

ORIGINAL
FILE

RECEIVED

AUG 24 '92

FEDERAL COMMUNICATIONS
COMMISSION
OFFICE OF THE
SECRETARY

CO

Necode Electronics

Route 9 Box 1520
Livingston, Texas 77351

Ms. Donna R. Searcy, Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

August 10, 1992

Dear Ms. Searcy:

With this letter we are responding to the petition RM-8031 submitted by the Coast Guard entitled, "*Proposed Minimum Requirements for Digital Selective Calling in Maritime Ship and Coast Station Equipment Sold in the U.S.*". We respectfully object to the rulemaking proposed by the Coast Guard. While we understand and support their intention, we believe that the proposed rule changes would be counter productive to their goals.

Necode Electronics

Necode is a company headquartered in Livingston Texas. We have been manufacturing and marketing a digital selective calling system used with MF/HF marine radios. We have manufactured and sold over 7,000 units. Approximately 4000 commercial vessels have and use Necode systems in their radio communications in and about US coastal waters. Another 1000 or so are in foreign marine installations. The Necode digital selective calling system is much simpler than the digital selective calling system that will be used in the Global Maritime Distress and Safety System (GMDSS). We are currently developing a digital selective calling system that would interface with MF/HF marine radios and includes both Necode and the GMDSS DSC formats. In the remainder of this document we will refer to the GMDSS format as simply DSC.

As we have in the past, we are working with SEA Inc. a major US manufacturer of marine radios. Our unit is capable of sophisticated control of SEA radios (models 322 and 330) as well as interfacing with generic radios. Our units will meet class B DSC requirements. We plan to price our unit at approximately \$2000.00.

While the proposed rule changes do not prohibit the manufacture and sales of DSC units that interface with marine radios, they would have an adverse effect by assuring the eventual obsolescence of such a unit. We and potentially other manufactures are far less likely to

market and pursue the avenue that has the best potential of distributing DSC to the largest number of vessels.

Necode is uniquely situated to propel DSC into the domestic commercial vessel market. We have an installed customer base numbering in the thousands. We are currently replacing the old Necode units and expanding our customer base. Our current plan is to discontinue the old Necode format units and to sell our new unit to new and old customers. In order to assure an easy transition, we would offer the new unit at approximately the same price of the old unit even though the new unit will cost significantly more to manufacture. Because our units will be compatible with the installed base of Necode units this is an ideal method of introducing DSC into a large group of users.

However, if the proposed rules are adopted, there will be little future for our new DSC unit. In that case, we are considering selling only the older Necode unit which would be more profitable. Unfortunately the opportunity to spread the DSC format quickly to our extensive customer base would then be lost.

Effectiveness of the proposed rules:

The intention of the proposed rule changes is to spread DSC capabilities to vessels not directly required to use the Global Maritime Distress and Safety System (GMDSS). We understand and agree with this goal. The effectiveness of the GMDSS will be enhanced by a large number of DSC equipped vessels acting as a safety network. However, we believe that the proposed rule would impede the spread of DSC rather than promote it.

The proposed changes would fail to achieve the desired results principally because the cost of marine radios would be dramatically affected. This is contrary to the current opinion of the Coast Guard. To their credit, the Coast Guard was sensitive to this issue and made a worthwhile effort to ascertain the cost impact on marine radios. The feedback they received from their inquires was from an industry that has not yet comprehended the complexity of the DSC system. Significantly higher prices for marine radios will reduce sales and restrict the dispersal of DSC.

In suggesting these rules, the Coast Guard is attempting to impose regulations by default, on vessels not required to carry GMDSS because it is easier to impose regulations on a few radio manufacturers than many vessels. While we will not pass judgment on such tactics, we believe that the Coast Guard is underestimating the appeal of the safety features of DSC to ALL vessels. Given the

opportunity, many smaller vessel owners will purchase a reasonably priced DSC unit that would interface to an existing radio. However, if their only option is to buy a high priced radio these owners will keep their existing radio indefinitely.

The cost of DSC equipped radios

We contend that the cost of adding DSC will be significantly higher than currently perceived by the Coast Guard. We feel we are qualified to speak authoritatively on the subject as we have already developed a DSC system.

The Coast Guard consulted with members of the marine industry regarding the cost of implementing DSC on marine radios. The feedback they received was that this would not be an expensive addition. We understand how they came to this conclusion. We originally made a similar assessment about the cost of producing a DSC unit prior to undertaking it's development. The companies that responded to the Coast Guard's inquires have not yet attempted to develop a DSC system and will certainly find it significantly more complicated than they originally anticipated.

We believe there are several factors, which will contribute to the higher cost of DSC radios. The complexity of the DSC system requires more computing power than is available in even the most advanced of the current marine radios. Another area where current radios fail to measure up to the requirements of DSC is in displays. We disagree with the statement in the Coast Guards recommendation (in reference to VHF radios) that there are no special display requirements. One of the most important pieces of information, the position of the ship in distress, is of little use if not made readily visible. There are many other important pieces of information which need to be displayed. Furthermore, the complexities in the DSC protocol will be bewildering if ample display space is not provided.

Let us consider the major domestic supplier of marine radios, SEA Inc. The lowest cost MF/HF radio in their line, the 222 has a listed retail price of \$2,000. The 222 is there best seller by a large margin. Their most sophisticated radio, the 330, sells for over \$7000. Although this radio has capabilities for multiple control heads, it still **does not have** the required computing facilities for handling DSC calling. We believe it is possible to produce a single control head DSC MF/HF radio for less than \$7,000. However, we are certain it can not be produced and sold for anywhere near the cost of their 222. Therefore, the cost of the best selling MF/HF radios will be drastically increased.

Another way to measure the cost of adding DSC to marine radios is to consider the price of separate DSC units currently on the market. We are aware of four, ranging in price from \$4000 to \$12,000.

DSC development costs

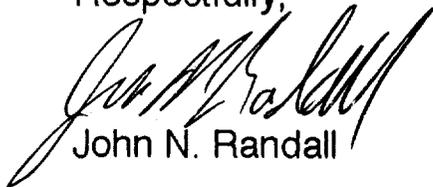
We offer our experience in the development of a DSC unit. Our costs to date are approximately \$500,000. Taking into consideration our very low overhead and exceptionally efficient programming, this must be considered a low figure. For a medium size or large company, we expect that the development costs could be well over 1 million dollars for a DSC unit. The program that controls our unit is about 15,000 lines of C code. We estimate the effort to produce this program is 6 man years. This estimate is based on the frequently used metric of 10 lines of code per day. With salary and overhead, this translates to a cost of \$500,000 for **software development alone**. Furthermore, as we mentioned above, no marine radios currently are sophisticated enough to handle DSC. This means that the radios will also need to be re-engineered, further increasing the cost of development.

The development cost of adding DSC to radios will place a significant burden on radio manufacturers. Furthermore, the resulting higher prices mandated by the high development and material costs will hurt radio sales. This will have a larger negative impact on smaller domestic radio manufacturers than their larger foreign competitors.

Summary

To summarize, we believe that the proposed rule changes would be counter-productive to its intended goal of wide distribution of DSC among marine vessels. The rules would dramatically increase the cost of low end marine radios, and would place an unfair burden on radio manufacturers. Finally, there would be an adverse effect on the marketing of reasonably priced DSC units that interface with marine radios. We believe these units offer the best vehicle for getting this technology on board marine vessels.

Respectfully,



John N. Randall

Neal Flukinger