

FINDINGS OF THE BOARD.

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DHIST

The Board finds,

1. That between 1835p and 1840 p on the 18th July, 1945, a short series of three or four minor explosions over a period of two minutes or more similar to the firing of small arms cartridges, originating on the Seaward end of the South Magazine Jetty, accompanied by a violent fire as of cordite burning was followed by a major explosion which destroyed the greater part of this jetty and the miscellaneous craft secured alongside. The blast from this explosion collapsed the wooden roofs of and partially demolished some of the older buildings in the vicinity of the South Jetty gate. The debris thrown up by the explosion, consisting of probably some ignited pyrothechnic stores, ignited cordite filled cartridges and numerous projectiles and other ammunition and explosive stores heated to a high temperature, ignited these collapsed buildings, growing brush and grass and produced almost immediate and continuous "cooking off" and occasional Major explosions of cartridges and shell. These produced during the night of the 18th-19th July an uninterrupted bombardment of an area extending over a radius of at least one mile from the Magazine area. The fires, together with burning and highly heated ammunition and debris from the minor explosions continued their progressive ignition of buildings and containing ammunition, also ammunition piled and stored in the open. When these reached a large concentration of explosive a major explosion resulted, the last of these occurring at about 0400p on the 19th July. The buildings South of a line through Magazine Buildings 73 and 80, Service residences and Veterans Guard quarters immediately across the Dartmouth-Bedford highway were now devastated. In addition considerable damage was caused to buildings in the remainder of the Magazine Area. Injuries to persons and damage to property occurred throughout a wide area, the extent of which has not been determined by this Board. This latter damage to buildings was due almost exclusively to blast and was generally diminishing in effect with distance and contour protection. Patrolman Craig on duty at the South Jetty gate is the only known fatal casualty. His death was the result of the first major explosion at approximately 1840p on 18th July, his body having been recovered at the approximate location of the South Jetty Gate.

2. (A) The Board was unable to determine the initial cause of the explosion. From the evidence it would appear that fire caused explosives to ignite thus increasing the intensity of heat to such a degree that detonation resulted. There was no evidence that fire had been observed by any person prior to the hearing of the first small explosions.

(B) The possible sources of fire were unextinguished smoking materials or sparks and spontaneous combustion of waste or other material.

(C) Contributing factors to the possibility of fire and the major explosion which resulted were as follows:

(i) Lack of magazine storage accommodation resulting in a large accumulation of explosive stores on the South Magazine Jetty, further accentuated by the fact that the North Magazine Jetty was unusable due to its condition and having been cleared to allow repairs to be undertaken.

(ii) Certain explosive stores had been accepted and stored on the South Magazine Jetty in contravention of Naval Magazine and Explosive Regulations and Regulations for Naval Armament Services.

(iii) The organization with respect to supervision was not sufficiently defined nor was enforcement insisted upon to that degree which made it practically impossible to smoke in prohibited places and that the South Jetty being in all respects part and parcel of the Magazine Area all magazine regulations should have been rigidly enforced.

(iv) Further there was not at this time included in the organization any arrangement whereby a guard was placed on the jetty to ensure that smoking restrictions were enforced both with respect to the jetty itself and also harbour craft secured thereto. This factor was most important at the time of the explosion on July 18th in view of the fact that large quantities of explosive stores were contained thereon and moreover repairs were concurrently being effected by a private Contractor.

(v) The construction of the building and jetty planking being of wood.

3. (A) Taking into consideration the above factors, and having heard the evidence of witnesses who were in the immediate vicinity of the jetty just prior to the outbreak of the initial explosions and the evidence of others who viewed the jetty from various locations and including observations of a passenger in an aircraft flying over the area, it is the Board's opinion that:

(i) The fire and explosions did not originate in a lighter or other craft moored alongside the South Magazine Jetty.

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(ii) That the first explosions observed or heard appeared to be at the seaward end of the jetty.

(iii) That no fire was seen before any initial explosion.

(iv) That the cause of the explosions was fire the probable origin of which was due to unauthorized smoking and carelessness with respect to disposal of ignited smoking materials. It is not possible to eliminate the possibility of spontaneous combustion as the congested state of the jetty would have made it difficult to see that all materials that might be subject to ignition were removed. A remote possibility might be the shifting of insecurely piled ammunition and the consequent striking of Primer caps.

(B) A further possible cause might have been due to a spark from the smoke-stack of the coal fired boiler on the floating Pile Driver operated by the Contractor. This is not considered very likely as the boiler fire had been banked at 1600p on Wednesday, 18th July.

(C) It has been ascertained that all personnel had left the jetty by 1745 p and that the only person proceeding on the jetty after that time and prior to the initial explosion was the duty Stoker who at approximately 1815 completed rounds of power Lighters secured thereto, he noticing no evidence of fire at that time.

4. (A) In inquiring into the events of the 18th-19th July, the Board find that a fire and explosion having occurred, the alarm was promptly turned in and responded to by all Departments concerned. The fire party attached to the Magazine area brought to bear all equipment at their disposal and advanced to a position as close as was prudent, playing water on buildings and ammunition dumps. They were in turn assisted by the Fire Departments of the Naval Establishments in Halifax and Dartmouth. The extent of fire and explosions was such that it was deemed impossible to control in a fire fighting sense, and withdrawal became necessary, this being effected at approximately 2000p 18th July. The Board find no evidence other than that at great personal risk all personnel, Civilian, Veterans Guards and Naval, made a determined effort to bring under control a situation that was beyond their power and that any withdrawal was not premature.

(B) The Board further find that all Senior Officers concerned were recalled and promptly assumed their responsibilities. That all Civilian Authorities were advised regarding areas recommended to be evacuated and that the response and arrangements were effected efficiently having regard to the conditions prevailing. That prompt steps were taken to keep the other Services informed of the situation, the co-ordination being eminently satisfactory. That prompt steps were taken to re-establish fire fighting in the area as soon as an aerial survey and observation of the area on foot had been completed.

ships required for the Pacific Theatre which were to be refitted or tropicalized.

(iii) The repairs being undertaken with respect to the North Magazine Jetty.

6. (A) The Board having been unable to determine the cause of the original explosion are unable to attribute direct blame to any person or persons.

(B) In considering the probable causes and contributing factors the Board is of the opinion that the following factors are within the jurisdiction and control of the Superintendent of the Naval Armament Depot (Acting Commander H. J. Magnusson, R.C.N.V.R.) and the Deputy Superintendent of the Naval Armament Depot (Acting Lieutenant Commander V. L. Miller, R.C.N.V.R.) the latter being the officer in immediate charge of the Bedford Magazine.

(1) Explosive stores were landed, accepted, and stored on the South Magazine Jetty in contravention of "Naval Magazine and Explosive Regulations" and "Regulations for Naval Armament Services", the particular regulations respecting the state of stores when landed being in force at this time. This constituted a hazard and was detrimental to the stores concerned.

(ii) Notwithstanding that certain Regulations could not be adhered to in their entirety and that in certain specific instances these conditions had been authorized or acquiesced in by higher Authority, it is the opinion of the Board that an energetic policy of enforcement was not pursued.

RECOMMENDATIONS.

7. (A) Certain conditions prevailing in the Magazine Area are beyond the scope of this Board to comment upon insofar as they concern the Policies and Plans of the Department of National Defence for Naval Services. The Board has already recommended that a survey be undertaken with respect to Naval Magazine Establishments in Canada. (See C. Supt.'s D.N. 24-4-16 of 7th August, 1945, addressed to C-in-C, C.N.A.)

(B) The Board recommends that an immediate survey be completed and submitted to Naval Service Headquarters for consideration, such survey to include primarily steps necessary to repair buildings and services so that the area may be brought up to a state capable of carrying out these functions within the capacity of those buildings now remaining or reasonably repairable.

THE MINUTES OF PROCEEDINGS OF BOARD OF INQUIRY HELD

(C) The Board further recommends that a complete survey be carried out with a view to establishing future requirements in all aspects and in consideration of Naval Service Headquarters' policy and plans connected therewith.

(D) The Board has taken cognizance that certain operations are now proceeding to remove from the Magazine Area and surrounding district dangers caused by the explosion.

(E) The Board recommends that these operations continue as rapidly as possible consistent with safety, and that a close liaison be maintained with Naval Service Headquarters and or any other Authorities that may be concerned.

Commodore G.W. (sgd) D. S. Rolland , R.C.N.V.R.

(sgd) R. W. Wood, R.C.N.

(sgd) G. M. Hibbard, R.C.N.

Captain R.W. Wood, R.C.N.

Commander L.S. Holland, R.C.N.V.R.

MEMBERS

1.	Commander Norman John Magnusson, R.C.N.V.R., O-43230, Superintendent, Naval Armament Depot.	3 - 8 20 - 20 292 - 309
2.	Lieut. Cdr. Vernon Lerne Miller, RCNVR, O-42830, Deputy Superintendent, Naval Armament Depot.	9 - 19 285 - 287 309 - 325
3.	Edward Prescott Thompson, Timekeeper, Bedford Magazine.	21 - 23
4.	Albert Hornsby, Sto. L/c, V-70023, Bedford Magazine.	24 - 31
5.	Wilfred Clarence Hall, Labour Foreman, Bedford Magazine.	32 - 37