup Rd., Reston, VA 20191-2104**. Checks are preferred for purposes of record keeping. Do not send contributions to the editor.

We are most grateful for your donations

NEW NCS LINEUP HBSN: KG2HA is now NCS on Fridays.

HBN QNI APRIL

NG1A	FRED	MA	10	58
N1DHT	GEORGE	VT	16	5
W1KX	BILL	ME	8	
N1OTC	JACK	MA	1	
KWIU	MARCIA	MA	12	
K1WU	DALE	MA	2	1
K2BCL	GAIL	PA	30	62
WA2CUW	TOM	NJ	21	3
W2EAG	MARK	MA	9	
K2GCE	BILL	NY	5	
WB2GTG	BILL	NY	3	1
W2MTA	BILL	NY	27	17
WB2RPW	GARY	NY	11	
K2VX	DAVID	NJ	6	
K2YAI	DON	NY	1	
WA2YL	JANICE	FL	4	2
N3AO	CARTER	PA	3	1
N3COR	DON	PA	7	3
N3DE	HARRY	MD	8	
KK3F	PAT	MD	21	1
K3FT	CHUCK	MD	5	
W3JKX	EARL	PA	19	2
WA3JXW	DUDLEY	PA	9	5
K3MIY	RON	PA	11	
K3NNI	JOHN	MD	20	2
N3QA	CAL	MD	8	20
K3RC	BOB	OH	11	1
N3SW	SCOTT	PA	1	
WA3UNX	DON	PA	18	4
WA3YLO	TONY	MD	1	
N4ABM	OLE	VA	18	22
AA4AT	ART	VA	14	24
AB4E	AB	NC	1	
W4FRR	CHAS	VA	1	1
WX4H	MORT	FL	30	5
K4IX	BUS	VA	1	
W4VFJ	CHAS	NC	5	
W4VLL	VIC	VA	3	
KA5NNG	MIKE	AR	12	
K5UPN	JOE	TX	2	
K8AI	CURT	MI	1	
KX8B	CHUCK	OH	21	1
WW8D	TOM	WV	5	
WD8DIN	SIS	NC	27	6
K8KV	BEN	MI	21	38
K8LJG	JOHN	MI	17	39
AA8PI	DON	MI	12	21
W8RTN	LEE	MI	12	21
WB8SIW	JIM	MI	2	
KA8VWE	WALLY	OH	10	1
KA8WNO	JACK	WV	27	55
WA8ZGL	TOM	OH	1	
KB9IOT	DAVID	WI	10	5
NR9K	AD	PA	21	1
N9KHD	ANDY	WI	13	1
W9MQN	JIM	WI	6	
K9PUI	DICK	IN	4	
WØGRW	GEB	MN	14	

HBSN 3714 KHz 7:30 AM Daily New Lineup:

Sunday	VE3DTR	John
Monday	W2MTA	Bill
Tuesday	NR9K	Ad
Wednesday	WB5ZJN	Sam
Thursday	N3ON	Chuck
Friday	KG2HA	Sam
Saturday	N3COR	Don

HBN 7042 KHz 8:30 AM Daily

Alt 7114

Sunday	W2MTA	Bill
Monday	KA8WNO	Jack
Tuesday	WA3UNX	Don
Wednesday	N4ABM	Ole
Thursday	K3MIY	Ron
Friday	WD8DIN	Sis
Saturday	WA4DOX	Obie

TRAFFIC CALL

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