

SP-20

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

RM M-276

ISSUED: May 24, 1985

Forwarded to:

Admiral James S. Gracey
Commandant
U.S. Coast Guard
Washington, D. C. 20593

SAFETY RECOMMENDATION(S)

M-85-42 through -44

About 1920, central daylight time, on June 11, 1984, the U.S. towboat ANN BRENT, which was downbound in the Mississippi River pushing a 4-barge tow, collided with the upbound Greek tankship MANTINIA. As a result of this accident, the lead barge in the tow sank and discharged its entire cargo of No. 6 oil into the river. The other barges in the tow were damaged to a lesser degree, but none of their cargoes were spilled. The MANTINIA sustained severe damage to its bow. No deaths or serious injuries resulted from this accident. The total damage to all vessels involved in the accident was estimated to exceed \$500,000. 1/

The ANN BRENT and the MANTINIA were approaching each other so that they would eventually meet in a manner described in the Inland Navigation Rules as a "head-on situation" (Rule 14(a)). According to the rules in effect at the time of the accident, each vessel operator had the responsibility to alter course to starboard so that each vessel would pass on the port side of the other. The application of the points and bends custom would also have dictated a port-to-port meeting at St. Elmo Point. Only within the confines of a narrow channel did the rules (Rule 9(a)(ii)) allow the option for vessel operators to alter course to port so that each vessel could pass on the starboard side of the other vessel. Besides allowing a starboard-to-starboard meeting, the narrow channel rule places an obligation upon the operator of an upbound vessel to "hold as necessary to permit safe passing." The operator of the ANN BRENT testified that he considered the river at St. Elmo Point to be a "narrow channel," while the pilot of the MANTINIA testified that St. Elmo Point was not a narrow channel. The rules do not define the term

1/ For more detailed information read, "Marine Accident Report--Collision of the U.S. Towboat ANN BRENT and Tow with the Greek Tankship MANTINIA, Mile 150, Lower Mississippi River, June 11, 1984" (NTSB-MAR-85/04).

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"narrow channel" nor provide a specific means whereby the rule can be invoked. The Board addressed this problem in a previous report ^{2/} of a collision on the inland waters of the United States. In that report, the Board recommended that the U.S. Coast Guard:

Publish interpretative rulings so that river towboat operators will know when to apply the narrow channel rule of the Inland Navigation Rules Act, 1980. (M-82-32)

The Coast Guard concurred with this recommendation and stated that it would discuss the issue with the Rules of the Road Advisory Council (RORAC). In its response to Recommendation M-82-32, the Coast Guard stated: "To define a 'narrow channel' so as to apply to all situations would be virtually impossible." The Safety Board agrees because there are so many variables involved in such a determination--vessel size, vessel type, vessel horsepower, configuration of the waterway, and current conditions, are just some of the factors that enter into such a determination. A particular section of a waterway reasonably might be considered to be a "narrow channel" by the operator of a 1,200-foot-long tow and not considered so by the pilot of a 750-foot-long deep draft ship. However, the Board considers that it is not so important to define "narrow channel" as it is to assure that the rule is applied consistently. The Coast Guard, following the advice of the RORAC, proposed amendment of the Inland Navigation Rules Act, 1980. On October 30, 1984, the President signed Public Law 98-557 which amended Rule 14(a) to read:

Unless otherwise agreed, when two power-driven vessels are meeting on reciprocal or nearly reciprocal courses so as to involve risk of collision each shall alter her course to starboard so that each shall pass on the port side of the other.

The amendment also added a new subsection (d) to Rule 14 which reads:

Notwithstanding paragraph (a) of this Rule, a power-driven vessel operating on the Great Lakes, Western Rivers, or waters specified by the Secretary, and proceeding downbound with a following current shall have the right-of-way over an upbound vessel, shall propose the manner of passage, and shall initiate the maneuvering signals prescribed by Rule 34(a)(ii), as appropriate.

The amendment did not address the issue of what constitutes a narrow channel nor did it alter Rule 9, the narrow channel rule, in any way. The amended Rule 14(a) allows starboard-to-starboard meetings in "head-on situations," which was a needed change to the rules for it legitimized the normal practice of vessel operators in certain situations. The new subsection 14(d) gives the "right-of-way" to a downbound vessel over an upbound vessel and allows the former to propose the "manner" of meeting. The rule does not define the privileges that this "right of way" grants, nor does it place any corresponding burden upon the upbound vessel. Moreover, Rule 14(d) does not describe the upbound vessel as a "give-way vessel" so as to invoke Rule 16, ^{3/} nor does it place a specific

^{2/} Marine Accident Report—"Collision of the U.S. Towboat M/V BRUCE BROWN and Tow with the U.S. Towboat M/V DEARBORNE and Tow, Mile 677.6, Ohio River, December 9, 1981" (NTSB-MAR-82-5).

^{3/} Rule 16, which specifies the action to be taken by a "give-way vessel," states, "Every vessel which is directed to keep out of the way of another vessel shall, so far as possible, take early and substantial action to keep well clear."

obligation upon such a vessel to stay out of the way of a downbound vessel. By contrast the narrow channel rule, however, specifies that the downbound vessel shall propose the manner and the place of passage and requires that the upbound vessel "hold as necessary to permit safe passing." The Inland Navigation Rules are intended to reduce the risk of collision upon the inland waters of the United States. The rules contained therein can only bring about that end if vessel operators apply the rules consistently to a particular set of circumstances. Therefore, a mechanism through which the requirements of the narrow channel rule can be activated and which leaves no doubt in the minds of the vessel operators that they have been activated is needed. If for any reason the operator of a downbound vessel reasonably believes that he must, to avoid risk of collision, navigate his vessel through a particular section of a waterway before he meets an upbound vessel, he should invoke the narrow channel rule. The rule should be invoked by means of a standard phrase broadcast over the bridge-to-bridge radiotelephone and confirmed by a standard whistle signal when vessels are in audible range. If the operator of the ANN BRENT had had such a mechanism available when he first communicated with the pilot of the MANTINIA, he could have invoked the narrow channel rule, the pilot of the MANTINIA would have then been obliged to hold his vessel at a location specified by the operator of the ANN BRENT, the meeting would not have been attempted in a bend of the river, and this accident may have been avoided.

When the second radio contact between the pilot of the MANTINIA and the operator of the ANN BRENT took place at 1912, it became evident to the operator that the vessels would meet in the bend, instead of below the bend as he had first anticipated. The operator attempted to make the best of what he considered to be a less-than-ideal situation. Since he believed that he had to be close to the left descending bank in order to maneuver around the point successfully, he attempted to change the meeting agreement to call for a starboard-to-starboard meeting. This request as recorded by the New Orleans VTS was, "Well Cap, if you want to go in the bend, I'll just stay in the right side of the point. Then just come on. That way you won't have to stop." This message is imprecise and subject to misinterpretation. The pilot of the MANTINIA in fact misinterpreted the operator to mean that the pilot should hold right to the point and keep coming and that way he would not have to slow down. The pilot assumed that the original port-to-port meeting was being confirmed. He responded to the operator of the ANN BRENT by transmitting, "All right, 34." At this point, both the operator of the ANN BRENT and the pilot of the MANTINIA believed that each was to maneuver his vessel toward the left descending bank and that the other vessel would move over to favor the right descending bank. Obviously the two parties had miscommunicated. Both the operator of the ANN BRENT and the pilot of the MANTINIA testified that their radios were functioning properly; radio traffic in the area was not so heavy as to interfere with their communications. In fact, they each testified that they had received the transmissions of the other loud and clear. Therefore, the miscommunication can in no way be related to the radio equipment.

The operator of the ANN BRENT was needlessly verbose in his attempt to alter the meeting agreement and his phraseology that he would "stay in the right side of the point" is confusing since the entire river is on the "right side of the point" for a downbound vessel. Radio transmissions intended to communicate navigational intentions to the operator of another vessel should be clearly stated in a short, crisp, and direct manner and should be easily and unambiguously understood by the receiving party. Slang expressions whose meanings may be ambiguous prevent effective vessel bridge-to-bridge radio communications.

The pilot of the MANTINIA was left with a completely erroneous understanding of what the operator of the ANN BRENT had proposed. This might not have resulted in a collision if the pilot had made an attempt to confirm the agreement by restating his understanding of the agreement. Instead, he merely transmitted, "All right, 34." If he had, for instance, said something to the effect, "All right, I will meet you on one whistle," or "All right, I will meet you port-to-port," the operator of the ANN BRENT would have been alerted to the fact that a misunderstanding had developed, he would have had time to correct it, and this accident could have been avoided.

Effective radio communications are dependent on clear, precise language combined with disciplined procedures. If a standard marine vocabulary and a formalized procedure were developed and required to be used in vessel bridge-to-bridge radiotelephone operations, the VHF radio could become an even more effective collision-avoidance tool in the navigable waters of the United States. For many years, navigational intentions between vessel operators have been communicated through a formal system of whistle signals which were augmented by the permissive use of a visual synchronized light signal. This system required the initiating party to sound a signal on the ship's whistle. The receiving party was then required to acquiesce by sounding the identical signal to signify receipt and agreement. In December 1981, the Inland Navigation Rules Act, 1980, went into effect. These rules recognized the technological advance that the VHF radiotelephone represented and made whistle signals optional if vessel operators reached an agreement on how they would pass in meeting, crossing, or overtaking situations by using the radiotelephone as prescribed by the Bridge-to-Bridge Radiotelephone Act (Rule 34(h)). However, while they both contemplate agreement neither the Rules nor the Act prescribe any formal radio procedures which include an unambiguous radio transmission confirming proposed passing arrangements in meeting, crossing, or overtaking situations. Use of the radio without confirming the specific agreement is not as safe as using whistle signals which must be acknowledged with the identical signal.

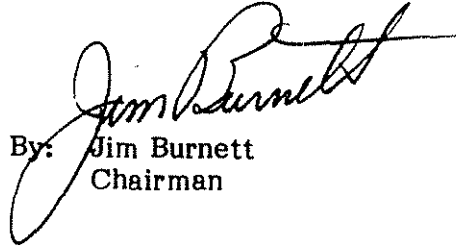
Therefore, the National Transportation Safety Board recommends that the U.S. Coast Guard:

Develop a standard phrase for use on the vessel bridge-to-bridge radiotelephone and a standard whistle signal to be used by a downbound vessel operator on the Western Rivers to invoke Rule 9 of the Inland Navigation Rules Act, 1980, and seek if necessary legislation to add the phrase and the whistle signal in the Act. (Class II, Priority Action) (M-85-42)

In conjunction with representatives of the marine industry who operate vessels on the Inland Waters of the United States, develop a standard vocabulary for use by vessel operators and pilots when formulating agreements on the vessel bridge-to-bridge radiotelephone. (Class II, Priority Action) (M-85-43)

In conjunction with representatives of the marine industry who operate vessels on the Inland Waters of the United States, develop a formal procedure to be followed by vessel operators and pilots to transmit their navigational intentions and to confirm agreements, when they use the vessel bridge-to-bridge radiotelephone. (Class II, Priority Action) (M-85-44)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, Member,
concurred in these recommendations.


By: Jim Burnett
Chairman