Amplified Kinematics of a Torpedo Launched and a Cannon Fired from a Naval Ship to Strike an Enemy Ship

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Abstract. Two naval ships, A and B are sailing with uniform velocities in a sea respectively along two straight line paths with an angle θ between them at junction O. While ship B is at a distance b from junction O, it launches a torpedo which moves with a uniform velocity in the sea water to hit the enemy ship A which is at a distance a from the junction O at the instant of launching the torpedo. The shortest distance between them is computed because torpedo may be launched at the time of having the shortest distance between them. A torpedo is launched and a cannon or powerless missile is fired at the same time to hit the target . The problem is mainly to find the minimum time taken by the torpedo to hit the enemy ship A and the time of flight of the projectile to hit the target. The minimum velocity of the projectile required to successfully hit the target is also found out.