

MARITIME MINING RECORD

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As stated some months ago, the Record made application to the Board of Examiners for the answers returned to the questions, at the examination, by a certain unsuccessful candidate. The papers, very curiously, could not be found. We have waited in hope that they might turn up, but as they are likely lost for good, we must be content to give the answers of one of the successful Candidates. There were many who failed; perhaps these answers will be of service in showing where they came short. Can any reader suggest improvements in the answers.

MANAGERS.—SURVEYING.

Ques. 1.—The following survey, which was surveyed by an instrument whose needle had 24 degrees of West variation, North 30 degrees West 6 chains; North 70 degrees East 10 chains, North 30 degrees East 5 chains; North 25 degrees West 8 chains, under what bearings must the survey be plotted on a plan whose delineated meridian has 15 Degrees of West variation?

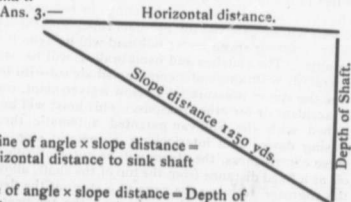
Ans. 1.—Reduce bearing with a meridian of 24 deg. of West variation. bearing with a meridian of 15 deg. of West variation.

N. 30 deg. W. 6 chains	N. 39 deg. W. 6 chains.
N. 70 deg. E. 10 chains.	N. 61 deg. E. 10 chains.
N. 30 deg. E. 5 chains.	N. 21 deg. E. 5 chains.
N. 25 deg. W. 8 chains.	N. 34 deg. W. 8 chains.

Ques. 2.—How is the direction of a new road set out from an existing road, if a magnetic bearing cannot be obtained,

Ans. 2.—The angle which the new road will make with the existing road is first ascertained by the protractor from the plan. The dial is then fixed at the point where the new road is to commence underground and the angle set out by the Vernier on the dial, a sight having been taken along the existing road and the new road set out at the angle obtained from the plan.

Ques. 3.—A slope dip 17 degrees is 1250 yards in length. Explain how and where you would sink a shaft to strike the face of slope; also tell how to find depth of shaft.



Ques. 4.—Why is the East marked to the left of the North, and West to the right of North in the miner's compass?

Ans. 4.—When taking a sight with the compass the North and South of the dial are always placed in the line of sight, the direction of the needle is the magnetic meridian and is either to the right or left, and as in sketch the line of sight is 20° to the right, that is to the East as the East is to the right hand of the North and South line, therefore the bearing of the line is 20° N. E. but if the letters E. W. were put in their proper position it would read N. W. which would be inaccurate.

Ques. 5.—The main entry from the bottom of the shaft runs due North 3600 feet. A cross entry is started due East at a distance of 200 feet from the face, and driven 2465 feet. What length of roadway started 250 feet from the shaft will be required to connect with face of the cross entry, and what will be the bearing of this connecting roadway?

Ans. 5.—

3150	24650	(.78254
	22050	
	26000	
	25200	
	8000	
	6300	
	17000	
	15750	
	12500	
	12600	

Ques. 6.—Plot and traverse the following courses of a survey to a scale of 100 feet to the inch:

Courses.	Distances.	Sines.	Cosines.
N. 10 Deg. E.	200 feet	.173648	.984808
N. 5 Deg. W.	100 "	.087156	.996195
N. 85 Deg. E.	250 "	.996195	.087156
S. 5 Deg. W.	100 "	.087156	.996195
S. 85 Deg. E.	200 "	.996195	.087156
S.	125 "		
S. 80 Deg. W.	110 "	.984808	.173648
N. 45 Deg. W.	75 "	.707107	.707107
S. 10 Deg. W.	110 "	.173648	.984808
S. 5 Deg. 30' W.	51 1/2 "	.995846	.995396
N. 80 Deg. W.	284 1/2 "	.984808	.173648

Ans. 6.

	Northing	Southing	Easting	Westing
N. 10 Deg. E. 200 feet.	196.96			
N. 5 Deg. W. 100 "	99.62			
N. 85 Deg. E. 250 "	21.80		249.05	8.72
S. 5 Deg. W. 100 "		99.62		8.72
S. 85 Deg. E. 200 "		17.44	199.34	
S. 5 Deg. 30' W. 51 1/2 "		125.00		
S. 80 Deg. W. 110 "		19.10		108.33
N. 45 Deg. W. 75 "	53.03			53.08
S. 10 Deg. W. 110 "		108.33		19.10
S. 5 Deg. 30' W. 51 1/2 "		51.32		4.94
N. 80 Deg. W. 284 1/2 "	49.40			290.17
	420.81	420.81	489.01	489.1