



*Society of Broadcast Engineers* *February 2000*

## SBE Short Circuits - February 2000

*By John L. Poray, CAE*  
*SBE Executive Director*

### SBE INTRODUCES CERTIFIED BROADCAST NETWORKING TECHNOLOGIST

SBE has rolled out a new certification program designed to respond to the convergence of the broadcast and information technology fields. Applications are now being accepted to take an exam to become a SBE Certified Broadcast Network Technologist. Terry Baun, CPBE, SBE National Certification Chairman, explains that the new certification level will delve into networks as much as possible without becoming specific to any vendor. Topics covered by the exams will include the basics of broadcast local area network installation, recognizing what a hub is, knowing what the different wire categories do and understanding the basic layers of network protocol common to all systems.

For more information about this new SBE Certification program, see the March issue of the SBE SIGNAL, your chapter Certification Chairman or contact Linda Godby-Emerick at the SBE National Office, (317) 253-1640 or lgodby@sbe.org.

### 2000 BRINGS NEW LEADER SKILLS SEMINARS

After three years of sponsoring five-day Leader Skills seminars for broadcast engineers, the Society of Broadcast Engineers, in cooperation with instructor Richard Cupka, is modifying the program for 2000. The shorter courses should make it easier on the schedule and less expensive for interested persons to attend.

The program will be split into two separate courses. Course I will be held, June 7-9 in Indianapolis and will provide the essentials to understanding leadership styles of yourself and others. It will provide the technical individual

(continued on page 4)

## Next Meeting:

**Thursday,  
February 24, 2000**

**Charter  
Communications'  
View of the Future**

**Dutch Treat Dinner  
at 5:30 PM**

**at China One Buffet  
518 Grand Canyon  
Drive**

**Meeting and Program  
at 7:00 PM  
at WISC-TV**

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## FCC DENIES PETITION FOR COFDM

**By Mike Norton**

On Friday, February 4, 2000, the FCC released a letter denying a Petition for Expedited Rulemaking, filed by Sinclair Broadcast Group, Inc. The Sinclair petition, filed in October of 1999, requested that the Commission modify its rules to allow broadcasters to transmit DTV signals using COFDM modulation in addition to the current 8-VSB modulation standard.

The October 1999 petition stated that "Following Sinclair's 1999 field trials, it is now clear that such action [allowing COFDM] is crucial to the future

viability fo DTV in the United States." The much-publicized DTV reception field trials conducted by Sinclair in the Baltimore area compared the FCC-approved ATSC 8-Vestigial Side Band (8-VSB) modulation to Coded Orthogonal Frequency Division Multiplexing (COFDM). The European DVB-T standard utilizes COFDM modulation.

At issue was the ability of consumers to receive digital television broadcasts with relatively simple receive antennas. According to Sinclair, many of the locations that were checked during the Baltimore

tests showed reception problems with the 8-VSB modulation, attributed primarily to both variable and long duration multipath. Approximately 25% of U.S. television stations supported the Sinclair Petition.

The Commission said that numerous studies conducted to date support the conclusion that NTSC replication is attainable under the 8-VSB standard. It said that the concerns raised in the Sinclair petition had done no more than to demonstrate a shortcoming of early DTV receiver implementation. It said that

(continued on page 7)

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## January Business Meeting Minutes

Chapter 24 of the Society of Broadcast Engineers met on Wednesday, January 19, 2000 at Babes Bar & Grill in Madison, Wisconsin. There were 19 members, and 1 guest present.

The meeting was called to order by Chair Kevin Ruppert at 7:00 PM. Minutes of the December meeting as published in the January newsletter were approved as published.

Treasurer, Stan Scharch, reported a balanced checking account which was in the black.

Newsletter Editor, Mike Norton, reported the deadline for the next newsletter is 2-4-'00.

Fred Sperry reported that we have 23 sustaining members.

Certification, Jim Hermanson, reported that the next local exam session would be February 11<sup>th</sup>-21<sup>th</sup>, and that December 31<sup>st</sup> was the deadline for applications. Exams can also be taken at the NAB Convention on April 11<sup>th</sup>, apply before March 5<sup>th</sup> if interested. The NAB convention will be your first opportunity to take the new "networking" exam. Also, the new edition of the TV operator's handbook is now available.

Frequency Coordinator, Tom Smith reported that frequency coordination has been mostly quiet this last month with the Y2K event at the Governors Command Post being the only event. Tom also expressed some concern as the UW-Madison and other colleges are likely to adopt the "Coach Com" RF communications system.

National Liaison, Leonard Charles, reported that the NAB will honor SBE members for "Member Rates", and that SBE Leadership Seminars will be back this year with two sessions.

Kevin adjourned the business meeting at 7:15 PM.

The evening's program, 601 Digital Video Testing, was presented by Mr. Jim Edwards from Tektronix.

*Submitted by Lloyd Berg, Secretary*



Visit Chapter 24 On  
the Web

<http://www.sbe24.org>

Steve Paugh is the editor for the Electronic  
Version of this Newsletter, uploaded monthly  
onto SBE Chapter 24's web page.

## SBE Listserver Info

Chapter 24 members are invited to join the chapter listserver. To subscribe, send an e-mail message to the following address: majordomo@broadcast.net

In the body of e-mail message type: subscribe msnbsbe. (The subject line can be left blank.) Instructions and a confirmation message will be sent to you. To post to the list, address you e-mail to: msnbsbe@broadcast.net

Also, join the Wisconsin SBE Chapters listserver. To subscribe, send e-mail to: majordomo@broadcast.net  
Body of e-mail message: subscribe sbe-wi  
To post to the list, send e-mail to: sbe-wi@broadcast.net

The SBE National also has a listserver: To subscribe, send e-mail to: majordomo@broadcast.net  
Body of e-mail message: subscribe sbe.  
To post to the list, send e-mail to: sbe@broadcast.net

There are also various other listservs of technical interest, such as the following discussion groups:

Digital Television (dtv), Electronic News Gathering (eng), Low Power FM (lpfm), Broadcast Radio Technical (radio-tech), SBE EAS (sbe-eas), Broadcast Television Technical (tv-tech), as well as others.

For more information on the operation of the listserver, send a e-mail message to majordomo@broadcast.net In the body of the message, type: help. The system will automatically reply with additional information.

## AMATEUR RADIO NEWS

By Tom Weeden, WJ9H

- The American Radio Relay League's Board of Directors has approved the development and implementation of an initiative to promote self-education by radio amateurs. The new ARRL Certification Program will aim to inspire amateurs to continue acquiring technical knowledge and operating expertise beyond that required to become licensed and give them a chance to test their own limits. "Many ARRL members believe there is a widening gap between what the FCC requires amateur licensees to know and what it takes to be truly knowledgeable about Amateur Radio," said ARRL Vice Executive President David Sumner, K1ZZ.

The new Certification Program will offer participants an opportunity to earn credentials at various levels of depth and difficulty in different courses of study—perhaps in such areas as ionospheric propagation, receiver design, and Morse code proficiency. The program likely will include some professional development aspects and could include the granting of Continuing Education Units—CEUs.

The League also is seeking cooperative arrangements with related professional organizations. It already has a memorandum of understanding with the National Association of Radio-Television Engineers and has approached the Society of Broadcast Engineers for a similar agreement.

- A new experimental low-frequency beacon is on the air from northern Virginia. WA2XTF/12 is operating on 136.745 kHz as a part of the Amateur Radio Research and Development (AMRAD) Corporation's experiments to gain experience operating at low frequencies. In October 1998, the ARRL petitioned the FCC to create two new amateur allocations at 135.7-137.8 kHz and 160-190 kHz. (The lowest amateur allocation is currently 1800-2000 kHz.) AMRAD obtained an experimental license under Part 5 of the FCC Rules early last year. The new beacon, near Front Royal, VA, features a 175 watt transmitter feeding a 1600-foot horizontal antenna, transmitting a continuous Morse code message at 5 words per minute.

(Excerpts from February 2000 "QST" and the American Radio Relay League's "ARRL Letter")



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Thanks to WISC-TV for maintaining the web server for the Chapter 24 Web page!

Thanks to WKOW-TV for providing copying and folding facilities for the Chapter 24 newsletter!

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**SBE Short Circuits (continued)**

the basics on how to manage other people successfully. Course II, to be held August 16-18, also in Indianapolis, will pick up where Course I left off, going into further depth and providing the participant with a solid foundation to manage others.

The cost for each course is \$425, which includes instruction, materials and refreshment breaks. Transportation, hotel and meals are additional. Those wishing to attend Course II must have attended either Course I or any of the SBE or NAB sponsored Leader Skills programs held since 1965. Registration Forms will be available in the March issue of the SBE SIGNAL and from the SBE National Office.

**SBE MEMBERS GET DISCOUNT ON NAB SPRING CONVENTION**

SBE members are able to register for the NAB Spring Convention in Las Vegas at the NAB Member rate, a savings of \$330. NAB has begun sending registration materials for the April 2000 event. They also have on-line registration available at their web site: [www.nab.org](http://www.nab.org). If your station is not a member of NAB, be sure to take advantage of this great SBE member benefit. The savings are equal to SIX times the cost of ONE year of SBE membership!

**GAME DAY COORDINATORS WILL MEET APRIL 10**

A special meeting has been scheduled during the NAB Convention for those who participated in the 1999 NFL season Game Day Coordinator program. Also, those interested in participating in 2000 are asked to attend. The program is a cooperative effort between SBE and the NFL to improve event frequency

coordination at all NFL games.

The purpose of the meeting is to review and critique the past season, discuss ways to improve the program and make plans for the 2000 season. Several representatives from the NFL will be present. The meeting will be held from 2:45 pm to 5:00 pm in Conference Rooms 13 & 14 of the Las Vegas Hilton Hotel. If you plan to attend, please RSVP to John Poray at the SBE National Office at [jporay@sbe.org](mailto:jporay@sbe.org) or (317) 253-1640.

A special tutorial on using the Game Day Coordinator Frequency Coordination software is also being planned for Tuesday, April 11. The time and location will be announced soon.

**REGIONAL SBE CONVENTIONS COMING UP**

A number of SBE chapters offer opportunities to attend a regional SBE convention or conference near home. Most of these events are very inexpensive or free and take minimal time away from your work and free time.

Coming up February 29 - March 1: Great Lakes Broadcasting Expo Lansing Center, Lansing, Michigan Contact: Michigan Assn. of Broadcasters (517) 484-7444 Engineering sessions organized by Chapter 91, Lansing, MI.

**ENNES WORKSHOPS PLANNED FOR ST. LOUIS, MO**

The Ennes Educational Foundation Trust, in cooperation with the Society of Broadcast Engineers, will present a one-day Ennes Workshop in St. Louis, MO on Saturday, June 17. The Workshop will be held in conjunction

with the Missouri Broadcasters Association summer conference. The Workshop will be held at the Adam's Mark Hotel in St. Louis' downtown, just across the street from the famous arch.

Watch for more information in the March issue of the SBE SIGNAL and future issues of "Short Circuits."

**MONTHLY HAMnet BRINGS SBE TO REMOTE AREAS**

At 8:00 pm EST, 0000 GMT, on the second Sunday of each month, SBE Chapter 73 takes the air. Hal Hostetler, WA7BGX, of Tucson, Arizona, is the control station for the "meeting." Updates on SBE activities are given each month and participants can discuss technical issues and visit. HAMnet was originally begun to help serve members who lived too far to attend meetings of any regular chapter, but any amateur operator is welcome and encouraged to participate. Look for HAMnet on 14.205 mHz.

Questions and comments about SBE may be e-mailed directly to Executive Director, John Poray at [jporay@sbe.org](mailto:jporay@sbe.org).

**DO YOU HAVE SBE MEETING PROGRAM IDEAS?**

Is there a topic you would like to see covered at one of our local Chapter 24 meetings? Or, better yet, is there a topic that you are qualified to speak on at an upcoming meeting?

Please forward any ideas to one of the Program committee members or to one of the Chapter 24 officers.

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## FCC Rulemakings

Compiled By Tom Smith

### FINAL RULEMAKING

#### WT Docket 99-168 Service Rules for the 746-764 and 774 MHz Bands, and Revisions of Part 27 of the Commissions Rules.

The FCC adopted service rules concerning 36 megahertz of spectrum in television channels 60 through 69. This is spectrum that Congress has order auctioned before September 30, 2000. The other 24 megahertz in the channel 60 through 69 TV band was allocated to public service use.

The FCC has allocated the band into one 20 MHz group (split into two paired 10 MHz bands) and one 10 megahertz group (paired into two five MHz bands). Bidders will be able to acquire one or both bands in any Economic Area Groupings across the country. The FCC has divided the country into six of these Economic Area Groupings. These are larger markets than previously used which usually numbered several market groups to a state.

The remaining six megahertz of spectrum will be auctioned into two additional paired groups with one containing two megahertz and the other containing one megahertz of spectrum. These smaller bands will serve as guard bands between the larger bands and the public service bands, and will be subject to more stringent restraints than those on the larger bands.

The FCC held a short comment period that ended on January 18<sup>th</sup> concerning interference standards and uses for the guard bands frequencies. Power levels will be 1000 watts for

base stations at 305 meters with reduced power for heights above that. Mobile stations will be limited to 30 watts and portable units limited to 3 watts.

The licenses in this band will not be subject to the Commercial Mobile Radio Service spectrum caps which limit a entity to 45 MHz of the existing 180 MHz used for CMRS in any one market. Local telephone carriers and cable operators will be able to bid on these licenses. Operators will not be required to meet minimum build out requirements until January 1, 2014, when the DTV transition is completed.

The winners in this service will be able to use these bands for a variety of services including internet services and other new broadband services, as well as new broadcasting services. They will have to protect the approximate 100 existing conventional TV stations from interference during the DTV transition.

#### MM Docket No. 99-25 Low Power FM Radio Service

At the January 20<sup>th</sup> meeting, the Commission approved a new low power FM radio service. The FCC is creating two classes of stations in this action, LP- 100 with stations operating with 50 to 100 watts, and LP-10 with power from 1 to 10 watts. Stations will be limited to antennas of 30 meters above average terrain. Ownership of this new class of stations will be limited to non-profit groups not holding a broadcast license. These groups included government and private educational groups, associations, and public safety groups. During the first two years only local groups will be allowed to own a LPFM station in a community and will be limited to one

station. After two years any group could own a station in any community and own up to five stations total, and after three years a group could own ten stations. Stations would be licensed for eight years with licenses renewable. The licenses will not be transferable. LP-100 licenses will be granted first, then LP-10 licenses will be granted. Applications will be accepted during announced filing windows, and mutually exclusive applications will be granted according to a point system with applicants ending in unresolved ties operating the stations on a rotating basis over the term of the license.

These who ceased operation of a pirate station before or within 24 hours of notification of illegal operation by the FCC will be able to apply for a LPFM license.

LPFM stations will be required to operate a least 36 hours a week and meet EAS, political, sponsorship, and ID requirements.

LPFM stations will have to meet minimum separation requirements and protect existing full power and translator stations, and full-service and translator stations applied for before and LPFM filing window. The low power stations will not have to meet third adjacent requirements, but will have to meet co-channel, first and second adjacent, and IF restrictions. The report and order is 108 pages long and is on the FCC web site.

#### MM Dockets 98-204,96-16 Equal Employment Opportunity Rules

The FCC adopted at the January  
(continued on page 6)

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## FCC RULEMAKINGS (continued)

20<sup>th</sup> meeting new rules that will affect the hiring procedures of all broadcast and cable operations. Stations and cable companies, including multichannel video programming providers, will be required to take one of two measures when hiring new employees. The first method is to send announcements to recruitment organizations that request them. The second is to participate in some form of outreach such as job fairs, internships, and interaction with educational and community groups. A station may design its own outreach program.

All stations must place a EEO report in their public file yearly, and stations with more than 10 employees must file at renewal and half way through the license period. The filing of EEO reports has been reinstated after being suspended due to a court decision. The report and order was released on February 3, 2000 and is on the FCC web site.

### PROPOSED

**DA-00-43  
Auction of Licenses for 747-762  
and 777-792 MHz Bands Scheduled  
for May 10, 2000**

The FCC was seeking comment on the auction of the two bands of frequencies in the channel 60 through 69 TV band. The auction is to start on May 10, 2000 and will be Auction Number 31. The FCC asks for comment on the upfront payments, and activity rules. Activity rules require bidders to place bids at regular intervals during the auction. This is to prevent someone from sitting out for a number of rounds and then placing a surprise bid. The type of bidding proposed is a simultaneous multiple round bidding method. A formula for minimum

increases in the bidding was also proposed.

The FCC will award 12 licenses for 6 Economic Area Groupings. One license in each area is for 20 MHz and the other for 10 MHz. The FCC is planning to set the reserve bids at about 750 million dollars.

**MM Docket 00-10; MM Docket  
99-292; RM-9261  
Establishment of a Class A  
Television Service**

The FCC has issued a Notice of Proposed Rule Making concerning the creation of a Class A low power TV service. In December the FCC canceled a similar inquiry after the Congress passed a law that created a low power Class A TV service. The notice deals with issues not addressed by the law that Congress passed.

Class A TV stations will be low power stations with primary status. Currently all low power TV stations are secondary and must go off the air for any new full power TV station. This notice will address interference issue between LPTV stations and full power, service areas of LPTV stations, DTV issues including possible NTSC/DTV channel pairings, application issues and operation outside the DTV core channels.

The FCC asked for comment on eligibility issues not addressed by Congress and if the Commission should accept applications for Class A TV stations after they process the applications from existing LPTV stations affected by the DTV stations allocated to existing TV broadcasters.

The FCC adopted and released the notice on January 13, 2000 with comments due on February 10, 2000

and replies on February 20, 2000.

*Compiled from FCC Press Releases and Notices (www.fcc.gov)*

### Scheduled EAS Test Times for Wisconsin State Relay Stations

This is a listing of planned Required Weekly Tests (RWT) and Required Monthly Tests (RMT) of the Emergency Alerting System to be sent by Wisconsin Public Radio. Since broadcast stations participating in the EAS system are required to log reception of tests from their designated monitoring sources, this list should be helpful for Chief Operators to ensure proper operation. All Wisconsin State Relay (SR) stations are members of WPR.

Monday, February 14th, 10:59am  
Tuesday, February 22nd, 12:59pm

Thursday, March 9th, 10:59am  
Monday, March 13, 2:59pm  
Tuesday, March 21st, 12:59pm  
Wednesday, March 29th, 10:59am

(RMT) Wednesday, April 5th,  
11:50pm  
Thursday, April 13th, 10:59am  
Monday, April 17th, 2:59pm  
Thursday, April 25th, 12:59pm

Thursday, May 11th, 10:59am  
Monday, May 15th, 12:59pm  
Thursday, May 23rd, 2:59pm  
Wednesday, May 31st, 10:59am

More information, along with dates and times of RMTs scheduled by NOAA weather radio stations can be found at <http://www.wpr.org/tech/eas.htm>.

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**SBE MEETINGS AND  
EVENTS SCHEDULED  
DURING NAB  
CONVENTION**

**Saturday, April 8**

- Certification Committee Meeting; 6:30 pm to 11:00 pm Royal Salon, Las Vegas Hilton Hotel

**Sunday, April 9**

- Board of Directors Meeting; 8:30 am to 12:00 Noon Embassy Salon, Las Vegas Hilton Hotel

**Monday, April 10**

- Frequency Coordinators Meeting; 1:00 pm to 2:30 pm Conference Rooms 13/14, Las Vegas Hilton Hotel

- NFL Game Day Coordinators Meeting; 2:45 pm to 5:00 pm Conference Rooms 13/14, Las Vegas Hilton Hotel

**Tuesday, April 11**

- Certification Exams; 9:00 am to 12:00 Noon Conference Room 12, Las Vegas Hilton Hotel

- Ennes Educational Foundation Trust Meeting; 9:00 am to 10:00 am Conference Room 9, Las Vegas Hilton Hotel

- EAS Meeting; 9:00 am to 10:30 am Conference Room 13, Las Vegas Hilton Hotel

- Political Conventions Frequency Coordination Committee; 10:00 am to 12:00 Noon, Conference Rooms 7 & 8, Las Vegas Hilton Hotel

- Membership Meeting; 5:00 pm to 6:00 pm Room N249/250/251, Las Vegas Convention Center

- Game Day Coordinator Software Tutorial (tentative); Tuesday, time and location to be announced



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**FCC REJECTS COFDM  
PETITION (continued)**

manufacturers are aware of problems cited by Sinclair and are aggressively taking steps to resolve multipath problems exhibited in some first-generation TV receivers.

Consumer Electronics Association (CEA) President and CEO Gary Shapiro responded to the FCC decision with the following statement: "As the first organization to call officially upon the FCC to dismiss Sinclair's proposal, we commend the commissioners for today's unanimous decision. With this ruling, DTV's future is clear and paved for success. The FCC has wisely provided broadcasters, manufacturers and consumers with the certainty they need to move forward with the transition to digital television."

Some semiconductor manufacturers have developed new DTV demodulators which claim to improve the reception of 8-VSB in high multipath conditions which are likely to be found in urban areas. Motorola with its MCT2100, and NxtWave with its NXT2000 demodulator chip claim to handle both static and dynamic multipath interference with sophisticated equalization techniques.

Canada, South Korea, Taiwan, and Argentina have adopted the ATSC DTV standard for digital terrestrial broadcasting. As of January 31, 1999, there are 117 television stations in 44 U.S. markets that are on the air with the ATSC 8-VSB standard.

Information from the FCC OET ([www.fcc.gov](http://www.fcc.gov)), Sinclair Broadcasting ([www.sbg.net](http://www.sbg.net)), Consumer Electronics Association ([www.ce.org](http://www.ce.org)), and DigitalTelevision: The Site ([www.digitaltelevision.com](http://www.digitaltelevision.com)) was used in this report.



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**CHAPTER 24  
SUSTAINING  
MEMBERS**

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**SBE Chapter 24 Newsletter**  
2029 Greenway Cross #11  
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**FIRST CLASS MAIL**

Newsletter edited on Pagemaker 5.0 by: Mike Norton  
Contributors this month: Lloyd Berg, Mike Norton, Tom Smith, and Tom Weeden.  
Thanks to Leonard Charles for his work on the Chapter 24 WWW page.

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# JANUARY MEETING and PROGRAM



## Society of Broadcast Engineers CHAPTER 24 MADISON, WISCONSIN Thursday, February 24, 2000

### THE FUTURE ACCORDING TO CHARTER COMMUNICATIONS

This month representatives from Charter Communications will present the future as viewed from their company. This futuristic vision looks in two directions. First, the future of Charter Communications' Cable Television growth will be explored. Then, the Charter Communications Fiber Link operation will look at an infrastructure of fiber interconnection and transport possibilities for Broadcasters. Both visions look at Charter Communications throughout the entire State of Wisconsin.

Dutch Treat Dinner at 5:30pm  
at China One Buffet (West)  
518 Grand Canyon Drive

Directions: Take the Beltline exit for Gammon Road,  
Go North (toward West Towne Mall), stay in right turn lane,  
Turn Right on Odana, go to the first stop light (Grand Canyon Drive)  
Turn Right on Grand Canyon, go 1/2 block to China One.  
(Across from the Raddison)

Meeting and Program  
at 7:00pm  
at WISC-TV  
7025 Raymond Road

Visitors and guests are welcome at all of our SBE meetings!

#### 2000 UPCOMING MEETING/PROGRAM DATES:

<b>Day</b>	<b>Date</b>	<b>Program</b>
Tuesday	March 21	Shortwave Radio/Dorrrough
Wednesday	April 26	NAB Review and Elections

Program Committee:	Kerry Maki 833-0047	Denise Maney 277-8001	Steve Zimmerman 274-1234	Mark Croom 271-1025	Steve Paugh 277-5139
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