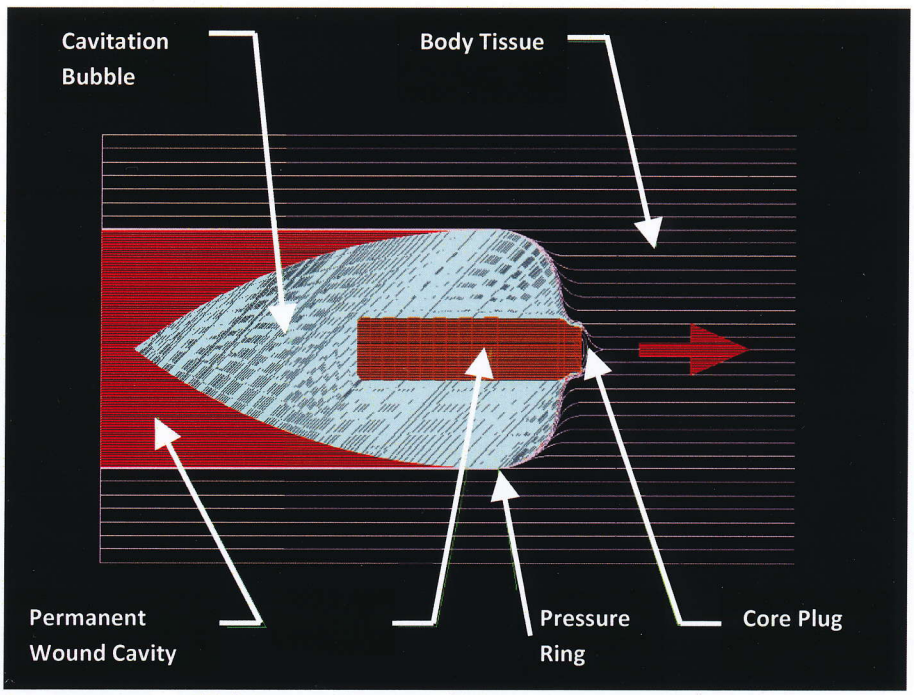
Hydrostatic Stabilization

By John Marozzi

Bachelor of Science/Metallurgy

Hydrostatic stabilization is a technique that has been used in the brass extrusion industry for many years. It is a method of producing pierced hollow bars to very precise concentricity by using tool design to harness hydrostatic forces to centralise mandrels when punching through brass billets. Now for the first time this concept has been used in bullet design to harness the same forces to produce a bullet that resists deflection and achieves deep straight-line penetration.



The task was to design a bullet that would bridge the gap between traditional expanding bullets and modern solids. These new generation hydrostatically stabilized bullets®[1] deliver tremendous shock transfer with the penetration of the latest sixth generation African monometal solids[2] and extremely reliable straight line performance.

The depressed nose at the leading edge of the bullet "cores" the medium (flesh) through which it is travelling which then creates a "pressure ring". The coring and pressure ring balance each other out to stabilise the bullet in the direction of travel. If the bullet hits hard bone the flesh core dissipates but immediately reforms, restoring the balance between it and the pressure ring, thus redirecting the bullet to its original direction of travel.

Additional benefits of this design are that the pressure ring creates a devastating wound channel and massive hydraulic shock transfer. The bullet actually travels in a low pressure cavitation bubble which aids in bullet stabilisation and greatly increases penetration due to significant reductions in frictional forces acting on the bullet (ref. fig 1).

This new bullet cuts a clean entry hole promoting profuse bleeding. Exits wounds are ragged due to the release of energy built up in the pressure ring as the bullet exits.

This homogenous bullet is made from a specially formulated copper alloy. Only the purest raw materials are used in its manufacture. The result is a bullet that has better toughness than modern homogenous bullets but creates breach pressures similar to standard gilding metal jacketed soft nose projectiles. This combination of materials and design allows for good regulation in most types

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[1] ®Registered Design,℗ Patent pending.

[2] Van der Walt, P. *Big Bore Cartridge Load Data Collection* Zimbi Books, South Africa

of double rifles as well as good accuracy in magazine rifles (In line with good practise when using this type of bullet in magazine rifles we strongly recommend that all ammunition is cycled through the magazine to ensure that feeding is reliable prior to going on a hunt).

Other desirable features are the shallow driving bands and full diameter body. The driving bands combined with the materials used keep pressures low minimizing stresses on barrels. The full diameter body (land diameter) has two beneficial effects. Firstly, the bullet is more stable as it travels through the barrel because it is fully supported which in turn results in more reliable accuracy performance. Secondly the weight of the bullet is evenly distributed from front to back, reducing the tendency to tumble during penetration.

This combination of engineering and metallurgical principles combined with cutting edge CNC repetition engineering has created the next generation in bullet design.

Bull elephant taken by Steve Saunders using new generation hydrostatically stabilized projectiles. Note profuse bleeding.

Clean entry wound created with an experimental steel tipped projectile from a 465 Holland & Holland royal double.

For further technical information contact John Marozzi via email on sales@laserbullet.com.au