

TABLE OF CONTENTS

	<u>Page</u>
TITLE PAGE	1
TABLE OF CONTENTS	2
LIST OF ILLUSTRATIONS	3
1. INTRODUCTION	5
2. RELAXATION METHOD APPLIED TO THE SMALL DISTURBANCE EQUATION	8
2.1 Introduction	8
2.2 Transonic Small Disturbance Theory	8
2.3 Finite Difference Method	14
2.4 Results	24
3. EXACT ISENTROPIC PROCEDURE IN TWO DIMENSIONS	29
3.1 Introduction	29
3.2 Steger and Lomax Procedure	31
3.3 Garabedian and Korn Procedure	32
3.4 Jameson Procedures	34
3.5 Jameson's Rotated Difference Scheme for Supersonic Regions	38
3.6 Results	41
4. AXISYMMETRIC FLOW	44
5. COMPARISONS WITH EXPERIMENT	45
5.1 Introduction	45
5.2 Viscous Effects	45
5.3 Wind Tunnel Wall Effects	51
6. SMALL DISTURBANCE PROCEDURE IN THREE DIMENSIONS	55
6.1 Introduction	55
6.2 Basic Formulation	55
6.3 Relaxation Procedure	58
6.4 Nonrectangular Planforms	59
6.5 Results	61
6.6 Swept Shock Waves	65
7. JAMESON'S EXACT ISENTROPIC PROCEDURE FOR YAWED WINGS	68
7.1 Introduction	68
7.2 Transformed Equation	69
7.3 Numerical Method	70
7.4 Results	71
8. CONCLUDING REMARKS	71
REFERENCES	74