

## ABSTRACT

Accident Frequency Forecast for Commercial Barge Operations  
on the West Gulf Intracoastal Waterway. (May 1976)

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The growth of barge traffic on the inland waterways in general and the West Gulf Intracoastal Waterway in particular has created safety problems resulting from congestion and excessive traffic density patterns.

This study isolates the 683-mile West Gulf Intracoastal Waterway as a major hazard area of the inland waterway network and analyses historical traffic and accident trends to determine estimates of future safety parameters forecasted for the year 1980.

The "study route" is divided into four segments for comparative traffic and accident trend analysis. Traffic analyses of the four segments involve calculations of route capacities, route occupancies and lock capacities as well as historical patterns and projections of expected annual waterway use and measures of segment traffic densities.

A safety analysis of the waterway is performed. The analysis combines traffic volume trends with accident data to determine historical and forecasted accident frequency comparisons for the

four segments of the waterway. Two critical locations within the study route are identified and isolated for closer observation.

A parametric expression defined as the "casualty coefficient" is formed from measures of traffic density and accident frequency whose value responds to changes in navigation channel geometry. This expression forms the basis for recommendations for improving various segments of the waterway in order to reduce future expected accident frequencies forecast for the year 1980.