Use of the uniform, time dependent temperature distribution in another analysis[4] has lead to relatively simple expressions for the bond stress with a viscoelastic propellant.

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Comment on "Insulation Requirements for Long-Time Low-Heat Rate Environments"

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In a previous note,[1] the authors discussed the problem of insulation requirements for long-time low-heat rate environments. With several simplifying assumptions, the problem was reduced to that of heat conduction in a slab. It was stated that the solution to the diffusion equation for the conditions of interest could not be found in standard heat conduction tests, and a solution was presented. It has subsequently been brought to the authors' attention that the solution presented in Ref. 1 is available in standard texts, such as Ref. 2. A solution to the same problem using Laplace transforms is also presented in Ref. 3. The latter solution is of a more convenient form than that obtained using Fourier series and is shown in Fig. 1. It is noted that the required insulation weight per unit area appears only in the ordinate. Thus, the insulation weight per unit area may be obtained directly without the iteration process demanded by the figure in the original note.

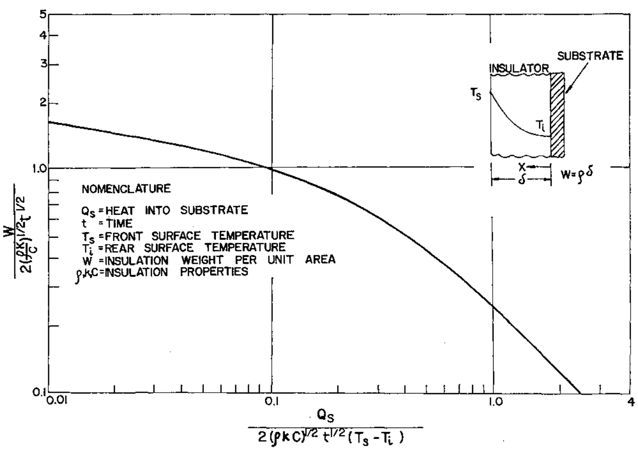

Fig. 1 Heat transmitted to rear surface of slab whose surfaces are maintained at constant temperatures.

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Correction and Addition to "Survey of Current Literature on Satellite Lifetimes"

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It has recently been brought to the attention of this author that Table 2 of Ref. 1 contains erroneous altitude data on the satellites noted and incorrect lifetime estimates.† Corrected perigee and apogee altitudes are (from top to bottom)

$$h_p = 95, 86, 123, 118, 120, 90, 104 \text{ naut miles}$$

$$h_a = 797, 526, 190, 391, 466, 477, 916 \text{ naut miles}$$

The estimated lifetimes associated with the above altitudes, however, have not been computed at this time.

Equations (66) and (67), which were hailed as rather general expressions for obtaining the number of revolutions and the time to decay, contain both the final radius and eccentricity of the orbit. In order to evaluate these expressions, an equation relating these quantities is needed. Reference 2 shows that the appropriate relationship is

$$\frac{e_1}{1+e_1}\rho_{p_1} j_1\left(\frac{\beta r_{p_1} e_1}{1+e_1}\right) = \frac{e_0}{1+e_0}\rho_{p_0} j_1\left(\frac{\beta r_{p_0} e_0}{1+e_0}\right) \qquad (1)$$

where the terms are defined in Ref. 1.

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† The lifetimes shown in the table do not correspond to the satellite data listed.

Optimization of System Reliability

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While conducting an analysis of a space power system, this author came upon a criterion for optimizing system reliability which seemingly presented a new insight into

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