

17 January 1978

SUBJECT: After Action Report--Au Train Ice Jam

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1. This report consists of three parts: (1) the Commanders After Action Report, (2) the Operations Section After Action Report, and (3) Technical Lessons Learned.

2. The Commanders After Action Report

a. An informal notification of the impending alert would have helped to increase the reaction time of this unit. Even if the Governor had not yet authorized the activation of the National Guard to relieve the ice dam at Au Train, an informal phone call would have been better than a rude awakening at 0500 hours. This is especially true since the rumored alert had been broadcast by the Marquette area media 24 hours before our notification.

b. The initial reconnaissance by battalion should have been completed after sunrise. The figures given to me by telephone at 0755 hours were extremely inaccurate. Only after our party arrived at Au Train were we able to truly evaluate the situation.

c. The help we received from Mr. Robert Rexstew, the Alger County Civil Defense Director, was invaluable. Any equipment that we needed to complete the mission was obtained by Mr. Rexstew.

d. The Munising State Police Post and the Alger County Sheriff Department are to be commended for the

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assistance they provided in the areas of traffic control and communications. Without the handtalkie radios they provided messages would have had to be relayed out to the edge of the ice jam and back, greatly increasing the time needed to accomplish the mission.

e. The Ladies Auxiliary of the Au Train Township Fire Department provided a warm hall, hot coffee, and sandwiches during the operation. Their help boosted the moral of the men on the ice jam.

f. The UH-1 Helicopter from Co A (AsLtHel), 38th Avn Bn proved to be invaluable. They moved additional personnel and equipment from the Armory in Gladstone with a minimum of delay. The aerial reconnaissance missions before and after the detonation of the explosives increased the safe accomplishment of the mission. Finally, the use of the helicopter to transport sandbags and supplies out to the far edge of the ice jam reduced the time to accomplish the mission by at least 8 hours. The pilots, CW2 Dennis M. Klein and CW2 Lawrence Bush, touched the helicopters skids to the ice and hovered while the supplies were unloaded on the ice jam. The two crew chiefs, SP4 Kim Toms and SGT Bruce Bierkamp provided valuable information on the aircrafts capabilities and assisted in the loading and unloading. All four men are to be commended for their assistance in the successful accomplishment of the mission.

g. CPT Tim Everett of the DMA Information Office provided accurate and timely press releases and coordinated the media coverage of the mission. He is to be commended for his assistance.

h. Mr. Joe Pepin of Pepin Explosives, Inc., Negaunee, Michigan not only provided the explosives, but the technical assistance and information on the use of the explosives. Without his technical assistance the mission might not have succeeded.

3. Operations Section After Action Report

a. Our initial response was to activate 12 men. After an introductory briefing and a preliminary reconnaissance of the ice pack it was decided that we would fire a test shot to get an indication of what the unfamiliar commercial demolitions would accomplish. One charge was fired, and

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and the results of this test shot provided planning information for Sundays operations. It was also decided after this test shot to double our manpower. By the completion of the mission we had activated a total of 28 men.

b. On Sunday morning the helicopter was utilized to transport the additional men from Gladstone to Au Train. While this was being done, three ice drilling crews began drilling holes with ice augers and extensions. The charging pattern used provided approximately four charges in the low areas where we could drill through the ice and into the water, and a single line of charges over the pressure ridge where it was too deep to drill through to water level. By 1720 hours the drilling and loading of the holes was complete and the charge was detonated at 1810 hours. A subsequent reconnaissance by helicopter indicated that a charge at the furthest end of the charge line had not detonated. Fourteen men were returned to Gladstone by bus and released from active duty.

c. On Monday morning a crew of three men was sent onto the ice to conduct a reconnaissance for the unexploded demolitions. They found four unexploded charges. These charges were detonated at 1220 hours and an aerial reconnaissance was again made by helicopter which indicated that all the charges had detonated. This was later verified by a reconnaissance patrol. At 1256 hours the Alger County Emergency Services officially released us.

d. Mr. Joe Pepin of Pepin Explosives, Inc., provided invaluable information and assistance in the utilization of the commercial explosives which we had never used before.

e. We emplaced approximately 5220 pounds of Water Gel explosive, 120 TNT boosters, and 6000 feet of detonating cord during this mission.

f. The two portable radios provided by the Michigan State Police were a great aid to the emplacement of the explosives. We could have used one more radio during the charging of the holes.

g. The helicopter was a valuable aid in the completion of the mission. Its uses included: transportation of men and equipment from Gladstone to Au Train, transportation of supplies from shore to the ice, safety reconnaissance

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before the blasting and surveying the results after the blasting, an evacuation means should someone have gotten injured on the ice, and an excellent public relations tool. Since the Au Train area received a substantial snowfall immediately after the blast and again on Monday morning prior to daylight, the unexploded demolitions probably would not have been found since they would have been covered with snow before a reconnaissance party could have been safely sent onto the ice on Monday morning. Since the helicopter was available and made a pass over the charge line immediately after the detonation, the existence of unexploded charges was known. (This fact was serious since the amount of unexploded demolitions was approximately 500 pounds. The cause of this malfunction in the blast was due to the detonating cord sheering at the face of the cliff of the last pressure ridge during the blast). Our only complaint on the helicopter assistance was that it had not been refueled on Sunday morning upon its return from Gladstone, and thus it was unavailable for a period of time when it was needed to transport supplies onto the ice. As an afterthought, perhaps an Air Force fuel truck, which was needed on site on Monday, should have been requested to be on site during the Sunday operations.

h. Should a similar emergency situation arise, consideration should be given to activating the battalion surveyors. Their assistance could have been used in determining the exact depth of the pressure ridges and providing a more accurate determination of the explosive charge line distance we were working with.

i. The warm atmosphere that was shown toward the National Guard by the Au Train-Munsing area residents was appreciated by the individuals working on the job site. This feeling of being wanted and needed provided a large psychological boost to the men on the ice and gave an incentive to do the best job possible for the local residents.

4. Technical Lessons Learned

a. Due to the granular nature of the ice-snow combination in the pressure ridges, the conventional formulas for calculating demolitions do not work.

b. The float ice beyond the pressure ridges showed large cracks of open water after the blast. It is sus-

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pected that the charges that were placed in the low points of the ice and that extended below the ice pack and into the water probably provided sufficient shock waves and wave actions in the water to cause these breaks in the ice. In all probability, the charges that extended into the water were effective charges, while the charges that were placed in the pressure ridges were, for the most part, wasted charges.

c. For ice operations the only effective method of drilling holes is with an ice auger. An extension for the auger bit can be used, but only to the length that a man can reach above his head to retract the auger from the ice. The auger will only clear itself over the length of the auger. When the extension is added, the auger must continuously and periodically be withdrawn from the ice to exhaust the debris that the auger has dug up. The maximum auger extension length that we were able to use was approximately seven feet, thus providing a ten foot hole depth.

d. Using 5 millisecond delay connectors on the detonating cord allows the noise of the blast to be spread out over a longer time, thus preventing any one loud report that could cause window breakage in the local area.

e. ~~The~~ jagged and slippery conditions of ice operations makes some type of rescue support necessary. The ideal support would be a helicopter; however, if this is unavailable, stretchers must be available and medical personnel should be available.

HENRY KNOCH
CPT MI ARNG
Commanding