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TO: Roy Anise **DATE:** April 25, 1991

FROM: Tom Saloun

SUBJECT: **BDI/CDI Calculations**

This note details concerns regarding Mike Moore's memo (see attached) requesting his Brand Group to conduct a series of analyses using BDI and CDI calculations.

Historically, we have used SDI's to compare brand and category performance across geographies, and in this the cigarette industry is somewhat unique. First, unlike other consumer goods categories, shipment data for all competitive manufacturers is available at nearly every geographic level. Second, other categories tend to have CDI's which vary significantly more than smoking incidence. State to state variation in smoking incidence is +/-4% or less, across almost all the U. S.

The concerns about the proposed analyses center on the methodology used to calculate these indices. Cigarette BDI's and CDI's are based on two elements:

unit consumption in a specified geography
population 18+ in the same geography.

However, for the cigarette category, there is no accurate source available for consumption below the national level.

Although shipment data could be viewed as a surrogate for consumption, shipments are distorted by transshipments (e.g., distributors in one Section supplying stores in another Section), and by trade programs.

To illustrate how transshipments distort a BDI/CDI calculation:

SPACE estimates transshipments in a given Section to be 30% incoming, and 6% outgoing. In other words, 30% of the retail volume sold by retailers in the Section is supplied by distributors whose warehouses are outside the Section, while the remaining 70% is supplied by distributors located within the Section. The SPACE data also indicate that 6% of all direct shipments to distributors within the Section are eventually delivered to stores outside the Section, leaving the remaining 94% to be supplied to local retailers.

If shipments to direct accounts in a Section totaled 100 cases, 94 would be sold by retailers in the Section. Since these 94 cases represent 70% of total estimated retail volume, consumption in the Section would be approximately 134 cases.

This means that actual consumption would be 34% greater than shipment data would indicate. At levels smaller than Sections, i.e.,trading areas and DMA's, where transshipments tend to be greater, the distortions of consumption rates increase, and often exceed 100% (see attached examples).

Since SDI's are calculated off only one data source (factory shipments), any over- or understatement will not result in major distortions. BDI's rely on two independent data sources (population and shipments), and any overstatement in one will impact the resultant ratio of the two.