County of Orange RACES

NetControl

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

OCRACES Online Meeting on Zoom:

Monday, September 14, 2020, at 7:30 PM

Orange County Sheriff's Department Technology Division

Captain's Corner
by RACES Captain Ken Bourne, W6HK, Chief Radio Officer

Smishing

Computers and cellphones are vital communications tools for RACES operations. It's important to keep these devices running reliably, and to maintain a strong defense against cyberattacks. I've previously covered cybersecurity in this column and at OCRACES meetings, focusing on computer protection, but it's also important to be aware of attacks against our cellphones in the form of texting *smishes*.

Smishing is a word derived from "SMS" (short message services, better known as texting) and "phishing." I've commented on "phishing" in previous articles. It's when cybercriminals send fraudulent emails that try to trick you into opening an attachment loaded with malware or clicking on a malicious link. Smishing is the same as phishing, except that it simply uses text messages instead of email.

For the past several weeks, I have been receiving texts from people posing as presidential campaign officials, giving me urgent deadlines to contribute so that matching funds will enhance my contribution. A URL is given at the end of each text to initiate the contribution. Naturally, I avoid clicking on those links, which could lead toward requests to provide my bank-account or credit-card number, or even to malware to infect my cellphone. This is a form of smishing. (It's important to install cellphone updates as soon as they are released. Those updates typically include security improvements, to protect you if you should click on a dangerous link.)

Another typical smishing text is pur-

portedly from your bank, perhaps as a "fraud alert," asking you to confirm your personal or financial information such as your account or ATM number.

A phishing email to your computer typically contains just a link. Sometimes the link is accompanied by a brief message such as, "Hey, check out this cool link." A computer with good anti-virus software might protect you if you click on a bad link. However, a smartphone has security limitations and won't directly protect against smishing. Furthermore, we often use our smartphones when we are distracted or in a hurry, and more likely to respond without thinking when we receive a text asking for bank information or to redeem a coupon.

A common smishing scam is a package delivery notice. If you receive such a notice, especially if you weren't expecting a delivery, the alert is potentially suspect. For example, you might receive a text message claiming to be from FedEx or Amazon with a tracking code and a link to "set delivery preferences." Do not tap that link on your phone! If you do, you might end up on a fake Amazon site with a fraudulent "free reward." The site will request your credit-card information for "shipping fees." If you provide payment details, you could get charged a substantial fee every month.

Cybercriminals try to steal your personal data so they can steal your money. They do this by tricking you to download malware that installs itself on your phone. The malware might look like a legitimate

Captain's Corner *Continued from page 1*

app, tricking you into typing in confidential information and sending this data to the cybercriminals. I recommend not installing an app from a text message or from an ad or link on a website, without first checking if the app is in the App Store for iPhones or in the Google Play Store for Android phones. Those stores typically check apps for malware, and those apps should really be downloaded from the stores rather than from any other source. Occasionally, a dangerous app might be posted accidentally on an iOS or Android store—so be careful!

Be wary if you receive a text that poses as an urgent security alert or a "you must act now" coupon redemption, offers, or deals. It's most likely a hacking attempt.

Banks and investment brokers will not text you to update your account information or confirm your ATM card code. Such a message is a smishing fraud.

Do not click on a reply link or phone number in a text that you're not sure about.

Do not store your credit-card or banking information on your smartphone. Also do not store passwords and lock combinations in your "Notes" app or elsewhere on your smartphone. Cybercriminals can steal such information if they slip malware onto your phone.

Don't send sensitive information in response to strange texts. For example, if you receive a text saying, "Hey, this is your wife, I just got a new phone—what's your social security number again?", it's a good idea to contact your wife directly to ensure she really sent you the text. (If you don't have a wife, it's certainly a fraudulent smishing text!)

FCC Proposes Amateur Radio Service Fees

Amateur radio licensees would pay a $50 fee for each amateur radio license application if the FCC adopts rules it proposed on August 26, 2020. Included in the FCC's fee proposal are applications for new licenses, renewal and upgrades to existing licenses, and vanity call sign requests. Excluded are applications for administrative updates, such as changes of address, and annual regulatory fees.

The FCC proposal is contained in a *Notice of Proposed Rulemaking* (*NPRM*) in MD Docket 20-270, which was adopted to implement portions of the "Repack Airwaves Yielding Better Access for Users of Modern Services Act" of 2018—the so-called "Ray Baum's Act."

The Act requires that the FCC switch from a Congressionally mandated fee structure to a cost-based system of assessment. In its *NPRM*, the FCC proposed application fees for a broad range of services that use the FCC's Universal Licensing System (ULS), including the Amateur Radio Service that had been excluded by an earlier statute. The new statute excludes the Amateur Service from annual regulatory fees, but not from application fees.

"[A]pplications for personal licenses are mostly automated and do not have individualized staff costs for data input or review," the FCC said in its *NPRM*. "For these automated processes—new/major modifications, renewal, and minor modifications—we propose a nominal application fee of $50 due to automating the processes, routine ULS maintenance, and limited instances where staff input is required."

The same $50 fee would apply to all Amateur Service applications, including those for vanity call signs. "Although there is currently no fee for vanity call signs in the Amateur Radio Service, we find that such applications impose similar costs in aggregate on Commission resources as new applications and therefore propose a $50 fee," the FCC said.

The FCC is not proposing to charge for administrative updates, such as mailing address changes for amateur applications, and amateur radio will remain exempt from annual regulatory fees. "For administrative updates [and] modifications, which also are highly automated, we find that it is in the public interest to encourage licensees to update their [own] information without a charge," the FCC said.

The FCC also proposes to assess a $50 fee for individuals who want a printed copy of their license. "The Commission has proposed to eliminate these services—but to the extent the Commission does not do so, we propose a fee of $50 to cover the costs of these services," the FCC said.

The Ray Baum's Act does not exempt filing fees in the Amateur Radio Service. The FCC dropped assessment of fees for vanity call signs several years ago.

Comments are being accepted on the *NPRM* in MD Docket 20-270. Formal deadlines for comments and reply comments will be determined once the *NPRM* appears in the *Federal Register*. Comments may be filed now, however, by using the FCC's Electronic Comment Filing System (ECFS), posting to MD Docket No. 20-270. This docket is already open for accepting comments, even though deadlines have not yet been set.

Sept. 14th OCRACES Meeting to Be on Zoom

Due to the COVID-19 pandemic and Sheriff's Department orders to stand down on all RACES activities outside the home, the next OCRACES meeting again will be online, using Zoom, on Monday, September 14, 2020, at 7:30 PM, with the meeting ID and password sent to the mailing lists for OCRACES members and applicants and city RACES and MOU officers, members, and coordinators. Joe Selikov, KB6EID, will once again be the meeting host. Everyone who wishes to participate should access https://zoom.us and download and install the Zoom software.

No Sheriff's Department business will be conducted during OCRACES Zoom meetings, due to security concerns. Zoom meetings are for socializing only, such as discussing amateur radio technical projects and on-the-air activities. We will not discuss activation policies and procedures, EOC RACES equipment, etc.

Zoom claims to have substantially increased the security of its system. Nevertheless, we will continue to use Zoom with caution. If you installed the Zoom software on your computer, be sure it is the newest version, currently 5.2.2.

City/County RACES & MOU Drill: October 3rd

On Saturday, October 5, 2019, we conducted a successful and enjoyable deployment drill as our annual first-Saturday-in-October City/County RACES & MOU ACS Exercise. We were hoping to do something similar this year, but the COVID-19 pandemic currently prevents us from having any RACES activities outside our home property. Consequently, we will have a Portable Drill that is similar to the one we conducted last May 2nd. Members will operate portable stations from their own property (such as their backyard), using battery power and portable antennas. From 0900 to 1000 hours, operations will be on the 146.595 MHz OCRACES simplex frequency. Net control will be OCRACES Chief Radio Officer Ken Bourne, W6HK, using his home station and high-gain chimney-mounted antenna, so that he can hear calls from much of Orange County. Alternate net controls and/or relay stations will be appointed throughout the county, so that even low-power handheld radios should be able to check in. Ken will begin the drill by calling for check-ins from cities in alphabetical order, then from MOUs, and finally from OCRACES members.

Beginning at 1000 hours, Ken will incorporate the Portable Drill into the normal Saturday morning 60-meter OCRACES ACS net on 5371.5 kHz USB ("channel 4" dial frequency). This net covers the 11 counties in the Cal OES Southern Region plus northern Arizona and southern Nevada. Home stations may check in, but backyard portable operation is preferred (using battery power and portable antennas such as Hamsticks, end-fed wires, etc.). Ken will also operate from his home station for this net, using a 102-foot G5RV antenna up about 35 feet. At the conclusion of the net, time permitting, Ken will move his operation to a low-power portable station in his backyard, using a Hamstick dipole up about 9½ feet on a tripod mast. The 60-meter net and overall drill will conclude at 1100 hours.

OCRACES Winlink System Remains Down

The OCRACES Winlink system went down on July 21, 2020, due to a server failure. Apparently, the server has been restored. However, other network issues still need to be resolved, including installation of equipment for network compatibility. At this time, the three OCRACES UHF RMS sites are not operational. However, OCRACES Assistant Radio Officer Bob McFadden, KK6CUS, has an RMS packet node running on 145.05 MHz from Aliso Viejo as KK6CUS-10.

ARRL VHF Contest: September 12-14

Here is an opportunity to test your VHF equipment and operating skills, while enjoying the ARRL VHF contest on the second full weekend of September. The contest begins at 1800 UTC Saturday and ends at 0259 UTC Monday, September 12-14, 2020. The objective is to work as many amateur stations in as many different 2 degrees x 1 Maidenhead grid squares as possible, using authorized frequencies above 50 MHz.

All legal modes are permitted (while CW and SSB/phone are most common, MSK144, FT8, and FM-only are gaining popularity—other popular modes include PSK31, FSK441, and JT65). For Cabrillo file mode definitions, digital modes should be represented as "DG" (for all things digital) or "PH" or "RY" can also be used, as digital modes are transmitted via phone audio.

Full contest details are posted on the ARRL website at http://www.arrl.org/september-vhf.

Icom IC-705 Certified, ID-52 Announced

IC-705 Portable SDR Transceiver

Many RACES members have been eagerly await-ing availability of the compact Icom IC-705 portable SDR transceiver that covers all modes on HF, 6 meters, 2 meters, and 70 centimeters. The IC-705 was de-scribed on page 5 of the October 2019 issue of *NetCon-trol*, long before it received FCC certification. Finally, on Thursday, August 6, 2020, the IC-705 received FCC ID AFJ407500. Immediately, Ham Radio Outlet and other dealers posted the selling price at $1,299.95.

Output power is 10 watts with an external 13.8 VDC power supply, and 5 watts with the internal BP-

Icom IC-705 portable SDR transceiver covers all modes on 160-10 meters plus 50, 144, and 430 MHz.

272 li-ion battery pack. The SDR receiver type is direct sampling. It receives continuously from 30 kHz to 200 MHz, as well as 400 to 470 MHz. Transmit/receive modes include USB, LSB, CW, RTTY, AM, D-STAR, and FM (plus wide FM receive only for FM broadcast and air-band AM receive). It has 500 memory channels. With RF direct sampling, it features a high-speed/high-resolution real-time spectrum scope and waterfall display.

The IC-705 provides the latest G3 gateway and DV mode features, with access to the D-STAR network with termi-nal/access point modes. The "Photo Share" feature in the IC-9700 transceiver is available in the IC-705 to share photos with other IC-705 and IC-9700 radios without a computer. Enhanced field operations are also provided with the built-in GPS receiver and antenna. Functions include location logging (microSD required), RX/TX locations via D-PRS, "Near Me" repeater search/scan, QSO recording with metadata (microSD required), and an internal clock synchronization.

AH-705 automatic antenna tuner covers the 1.9-50 MHz ama-teur bands using a long-wire element. It may be powered from alkaline batter-ies or external 13.8 VDC. Latching relays provide power con-sumption efficiency.

An optional LC-192 utility backpack will soon be available for field op-erations, at $169.95. Adjustable internal panels for custom compartments ac-commodate accessories such as antennas, battery packs, and the AH-705 au-tomatic antenna tuner, which will be available later. (The IC-705 does not have an internal antenna tuner.) The AH-705 is intended for use at the anten-na. It includes a BNC connector for connecting a coaxial cable to the IC-705's BNC connector, and an SO-239 for connecting to the antenna's cable. (Some hams plan to use an Elecraft T1 compact automatic antenna tuner at the IC-705 instead.) Another optional accessory is the IC-AL-705 40-10-meter magnetic loop antenna, at $299.95, which will store in the LC-192.

The IC-705 features a 4.3-inch color touch screen. Built-in Bluetooth and wireless LAN are used for smartphone linking and remote control. A Mi-croSD card slot is used for storing user profiles, QSO recording, TX voice memory keyer, RTTY logging, GPS data, and screen captures. The supplied HM-243 programmable speaker/microphone comes with assignable keys, such as volume adjustment or frequency change.

ID-52A Dual-Band Handheld Transceiver

Icom in Japan announced the ID-52A VHF/UHF dual-band digital transceiver that supports D-STAR. Pending FCC approval, it is not yet available in the United States. The ID-52A is equipped with a 2.3-inch "transflective" color display for viewing in bright sunlight. The transceiver supports Bluetooth communication as standard. It will wirelessly connect to Android devices with ST-4001A/ST-4001I Picture Utility software and RS-MS1A remote control software installed. The optional VS-3 Bluetooth headset is also available, for hands-free operation.

The ID-52A provides simultaneous reception in V/V, U/U, V/U, as well as DV/DV. Air-band reception includes VHF as well as UHF (225-374.995 MHz). It can be charged via a micro USB connector. Audio output is 750 mW. The latest function of D-STAR enables you to send, receive, and view saved photos on an installed microSD card using only the ID-52A.

Features include the DR function with easy setup, built-in GPS receiver, IPX7 waterproof con-struction, and terminal/access point modes.

Icom ID-52A VHF/UHF dual-band digital transceiver.

Eliminating RF Interference from Wall Warts

"Wall warts," which are small switching DC power supplies that plug into an AC power line socket and provide DC power to laptops, wireless routers, battery chargers, cellphone chargers, etc., are an occasional source of broadband RF noise. Just ask Ray Grimes, N8RG! He was plagued with high noise on 60 meters at his second home in Prescott, Arizona, which made it extremely difficult for him to participate in the Saturday morning 60-meter OCRACES nets. By elimination, he tracked down much of the noise to the wall warts powering his security cameras. By unplugging them, he reduced the noise by more than 20 dB. He is replacing all wall warts in his house with Class 2 transformer types in hopes of reducing the noise even more.

Another way to reduce such noise is to purchase a pack of wall wart ferrite noise filters from Palomar Engineers (or HRO). Installation is quick and easy. Simply wrap the DC power cord through the center of one of the ring filters as many times as you can (maybe 8 to 12 turns) and reinstall. In some cases, it might not be the wall wart that is generating the RF noise. Rather, it might be the powered device—or both. For best results with long DC power lines, use one of the ferrite ring filters at the wall-wart end (to prevent the wall-wart power supply from using the DC line as an antenna) and another at the DC plug end (to prevent the electronics in your powered device from using the DC cord as an antenna). Such an arrangement might even reduce interference to your device caused by RF from your HF transmitter.

Palomar Engineers RFI-WW-10 wall wart RFI noise filter pack consists of ten ferrite rings.

FCC Grants Temporary PACTOR 4 Waiver

On August 27, 2020, the FCC granted an ARRL request for a 30-day waiver to facilitate relief communications in the wake of Hurricane Laura. The waiver temporarily permits amateur data transmissions at a higher symbol rate than currently permitted under the FCC's rules. ARRL pointed out in its request that Amateur Radio Emergency Service (ARES) members would be working with federal, state, and local emergency management officials to assist with disaster relief and may use radio modems capable of both PACTOR 3 and PACTOR 4 emissions. The higher data rates PACTOR 4 offers are critical to sending hurricane relief communications, including lists of needed and distributed supplies.

Section 97.307(f) limits the symbol rate—also known as the baud rate—for HF amateur radioteletype (RTTY) and data transmissions to 300 baud for frequencies below 28 MHz (except on 60 meters), and 1200 baud in the 10 meter band. "The digital code used to encode the signal being transmitted must be one of the codes specified in section 97.309 (a) of the Commission's rules, but an amateur station transmitting an RTTY or data emission using one of the specified digital codes may use any technique whose technical characteristics have been publicly documented, such as CLOVER, G-TOR, or PACTOR," the FCC pointed out in granting the request.

In 2016, in response to an ARRL petition for rulemaking, the Commission proposed to remove the symbol rate limitations, which it tentatively concluded had become unnecessary due to advances in modulation techniques and no longer served a useful purpose. That proceeding, WT Docket 16-239, is still pending.

ARRL sought the waiver for radio amateurs directly involved with hurricane relief on HF using PACTOR 4. PACTOR 4 permits relatively high-speed data transmission, and the FCC has granted temporary waivers in the past to permit the use of this protocol in similar events.

"ARRL stands ready to assist the area potentially impacted by Hurricane Laura to conduct disaster relief communications," the FCC said. "We conclude that granting the requested waiver is in the public interest. Hurricane Laura has the potential to cause massive destruction states along the Gulf of Mexico, and communications services will likely be disrupted."

The waiver is limited to PACTOR 3 and PACTOR 4 transmissions directly involved with HF hurricane relief communications.

Hurricane Watch Net Logs over 29 Hours

This article was posted on the ARRL website—Editor

The Hurricane Watch Net (HWN) logged 29.5 hours of continuous operation in advance of Hurricane Laura, beginning at 1300 UTC on August 26, 2020, and after the storm made landfall.

One primary function of the HWN is to elicit real-time ground-level weather conditions and initial damage assessments from radio amateurs in the affected area and relay that information to the National Hurricane Center (NHC) via WX4NHC.

"Since Laura had become a Major Hurricane (Category 3) overnight, well ahead of earlier forecasts, we opened our net on both 14.325 MHz and 7.268 MHz," said HWN Manager Bobby Graves, KB5HAV. "We did this for two reasons. HF propagation was horrible on both bands, and we wanted to make sure anyone trying to contact us would be able to do so." Graves said it strained resources, but the net was able to get its job done. The HWN remained in continuous operation until Thursday, August 27, at 1830 UTC, well after Hurricane Laura made landfall in Louisiana, near the Texas border.

"In many ways, Laura seemed similar to Hurricane Michael in 2018, as it rapidly intensified close to landfall, nearly becoming a Category 5 hurricane," Graves commented. "Additionally, with major hurricanes, you normally have a few eye-wall replacement cycles. I don't recall there ever being one [with Laura], and meteorologists I know agree."

Graves noted that on Wednesday afternoon, forecasters at the National Hurricane Center used a phrase not typically heard, in order to get a point across: unsurvivable storm surge. The ominous prediction certainly caught on with the media and was widely repeated.

"Given the terrain for the projected impact of Laura, the storm surge was expected to move well inland, as far as 40 miles, with depths as high as 15 to 20 feet in some areas," he said.

Throughout its more than a day of operations, the HWN collected and forwarded numerous surface reports to the National Hurricane Center. Graves said that Emergency Management in Louisiana checked in with the net on 14.325 MHz to announce its presence on 7.255 MHz.

"After Laura was downgraded to a tropical storm, we shifted gears and began asking for post-storm reports from those affected by Laura," Graves recounted. "We also called for emergency or priority traffic."

Graves expressed his appreciation to other stations for moving aside for the net to use 14.325 and 7.268 MHz. "Having a clear frequency certainly makes our job easier, and we know those in the affected area greatly appreciate it as well," he said.

Graves noted that the forecast for this year's hurricane season is reminiscent to that of 2005, when Hurricane Katrina struck. "It is forecast to be a very busy season," he said. "When it comes to hurricane season, never drop your guard." Families should have plans in place ahead of a major storm, and to factor the COVID-19 pandemic into those plans, he advised.

Power Supplies Explained

A power supply is often taken for granted by radio amateurs, as for many it is simply the box that, at the flick of a switch, provides stable DC voltage. A modern power supply is much more though, combining theory that dates back to the nineteenth century incorporating the latest techniques in digital control, with a wealth of electronics practice in between. *Power Supplies Explained* by Paul Lee, G3ZKO, and published by the Radio Society of Great Britain, sets out to do exactly this—explain in understandable terms what that little box is doing, right through to designing your own custom-built power supply.

Some believe there is a little magic in power-supply design. Beginners may be especially wary of the challenging mixture of digital, analog, magnetics, and control loops, with cooling, EMC, and safety to contend with as well. While many books deal with the theory in depth, they often give little guidance on the practical aspects of achieving working designs. *Power Supplies Explained* is different. This book describes how circuits are chosen for the application and how circuits are designed including their inductors and transformers. Calculations are outlined in a simple way so that the reader can use them as a basis for their own designs.

Readers will find chapters that include descriptions of "linear" supplies and a wide range of "switched-mode" types from simple buck converters to the latest off-line high-efficiency types. Practical examples are based around typical radio amateur requirements and in many cases are versions of commercial products that the author has successfully designed. There are also chapters on magnetics theory, control loops, EMC, practical construction techniques, test equipment, and more. High-voltage power supplies are included with comprehensive guidance on safety.

ARRL offers this 320-page soft-cover book for $24.95.
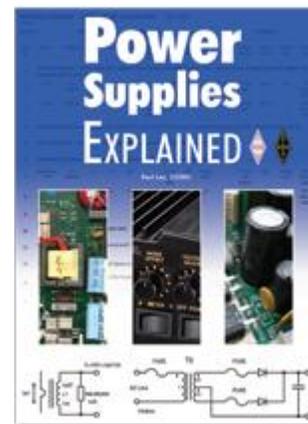
September 2020

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5 Weekly 60 m ACS Net
6	7 Labor Day (no net, no meeting)	8	9	10	11	12 Weekly 60 m ACS Net
13	14 Weekly 2 m ACS Net & OCRACES Zoom Mtg	15	16	17	18 Orange County Amateur Radio Club Meeting	19 Weekly 60 m ACS Net
20	21 Weekly 2 m ACS Net	22	23	24	25	26 Weekly 60 m ACS Net
27	28 ACS Net on 4 Bands	29	30			

Upcoming Events:

- **September 7:** Labor Day (no net, no meeting
- **September 14:** OCRACES Meeting on Zoom, 1930 hours
- **September 18:** Orange County Amateur Radio Club (OCARC) Meeting, 1900 hours, on Zoom
- **October 3:** City/County RACES & MOU ACS Exercise

https://ocraces.org

Mission Statement

County of Orange RACES has made a commitment to provide all Public Safety departments in Orange County with the most efficient response possible to supplement emergency/disaster and routine Public Safety communications events and activities. We will provide the highest level of service using Amateur and Public Safety radio resources coupled with technology, teamwork, safety, and excellence. We will do so in an efficient, professional, and courteous manner, accepting accountability for all actions. We dedicate ourselves to working in partnership with the Public Safety community to professionally excel in the ability to provide emergency communications resources and services.

County of Orange RACES Frequencies

60 m: 5371.5 kHz USB (dial) (Channel 4) (OC ACS Net—Saturdays, 1000 hours)
40 m: 7250 kHz LSB
10 m: 29.640 MHz output, 29.540 MHz input, 107.2 Hz PL (out of service)
6 m: 52.620 MHz output, 52.120 MHz input, 103.5 Hz PL
2 m: 146.895 MHz output, 146.295 MHz input, 136.5 Hz PL*
2 m: 146.595 MHz simplex
1.25 m: 223.760 MHz output, 222.160 MHz input, 110.9 Hz PL
70 cm: 446.000 MHz simplex
70 cm: 448.320 MHz output, 443.320 MHz input, 141.3 Hz PL (private)
70 cm: 449.100 MHz output, 444.100 MHz input, 110.9 Hz PL (private)
70 cm: 449.180 MHz output, 444.180 MHz input, 107.2 Hz PL (private)
70 cm: 449.680 MHz output, 444.680 MHz input, 131.8 Hz PL (private)
23 cm: 1287.650 MHz, 1287.675 MHz, 1287.700 MHz, 1287.725 MHz, 1287.750 MHz, and 1287.775 MHz outputs, –12 MHz inputs, 88.5 Hz PL

*Primary Net—Mondays, 1900 hours

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*"W6ACS ...
Serving
Orange County"*

Meet Your County of Orange RACES Members!

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**Jack Barth
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**Ernest Fierheller
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