



The Illuminator



The monthly newsletter of the Carbon Amateur Radio Club

July 2004

July Meeting

The next regular meeting of the Carbon Amateur Radio Club will be held on Thursday, July 15, at 7:30 p.m. at the EMA Center in Nesquehoning. See you there!



Treasurer's Report

By John, W3MF

As of the June Meeting:

Previous Balance (From May Meeting)	937.62
Receipts (dues)	15.00
Subtotal	952.62
Disbursements*	204.81
Final Total	747.81

* Disbursements include \$4.81 to mail the newsletter and \$200 for Field Day expenses.



2004 Field Day Results

This year, the Carbon Amateur Radio Club operated W3HA in the 2A class (two HF transmitters and a "free" VHF station, all operated from emergency power).

Here are the gory sadistics on this year's effort:

Band	CW QSOs	Phone QSOs
80	103	152
40	375	341
20	83	160
6	0	64
2	0	1

We had 561 QSOs on CW (at 2 points per QSO) and 718 QSOs on phone (at 1 point per QSO). With a power multiplier of 2, that comes to 3,680 points, before bonus points.

We expect the following bonus points:

- 200 points for 100% emergency power for two transmitters
- 100 points for media publicity
- 100 points for public location
- 100 points for public information table
- 100 points for W1AW special Field Day bulletin
- 100 points for non-traditional mode demonstration (APRS)
- 100 points for site visitation by an elected governmental official
- 100 points for site visitation by a representative of an agency

900 bonus points would bring us up to 4,580 points, which is almost identical to last year's score.

Good job, team!



Utility Cuts Short BPL Trial that was Target of Amateur Complaints

(From the ARRL Letter)

Alliant Energy has called an early end to its broadband over power line (BPL) pilot project in Cedar Rapids, Iowa. The "evaluation system" went live March 30, and plans called for keeping it active until August or September. Alliant shut it down June 25. Ongoing, unresolved HF interference from the system to retired engineer Jim Spencer, W0SR, and other amateurs prompted the ARRL to file a complaint to the FCC on Spencer's behalf demanding it be shut down and the utility fined.

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Alliant Energy's BPL Project Leader Dan Hinz says the ARRL complaint "certainly was a factor" in the utility's decision to pull the plug prematurely but "not the overriding factor." The main reason, he said, was that Alliant accomplished most of its objectives ahead of schedule. The primary purpose of the Cedar Rapids evaluation was to gain an understanding of BPL technology and what issues might be involved in a real-world deployment, Hinz explained. But, he added, regulatory uncertainty and other unspecified technical issues also factored into the choice to end the pilot early.

Hinz said Alliant is "mashing the data" to compile a written evaluation of the Cedar Rapids pilot, but the company has no plans at this point to move forward with BPL. Alliant did not partner with a broadband services provider, and it has no other BPL test systems in operation. The system used Amperion BPL equipment.

According to Spencer, five fixed Amateur Radio stations within proximity of the BPL evaluation system and two mobile stations formally reported BPL interference on HF. "The radio amateurs and Alliant Energy cooperated by sharing interference information," he said. "Alliant Energy turned the BPL evaluation system off twice to allow collection of extensive BPL frequency and signal level data — with and without BPL." He said Alliant and Amperion tried various "notching" schemes to rid amateur frequencies of the BPL interference with only limited success.

The system included both overhead and underground BPL links to feed 2.4 GHz wireless "hot spots" for end user access. Hinz said the area's topography presented some challenges, especially with the wireless links. "I think in the end, we actually over-challenged ourselves with this specific pilot location," he said. And, despite "substantial progress" in mitigating interference, Alliant decided at this point that "it wasn't worth the extra effort" to resolve the thornier technical issues, Hinz added.

As for any broader implications, Hinz says he's always viewed BPL as a "strategic deployment technology," not one a company could roll out just anywhere and expect to be competitive with existing broadband services such as cable and DSL. "At least that's how we were looking at it," he said. "You have to find the right areas with the right

topography with the right concentration of certain types of customers," he said.

"It's never been in my mind that BPL has to compete with the speeds of cable today," Hinz added. "It has to compete with the speeds of cable and the next best thing tomorrow as well, if it's going to be usable well into the future." He hinted that Alliant might want to take another look at BPL once the FCC has put BPL rules and regulations into place, and the technology has further evolved.

The ARRL's formal complaint to FCC Enforcement Bureau Chief David H. Solomon called on the Commission not only to close down Alliant's BPL field trial system but to fine the utility \$10,000 for violating the Communications Act of 1934 and FCC Part 15 rules. Commenting on the termination of the Cedar Rapids BPL trial, ARRL CEO David Sumner, K1ZZ, pointed out that Alliant had tried for more than 12 weeks to fix the interference problem to a station 600 feet from its installation.

"In the end," Sumner said, "the interference was not eliminated except by shutting down the BPL system. Could the case against BPL deployment be any clearer?"

Spencer said he was happy with Alliant's decision, and he was gracious in expressing appreciation to the utility for working with him. "And thanks also to the ARRL and the Cedar Rapids BPLL Steering Committee for their knowledge and efforts in making a truly professional evaluation," he added.

Still outstanding are some chronic power line noise problems Spencer has experienced.

For additional information, visit the "Broadband Over Power Line (BPL) and Amateur Radio" page on the ARRL Web site <http://www.arrl.org/bpl>. To support the League's efforts in this area, visit the ARRL's secure BPL Web site <https://www.arrl.org/forms/development/donations/bpl/>.



UPLC Comment Shows BPL Campaign Starting to Pay Off, Haynie Says

(From the ARRL Letter)

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ARRL President Jim Haynie, W5JBP, says a remark the United Power Line Council (UPLC) made recently about Amateur Radio shows that the League's BPL message is getting through. In its reply comments on the FCC's BPL Notice of Proposed Rule Making in ET Docket 04-37, the UPLC's Brett Kilbourne claimed that members of the BPL industry are the real experts on the technology, "not a misinformed set of armchair amateurs that still use vacuum tube transmitters." A subsequent UPLC press release repeated the swipe, drawing a storm of protest from the amateur community. Haynie said this week that he took comfort rather than offense at the intended affront.

"I thought that the comment was a good indicator that the work that the League has been doing on multiple fronts is beginning to pay off," Haynie said. The League's FCC filings, technical studies and information on BPL, he said, have made it "very embarrassing" for the BPL industry to keep insisting "that the emperor is wearing clothes," so it's resorted to name calling instead.

Haynie said he remains puzzled that the BPL industry appears unwilling to support its claims that "the risk of interference from BPL is extraordinarily low, because it produces only minimal radio frequency energy at a few points in the system," as the UPLC's press release asserts. Any harmful interference that does occur, the UPLC claims, can be "mitigated" using a variety of techniques, "including frequency notching or frequency shifting."

"Just saying 'We said it's not going to interfere' is not going to cut it," he said. Haynie challenged the BPL industry to sponsor independent, professional engineering evaluations of the technology's interference risk. "Let's see what they've got."

Haynie said that while he found the UPLC's "armchair amateurs" remark amusing, its severe criticism of the National Telecommunications and Information Administration (NTIA) Phase 1 BPL report and comments in the proceeding raised his eyebrows a bit. In its press release, the UPLC said "NTIA's recommendations and ARRL's naysaying are misguided" and that the UPLC has "forcefully replied" to interference concerns.

"For Mr Kilbourne to come out and say they [NTIA] don't know what they're talking about, he might as well shoot himself in the foot," Haynie said, pointing

out that the White House, which is promoting BPL, is putting a lot of weight on the NTIA's recommendations.

In its comments, the UPLC said the NTIA's approach was "fundamentally at odds with the Part 15 rules" and "unjustified" by BPL's interference potential.

In response to the criticism leveled from the amateur community, the UPLC declared its "support for Amateur Radio remains unabated," but expressed concern for "uninformed armchair quarterbacking by a small number of amateurs." The UPLC also said it has "sought to work with ARRL," citing its offer to help resolve "a complaint in Cedar Rapids, Iowa." Alliant Energy prematurely shut down its BPL pilot system in Cedar Rapids June 25 Interference complaints from amateurs were a factor in the utility's decision.



AMSAT-OSCAR Echo Satellite Launched! (From the ARRL Letter)

A Russian Dnepr LV rocket carrying the AMSAT-OSCAR Echo Amateur Radio satellite and several other payloads launched on schedule June 29 at 0630 UTC from Baikonur Cosmodrome in Kazakhstan. Ground controllers made their first contact with Echo at 1452 UTC and collected some telemetry for analysis before shutting down the 435.150 MHz digital downlink transmitter.

"This achievement is due to many individuals around the world, who have helped in the design, building, integration, testing and launching of this satellite," said AMSAT-NA President Robin Haighton, VE3FRH. "Also the members of AMSATs in many countries who have helped us by funding this 'electronic adventure.' Without your financial support the satellite could not have been completed and would never have been launched. Give yourselves a pat on the back for a job well done."

Jim White, WD0E, of the AO-Echo project team reports that an initial analysis of Echo's telemetry indicates everything is looking good. "The battery, solar panels and temperatures were all as expected," he said. Housekeeping software now is

uploaded and running, and the transmitter was left on at a power level of 1.2 W.

Earth stations should not attempt to transmit on the satellite's uplink until checkout and commissioning are complete and AO-Echo has been made available for general use. White says that won't happen for at least one week. AMSAT will release bulletins when the satellite becomes available.

A telemetry decoding program, TLMEcho, is available for those who would like to view and report data from Echo. It may be downloaded from the "Echo Satellite User Software and Documentation page." AMSAT-NA requests that anyone recording Echo telemetry to send the CSV files to Mike Kingery, KE4AZN. A telemetry database has been established and will be tested over the next few days. When testing is complete it will be made available to directly upload telemetry files and query all data.

AO-Echo's sun-synchronous orbit is some 800 km (nearly 500 miles) above Earth. Among other capabilities, the 10-inch-square microsat — equipped with a transmitter capable of up to 7 W output — will allow voice communication using handheld FM transceivers. Echo will feature V/U, L/S and HF/U operational configurations, with V/S, L/U and HF/S also possible. FM voice and various digital modes — including PSK31 on a 10-meter SSB uplink — also will be available.

At last report, the AO-Echo project was still some \$12,500 shy of its \$110,000 fund-raising goal. AMSAT — a 501(c)(3) organization—welcomes additional donations to bridge the funding gap. Visit the AMSAT AO-Echo Web page for additional details. — AMSAT News Service



ARRL Propagation Forecast Bulletin

Propagation Forecast Bulletin 27 ARLP027
From Tad Cook, K7RA
Seattle, WA July 2, 2004
To all radio amateurs

Conditions were good for Field Day last weekend. There wasn't much of a sunspot count, but there weren't any solar storms either. I operated mobile

on 20 and 15 meters. I didn't hear much on 15 in Seattle, especially on Sunday. Last week's bulletin suggested possibly unsettled geomagnetic conditions over the weekend, but fortunately that was delayed until after Field Day.

A solar wind stream caused geomagnetic indices to begin rising late Monday UTC (June 28), which is late afternoon here on the West Coast. Mid-latitudes weren't affected very much, but the planetary K index rose to 4. The planetary A index on Tuesday, June 29 was 20, and the Alaskan College A index (from Fairbanks) was 29.

Sunspot numbers have been dropping. Average daily sunspot numbers over the past week were over 55 points below the week before, down to 60.9. Average daily solar flux dropped by nearly 19 points. For the next week the daily solar flux numbers look to stay about the same, between 80 and 85, not turning up again until around July 9. Sunspot numbers and solar flux are expected to peak for the short term between July 16-19. Geomagnetic indices should be stable, with possible unsettled conditions around July 6.

June 30 was the end of the second quarter for 2004. Time now to take a look at quarterly averages for solar flux and sunspot numbers, to help us discern the decline of the current cycle.

The average daily sunspot number for April 1 through June 30 2004 was 71.3, and average solar flux was 99.5. Both indicators are down since the first quarter of 2004.

From the third quarter of 2002 through the second quarter of 2004, the average daily sunspot numbers were 193.5, 152.7, 120.3, 107.3, 110.2, 99.2, 72.9 and 71.3. The average daily solar flux values for the same two years were 178.1, 164.2, 134.3, 124.2, 120.8, 137.4, 111.1 and 99.5. This is another confirmation of cycle 23's slide toward solar minimum, currently forecast to occur about two and a half years from now.

For more information concerning propagation and an explanation of the numbers used in this bulletin see the ARRL Technical Information Service propagation page at <http://www.arrl.org/tis/info/propagation.html>.

Sunspot numbers for June 24 through 30 were 94, 83, 64, 48, 45, 50 and 42 with a mean of 60.9.

10.7 cm flux was 108.3, 102.9, 98.9, 97.2, 89.4, 85.1 and 81.8, with a mean of 94.8. Estimated planetary A indices were 6, 4, 7, 5, 13, 20 and 10, with a mean of 9.3. Estimated mid-latitude A indices were 4, 3, 8, 4, 11, 15 and 8, with a mean of 7.6.



ARRL DX Bulletin

DX Bulletin 26 ARLD026
From ARRL Headquarters
Newington CT July 1, 2004
To all radio amateurs

This week's bulletin was made possible with information provided by AJ9C, K2ZD, N1RL, the OPDX Bulletin, The Daily DX, 425DXnews, DXNL, WA7BNM and Contest Corral from QST. Thanks to all.

FIJI, 3D2. Christian, EC3ADC is QRV as 3D2EA from Viti Levu, IOTA OC-016, and is active on 40, 20 and 17 meters. He is here until September. QSL via EB2AYV. Meanwhile, Norm, W1BYH will also be QRV from here from July 5 to 14. Activity will be on 40 to 10 meters using CW, SSB, RTTY and PSK. QSL to home call.

CROATIA, 9A. Den, 9A3FO is QRV as 9A3FO/p from the Island of Pag, IOTA EU-170, until July 10. Activity is on 40 to 12 meters, including 30 and 17 meters, using CW. QSL to home call.

TRINIDAD AND TOBAGO, 9Y. Look for KE9I, N9LAH and AJ9C to be QRV as 9Y4/homecalls from July 3 to 17. Activity will be on 160 to 6 meters using CW, SSB, RTTY and PSK. They will also participate in the upcoming IARU contest as 9Y4ZC. QSL contest call via AJ9C and all others via home calls.

MOROCCO, CN. Youssef, CN8YZ has been QRV using RTTY on 20 meters around 0015 and 0115z. QSL via EA7FTR.

ANGOLA, D2. Ed, D2PFN has been QRV using SSB on 10 meters around 1100 to 1200z. QSL via KK5DO.

CANARY ISLANDS, EA8. Members of the Gran Canaria DX Group and others will be QRV using the special event call ED8ERC from July 3 to 10 to celebrate the 2nd Canarias Ham Radio meeting. Activity will be on all HF bands, using CW, SSB and possibly RTTY and PSK31. They plan to have one APRS station active as well. QSL via operators' instructions.

MOLDOVA, ER. Special event station ER500S is QRV until July 4 in celebration of the 500th anniversary of the death of the Moldavian King Stefan the Great. QSL via ER1DA.

NORWAY, LA. Mario, DL5ME and Guenter, DG3HWO are QRV as LA/DL5ME from Tromoy Island, IOTA EU-061, until July 6. Activity is on 40 to 15 meters, including 30 and 17 meters, using CW and SSB. They may also be active on the VHF bands. QSL to home call.

LUXEMBOURG, LX. LX8M will be QRV during the DL-DX-RTTY Contest and in the upcoming Russian RTTY WW Contest. QSL via LX1ER.

ST. MAARTEN, PJ5. Mario, K2ZD and Jim, K4BI are QRV as PJ7M from St. Maarten until July 12. Their primary focus will be 6 meter Sporadic E propagation. QSL via K2ZD.

ICELAND, TF. Kan, JA1BK is QRV as JA1BK/TF and has been active on 20 meters around 0800z and then around 1400z. QSL via VE3HO.

ST. KITTS AND NEVIS, V4. Andrei, NC2N will be QRV as NC2N/V44 from Nevis Island, IOTA NA-104, from July 5 to 12. Activity will be on all bands using CW, SSB and RTTY. This includes an entry in the upcoming IARU contest. QSL via W3HNK.

CANADA, VE. Carl, VE3ZCO is QRV as VY0CQ from the Canadian Arctic until August 25. He is here with other geologists, and his radio activity is limited to his free time and will be mostly on 20 meters. QSL to home call.

EL SALVADOR, YS. Rick, N1RL is here until July 11 while participating in a project to rebuild housing damaged or destroyed by natural disasters. He hopes to be QRV possibly as N1RL/YS using QRP, generally on 20 or 17 meters as conditions permit, using mostly CW. He may try some FM satellite activity as well. This includes the new Echo

satellite if it's functioning during his stay. QSL via operator's instructions.



Full Calls Only

By Paul Dunphy, VE1DX

We were sitting on the veranda with a split video feed running from the computer in the shack. We had long since learned never to be out of range of the cluster spots and the Internet. After all, this was DXing and we were convinced that to DX, one had to have a computer. Absolutely. No self-respecting DXer gets on HF without computer. All DXers know this, although some have been slower than others to see the elephant.

The bands had been flat for the last few days and we were taking a break from tuning. If anything showed up, we'd know within ten seconds. DX IS! And our computers tell us where it is and probably how to work it! This is one of the new Enigmas of DXing.

While we were contemplating this, one of the local QRPer made his way around the bend and beat his way up the hill. This one had been by a number of times before and he wasted no time getting to the point. "What's all this about using your last two in a pileup being illegal?" He asked, glaring at us with his beady little eyes. "Haven't we all been doing that for years?"

We tried to recall how many times we had heard this argument before and it seemed to top the number of DXCC countries on VE1YX's confirmed list. Even counting the deleted ones! The QRPer continued on, "There's talk on the Internet and even on the DX repeater that this is a clear violation of the FCC rules and that you have to ID with your full call every ten minutes. How can I work DX that way? And suppose, just suppose, something I need comes up on a list. How else can I get on that list unless I follow the rules? If all this is illegal, why hasn't something been done to stop it?" He was pacing back and forth, and starting to sweat.

We looked at him for a moment, and then glanced over at the monitor. Nothing interesting had been spotted on the cluster so that avenue of escape

was blocked. "Well," we replied cautiously, "this isn't the first time this issue has been raised and there has never been a clear cut answer. Some say it's OK and others claim the FCC and the ARRL both find it in violation." The QRPer nodded in agreement, "That's the point! I asked about ten different Big Gun DX types and I got ten opinions. I even wrote to the FCC and all I got back was a letter saying they would look into it and let me know. That was six months ago! You've been around a lot longer than I have. What is the right answer?"

Son of a Gun! Where was Judge Judy when we needed her? Given that we likely weren't going to get a ruling from the judge on this one, we did the next best thing and hauled the QRPer up the hill to see the Old Timer. The age-old question was repeated again, this time with a fist smacking into a palm to drive the point home. The Old Timer looked at the QRPer for a moment, then at us. "Who knows?" He replied. We had to admit that this was not what we expected, but we knew better than to ask for clarification. The QRPer was not so self-restrained. "What do you mean, who knows? If I'm in violation of an FCC rule, I want to know! I might get a citation... or if the DXCC Desk finds out that I worked some of my DX by using my last two, might they not take away my membership? I want to follow the rules... all I want to do is to find out what they are!"

The Old Timer looked at the QRPer for a few seconds and then said, "Son, there will always be opinions offered by those who judge others by their own standards. Remember that. When one of these DXers who has almost everything worked, and likely a lot of deleted ones as well, tell you that you can't use your last two, they might be right. Don't discount their knowledge. Don't argue with them." The QRPer looked more confused than ever. "But are they right?"

The Old Timer had flipped on his rig and began tuning 15 meters for the polar opening to Asia. He looked over his shoulder at the QRPer and said, "Memory is often purified as time goes by. I think you will find that the higher their country total and the more times these Big Guns have been around the track, the less often they will recall using their last two. And you might even find that those with monobanders at 100 feet pushing out the full legal limit and a little extra can't recall ever using anything but their full call... and usually only once."

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And that was it. He put his headphones on and was off to see who was causing all the fuss between 21300 and 21310.

We walked back down the hill with the QRPer. We had understood what the Old Timer had been getting at, but we weren't sure about the QRPer. "So it's OK for me to use my last two in a pileup, right?" He asked. We shrugged our shoulders and repeated what the Old Timer had said, "Who knows? For as Albert so often said, all things are relative, although some more than others and this is another practical example of the Special Theory of Relativity."

The QRPer glanced at us with a puzzled and frustrated look as he walked off down the hill. "What's the use?" He muttered as he made his way around the corner and back down into the village. We thought about it for a second and shrugged again. What more could we say? The QRPer just didn't understand the Mysteries of the Ages and the Eternal Enigmas of DXing. We sat back down on the veranda and thought about the new towers in our antenna farm that had sprouted up over the past few years. And it seemed that we couldn't recall ever using anything other than our full call in a pileup. Perhaps we should have told the QRPer not to use his last two... for surely it is not legal anymore!



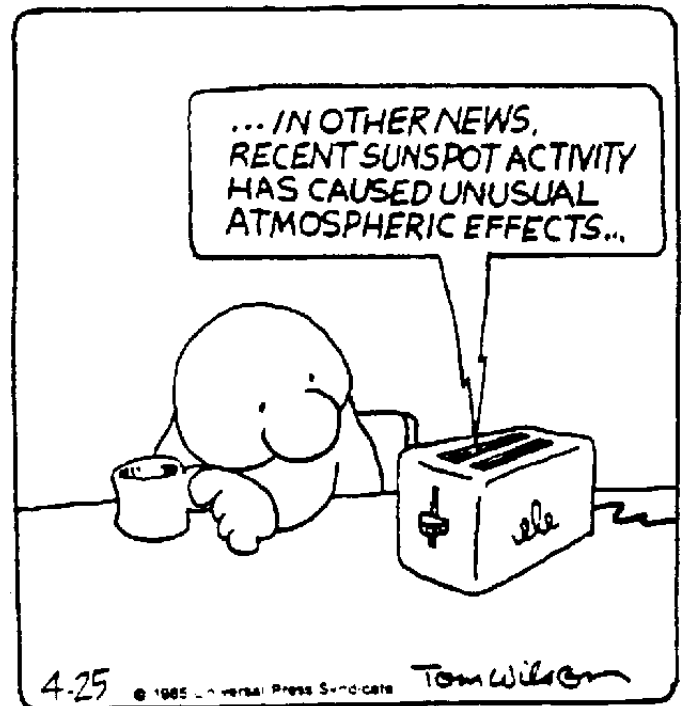
Helpful Hints

Apply red nail varnish to your nails before clipping them. The red nails will be much easier to spot on your bathroom carpet. (Unless you have a red carpet, in which case you should move.)



Shallow Thoughts

Why don't sheep shrink when it rains?



Carbon Amateur Radio Club – 2003-2004 Officers

President: Anthony "Goody" Good, K3NG, goody@fast.net
Vice President: Rob Roomberg, KB3BYT, roomberg@ptd.net
Secretary: Darryl Gibson, N2DIY, n2diy@losch.net
Treasurer: John Schreibermaier, W3MF, w3mf@ptd.net
W3HA Callsign Trustee: John Bednar, K3CT, k3ct@fast.net
W3HA Repeater Trustee: John Bednar, K3CT, k3ct@fast.net
Public Information Officer: Lisa Kelley, ldkelley@voicenet.com

Directors

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ARES/RACES Committee

Bruce Fritz, KB3DZN (DC), bruce56@ptd.net
Darryl Gibson, N2DIY, n2diy@losch.net
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Services

W3HA Repeater: 147.255 MHz + PL 131.8

CARC Website: <http://www.learnmorsecode.com/carc/>
Webmaster: Rob, KB3BYT roomberg@ptd.net

CARC Email Reflector: see www.qth.net CarbonARC list for details

Emergency Power Equipment Trustees: Lisa and Bill Kelley, KA3UKL,
ldkelley@voicenet.com

CARC Membership Information

Regular Membership is \$15.00, which includes autopatch privileges.

All amateur radio operators are invited to join the CARC ARES / RACES net held 2:00 local time every Wednesday on the W3HA repeater at 147.255 MHz + offset, PL 131.8. Any amateur radio operator or anyone with an interest in ham radio is welcome to attend our monthly meetings which occur the third Thursday of each month at 7:30 PM at the Carbon County EMA Center on Route 93 in Nesquehoning.

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