ABSTRACT

Gun barrel is a part of firearm that is functioned to control gas flow to propel projectile out of the barrel with high velocity. Every projectile that is propelled will produce high temperature that cause from the explosion from projectile and friction between projectiles with the bore surface. If the temperature in the gun barrel reach cook-off temperatur, it will be damage (crack) the bore surface. In order to avoid cook-off temperature in the gun barrel, a model temperature history (temperature difference in each shot based on time) in the gun barrel is needed. In this final project, finite volume is applied to model temperature history in the gun barrel. Result of the simulation found that the limit of shoot so it won't reach cook-off temperature is 27 times with 10 second interval per shoot.

Keyword: Gun Barrel, Finite Volume Method, Temperature History, Bore, Cook-off