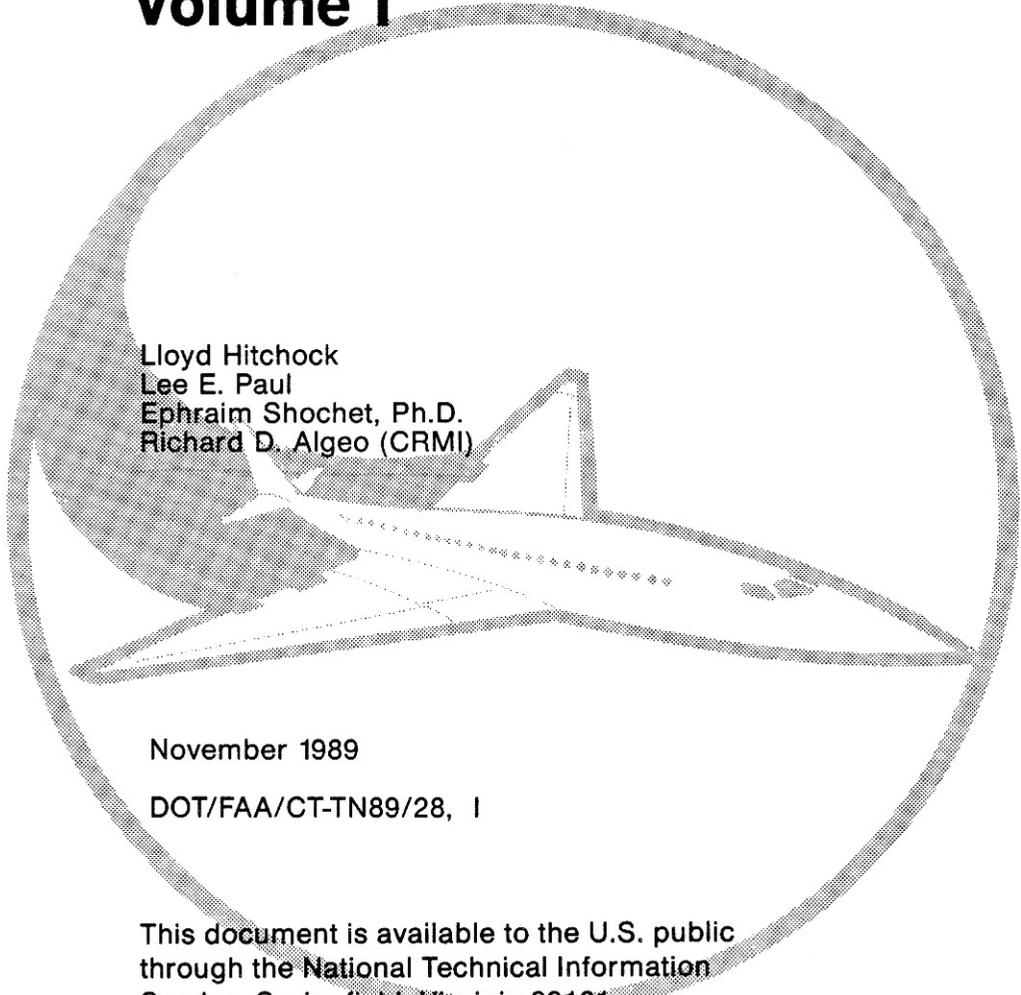


Dallas/Fort Worth Simulation Volume I



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November 1989

DOT/FAA/CT-TN89/28, I

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U.S. Department of Transportation
Federal Aviation Administration

Technical Center
Atlantic City International Airport, N.J. 08405

1. Report No. DOT/FAA/CT-TN89/28, I	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Dallas/Fort Worth Simulation		5. Report Date November 1989	
		6. Performing Organization Code ACD-340	
7. Author(s) Lloyd Hitchcock, Lee E. Paul, Ephraim Shochet, Ph.D., and Richard D. Algeo (CRMI)		8. Performing Organization Report No. DOT/FAA/CT-TN89/28, I	
9. Performing Organization Name and Address Federal Aviation Administration Technical Center Atlantic City International Airport, NJ 08405		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No. F2006C	
12. Sponsoring Agency Name and Address U.S. Department of Transportation Federal Aviation Administration National Airspace Capacity Staff Washington, DC 20590		13. Type of Report and Period Covered Technical Note	
		14. Sponsoring Agency Code ATO-20	
15. Supplementary Notes			
<p>16. Abstract</p> <p>At the request of the Director, Southwest Region, the Technical Center conducted a series of dynamic, real-time, air traffic control simulations of selected aspects of the D/FW Metroplex Air Traffic System Plan. Using D/FW controllers as subjects, the simulations provided an opportunity evaluate proposed changes in area flow patterns and traffic management and to experience simultaneous approaches to the four parallel runway configuration under consideration for D/FW. The results of these simulations demonstrated that, even when faced with up to twice their normal traffic load, the controllers could maintain a smooth and safe flow of traffic using the new configurations proposed for the D/FW area.</p> <p>The D/FW Evaluation Team declared that the "parallel arrival routes, separate altitudes for high performance turboprops, increased departure routes, and stratified sectors all proved to be valuable controller tools." In addition, simulation of the four simultaneous parallel approaches led the Evaluation Team to "enthusiastically endorse the concept of four simultaneous approaches to the D/FW airport" and to affirm that "in each and every case the concept proved to be safe" even though frequently challenged by the unlikely conditions of 30 degree blunders without communications.</p>			
17. Key Words D/FW Metroplex		18. Distribution Statement This document is available to the U.S. public through the National Technical Information Service, Springfield, VA 22161	
19. Security Classif. (of this report) UNCLASSIFIED	20. Security Classif. (of this page) UNCLASSIFIED	21. No. of Pages 149	22. Price

EXECUTIVE SUMMARY

The Federal Aviation Administration (FAA) Technical Center conducted a series of dynamic, real-time simulations of selected alternatives for the proposed traffic enhancement modifications for the Dallas/Fort Worth Airport complex as detailed in the D/FW Metroplex Air Traffic System Plan. A selected sample of the proposed modifications to the traffic patterns in the D/FW area was evaluated including the proposal to conduct simultaneous operations to the four parallel runways which have been proposed for D/FW. During the simulation, in order to exercise D/FW's proposal to conduct simultaneous approaches to four runways, selected aircraft were directed to deviate (blunder), in accordance with a structured scenario, from their assigned localizer paths by either 10, 20, or 30 degrees. Two thirds of these blundering aircraft were also designated to simulate a complete failure of their communication systems.

The results of these simulations demonstrated that, even when faced with up to twice their normal traffic load, the controllers of the D/FW facility could maintain a smooth and safe flow of traffic using the new configurations proposed for the D/FW area. In their summary report, the D/FW Evaluation Team declared that the "parallel arrival routes, separate altitudes for high performance turboprops, increased departure routes, and stratified sectors all proved to be valuable controller tools." In addition, simulation of the use of the four simultaneous parallel approaches to the proposed D/FW runway configuration led the Evaluation Team to "enthusiastically endorse the concept of four simultaneous approaches at the D/FW Airport" and to affirm that "in each and every case the concept proved to be safe" even though frequently challenged by the extremely unlikely conditions of 30 degree blunders without communications.