TABLE OF CONTENTS

INTRODUCTION	1
PART I: FUTURE CANADIAN NEEDS FOR SURVEILLANCE	
Meeting Future Surveillance Needs for Defence	4 5 11 14
Civil Peacetime Value of Aerospace Surveillance of Aircraft and Surface Ships	16
Other Civil Peacetime Services Available from Aerospace Surveillance	21
Geographic Characteristics of Canada and of the Approaches to Canada	22
PART II: THE TECHNICAL CHARACTERISTICS OF THE MEANS OF SURVEILLANCE	
The Capabilities and Limitations of Surveillance Line of Sight Resolution and Field of View Detection of Colours, Heat, and Movement	24 24 27 30
The Capabilities and Limitations of Orbiting Satellites Ballistic Trajectories Satellite Paths as Seen from the Earth The Limited Manoeuvring Capability of a Satellite Summary Coverage of Canadian Territory by a Single Satellite	33 33 36 41 42 42
The Strengths and Weaknesses of Satellite Surveillance The Strengths and Weaknesses of Airborne Surveillance	48 48 50 50