RIVIER COLLEGE MATH TEAM PARTICIPATES IN THE MATHEMATICAL MODELING CONTEST'2007

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Three of Rivier College's Undergraduate Math Majors, **Clare Burroughs**, **Sarah Blagdon**, and **Stacie Derderian** participated in the Mathematical Modeling Contest'2007 sponsored by COMAP, the Consortium for Mathematics and Its Applications (http://www.comap.com/undergraduate/contests/mcm/). Each team spends the contest weekend in February 2007 working on a real industrial problem. No outside assistance is allowed during the competition except for computer and library resources. Later in the spring, certificates are awarded noting Successful Participant, Honorable Mention, Meritorious, or Outstanding Winner as judged appropriate. This year the Rivier College Team was awarded Successful Participant.

The problem that the Rivier Team worked on was as follows:

Problem B: "*The Airplane Seating Problem*":

"Airlines are free to seat passengers waiting to board an aircraft in any order whatsoever. It has become customary to seat passengers with special needs first, followed by first-class passengers (who sit at the front of the plane). Then coach and business-class passengers are seated by groups of rows, beginning with the row at the back of the plane and proceeding forward.

Apart from consideration of the passengers' wait time, from the airline's point of view, time is money, and boarding time is best minimized. The plane makes money for the airline only when it is in motion, and long boarding times limit the number of trips that a plane can make in a day. The development of larger planes, such as the Airbus A380 (800 passengers), accentuate the problem of minimizing boarding (and deboarding) time.

- Devise and compare procedures for boarding and deboarding planes with varying numbers of passengers: small (85–210), midsize (210–330), and large (450–800).
- Prepare an executive summary, not to exceed two single-spaced pages, in which you set out your conclusions to an audience of airline executives, gate agents, and flight crews.

An article appeared in the NY Times, November 14, 2006, addressing procedures currently being followed and the importance to the airline of finding better solutions. The article can be seen at: http://travel2.nytimes.com/2006/11/14/business/14boarding.html."