

"Improvements in warhead design validated by nuclear testing have made possible an even more dramatic reduction in our explosive power - currently one-fourth what it was at its high point."<sup>7</sup> Mr. Gaffney presumably referred to total yield when he spoke of this reduction; the destructive power of the arsenal has almost certainly increased because the US has many more re-entry vehicles with smaller but more efficient warheads.

### Throw-weight

Throw-weight "is the weight of the post-boost vehicle (warheads, guidance systems, penetration aids) over a given range."<sup>8</sup> Missiles with large throw-weights can be converted to carry more warheads of smaller yield. Throw-weight then gives a general indication of the potential for MIRVing. In their current reduction proposal, for example, the US has included a provision that could require the Soviets to reduce their total throw-weight by 50%. This provision reflects the US concern that the large Soviet advantage in throw-weight (particularly on the SS-18's), combined with the increasing accuracy of the re-entry vehicles, gives the Soviet Union an inherent advantage in counter-force capabilities. The contrary argument is that increasing accuracy permits the use of warheads with lower yields, thereby diminishing the significance of throw-weight.

### Fuel

Fuel is either liquid (deuterium and tritium) or solid (lithium-6 deuteride). Liquid fuel decays radioactively and must be replaced on an ongoing basis.<sup>9</sup> Liquid fuel must be primed in advance of launch time and the priming of the fuel releases gases which can be detected by satellite as a warning of preparations for launch. Solid fuel is in a constant state of readiness for launch and has a much longer storage life. It is

<sup>7</sup> F. Gaffney, "What's Good About U.S. Nuclear Testing" New York Times August 28, 1985 p. 22

<sup>8</sup> IISS, The Military Balance 1984-1985 p. 136

<sup>9</sup> Cochran, Arkin, Hoening, US Nuclear Forces and Capabilities (Natural Resources Defense Council, 1984). p. 26