

Impuls of a force (Impulse):

(3)

We often come across situation in which very large forces acts for very short intervals of time.

eg. A ball hit by bat.

& Impact of a hammer on nail.

"

Impuls of a force is defined as the product of the force & the time for which the force acts"

From Newton second law

$$f = m\bar{a}$$

$$f = m \left(\frac{\bar{v} - \bar{u}}{t} \right)$$

$$f \cdot t = m(\bar{v} - \bar{u})$$

$$\bar{J} = m\bar{v} - m\bar{u}$$

Impuls = change in linear momentum

Impuls is vector quantity. Its direction is a ~~vector~~ ~~same~~ same as that of Force

The SI Unit of impulse is 'N.s'
(Newton . second)

$$N \cdot s = kg \frac{m}{s^2} \times s$$

$$N \cdot s = kg \cdot \frac{m}{s}$$

Dimensions of the impulse $[M^1 L^1 T^{-1}]$