

## Tank Barrel Surface Damage Detection Algorithm

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**Abstract :** The article proposes a new algorithm for detecting damaged areas of the tank barrel based on the image of the inner surface of the tank barrel. Damage position is calculated using image processing techniques such as edge detection, discrete wavelet transformation and image segmentation for accurate contour detection. The algorithm can detect surface damage in smoothbore and even in rifled tank barrels. The algorithm also calculates the volume of the detected damage from the depth map generated, for example, from the distance measurement unit. The proposed method was tested on data obtained by a tank barrel scanning device, which generates both surface image data and depth map. The article also discusses tank barrel scanning devices and how damaged surface impacts material resistance.

**Keywords :** barrel, barrel diagnostic, image processing, surface damage detection, tank

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