

NATIONAL GMDSS TASK FORCE

Newsletter and Summary Record of 8 January 2015 Meeting

1. **The Task Force Meeting.** This Newsletter reports on the recent meeting of the Global Maritime Distress and Safety System (GMDSS) Task Force, a group dedicated to monitoring the success and shortcomings of the GMDSS. The Task Force is also active in current efforts to modernize the GMDSS and monitors related developments in maritime radio and electronic navigation (e-navigation). The Task Force makes recommendations to government authorities to improve safety at sea.

2. **Task Force membership.** Membership is open to individuals associated with commercial vessel operations, recreational vessel interests, training institutions, service agents, manufacturers, and government authorities. Membership is open to any interested person or organization and there is no fee for participation. New members are welcome, to join, send your name, organization (if any), email address, and telephone number (optional) to gmdss@comcast.net. Members who are unable to attend Task Force meetings are invited to participate by email and to connect with Task Force meetings by webcast or conference call.

3. **The summary record.** This record of the meeting is provided for information and will be posted on the Task Force portion of the Coast Guard web site: www.navcen.uscg.gov/?pageName=MaritimeTelecomms (click GMDSS, then GMDSS Task Force). The summary record is also distributed to all Task Force members to serve as a Newsletter summarizing GMDSS developments and other issues in marine telecommunications. The GMDSS Task Force met on 8 January 2015 at the RTCM Headquarters in Arlington, Virginia. The documents listed below were distributed and are available on request:

Notice to Manufacturers in Attempt to Facilitate Change of MMSI Numbers
Draft U.S. Input to IEC on Integrated Communications Systems
Garrett's Slide Show: How Emergency Beacons Have/Could Have Aided Survival

4. **The Coast Guard Reports:** The following presentations were made by the persons indicated:

a. The Coast Guard Report on Task Force Petition to Require Emergency Beacons on Recreational Vessels Offshore. Jeffrey Ludwig reported that the Office of Boating Safety had largely completed the data analysis and was now moving into the regulatory phase that starts with a request to the Coast Guard's Safety and Security Council to authorize project origination.

b. Status of the Rescue 21 Coastal VHF-DSC Network. Captain Paul Boinay reported on the status of the project with the following highlights:

1.) The Coastal Network. The U.S. Atlantic, Pacific and Gulf of Mexico coasts excluding Alaska, are fully operational as are the offshore islands Puerto Rico, the U.S. Virgin Islands, Hawaii, Guam, and the Northern Mariana Islands Saipan, Tinian and Rota. The U.S. Great Lakes, while not technically a GMDSS area, are also fully operational on VHF-DSC.

2.) Alaska. Implementation of Rescue 21 in Alaska is well along but is not intended to include full coastal coverage. The existing 30 sites have been upgraded and new 3 new sites have been added to fill gaps. Construction is projected to be complete by 2017. DSC services have not yet been activated in Alaska. Initial declaration of Sea Area A1 will not include Alaska.

3.) The Western Rivers. The navigable rivers of the U.S. are also being upgraded and the existing 47 sites will be augmented with 3 new sites to fill gaps. Direction Finding service is not being provided in the Western Rivers.

4.) Declaration of Sea Area A1. At the previous Task Force meeting the Coast Guard announced its intent to declare Sea Area A1 operational in the coastal areas excluding Alaska. Sea Area A1 exists when the area is covered by continuous DSC channel 70 watch ashore from one or more shore stations. Subsequent to the meeting, the Coast Guard formally announced plans for Sea Area A1 in the Federal Register on 20 January 2015. The FCC is expected to make its own announcement setting a termination date for DSC waivers granted to certain mandatory vessels. There were questions about how Declaration of Sea Area A1 would affect NAVTEX MSI broadcasting (noting that MSI broadcasts on 2 MHz had been discontinued). It was agreed to examine MSI aspects in more detail at the May Task Force meeting.

c. Status of the Task Force Petition to Upgrade Radio Safety Equipment on Small Passenger Vessels. Russ Levin reported that he had been contacting cognizant Offices at Coast Guard Headquarters but that it was too early to forecast action on the Petition. Further developments are expected by the date of the next Task Force meeting in May. Russ will also undertake coordination with the FCC which was also petitioned on this issue.

d. Planning for the IMO NCSR Subcommittee meeting 9-13 March. Russ Levin noted that there was only one official public meeting scheduled for 4 March 2015 at RTCM to prepare the Delegation for the NCSR meeting. Persons wishing to be placed on the invitation list for that and subsequent meetings should contact George Detweiler at george.w.detweiler@uscg.mil.

e. NOAD and (AIS) Expansion Rulemaking: The Coast Guard "Vessel Requirements for Notices of Arrival and Departure (NOAD) and Automatic Identification System (AIS) (USCG-2005-21869)" Final Rule regarding expansion of NOAD and AIS carriage requirements (to all navigable waters) was published in the Federal Register on 30 January 2015. The NOAD-AIS Final Rule is available at the Federal Register Public Inspection Desk/Page at <https://federalregister.gov/a/2015-01331>. This Rulemaking has been in progress for over ten years and will be discussed more fully at the next Task Force meeting in May.

5. The FCC Reports: Ghassan Khalek reported with the following highlights:

a. Comments on Docket 14-36, NPRM on changes to Part 80: The FCC has reviewed the comments received and still plans to make adjustments to the Rules on the following issues:

- 1.) Use of hand held VHF radios ashore within 3 miles of the vessel
- 2.) Recognize the AIS SART.
- 3.) Enable Digital messaging on voice channels.
- 4.) Selected changes to part 80 relating to license transfer.
- 5.) Update Rules to recognize new specifications for SEND devices
- 6.) Clarify rules on radar
- 7.) Require EPIRBs to be able to send position data when activated.
- 8.) Update Rules to recognize new specifications for MSLD devices

b. Action on the Task Force Petition regarding Small Passenger Vessels. The FCC issued a Public Notice (Report No. 3006, RM No. 11726) inviting interested persons to file statements opposing or supporting the petition for Rulemaking within 30 days. This period expired on 17 August, but there was no report on the substance of comments received. The FCC plans to coordinate with the Coast Guard before taking any action on the Petition.

c. Conditions for a non-SOLAS Vessel to Qualify for a Waiver to Use a Non-Inmarsat Satellite Service as an Alternative to MF/HF DSC. The discussion on small passenger vessels produced a clarification of the proposed conditions under which the FCC might grant a waiver to use a non-Inmarsat satellite system. It was suggested that in addition to selecting a system which covers the vessel's operating area and maintains a 24x7 watch for emergencies, the vessel should have an account with that system, have an external antenna and a docking station to keep the satellite phone charged. Other waivers granted by the FCC specified that the vessels post a Coast Guard contact number at the docking station. The FCC has granted about 150 waivers for mandatory non-SOLAS vessels desiring to discontinue 2 MHz watches.

d. Waiver Request for a Wrist Mounted Personal Locator Beacon (PLB). Ghassan confirmed that the FCC had received a request for waiver from Breitling to authorize a wearable PLB but did not think it had been authorized as yet.

e. Management of MMSI Numbers: As noted before, MMSIs for SOLAS vessels seem to be managed with only minor problems. Non-SOLAS vessels and recreational vessels present more of a problem. The FCC and the Coast Guard have entered into Memoranda Of Understandings (MOU)s with several private sector agencies to issue MMSIs to vessels not requiring a Station License. These agencies are obliged to maintain their block of numbers and query the holders periodically to verify that the assignments are still in use. The FCC is still planning to change the system so that previously issued MMSIs can be 'recycled' to other users but all improvements to MMSI management are on hold pending a major overhaul of Licensing procedures which is still unfunded.

6. Introduction of the National Safe Boating Council (NSBC). Rachel Johnson, Executive Director of NSBC, outlined the scope of the Council's activity and their mission to enhance the safety of the recreational boating experience through education, outreach, and training. The NSBC was founded in 1958 and presently has a membership of over 330 U.S. and Canadian organizations, all with an interest in boating safety and education. The NSBC membership is diverse, with approximately 65% of the membership being nonprofit

organizations and 35% being for-profit organizations. The NSBC should not be confused with the National Boating Safety Advisory Council (NBSAC), an Advisory Council established by the Federal Boat Safety Act of 1971.

Rachel described a new Boating Safety Grant to the NSBC to promote voluntary carriage of emergency beacons by recreational vessels. The NSBC Campaign, entitled “Saved By The Beacon,” hopes to modify the behavior of recreational boaters to ensure they understand the importance of the 406 MHz beacons and how to use them correctly in emergency. The campaign will introduce EPIRBs and PLBs and compare their benefits to other commonly used mariner’s communications devices such as VHF radios, GPS trackers and cell phones. In promoting an understanding of the beacons and their capabilities, the importance of maintaining a current registration of the beacon with NOAA will be emphasized.

The Task Force has offered to assist NBSAC with their campaign and Gordy Garrett, who monitors Distress Cases for the Task Force has been sending them cases involving successful use of emergency beacons and also cases where absence of a beacon had disastrous results.

7. Gordy Garrett’s Power Point Presentation of Survival Principles and Selected SAR Cases. Gordy has done a fantastic job of tracking SAR cases for the Task Force and his work will prove very beneficial to the NSBC Campaign. His presentation began with a recounting of the four principles of survival: Distress Alerting to SAR authorities; Position Indicating; Active Signaling for on-scene locating; and survival awaiting rescue through flotation and protective clothing. Gordy’s SAR cases, selected from many in 2014, include both successful outcomes and outright failures. Several Task Force members in attendance asked for copies of the slides for use in promoting safety on the water. The slides are also available by email to any Task Force member on request to Jack Fuechsel at gmdss@comcast.net.

8. Reports and Issues, Recreational Vessel Group: David Kennedy of BoatUS reported with the following highlights:

a. The U.S. Sailing Organization’s Safety At Sea Committee. Renee Mehl reported on how U.S. Sailing cooperates with the International Sailing Federation to improve safety features for ocean, coastal and local racing. The Safety at Sea Committee has been especially active in harmonizing U.S. standards with International standards and generally making them easier for operators and sponsors to understand. Among U.S. Sailings required radio gear for offshore races are VHF radio with masthead antenna, AIS Transponder also with masthead antenna, Radar Reflector, and EPIRB (GPIRB if purchased after January 2016). For the masthead VHF antennas, a splitter is permitted provided that the coax has no more than 40% loss. While Renee’s emphasis was on safety for sanctioned races, the Task Force noted with pleasure that long haul sailing craft that cruise the oceans of the world are among the best equipped and with the most knowledgeable operators of any recreational craft. We look forward to a productive relationship with the Safety at Sea Committee.

b. Status of MMSI Registrations by Designated Agents and Database Adequacy. In reviewing the status of Agent issued MMSIs, it was reported that BoatUS has issued about

155,000 and Sea Tow and the U.S. Power Squadrons roughly 15,000 each. BoatUS has been discussing possible revisions to the Memorandum Of Understanding (MOU) with the FCC and the Coast Guard. All of the designated Agents are in compliance with the government mandate to maintain a current database but are finding that it requires a significant commitment of time.

There was an extended discussion of the adequacy of the database of MMSI numbers. The FCC database is publically accessible but doesn't contain individual listings from Agents. The Coast Guard MISLE Database contains all Agent registrations but is not publically accessible. The International records maintained by the ITU are accessible but do not contain MMSIs of recreational vessels since the FCC does not notify these to the ITU. MMSIs issued by other government agencies are managed by their spectrum management offices.

9. Reports and Issues of the Service Agents and Manufacturers Group: Ralph Sponar moderated the discussion that covered the following issues:

a. Standardized Inspection Checklists. The Group has worked with the Coast Guard, the FCC, and Classification Society inspectors to update checklists for mandatory inspections of selected vessel types. At this point all of the checklists have been completed and posted on the NMEA website. Once the FCC has accepted the additional checklists and posted them, they will be linked to the Task Force website. The following are internet addresses for Inspection Check Lists and NOAA Registration forms:

3 FCC forms: <http://www.transition.fcc.gov/eb/shipinsp/>

4 NMEA FCC forms: www.nmea.org/content/vessel_inspect/fcc_forms.asp

3 NMEA Voluntary: www.nmea.org/content/vessel_inspect/voluntary_vessel.asp

4 NOAA Registrations: www.nmea.org/content/vessel_inspect/noaa_forms.asp

b. Continuing Issue – Should “3 Strikes Rule” be Rescinded? It is now clear that almost everyone agrees that the rule limiting to three the number of ‘tries’ to enter MMSI numbers in VHF-DSC radios is proving counter productive. The Coast Guard and FCC discussed the issue and had no objection to providing a ‘work around’ to ease the “three strikes” rule. Joe Hersey introduced a draft Notice to Manufacturers encouraging them to adopt simpler procedures for resetting MMSI numbers with the hope that owners would be more serious about keeping their MMSI registrations current. After much discussion and some editing, a final version was adopted and is now being vetted with the National Marine Electronics Association (NMEA) and the RTCM in the hope that they will both join the Task Force in sponsoring the Notice. The Coast Guard and the FCC are also reviewing the issue again since the Notice indicates that it has been coordinated with both Agencies.

10. Reports and Issues, Commercial Vessel Task Group. The Task Force invited Rich Beattie to assume leadership of this Group following the retirement of Nino Martini. The following issues were discussed:

a. Changes to Task Force Earlier Recommendations for Fishing Vessels and Towing Vessels. A pending issue is the need for further changes to Carriage Requirements for Other Mandatory Non-SOLAS Vessels as a Result of the Coast Guard Discontinuing 2 MHz Watches ashore. The Task Force will be upgrading its earlier recommendations regarding Fishing Vessels, Towing Vessels and other mandatory commercial vessels needing to go farther than 20 miles offshore. The main upgrades recommended will be patterned after those in the Petition for Small Passenger Vessels and in most cases will probably be to provide relief from maintaining watches on 2 MHz channels and offer alternative watch on HF or satellite systems.

b. New Issue Regarding Input to the IEC/TC80 Group on the Integrated Communication System (ICS). Joe Hersey introduced proposed comments he and Dave Blevins had drafted as a U.S. submission to the IEC on the ICS Standard. The IEC Project Team will meet at RTCM in February to discuss comments on the Standard. The revised Standard will hopefully become part of a modernized GMDSS. The Task Force concurred with the draft proposals, the main points of which are the following:

- 1.) Integrating GMDSS with AIS, at least for identifying and locating ships in distress
- 2.) Displaying distress alerts, maritime safety information (eg SafetyNET and NAVTEX), AIS safety-related messages and application specific messages (iaw 61174 Ed4 ECDIS and 62288 Ed2 navigation displays)
- 3.) GMDSS Human-machine interface based upon ITU RR Articles 32 & 33.
- 4.) Implementing MSC.1/Circ.1389 Guidance on procedures for updating shipborne navigation and communication equipment as done in the ECDIS case
- 5.) Cybersecurity measures
- 6.) Establishing means for automatically contacting the maritime RCC responsible for the area in which the ship is operating (similar to cell e911), rather than requiring the MRCC associated with a satellite earth station pass the alert on to the proper MRCC.

11. Reports and Issues: Training Task Group. Kurt Anderson reported on his Group's activity that includes a continuing review of the Question Pools for GMDSS Operator exams. Some of the issues being watched are the role of SITOR which is rarely used but accounts for about 8% of the questions; display of Navtex and SafetyNET Marine Safety Information (MSI) on various integrated display devices and Inmarsat-C which appears destined to become the only GMDSS qualified Inmarsat system.

12. Report of the IMO/ITU Joint Experts Group Meeting in London 6-10 October 2014: The Group's mandate is to facilitate development of technical regulations by the International Telecommunications Union (ITU) to implement operational requirements set by the International Maritime Organization (IMO). This has become an important forum for GMDSS Modernization partly because of the heavy workload of IMO's Navigation, Communication and Search and Rescue Subcommittee (NCSR). The Experts Group reviewed the GMDSS Modernization work of NCSR 1 that left some questions unresolved and the proposals made by the Modernization Correspondence Group including a draft preliminary revised text of SOLAS Chapter IV. Other issues reviewed included:

- a. How to change Sea Areas A3/A4 to accommodate non-Inmarsat satellite systems?
- b. Assuring that distress and safety traffic from other satellite systems gets to RCCs?
- c. How to sustain MF/HF Services with the decline of MF/HF Public Coast Stations?
- d. Role of AIS in GMDSS, if any?
- e. Government's reluctance to pay for duplicate satellite broadcasting of MSI?
- f. Whether man overboard devices should be included in GMDSS and if so how?
- g. Role of VHF Digital Exchange System in GMDSS?
- h. Next generation EPIRBs and PLBs to work with new COSPAS/SARSAT satellites
- i. The role of text messaging in GMDSS, if any?

The Correspondence Group was asked to take these discussions into account and make a further report to NCSR 2 by 19 December 2014.

13 GMDSS Modernization. Bob Markle, chairman of the International GMDSS Modernization Correspondence Group confirmed that the issues identified in paragraph 12 above are the principal issues addressed in the Correspondence Group report and offered some further commentary of a few of them as follows:

a. Provision for GMDSS Satellite Providers in Addition to Inmarsat. The Sea Area discussion won't affect ships other than SOLAS ships. Other issues related to accommodation of alternative satellite systems include assured delivery of distress and Safety traffic to RCCs and the reluctance of governments to pay for broadcast of MSI on multiple satellite systems.

b. Equipment Options to Receive and Display MSI. This includes alternatives to NAVTEX receivers and a possible transition to NAVDAT (digital MSI broadcasting on 500 kHz). Also included is formatting which will allow graphical presentation where appropriate.

c. New COSPAS/SARSAT Constellations and the Impact on EPIRBs and PLBs. The introduction of new satellite technology for detecting EPIRBs and PLBs is being managed so that older beacons will be compatible with the new technology. It also projects that new models of EPIRBs and PLBs will be optimized for the new satellite technology in the future.

14. The RTCM Report: RTCM President Bob Markle provided the following updates on the continuing work of the RTCM Special Committees. The following are highlights:

a. RTCM SC-101 on GPS in VHF-DSC Handhelds. The Committee has completed an edition of its standard on GPS in VHF-DSC handhelds. Prompt approval by the FCC is expected.

b. RTCM SC-104 on Differential Global Navigation Satellite Systems (GNSS). This Committee is working on incorporating new differential GNSS messages to accommodate new global and regional systems such as the Chinese BeiDou System (BDS) and the Japanese QZSS System into its standards that were originally developed for GPS. The group met in Tampa in September and considered promulgation of differential corrections by AIS broadcast and Internet web sites.

c. RTCM SC-109 on Electronic Charting Technology. The Committee is working on a new version of the standard and plans to include provisions for Voyage Data Recorder (VDR) functionality in Electronic Charting Systems. The Committee is expected to circulate the latest version for approval shortly.

d. RTCM SC-110 on Emergency Beacons. Current work is on beacons that will be optimized for the new Second Generation MEOSAR Satellite System. Existing beacons will also work with the new satellite system. A new standard is being developed to allow homing on both 121.5 and AIS in the same EPIRB. A new PLB standard has been approved which includes integral GNSS. This is not expected to be a problem since virtually all PLBs on the market already include GNSS receivers.

e. RTCM SC-112 on Marine Radar Standards. This Committee is developing language for this and other standards to require the use of “NMEA Network” messages, worded in such a way that NMEA OneNet can be used when it is ready along with NMEA 2000 and NMEA 0183. The revised standard is expected to be out for vote soon.

f. RTCM SC-119 on Maritime Survivor Locating Devices (MSLD). This Committee amended the man overboard standard to accept either closed or open loop networks. The Committee voted approval prior to the RTCM Assembly and the amendment is now published. The group was advised that Australia has accepted the RTCM MSLD Standard.

g. RTCM SC-121 on Automatic Identification Systems (AIS) and Digital Messaging. This Committee has completed the standard that establishes the process for developing Application Specific Messages (ASM). The new standard is expected to be out for Committee vote soon.

h. RTCM SC-123 on Digital Small Messaging Services on Maritime Frequencies. In response to an RTCM petition, the FCC has proposed to adopt RTCM Standard 12301.1 for transmitting data on VHF channels. The Committee may expand its work to include data messaging on MF and HF channels as well as Encrypted AIS (EAIS).

i. RTCM SC-127 on E-Loran. This Committee is developing an eLoran standard in connection with the eLoran demonstration project taking place in the United Kingdom under the General Lighthouse Authorities.

j. RTCM SC-128 on Satellite Emergency Notification Devices (SEND). This Committee was chartered at the request of the Coast Guard to develop performance standards for emergency notification systems using private satellite systems such as SPOT. The Committee has completed and approved a clarifying amendment to this standard. The FCC initially declined to include the revised standard in its Rules, but RTCM has asked for reconsideration.

k. RTCM SC-129 on Portrayal of Nav-Related Information on Shipboard Displays. This Committee has completed a first draft of the portrayal standard but the issues are very complex. Additional input will likely be required from SC-112.

l. RTCM SC-130 on Electro-Optical Imaging Systems (EOIS). The work of this Committee deals primarily with night vision systems but the Committee work has been suspended pending industry resources to support it.

m. RTCM SC-131 on Multi System Shipborne Navigation Receivers. This new Special Committee has been approved by the RTCM Board to develop a standard incorporating space based and terrestrial navigation systems, and to possibly include inertial systems as well. The standard will include provisions for resistance to interference, spoofing, and jamming. In cooperation with IALA, RTCM has been developing an IMO performance standard and will begin work on an IEC technical standard.

n. RTCM SC-132 on Visual Emergency Signaling Devices. This new Committee was chartered at the request of the Coast Guard to review devices that might be used to replace flares on vessels. The U.S. Coast Guard Research and Development Center is studying the most effective light characteristics for this purpose.

15. Next Meeting of the GMDSS Task Force: The next Task Force meeting will be held at Loews Hotel in Annapolis, Maryland on Thursday, 7 May during the RTCM Annual Assembly 3-8 May 2015.

GMDSS TASK FORCE CONTINUING WORK LIST

8 January 2015

1. Monitor FCC continuing action to update GMDSS Rules (TF)
2. Recommend actions to reduce false alerts in GMDSS systems (TF)
3. Monitor Coast Guard Port State GMDSS inspection program (TF)
4. Monitor MSI broadcasting programs for compliance with GMDSS Standards (TF)
5. Review GMDSS Internet Web Sites and update Task Force portion of USCG site (TF)
6. Support SOLAS Working Group planning for IMO NAVCOMSAR meetings (TF)
7. Advocate Canadian coordination to extend GMDSS services to the Great Lakes (TF)
8. Advocate voluntary carriage of VHF and EPIRB/PLBs by all vessels offshore (TF)
9. Advocate overhaul of FCC policy and practice on MMSI assignments (TF)
10. Monitor non-GMDSS systems: AIS, LRIT, SSAS, VDR, VMS, & E-Navigation (TF)
11. Recommend updates for Coast Guard NVIC on GMDSS Requirements (TF)
12. Recommend means to facilitate Distress Alerts by Cell Phone & Internet (TF)
13. Advocate GNSS for U.S. EPIRB and PLB Standards (TF)
14. Advocate mandatory Distress Beacons on R/V more than 3 miles offshore (TF)
15. Advocate use of the Alaska AIS Monitor Network for VHF Distress Guard (TF)
16. Review GMDSS concepts and make modernization recommendations (MOD)
17. Advocate intership calling on HF GMDSS channels (CV)
18. Recommend Safety Radio and VMS Requirements for Small Fishing Vessels (CV)
19. Recommend Safety Radio & Navigation Requirements for Towing Vessels (CV)
20. Recommend Safety Radio & Nav. Outfit for Small Passenger Vessels (CV)
21. Advocate applications for new MF/HF Digital Communications Service (CV)
22. Advocate voluntary training programs for users of GMDSS systems (RV)

23. Encourage GMDSS handbooks and Internet and video training aids (RV)
24. Encourage users of VHF-DSC to Register for MMSI and connect GPS (RV)
25. Advocate FCC let R/Vs retain existing MMSI when applying for Station Lic. (RV)
26. Encourage Mfgs. to upgrade GMDSS explanations in equipment manuals (SA)
27. Recommend proper interconnection of GPS receivers with DSC Radios (SA)
28. Advocate better FCC & USCG management of annual GMDSS inspections (SA)
29. Maintain Inspection Guidelines and Check Lists for selected vessel types (SA)
30. Recommend Certification Path For GMDSS Maintainer (SA) and (TR)
31. Maintain GMDSS Question Pools for FCC and Coast Guard Examinations (TR)
32. Advocate 5 Year USCG Recertification Training of GMDSS Operators (TR)

Key to cognizant groups:

- (TF) Task Force
- (CV) Commercial Vessel Task Group
- (RV) Recreational Vessel Task Group
- (SA) Service Agents and Manufacturers Task Group
- (TR) Training Task Group
- (MOD) Modernization Task Group

Please refer questions and proposals to Captain Jack Fuechsel at 703-527-0484 or gmdss@comcast.net. If you have an Internet server with spam filters, please authorize receipt of messages from gmdss@comcast.net

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