



## Broadband Shock Noise in Internally Mixed Dual-Stream Jets

By James E. Bridges

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 28 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. Broadband shock noise (BBSN) has been studied in some detail in single-flow jets and recently in dual-stream jets with separate flow exhaust systems. Shock noise is of great concern in these latter cases because of the noise created for the aircraft cabin by the underexpanded nozzle flow at cruise. Another case where shock noise is of concern is in the case of future supersonic aircraft that are expected to have bypass ratios small enough to justify internally mixed exhaust systems, and whose mission will push cycles to the point of imperfectly expanded flows. Dual-stream jets with internally mixed plume have some simplifying aspects relative to the separate flow jets, having a single shock structure given by the common nozzle pressure. This is used to separate the contribution of the turbulent shear layer to the broadband shock noise. Shock structure is held constant while the geometry and strength of the inner and merged shear layers are varying by changing splitter area ratio and core stream temperature. Flow and noise measurements are presented which document the efforts at separating the contribution of the...



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