

<u>Contents</u>	Page
1. Introduction	1
2. Forms of Shock-Boundary Layer Interaction and Associated Flow Models	5
2.1 Some Typical Shock-Boundary Layer Interactions	5
2.2 Shock-Boundary Layer Interaction - General	7
2.3 Shock-Boundary Layer Interaction in the Absence of Separation	9
2.4 Interactions with Shocks Strong Enough to Cause Separation	10
2.4.1 Interactions involving oblique shocks	10
2.4.2 Interactions involving normal shocks	13
2.5 Free Interaction	16
2.6 Incipient Separation	17
2.7 Laminar , Transitional and Turbulent Interaction	21
3. Experimental and Theoretical Results of Interactions Involving Oblique Shock Waves	22
3.1 Pressures	23
3.1.1 Laminar interactions	24
3.1.2 Turbulent interactions	31
3.2 Extent of the Interaction and Change in Boundary Layer Parameters due to the Interaction	41
3.2.1 Turbulent interactions	42
3.2.2 Laminar interactions	49

	Page
4. Interactions Involving Normal Shock Waves	51
4.1 Flow Development Associated with Normal Shock-Induced Separation	52
4.2 Pressures Associated with Separation	55
4.3 Extent of the Interaction Region	63
5. Flow Downstream of Finite Bodies and Reattachment	66
5.1 Basic Flow Models of Chapman and Korst	66
5.2 The Semi-empirical Analysis of Sirieix et Al.	73
5.3 'Exact' Methods	
6. Theoretical Prediction Methods	80
6.1 'Sustained' Adverse Pressure Gradients	81
6.1.1 Separation Criteria	81
6.1.2 Stratford's two-layer analysis	84
6.2 The Two-layer Analysis of Gadd [25] for Strong Shock-Boundary Layer Interactions	88
6.3 Prediction of Boundary Layer Properties in "Weak" Interactions	91
6.3.1 Extended-scale analysis	91
6.3.2 Discontinuity analysis	95
6.4 Prediction Methods for Interactions with Extended Regions of Separated Flow - Strong Interactions	99
7. Concluding Remarks	106
References	