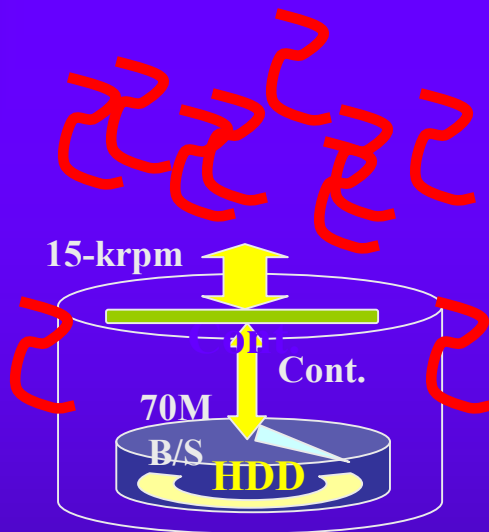




Numeric calculation of HDD heat issues.

Heat comes from friction loss between disk with air.

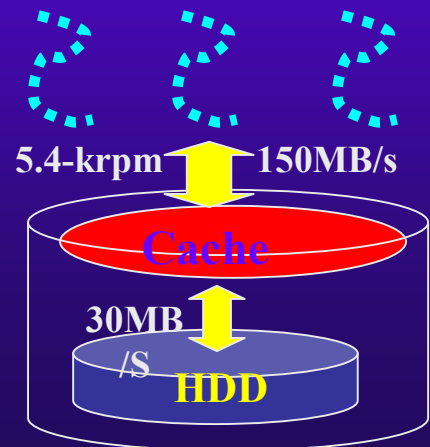


Therefore, General heat (H) is
 $H = ((\text{out side disk circumference})^2)^2$

Therefore, emitting heat air ratio between 3.5 inch 15krpm HDD to 7.2Krpm HDD is

$$H(15Krpm) = ((15krpm / 7.2Krpm) * 2)^2 = 18.7 \text{ times}$$

Platinum HDD uses 5.4Krpm 2.5inch HDD
 Therefore, H(Platinum hdd) is.



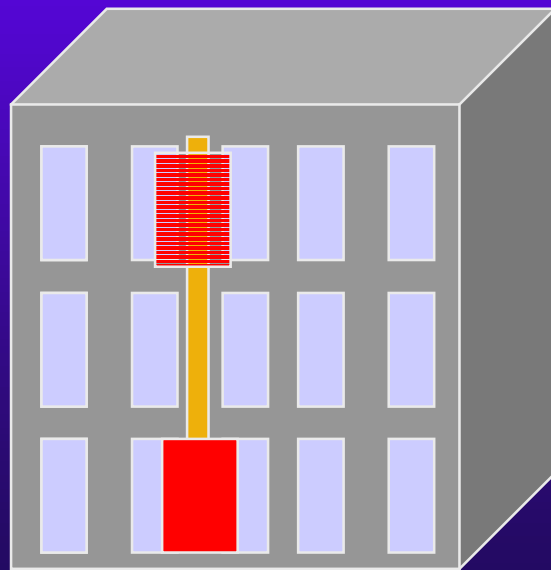
$$H(\text{M-Cell hdd}) = ((2.5 \pi) / (3.5 \pi))^2 * (5.4Krpm / 7.2Krpm) = (0.714 * 0.75) = 0.5355 \text{ times}$$

Therefore, ratio between 15Krpm to Platinum HDD is
 $R = H(15Krpm) / H(\text{Platinum hdd}) = 18.7 / 0.5355 = 34.9 \text{ times}$

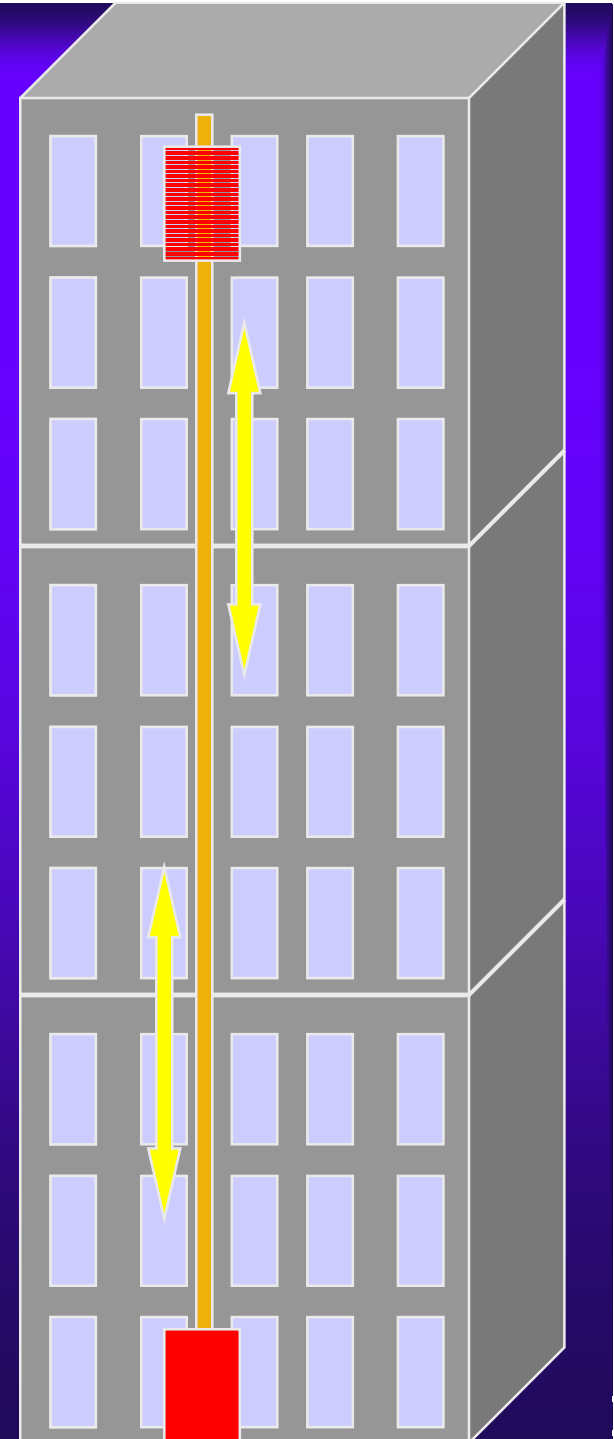


IOPS per GB on Traditional HDD

There are single elevator in the building.
The number of actuator in HDD is same
one, even the capacity increase more than
1TB. This is a one of reason to slow down
in IOPS test result.



???????





IOPS per GB on Platinum Hybrid RAM disk.

Hybrid RAM disk cache table SDRAM and it doesn't have seek head mechanism therefore, it looks like multiple numbers of elevators in the building, even disk capacity increase.

