optimum body for a given length and volume is 8/9 times the drag of the Karman-Ogive body of the same length and volume, whereas the drag coefficient based on the maximum area (i.e., base area) is the same for both. The body having minimum drag coefficient based on the base area has $B/V = (8/9)^{1/2}$, which lies between that of the optimum body and the Karman-Ogive body.

It may be mentioned that, since the base area of the optimum body is less than that of the Karman-Ogive body, the contribution of the base drag is also likely to be smaller and hence this body may be expected to be better than the Karman-Ogive body not only from the point of view of wave drag but even more so from the point of view of overall drag.

Conclusions

Reference 1 limits its discussion to bodies with B/V less than 4/5. It does not bring out the fact that (in the range of values of B/V from 4/5 to 4/3) there are several optimum bodies for which the maximum area occurs at the base. Among them the body with $B/V = 8/9$ has the minimum drag for a given length and volume, and its drag is 8/9 times the drag of a Karman-Ogive body of the same length and volume.

Reference

[1] Adams, M.C., "Determination of Shapes of Boattail Bodies of Revolutions for Minimum Wave Drag," NACA TN 2550, Nov. 1951.

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