Int. J. Heat Mass Transfer. Vol. 18, p. 714. Pergamon Press 1975. Printed in Great Britain

REJOINDER

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IN A LETTER to the editor dated 8th October 1974, Dembi comments on my paper [1]. I would like to give the following answer to Dembi's note:

It is correct as pointed out that equation (15) of [1] is correct only for $n = m$. The correct general expression for X should be as stated by Dembi.

$$X = \left[\frac{M_L^{*(1-0\cdot5n)}}{M_G^{*(1-0\cdot5m)}}\right]\cdot\left[\frac{\eta_L^{0\cdot5n}}{\eta_G^{0\cdot5m}}\right]\cdot\left[\frac{\rho_L}{\rho_G}\right]^{-0\cdot5} \times\left[\frac{C_L}{C_G}\right]^{0\cdot5}\cdot\left[\frac{\pi}{4}D\right]^{0\cdot5(n-m)}$$

However, this matter does not affect the theoretical relationship between X and ϕ_G and X and $(1-\bar{\varepsilon})$, presented in Fig. 2 and Fig. 3 of [1], as they are based on the assumption that $n = m = 0{\cdot}25$.

Regarding the parameter U_G, given by equation (21) of [1], this equation is based on the assumptions stating that "... the friction between the gas and the pipe wall as well as liquid surface is equal". The circumference U_G of the gas flow channel is therefore equal to the sum of the circular arc and the chord, as shown by the thick line in Fig. 1 of [1], giving

$$U_G = 2R\{\arccos(1-H/R)+\sqrt{[2H/R-(H/R)^2]}\} = 2R\tilde{U}_G$$

in accordance with equation (21) of [1]. The contention of Dembi that equation (21) is incorrect must therefore depend on a misunderstanding.

REFERENCE

1. Th. Johannessen, A theoretical solution of the Lockhart and Martinelli flow model for calculating two-phase flow pressure drop and hold-up, *Int. J. Heat Mass Transfer* **15**, 1443–1449 (1972).

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ERRATUM

LLOYD H. BACK, Transonic laminar boundary layers with surface curvature, *Int. J. Heat Mass Transfer* **16**(9), 1745–1761 (1973).

Typographical corrections are indicated as follows:

(a) p. 1746, Fig. 1 caption, v in second term in equation should read U.
(b) p. 1747, p in first term of equation (1) should read ρ; y in numerator of second term on right side of equation (4) should read ∂.
(c) p. 1748, g in brackets of third term on left side of equation (12) should read g'.
(d) p. 1749, equation (16), f'_w should read f''_w.
(e) p. 1751, in equation for S the group $[(\gamma+1)/2]^{\frac{1}{2}}$ in the denominator should read $[(\gamma-1)/2]$.
(f) p. 1752, in fourth line in second column, "the t" should read "then".