

# Center for Engineering Logistics and Distribution (CELDi)

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Oklahoma State University, University of Oklahoma

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## Fleet Optimization

The Center for Engineering Logistics and Distribution (CELDi) has been conducting research on power forecasting and fleet location optimization with a member company called American Commercial Barge Lines (ACBL). Researchers on the project have optimized fleet scheduling in the Ohio River valley and the utilization of fleet locations in the Gulf of Mexico. The power-scheduling model currently being implemented at ACBL is expected to replace the manual methods currently used. Preliminary testing indicates that power requirements on the Ohio River may be drastically reduced. Specifically, it is anticipated that as much as one full boat can be removed from service on the river. The exact savings associated with a one-boat reduction are proprietary, but they easily exceed 10 times the investment for a CELDi membership. For more information, contact Don Taylor, University of Louisville Professor G. Don Taylor, Center Director at University of Louisville, 502-852-2741; Fax: 502-852-5633, e-mail: [don.taylor@louisville.edu](mailto:don.taylor@louisville.edu).

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## Airspace System Security

CELDi researchers are working with the FAA Logistics Center in Oklahoma City to model logistics systems under heightened National Airspace System (NAS) security requirements. This project resulted in the development and application of security procedures and technologies. In addition, an integral part of this project was to identify part numbers that are vulnerable to potential threats to the NAS. The algorithms developed provided benefits that yielded a pay back of less than two years. For more information, contact Tom Landers at [landers@ou.edu](mailto:landers@ou.edu) or Babur Pulat at [pulat@ou.edu](mailto:pulat@ou.edu) at the University of Oklahoma.

## Improved Production Line Performance

The Industry/University Cooperative Research Center for Engineering Logistics and Distribution (CELDi), involving the University of Arkansas, the University of Oklahoma, the University of Louisville, and Oklahoma State University, has made research advances that improve production line performance in processing industries. These results are applicable to many processing industries and in most cases produce significant cost savings. For example, using these advances, a food processing company (ConAgra) realized a productivity improvement of greater than 2 percent, resulting in an increase of 75,000 cases per year on two production lines and generating a savings of over \$1 million per year. In addition, through operational analysis studies, CELDi identified a significant improvement in sanitation procedures in this company, helping them reduce their environmental impact. For more information, contact Erhan Kutanoglu at [erhank@mail.utexas.edu](mailto:erhank@mail.utexas.edu) at the University of Texas or Earnest W. Fant at [erhank@mail.utexas.edu](mailto:erhank@mail.utexas.edu) at the University of Arkansas ([ewf@engr.uark.edu](mailto:ewf@engr.uark.edu)).