CONCLUSIONS OF THE 20 MAY GMDSS MODERNIZATION WORKSHOP

Captain Jack Fuechsel, USCG (Ret)
Director, GMDSS Task Force
gmdss@comcast.net
703-527-0484

To all Members of the GMDSS Task Force: The attached document is a summary of the GMDSS Modernization Workshop held on 20 May 2010 during the RTCM Annual Conference. It is being furnished to all members for information and with the invitation to provide your comments. The Workshop was sponsored by the GMDSS Task Force and the Radio Technical Commission for Maritime Services (RTCM) and the summary is being shared with the Task Force membership with a view to adopting the conclusions as the position of the Task Force. The intent is to transmit those conclusions to appropriate government authorities with the recommendation that they be adopted as the position of the U.S. and be transmitted as input papers to the international conferences dealing with GMDSS Modernization.

How to submit your comments: You should feel free to respond at any time but would prefer to receive most comments by Friday 2 July in order to move ahead with our recommendations to government authorities. Your comments should be submitted by email to any of the addressees listed below or simply by replying to this message:

RADM Ed Gilbert, USCG (Ret), Convener of the Workshop, gilbinc@aol.com
CAPT Jack Fuechsel, USCG (Ret), Director, GMDSS Task Force, gmdss@comcast.net
Mr. Robert Markle, President, RTCM rmarkle@rtcm.org

GMDSS Task Force
Modernization Notes from 20 May 2010

Background.

1. The MSC has added an agenda item for COMSAR to address GMDSS modernization via a scoping exercise to be completed during COMSAR 15 & 16.
2. Preliminary work was done on the modernization issues during COMSAR 14. Based on input papers and work at the meeting, 41 issues were identified for possible consideration by the next meeting of the Joint IMO/ITU Group of Experts (GOE).
3. For many years there has been a GMDSS Task Force in the U.S. to address issues by an open dialogue among government agencies, industry, users and others. The Task Force has an extensive e-mail distribution list, and it has benefitted from inputs from many sources. It has a close relationship the RTCM, NMEA and others. Frequently, the Task Force makes formal and informal inputs to U.S. governmental regulatory agencies.
4. Several events of interest to the Task Force occurred at the recent RTCM Assembly May 17-18, 2010 :
    a. A number of very informative papers were presented concerning GMDSS issues; these may be obtained by contacting www.rtcm.org.
    b. A meeting of the Task Force to discuss issues; this was one of four meetings per year.
    c. A GMDSS modernization workshop that allowed a wide ranging discussion of GMDSS modernization issues
5. Workshop participants:
    a. Reviewed the 41 modernization issues generated by COMSAR 14
    b. Reviewed information previously gathered from users
    c. Reviewed comments by ship operators which had been solicited in advance.
    d. Concluded there continues to be a compelling need for inputs from GMDSS users and providers for COMSAR's deliberations
    e. Discussed papers presented at the Assembly. These included
        i. Several papers on applications of the Automatic Identification System (AIS) which is not technically a GMDSS system but which has many useful applications which can enhance GMDSS
        ii. Presentations on alternative satellite systems not presently part of GMDSS which likewise have clear potential for GMDSS augmentation
    f. Decided to create its assessment of the most important issues among those 41 identified by COMSAR 41 as an output
    g. Agreed to provide this assessment of priorities to the GOE for their consideration; please note this input will be from the workshop and have no official standing from any administration or other organization
    h. Approved a summary compilation of the 41 issues into broad affinity groups to facilitate consideration of similar issues
    i. Examined the top issues and discussed them in some detail
    j. Emphasized that incremental progress on key issues should continues with urgency while the scoping work is done and approved

6. Annex A contains the 41 issues developed by COMSAR 14 and the affinity groups; an * indicates the workshop concluded this issue belongs in the top in priorities

WORKSHOP CONCLUSIONS

While there was not unanimous agreement, there was a broad consensus. The following are the most important issues; ranking among them was not done.

There was agreement about the critical need to make progress on the DSC issues as first in priority. Inputs about difficulties with it continue to be received, and its reputation has a deleterious effect on the overall reputation of the GMDSS. One set of suggestions about how to improve DSC is attached as Annex B.

..

The following issues which had strong support at the Workshop have been selected for recommendation to the GOE:

1. Procedural Considerations. The scoping effort for GMDSS Modernization is too large to be pursued during regular COMSAR meetings. At COMSAR 14, the issue was assigned to an already overloaded Working Group, which recommended the GOE meeting in September be invited to consider GMDSS Modernization. That meeting is only scheduled for 3 days, which doesn't auger well for significant action. It is recommended that the IMO schedule one or more intercessional meetings on Modernization or lacking that, commission a Correspondence Group to work by email and report to COMSAR at each session. After initial modernization adjustments, continuing development could be managed by a special COMSAR Modernization Panel functioning much as the NAVTEX and SafetyNet Panels presently operate. Workshop participants at the RTCM Assembly agreed to continue correspondence via e-mail and invited others to join.

2. Medium Frequency Digital Selective Calling (DSC). Despite delays in upgrading the U. S. coastal watch on 2 MHz DSC and an uncertain funding forecast, there appears to have been a higher level of usage of the 2 MHz system (without DSC) in recent years and to the extent that domestic users may be required to upgrade to DSC, a more reliable performance of the system can be expected. The principal motivation for continuing with the upgrade is to improve coverage, facilitate ship-to-ship usage at ranges greater than VHF, improve Coastal Marine Safety Information (MSI) Broadcasts, and to better support the primary users in the commercial fishing industry. It would then follow that the U.S. should support retention of 2 MHz DSC in the GMDSS system, which is also the likely position of nations without plans for a coastal watch on VHF-DSC. By advocating retention of Sea Area A2, there is an implicit recommendation for retaining all four Sea Areas. There was a strong consensus that progress should be continued in resolving DSC issues as the scoping work is done and approved. Suggestions for short term actions are contained in Annex 2.

3. Alternative Satellite Systems. There has long been interest in including additional satellite systems in the GMDSS system. IMO's procedures for including additional participants, Resolution A. 1001 (25), needs revisions to remove barriers and encourage others to join. The Assembly received a very interesting presentation about the Iridium System promising global

coverage including the Arctic Ocean where there is expanding navigation in the region. Once systems are introduced and tested successfully in the Polar Regions, the need for MF to cover these regions would be reduced or eliminated. Subsequent to the Assembly, Iridium announced plans for its next generation and awarded a contract to build it. Thuraya's presentation provided exceptionally useful information about how a regional system could add much value for maritime safety, security and pollution prevention. IMO should establish performance parameters including watch standing, redundancy, and connectivity to the MRCC/RCC network. Candidate satellite systems need not be able to perform all functional requirements such as broadcasting of MSI since ships can still be required to watch NAVTEX and SafetyNet. Acceptance of alternative satellite systems would also strengthen the concept of allowing ships to utilize systems they already use for business, to meet their safety requirements. An equitable oversight cost sharing arrangement would be necessary via IMSO.

4. Use of Four Levels of Priority in Radiocommunications. This traditional requirement originated when it was appropriate to give Morse Radio Operators aboard ships and ashore, guidance on the relative priority of messages which sometimes had to be queued for manual transmission. With the modern systems now in use and the high degree of automation, it is no longer necessary to have four levels. A single category of "Priority" for communications relating to distress and the safety and movement of shipping, with provisions of availability speed of service and service availability would be adequate*. Some further work will be necessary to specify which type of Priority messages warrant being sent from shore to ship and from ship to ship preceded by an alerting signal to activate shipboard alarms. *(Comment by Joe Hersey I think it may be more complicated than that. If availability and speed of service requirements and applied to distress and the various safety categories, than arguably it would be unnecessary to require any priorities. However ITU's spectrum priority requirements described in RR 5.353A must also be applied: "Maritime-mobile satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating in a network". This can become complicated due to the wide array of GMDSS communications included in the definition of safety (see RR 33.1-33.7, which overlap IMO's use of the term "general communications". The aeronautical service has simplified this problem by simply requiring priority access to the AMS(R) S service, defined to include all "communications relating to safety and regularity of flights" (see RR 1.36). I suggest we do something similar.)

5. Retention of All GMDSS Functional Requirements. The review of functional requirements in the GMDSS validated most of them but, "General Communications" needs further considerations. This was intended to enable ships to utilize for safety communications those systems they used for ships business with the expectation that the operators would not need repetitive training for systems they used routinely. Unfortunately, the GMDSS VHF/MF/HF DSC services previously had a Public Correspondence component which provided voice and record general communications. Most have since been terminated for economic reasons.

6. Use of AIS for Distress Alerting and Messaging. The expanding use of AIS for distress alerting and safety related messaging under the concept of e-Navigation calls attention to the present reluctance to endorse that same messaging capability for distress alerting. This reluctance is based on there not being a dedicated watch on the channel despite the fact that all SOLAS

ships and others sail with AIS operational, as well as AIS safety related messages not being designed for the purpose of distress alerting[1]. On the other hand, ITU Regulations make it clear that a ship may make use of any radio capability to issue a distress alert. The AIS position report message navigational status could be adapted to include a distress alerting capability. The consensus was that it is time to agree that AIS can be used distress alerting and messaging.

7. Use of AIS as an Alternative to the 121.5 MHz EPIRB Homing Signal. This proposal has been considered by COMSAR because of its clearly superior performance, but it was not adopted at the last session due to concerns of some administrations that few aircraft were equipped to home on the AIS signal. This enhancement is considered too beneficial for further delay. Because the EPIRB power budget will not economically support both homing options, it is recommended that COMSAR accept the AIS homer as an alternative to the 121.5 MHz homing beacon in the same fashion that the AIS SART was accepted as an alternative to the Radar SART.

8. Inclusion of AIS, SSAS, and LRIT in the GMDSS System. Recognizing the case for AIS as outlined in the preceding paragraphs, it should be declared a GMDSS system in addition to its other applications for safety of navigation. In the same fashion, the IMO created the Ship Security Alerting System (SSAS) and the Long Range Identification and Tracking (LRIT) system; both have clear safety and distress applications. All three should be declared GMDSS systems and thus subject to the IMO requirements for reserve power, annual inspections, and operator training.

9. Enhancement of Safety Communications for Survival Craft. There have been numerous suggestions that along with GMDSS Modernization there should be an overhaul of lifesaving appliances on survival craft. The voluntary radio equipment carried on large cruise ship lifeboats (especially those used as tenders) already far exceeds the IMO requirements, often including fixed mount VHF radios and radar. At the other end of the scale, the U.S. National Transportation Safety Board has recommended that small craft carrying passengers for hire carry VHF portables as a minimum. Updating the IMO rules for Lifesaving Appliances will, of course, need to be coordinated with the Design and Equipment Subcommittee. It is recommended that to begin the process, input papers on the issue be submitted to COMSAR to be coordinated with the D&E Subcommittee providing for fixed mount VHF radios and AIS for all self propelled lifeboats and VHF portables with integral GNSS for other survival craft. The option to include a handheld satellite phone should also be included.

10. Modernization of GMDSS MSI Broadcasting. There is a general need to prepare for a transition to making MSI available on web sites for use by mariners. This is often referred to as "pulling" MSI as opposed to "pushing" by broadcasting. Of the currently available broadcasting systems, NAVTEX coastal broadcasts are over loaded and too slow, SafetyNet broadcasting to the high seas seems generally adequate, and HF broadcasting is done by very few countries and the extent of its usage by ships is hard to evaluate. More specifically, the NAVTEX system needs to transition to a much higher data rate to accommodate the volume of coastal warnings being

[1] Safety related messages are transmitted with a priority 2 in a 4 priority system and do not use the SOTDMA reserved slot process normally used by AIS (see ITU-R M.1371-4 Table 43), and therefore may not be reliably received where AIS traffic loading is high. Messages requiring multiple slots are especially vulnerable.

broadcast. While the SafetyNet system can handle present volumes, we need to monitor implementation of broadcasting MSI by Inmarsat Fleet Broadband, which may overcome the problem of having to track specific satellites for intended reception. As means are provided to allow more data to be "pulled" more easily by shipping, it may be possible to reduce the amount of data now being "pushed" to ships by systems such as NAVTEX, Inmarsat SafetyNET and by voice broadcasts. As a start toward "pulling" MSI by ships, originators of MSI broadcasts should ensure that all broadcast material is maintained on websites as soon as released and for at least 30 days after cancellation to facilitate training and forensic analysis. The Inmarsat representative presented a very useful paper discussing this subject at the RTCM Assembly. Workshop participants noted IMO/IHO/WMO groups are working very effectively on these issues, and a possible conclusion of the scoping task could be to just continue to follow the work of these groups. When GMDSS functional requirements are considered, interoperability among all classes of vessels needs attention.

11. Accommodation of e-Navigation in GMDSS Modernization. The emerging concept of e-Navigation is likely to utilize many of the same communication systems used for GMDSS, especially VHF which is already heavily loaded. In addition, the expanding e-Navigation requirements overlap in some cases such as the use of MMSI identifiers. Integration of radar and AIS displays on electronic charts invites further integration of MSI warnings as well. New requirements for cargo security monitoring and special broadcasting services make a strong case for dealing with e-Navigation requirements and GMDSS modernization together. There was a divergence of opinions at the workshop about the relationships between the two initiatives. Some stated COMSAR needs should be fully developed independently and then discussed in the context of e-Navigation initiatives rather than emphasizing a parallel effort.

12. Recognizing the Needs of Non-SOLAS Vessels in GMDSS Modernization. While GMDSS requirements apply only to SOLAS vessels, it is customary for most administrations to apply some of the GMDSS requirements to non-SOLAS vessels under domestic regulation. This is especially important in the U.S. with the world's largest fleet of recreational vessels and a rather modest SOLAS fleet. The IMO has recommended guidelines for fishing vessels of various sizes, but the U.S. has not followed those guidelines, and our radio safety regulations for fishing vessels are overdue for upgrading. More effective safety outfit for U.S. fishing vessels is a domestic issue, but simplification of GMDSS requirements and recognition of alternate satellite systems will provide more options for improving the safety of U.S. non-SOLAS vessels.

13. Improving the HF Communications Option in GMDSS Modernization. Many ships use the satellite option for GMDSS communications due to is reliability and operating simplicity, but the HF option is still preferred by those ships looking for lower cost alternatives or operating partially in Sea Area A4. False alerts continue to be prevalent in the HF systems due to system complexity and poor operator training. The Inmarsat and Cospas-Sarsat systems also experience false alerts but benefit from an aggressive follow up by their system management. Unfortunately, there is no central authority to follow up on HF false alerts unless the individual countries operating HF Coast Stations adopt their own aggressive follow up program including coordinating with the flag states of offending ships. The Scoping exercise output should propose a broad plan for participating administrations to follow up on false alerts including a report to

each session of COMSAR. It should consider also how commercial HF providers could become part of the GMDSS.

Conclusion. This report is being forwarded to the GMDSS Task Force with the request that it be appended to the Summary Record of the May 2010 meeting inviting members to comment on the issues. For those issues in the report for which there is general agreement, an edited report could then be transmitted to government authorities with a suggestion that they be incorporated into input papers to appropriate international fora.

Annex A

COMSAR 14's modernization issues; note these were part of the COMSAR report as suggested issues for the IMO/ITU GOE to address. I've made a few purely editorial changes for clarity and plan to use this as background for our modernization discussions at the RTCM Assembly.

Suggested issues to be examined for each of the items listed below

- What is the priority of this item compared to the other 40 in terms of making a difference out there on the water for safety and security
- Is this within the sole purview of the IMO, or are other organizations involved—list them
- Is this a candidate for incremental action while the scoping work is in progress
- What documentation is already available concerning this issue—list it
- What additional info is needed for consideration of the issue—how can it be collected
- How should this issue be addressed during the scoping task work

Issues

1. *The further development of the list of areas requiring closer attention to fully frame the requirement for a review of the GMDSS.
2. The extent for the review including the shape, size and structure of this review.
3. How the review may be implemented?
4. The development of a work plan outlining how the review would be undertaken, its format and timescales working towards completion.
5. Facilities required for capacity building.
6. Whether to look at a goal-based approach to the review of SOLAS chapters IV and V and the STCW Convention's wording instead of a prescriptive approach for regulations and the regulatory framework.
7. *The relationships with the development of e-navigation.
8. Which basic communication capabilities are properly part of the GMDSS and which should become a part of the developing e-navigation concept?

9. *The need for the establishment of a correspondence group to work intersessionally between COMSAR 15 and COMSAR 16 and the Terms of Reference for that group.
10. *The need for the current order of priorities in use for Radiocommunications.
11. The introduction of a sort of advance notice message for circumstances where the state of this ship and/or crew was uncertain.
12. The reduction of the four different areas of carriage requirements.
13. The distress communications should be clearly separated from other types of communications.
14. A requirement to allow differences for certain categories of ships.
15. The issue of training and performance of crews onboard ships.
16. *That over the years GMDSS had become the distress and safety system for non-SOLAS ships as well.
17. *New developments, mainly by non-GMDSS communication providers, as well as the use of mobile phones and regional satellite systems.
18. To have a forum in the future, to keep the system modern and up to date and whether the COMSAR Sub-Committee, which meets only once a year, would be the right body.
19. *The need to investigate the views of seafarers on possible improvements of distress and safety communications on board ships.
20. The development of a clearer definition of “General Communications”, which is continuing to cause some confusion in the marketplace.
21. *AIS safety related messaging, the role of NBDP and the role of MF/HF DSC.
22. Problems that might arise due to a lack of HF stations in the future.
23. A continued need for a 2 MHz distress system, upon which GMDSS Sea Area A2 would be based.
24. The false alert rate for VHF DSC, which remains unacceptably high.
25. That voice communications remains an integral part of the GMDSS, benefitting search and rescue operations.
26. That VHF equipment used in the sea areas A1 might embrace more modern digital technology.
27. Measures which could or should be taken to encourage additional service providers to enter the GMDSS.
28. The need for continuing protection for the necessary spectrum for satellite-based radio-communication service for the GMDSS.
29. *The possible establishment of a requirement to carry a suitable hand-held satellite telephone terminal in some or all life rafts, and how its power supply could be assured.
30. The evolution of more efficient satellite EPIRB systems and equipment designs.
31. *The need for inclusion of the Ship Security Alert System (SSAS) in the GMDSS suite of equipment.
32. *The further evolution of Maritime Safety Information broadcast systems.
33. The potential benefit of permitting the use of regional satellite systems in ships that trade only within a restricted area, limited to the footprint of such systems.
34. The use of satellite equipment as an alternative in sea areas A2 currently based around MF/HFDSC.
35. Additional spectrum requirements.
36. Transition to a complete new numbering scheme (partly) replacing the current assignment and use of maritime mobile service identities (MMSI numbers.) (Note may require another item on MMSI evolution.)
37. Inconsistencies between SOLAS chapters IV and V, in particular with regard to type approval, secondary equipment and maintenance arrangements. (Note-reserve power and inspections are issues as well.)
38. The idea to change the title of chapter IV to distress communications and to transfer non-distress related communications to other chapters, as well as transferring all distress related communications to chapter IV.
39. The need to clarify the difference between power supplies for the GMDSS equipment and other equipment on the bridge.
40. The need for impact analysis of the cost impact, as will any amendments to the legislation and administrative that may come about.

41. That the benefits that emerge should include enhancement of safety, security, environmental protection and general communications for the industry.

CATEGORIES

GMDSS Areas

1. The further development of the list of areas requiring closer attention to fully frame the requirement for a review of the GMDSS. (1 & 12)

2. A continued need for a 2 MHz distress system, upon which GMDSS Sea Area A2 would be based. (23)

3. The use of satellite equipment as an alternative in sea areas A2 currently based around MF/HFDSC. (1)

Procedural issues for scoping work

1. The extent for the review including the shape, size and structure of this review. (2)

2. How the review may be implemented? (3)

3. The development of a work plan outlining how the review would be undertaken, its format and timescales working towards completion. (4)

4. Facilities required for capacity building. (5)

5. Whether to look at a goal-based approach to the review or SOLAS chapters IV and V and the STCW Convention's wording instead of a prescriptive approach for regulations and the regulatory framework. (6, 37, 38, 41)

6. The need for the establishment of a correspondence group to work intersessionally between COMSAR 15 and COMSAR 16 and the Terms of Reference for that group.(9)

7. A requirement to allow differences for certain categories of ships. (14) (Note IMO already recognizes some different categories—FV & MODUs and high speed craft)

8. That over the years GMDSS had become the distress and safety system for non-SOLAS ships as well. (16)

9. To have a forum in the future, to keep the system modern and up to date and whether the COMSAR Sub-Committee, which meets only once a year, would be the right body. (18)

10. The development of a clearer definition of "General Communications", which is continuing to cause some confusion in the marketplace. (20)

11. The need for impact analysis of the cost impact, as will any amendments to the legislation and administration that may come about. (40)

e-Nav relationships

1. The relation with the development of e-Navigation. (7)

2. Which basic communication capabilities are properly part of the GMDSS and which should become a part of the developing e-navigation concept? (8)

3. The distress communications should be clearly separated from other types of communications. (13)

4. The need to clarify the difference between power supplies for the GMDSS equipment and other equipment on the bridge. (39)

Technical issues

1. The need for the current order of priorities in use for Radiocommunications (10)

2. The introduction of a sort of advance notice message for circumstances where the state of this ship and/or crew was uncertain. (11)

3. AIS safety related messaging, the role of NBDP and the role of MF/HF DSC. (21)

4. Problems that might arise due to a lack of HF stations in the future. (22)

5. The false alert rate for VHF DSC, which remains unacceptably high. (24)

6. That voice communications remains an integral part of the GMDSS, benefitting search and rescue operations. (25)

7. That VHF equipment used in the sea areas A1 might embrace more modern digital technology. (26)

8. The evolution of more efficient satellite EPIRB systems and equipment designs. (30)

Incorporation of other capabilities

1. New developments, mainly by non-GMDSS communication providers, as well as the use of mobile phones and regional satellite systems. (17)

2. AIS safety related messaging, the role of NBDP and the role of MF/HF DSC. (21)

3. Measures which could or should be taken to encourage additional service providers to enter the GMDSS. (27)

4. The possible establishment of a requirement to carry a suitable hand-held satellite telephone terminal in some or all life rafts, and how its power supply could be assured. (29)

5. The need for inclusion of the Ship Security Alert System (SSAS) in the GMDSS suite of equipment. (29)

6. The further evolution of Maritime Safety Information broadcast systems. (32)

7. The potential benefit of permitting the use of regional satellite systems in ships that trade only within a restricted area, limited to the footprint of such systems. (33)

Spectrum requirements

1. The need for continuing protection for the necessary spectrum for satellite-based radio-communication service for the GMDSS. (28)

2. Additional spectrum requirements. (35)

Annex B

The following is a summary of a presentation made to the 2010 RTCM conference in San Diego, USA.

RTCM PRESENTATION MAY 2010 GMDSS - A WAY AHEAD
What's wrong with DSC?

These days, the GMDSS is all about Satcoms, and the drive for more and more bandwidth to ships.

No one uses the GMDSS HF gear…it sits in the corner of the bridge, gathering dust….right?

Wrong.

A typical GMDSS HF Coast Radio Station receives, on average, 6000 DSC calls per day.
6000 calls, distributed over 2 – 16 MHz….

Even using a modest antenna system, you can hear calls on the 12 and 8 MHz DSC channels at least every minute, all day.

What's the problem?

The system is clearly being used and is working well technically – ships are communicating with coast stations and other ships.

DSC was originally designed to automate radiotelephone calls between ships at sea and telephone subscribers ashore.
However, satellite/cellular communications have replaced HF radio-based telephone systems for merchant ships.

The result is that DSC is effectively designed around a function that no longer exists.

This is evident in the number of redundant tele-commands incorporated in the DSC standard.

Confusion….it need not be so…

One of the great advantages of using a PC for coast station DSC software is that the operator interface can be easily modified or redesigned. We can change labels, we can alter the layout and we can hide the more baffling DSC tele-commands to make the system operator friendly.

Alas, ships can't do that... They are faced with a myriad of menus, containing many superfluous commands, all which are never used.

The DSC technical specification, ITU Resolution –M.493, has been revised 13 times since it was first published.
Many of the revisions incorporate very important operational and technical updates, which make the system much more efficient and easier to use.

Equipment performance standards are updated as a result of the revisions, and DSC manufacturers dutifully incorporate these updates into their latest products.

However, where the good ship DSC hits the proverbial iceberg is real-world implementation - the revised performance standards apply only to new equipment…

There is no requirement for ships to update their DSC equipment to comply with new specification.
So, as a result, ships are sailing around with 1st and 2nd generation DSC systems….old and clunky, full of redundant tele-commands, and thus a nightmare to use….

To their credit, the USCG has identified this problem.

They put a paper to the recent IMO COMSAR meeting proposing that SOLAS Chapter 4 be modified to require the latest DSC software version to be used.

This issue is moving forward through IMO, but it will take time to implement…

Oversight…

Despite all the DSC traffic, many ships are still making fundamental mistakes with the system.

Using the latest software will go some way to fixing the problem – but, what is really needed is for some central body to take charge of DSC, and conduct an active monitoring and education campaign.

Internet technology allows remote control of DSC shore stations from anywhere in the world.

A number of DSC HF monitoring stations could easily be controlled from a central point, to provide world-wide coverage.

It would be a simple matter to match a ship's DSC identity number (MMSI) to her Inmarsat number.

Ships which regularly breach DSC operational standards could be sent a polite reminder (or even an operational guide) via Inmarsat…..

Don't let small craft near DSC…!

Many SAR agencies are reluctant to promote VHF DSC to recreational users because of a fear of false alerts.

Any automated distress system will suffer a certain percentage of false alerts, either malicious or inadvertent.

Training, education and equipment design will address the majority of these problems - but there is one solution that would really solve the DSC false alert issue…

Mandate that all DSC equipment is to be fitted with an inbuilt GPS/GNSS receiver.

•Every distress call will contain a real position.
•This will all but eliminate malicious false alerts.
•Inadvertent alerts will be identified and localised.

GNSS receivers are small and cheap – they could be easily integrated into a VHF radio.

In summary - Fixing DSC…

•Remove the remainder of superfluous tele-commands from the standard, to simplify the system as much as possible…DSC isn't going to be used for setting up phone or fax calls……

• Mandate updating of ship equipment to comply with the latest standards.

• Become pro-active with monitoring and real time education/mentoring.

• Fit an integrated GPS receiver to all new DSC radios.

UPDATING THE GMDSS

Let's get rid of DSC….it is all too hard…

There has been 'corridor discussion' at IMO of removing MF DSC from Sea Area A2 and possibly A3 – this smacks of the 'turn it off and ignore it' philosophy demonstrated by some ships.

Abandoning DSC would be a serious mistake.

The inherent strength of the GMDSS is the multiplicity of communication links it provides over different satellite and terrestrial bearers.

If one system is down, you always have an alternative.

MF DSC provides ship-ship and ship-shore alerting in Sea Area A2 and ship-ship alerting in Sea Area A3.

What do we replace it with? Satcom systems can not provide direct ship-ship alerting to all other vessels in the area of the ship in distress.

Inmarsat C has demonstrated its worth time and time again for ship-shore alerting – it is one of the GMDSS' standout sub-systems. However, it can not replace DSC.

Yes, DSC has problems – but we must fix them, not just give up and say it is

all too hard…..

NBDP? Ditch it…

NBDP (aka radio telex) is a clunky old system that (to my knowledge) has never been used in anger for distress traffic.

A3 ships already have an option to dispense with it – this should logically be extended to all A3 ships.

I know if the water was coming in the bridge wing door, I would rather be talking into a microphone than trying to type on a keyboard…

A truly global system?

Australia is still effectively running 2 distress systems in parallel – GMDSS and pre-GMDSS. Australia is not alone in this – many developed nations still run old and new marine radio networks.

Many areas of the world have no GMDSS infrastructure at all…

Why? The GMDSS has been in place for more than 10 years….

If we are going to modernise the system, then surely we need to start with making it universal.

Way ahead……it isn't rocket science….

GMDSS shore infrastructure needs to be installed in the Pacific.

Marine Radio equipment standards for smaller, non-SOLAS vessels need to be modified to include DSC.

Governments need to amend their marine legislation to require DSC equipment to be fitted to all ships - large and small.

GMDSS Sea Area A1 needs to be declared in areas of high shipping activity.

Governments need to develop a transition plan to eventually phase out voice watchkeeping and replace it with automated DSC watches.

(Source: Densham and Associates)