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Mrs. Roberta Spencer, Executive Director, System Dynamics Society  
Rockefeller College, 135 Western Ave., Milne 300, Albany, NY 12222  
Email: system.dynamics@albany.edu Phone: 518-442-3865

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### SYSTEM DYNAMICS SOCIETY

#### Membership and Subscription Form

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Membership includes a year's subscription to the Society's journal, the *System Dynamics Review*.

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Please return this form and your money order or check drawn on a U.S. bank made payable to System Dynamics Society. Mail to: John Wiley & Sons, Journals Administration, 1 Oldlands Way, Bognor Regis, West Sussex PO22 9SA, ENGLAND

## ***The Beer Game Instructions, Videotape, and Game Boards***

Together as a kit or each individually, the Beer Game essentials  
are available from:

Mrs. Roberta Spencer, Executive Director  
The System Dynamics Society  
Milne 300  
Rockefeller College  
University at Albany, State University of New York  
Albany, NY 12222

Phone: (518) 442-3865

FAX: (518) 442-3398

Email: [system.dynamics@albany.edu](mailto:system.dynamics@albany.edu)

Please contact Ms. Spencer for prices.

(Note: The instructions for running the Beer Game are on the  
WWW at:

<http://learning.mit.edu/pratool/beer.html>)

# System Dynamics: Follow-up Resources

**Prof. John Sterman**  
**Director, System Dynamics Group**  
**Sloan School of Management**  
**Massachusetts Institute of Technology**  
**Cambridge MA 02142**  
**617/253-1951 (voice) 617/258-7579 (fax) jsterman@mit.edu (e-mail)**

This document lists some resources available for people interested in system dynamics, simulation software, management flight simulators, journals, and other information about the development and application of dynamic modeling and systems thinking around the world.

## Software for Systems Thinking and Dynamic Modeling

**STELLA** and **iThink** run on Macintosh or IBM compatibles running Windows. Graphical user interface facilitates interactive modeling. Widely used for operational and strategic modeling. High Performance Systems, 45 Lyme Road, Ste 300, Hanover, NH 03755, 800/332-1202, fax: 603/643-9502. [www.hps-inc.com/hps.html](http://www.hps-inc.com/hps.html)

**DYNAMO** is a mainframe or IBM-PC based simulation language. Widely used in logistics, project management, and other corporate applications. Pugh-Roberts Associates, 41 William Linskey Way, Cambridge, MA 02142, 617/864-8880, fax: 617/864-8884.

**Powersim** is a powerful simulation environment with graphical interface. Includes arrays, OLE/DDE capability, "co-models," gaming and other features. Can incorporate multimedia. Windows only. Powersim Corporation, 1175 Herndon Parkway, suite 600, Herndon VA 22170, 703/476-4228, [powersim@powersim.com](mailto:powersim@powersim.com)

**Vensim** is a powerful simulation environment with graphical interface and innovative capabilities for statistical estimation and calibration of models with historical data. Also includes arrays, gaming, DDE, other features. Used in a variety of corporate and defense-industry applications, as well as large-scale macroeconomic modeling at MIT. Macintosh and Windows. A free version called **Vensim PLE** can be downloaded from the URL below. Ventana Systems, Inc., 60 Jacob Gates Road, Harvard, MA 01451, 508/456-3069. Web: [www.std.com/vensim](http://www.std.com/vensim)

## Publications and Other Resources:

### **System Dynamics Society and *System Dynamics Review***

Professional society of SD practitioners, academics, and users. Publishes the *System Dynamics Review* and membership directory; holds annual conferences. Membership includes subscription to the *System Dynamics Review*, published 4 times a year. The Review covers the theory and practice of system dynamics, with many applications to managerial issues. Membership: \$80; Student membership: \$40. Send dues to: Subscriptions Department, John Wiley & Sons, Ltd., Baffins Lane, Chichester, West Sussex, PO19 1UD, England. Web: [www.std.com/vensim/SDSOCIET.HTM](http://www.std.com/vensim/SDSOCIET.HTM)

**Publication List, System Dynamics Group, MIT.**

Current reprints and preprints available for a small cost from the System Dynamics Group; other information about systems thinking, journals, books, executive courses etc. Contact: Nan Lux, MIT, by email at: [nlux@mit.edu](mailto:nlux@mit.edu)

**The Beer Distribution Game Materials: Video, instructions, and game boards****NOTE: free instructions can be downloaded:****<http://learning.mit.edu/pratool/beer.html>**

The video, aired on the MacNeil/Lehrer News Hour in 1989, shows Professor Sterman of MIT leading the 'Beer Game', an interactive simulation of a company which shows how business cycles can occur. The Beer Game is widely used in business schools and corporations to help managers cope with the complexity of dynamic environments. The 12 minute video tape is used in the debrief session. Beer Game materials are available for a reasonable cost from Mrs. Roberta Spencer, Executive Director, System Dynamics Society, 300 Milne, Rockefeller College, Albany, NY 12222. Phone 518/442-3865. Email: [system.dynamics@albany.edu](mailto:system.dynamics@albany.edu)

**The Systems Thinker**

Newsletter covering principles and real-world applications of systems thinking and organizational learning. 10 times a year. Contact: Pegasus Communications, PO Box 120, Cambridge MA 02142. 617/576-1231; fax 617/576-3114.

**System Dynamics Email Discussion Group**

A moderated email discussion list on system dynamics is maintained by Bob Eberlein of Ventana Systems. For information, see < [www.std.com/vensim/SDMAIL.HTM](http://www.std.com/vensim/SDMAIL.HTM) >

**System Dynamics on the World Wide Web****MIT System Dynamics Group: [web.mit.edu/sdg/www](http://web.mit.edu/sdg/www)**

Publication list, working papers, research summaries for the members of the MIT group; links to other SD related sites

**15.874 System Dynamics for Business Policy: [web.mit.edu/15.874/www/](http://web.mit.edu/15.874/www/)**

The introductory course in system dynamics at MIT's Sloan School of Management; links to other SD resources

**System Dynamics in Education project: <http://sysdyn.mit.edu>**

Project at MIT system dynamics group developing curriculum material for K-12 and other educational settings. Current Project: The Road Maps series.

**System Dynamics Society: [www.std.com/vensim/SDSOCIET.HTM](http://www.std.com/vensim/SDSOCIET.HTM)**

Information on the Society and its journal, the System Dynamics Review

**System Dynamics Bibliography: [www.std.com/vensim/SDBIB.HTM](http://www.std.com/vensim/SDBIB.HTM)**

Downloadable bibliography of system dynamics work.

**System Dynamics conferences: [www.std.com/vensim/SDCONF.HTM](http://www.std.com/vensim/SDCONF.HTM)**

Access to virtual proceedings and conference information for the annual conference of the System Dynamics Society.



# *Announcing the* International Distribution of Management Flight Simulators

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\*\*\*\*\*

# **Management Flight Simulators Summary Sheet**

**U.S.A. Orders Only: Contact the office of Prof. John Sterman,  
Sloan School of Management**

**Massachusetts Institute of Technology**

**Cambridge MA 02142**

**617/258-5583 (voice) 617/258-7579 (fax) (e-mail) [jsterman@mit.edu](mailto:jsterman@mit.edu)**

**Non-U.S.A. Orders: Contact Phrontis Limited at <[t2@phrontis.demon.co.uk](mailto:t2@phrontis.demon.co.uk)>**

## **People Express Management Flight Simulator.**

Take the controls and 'fly' People Express Airlines from start-up to success...or bankruptcy. Used in Sloan's orientation program and by business schools and corporations around the world. Macintosh or IBM-compatibles running Windows (3.1 or Win 95)

## **B & B Enterprises ("Boom and Bust" Management Flight Simulator)**

Interactive management flight simulator for competitive strategy. Manage a new consumer durable product from launch through maturity. Includes realistic aspects of strategic settings including the learning curve, pricing, customer word of mouth, marketing, and a wily competitor. Macintosh or IBM-compatibles running Windows (3.1 or Win 95)

## **F & B Enterprises ("Food and Brands" Management Flight Simulator)**

Management flight simulator for competitive strategy in the consumer products industry. Manage a consumer brand through its life cycle by setting price and capacity, and using coupons, trade promotions, and advertising to gain competitive advantage. Like the B & B simulator the environment includes learning curves, pricing, customer word of mouth, marketing, and a wily competitor. Macintosh only.

## **Commercial Real Estate Management Flight Simulator**

Manage a real estate portfolio in a turbulent market. Can you stay cool through times of boom and bust, or will you be the next Donald Trump? Focuses on risk management and investment strategy for cyclical markets. Macintosh only.

## **International Oil Tanker Management Flight Simulator**

The market for oil tankers is one of the most volatile in the world - tanker rates can change by a factor of five in a few months. Can you sail your fleet to a safe financial harbor through such dangerous seas? Focuses on investment strategy for cyclical markets. Macintosh only.

## **Beer Distribution Game**

Board game simulating the production and distribution of a product. Widely used at all levels of management for team building and to develop awareness of systems issues. A computer-based management flight simulator of the game is now available (Macintosh only). The computer version is a complement to, not a substitute for, the board game.

## People Express Management Flight Simulator

In April 1981, People Express Airlines was launched – and a business phenomenon took off. By the beginning of 1986, People Express had grown to be the fifth largest airline in the United States, and had revenues of about \$1 *Billion* per year. Its innovative management style and structure were praised as the wave of the future, and companies around the world rushed to imitate them. Yet by September of 1986, People Express was nearly bankrupt, and was acquired at the last minute by Texas Air.

What went wrong?

The *People Express* Management Flight Simulator gives you the opportunity to find out by 'flying' the company yourself. The simulator functions just as an aircraft simulator does. You will take command of the firm and pilot it from startup to success. Each simulated time period you will make strategic and operational decisions, and receive feedback from your past decisions. You decide how fast to grow, how to set prices, how aggressively to advertise. Your hiring policies will influence morale, productivity, and turnover; your marketing efforts will shape the growth of demand; your competitors will fight back. You may face financial crisis or unexpected opportunity. You may go bankrupt, or grow to dominate the industry. But there is no winning or losing. The purpose of the simulator is to give you insight into the issues raised by the case; to illustrate the difficulties of coordinating operations and strategy in a growth market; and to understand the dynamic interconnections among a firm, its market, and its competitors. The flight simulator is a laboratory in which you can systematically explore the consequences of different strategies without risking the fortunes of the real enterprise.

The simulator is used successfully for management education and training at the Sloan School of Management at MIT and many other universities and companies. It is extremely easy to use, requiring little or no training. The simulator can be used in courses on strategy, operations, human resource management, organizational behavior, simulation, and operations research. It is effective as an introduction to principles of management, or as an integrative experience.

**Hardware Requirements:** The People Express Management Flight Simulator runs on the Macintosh family of computers, from the Mac Classic up, including Powerbooks and Power Macs. It is System 7 and 7.5 compatible. It requires only 400K bytes of RAM. The People Express Management Flight Simulator is also available for IBM Compatibles running Windows version 3.1. It runs on systems with at least 4 MByte RAM. The software comes complete (no other applications are needed), and includes comprehensive documentation and instructions, a case study of People Express as background, and historical data on the company.

**Prices:** \$50 (educational and non-profit), \$90 (all others), plus \$5 shipping and handling. Order form on reverse. Quantity discounts, site licenses and other simulation games are available. Order form, see next page. Call or write for information:

Prof. John Sterman  
MIT Sloan School of Management  
50 Memorial Drive, E53-351  
Cambridge, MA 02142

617/2531951  
FAX 617/258-7579  
jsterman@mit.edu

# People Express Management Flight Simulator

## ORDER FORM

**Hardware Requirements:** *The People Express Management Flight Simulator* runs on the Macintosh family of computers, from the Mac Classic up, including Powerbooks and Power Macs. It is System 7 and 7.5 compatible. It requires only 400K bytes of RAM. The People Express Management Flight Simulator is also available for IBM Compatibles running Windows version 3.1. It runs on systems with at least 4 MByte RAM. The software comes complete (no other applications are needed), and includes comprehensive documentation and instructions, a case study of People Express as background, and historical data on the company.

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	<i>People Express Management Flight Simulator, v. 1.03</i> (\$50 for academic and non-profit customers, \$90 all others)	\$
	Postage and Handling	5.00

\_\_\_\_ Macintosh or \_\_\_\_\_ IBM Compatibles running Windows '95

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Asst.to Prof. John Sterman

617/258-5583

MIT Sloan School of Management

FAX 617/258-7579

E53-350 MIT

Email:

jsterman@mit.edu

Cambridge, MA 02142

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## **B & B Enterprises Management Flight Simulator**

Boom and bust is a pervasive dynamic for new products. Sales of new products often grow explosively as word of mouth, advertising, and falling prices attract new buyers. New producers tend to enter the market. But eventually the market saturates and sales fall, often just as capacity is growing the most rapidly. The all-too-frequent result is excess capacity, a price war, huge losses, and the failure of leading firms. The boom and bust dynamic appears in diverse industries, including personal computers, consumer electronics, toys and games, recreational equipment, and semiconductors, to name a few.

How does boom and bust arise? And why is it so persistent? What prevents companies from learning from the mistakes of others and smoothing out the roller-coaster of new product life cycles? The B & B Enterprises Management Flight Simulator creates a learning laboratory to explore these issues.

Players take the role of top management of B & B Enterprises, a fictitious firm based on a variety of real cases. The game begins as a new product is launched. Players are responsible for marketing, pricing, and capacity expansion decisions to maximize their cumulative profit over the next 40 quarters. The potential market is large, but as in real life key attributes of the market, including its size and price elasticity, consumer responsiveness to word of mouth, repurchase behavior, and other customer attributes, are unknown. The player also faces a simulated competitor whose pricing, marketing, and capacity expansion strategies are likewise unknown. The game illustrates fundamental principles of corporate strategy including the learning curve, time delays in capacity expansion, competitive dynamics, and market saturation.

The game can be used alone or in conjunction with a wide range of cases. The strategic environment captured in the game is particularly applicable to consumer durables, toys and games, fashions, fads, and other products that experience rapid growth and saturation. Consumer electronics such as video games, personal computers, CB radios, and VCR's; durables such as 10 speed bicycles and chain saws; toys and games such as LazerTag and Trivial Pursuit; and even fad products such as wine coolers or fashion watches all exemplify the dynamics captured in the game. B & B focuses on the effective management of the life cycle of a new product, and allows the player to experience issues such as competitive strategy, coordination of pricing, marketing, and capacity acquisition. The game is currently in use at MIT's Sloan School and in a number of other universities and companies around the world. As product life cycles continue to shorten the dynamics exemplified in the game become more and more relevant.

B & B Enterprises runs on the Macintosh family of computers, from the Mac Classic up, including Powerbooks and Power Macs. It is System 7 and 7.5 compatible. It requires only 400K bytes of RAM, and runs in color on color machines. B & B Enterprises is also available for IBM Compatibles running Windows version 3.1. It runs on systems with at least 4 MByte RAM. The software comes complete (no other applications are needed), and includes a User's Guide and Instructor's Manual.

**Prices:** \$50 (educational and non-profit), \$90 (all others), plus \$5 shipping and handling. Order form on reverse. Quantity discounts, site licenses and other simulation games are available. See order form on next page. Call or write for information:

Professor John D. Sterman  
Sloan School of Management, E53-351  
Massachusetts Institute of Technology

Fax: 617/258-7579  
50 Memorial Drive  
Cambridge, MA 02142

# B & B Enterprises Management Flight Simulator

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_____	<i>B &amp; B Enterprises</i> (\$55 for academic and non-profit institutions, \$95 all others)	\$_____
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\_\_\_\_\_ Macintosh or \_\_\_\_\_ IBM Compatibles running Windows 3.1 & Windows '95

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MIT Sloan School of Management

FAX 617/258-7579

E53-350 MIT

Email: jsterman@mit.edu

Cambridge, MA 02142

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# The Beer Distribution Game Management Flight Simulator

Our increasingly interconnected and dynamic world challenges managers to find new ways to understand and control change. The accelerating rate of technological, organizational, and social change means managers are faced with situations that are in many ways new, and must increasingly deal with the unexpected. Managers are not alone in facing such daunting tasks. Modern society is built upon systems of enormous complexity, from nuclear power plants to jumbo jets. A pilot, for example, must also control a system of great complexity and be prepared for the unexpected. There is, however, one significant difference between the pilot of a jet and the manager of a business. No airline would dream of sending a pilot up in the real thing before they had had extensive training in a flight simulator on the ground. The simulator allows the pilot to learn, to make mistakes, to experience the unexpected without risk to passengers or aircraft. Yet managers are expected to fly their organizations into unknown skies with their only training being management 'ground school' or experience as junior crew members.

This management flight simulator is based on the manual version of *The Beer Distribution Game*. In the manual game, teams of participants manage each level of the distribution chain. There are four levels in the system - Retailer, Wholesaler, Distributor, and Factory. Each week, the players at each level receive shipments of beer from their suppliers, fill as much of their customers' orders as possible from their inventory, and place new orders for beer with their supplier. Their goal is to keep company costs as low as possible while meeting customer demand.

*The Beer Distribution Game* Management Flight Simulator gives you the opportunity to 'fly' a company yourself. The simulator functions just as an aircraft simulator does. You will take command of a firm and pilot it from start up to success. Each simulated time period you will make operational decisions and receive feedback from your past decisions. You may be surprised by side effects and delayed consequences of your own decisions. But there is no winning or losing. The purpose of the simulator is to give you insight into the behavior of a distribution system and to illustrate the difficulties of developing a robust strategy for managing even a very simple system. More fundamentally, the flight simulator is a laboratory in which you can systematically explore the consequences of various strategies without risking the fortunes of the real enterprise.

*The Beer Distribution Game* is not about and does not promote beer or drinking. It is about the dynamics of supply chains and teaches principles for effective management. The beer distribution system is chosen only as a representative instance among a wide variety of products and systems to which the lessons of this simulator are applicable.

**Hardware Requirements:** The Beer Distribution Game Management Flight Simulator runs on the Macintosh family of personal computers, from the Mac Classic up, including Powerbooks. It is System 7 and 7.5 compatible. It requires only 800K bytes of RAM, and runs in color on color machines. The simulator includes a User's Guide and Instructor's Manual.

**Prices:** \$50 (educational and non-profit), \$90 (all others), plus \$5 shipping and handling. Order form on

reverse. Quantity discounts, site licenses and other simulation games are available. See order form on next page. Call or write for information:

Professor John D. Sterman

Fax: (617) 258-7579

Sloan School of Management, E53-351, Massachusetts Institute of Technology  
50 Memorial Drive, Cambridge, MA 02142

# The Beer Distribution Game Management Flight Simulator

## ORDER FORM

*The Beer Distribution Game* is a Board game simulating the production and distribution of a product. It is widely used at all levels of management for team building and to develop awareness of systems issues. A computer-based management flight simulator of the game is now available (**Macintosh only**). The computer version is a complement to, not a substitute for, the board game.

**Hardware Requirements:** The *Beer Distribution Game* Management Flight Simulator runs on the Macintosh family of personal computers, from the Mac Classic up, including Powerbooks. It is System 7 and 7.5 compatible. It requires only 800K bytes of RAM. It is ready to run and requires no other software. It includes a User's Guide and Instructor's Manual. **NOTE: Available only for Macintosh computers!**

**Ship To** (please type or print clearly):

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Email: jsterman@mit.edu

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## **F & B Enterprises Management Flight Simulator**

The F & B Enterprises Management Flight Simulator gives you the opportunity to 'pilot' a company from start up to success. Each simulated time period you will make strategic and operational decisions, and receive feedback from your past decisions. You will decide how fast to grow, how to set prices, and how aggressively to market. Your policies will shape the growth of demand and the way your competitors fight back. You may be surprised by side effects and delayed consequences of your own decisions. You may face financial crises or unexpected opportunities. You may go bankrupt, or grow to dominate the industry. But there is no winning or losing. The purpose of the game is to to give you insight into the issues raised by the particular case; to illustrate the difficulties of coordinating operations and strategy in a growth market; and to understand the dynamic interconnections among a firm, its market, and its competitors.

F & B Enterprises provides an experiential introduction to issues in corporate strategy, marketing, competitive analysis, and decision making. The game focuses on the management of a packaged goods product through its complete life cycle, from launch through maturity. Players take the role of top management of F & B Enterprises, a fictitious food and beverage manufacturer. The game begins as a new product is launched, and players are responsible for making marketing, pricing, and capacity expansion decisions to maximize their cumulative profit over the next 40 quarters. The player also faces a computer simulated competitor whose pricing, marketing, and capacity expansion strategies are likewise unknown. The game illustrates fundamental principles of strategy including the learning curve, time delays in capacity expansion, competitive dynamics, market saturation, and so on.

The game software consists of three parts: the microworld, the information system, and the game controls. The microworld is a mathematical model which represents the structure of F & B, including operations, capacity acquisition, the financial system, the market and customer base, competition, and so on. This model will generate dynamics over time as you make decisions. The information system reports to you the current state of the system and allows you to review the history of the firm. For example, you will be able to monitor the financial performance of your firm quarter by quarter, and receive reports on operations, human resources, the competition, etc. The controls allow you to make strategic and operational decisions to achieve your goals.

\* The Microworld: At the heart of the game lies a microworld or simulation model of the firm and its environment. The model has been extensively tested and calibrated. However, like any model, it is a simplification of reality and omits certain factors and details.

# F & B Enterprises Management Flight Simulator

## ORDER FORM

F & B Enterprises a product life cycle simulation Portraying the launch, growth, maturity and decline of a consumer product such as a food or beverage brand product. It's been tested extensively with students and managers and is being used by a number of major corporations.

**Hardware Requirements:** *F & B Enterprises* runs on Apple **Macintosh computers only**, from the Mac Classic up, including Powerbooks. It is System 7 and 7.5 compatible. It requires only 800K bytes of RAM, and runs in color on color machines. The software comes complete and ready to run (no other applications are needed), and includes a User's Guide and Instructor's Manual. **NOTE: Macintosh computers only!**

**Ship To** (please type or print clearly):

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<b>Quantity:</b>	<b>Item:</b>	<b>Amount:</b>
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Cambridge, MA 02142

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## Commercial Real Estate Management Flight Simulator

Our increasingly interconnected and dynamic world challenges managers to find new ways to understand and control change. The accelerating rate of technological, organizational, and social change means managers are faced with situations that are in many ways new, and must increasingly deal with the unexpected. Managers are not alone in facing such daunting tasks. Modern society is built upon systems of enormous complexity, from nuclear power plants to jumbo jets. A pilot, for example, must also control a system of great complexity and be prepared for the unexpected. There is, however, one significant difference between the pilot of a jet and the manager of a business. No airline would dream of sending a pilot up in the real thing before they had had extensive training in the flight simulator on the ground. The simulator allows the pilot to learn, to make mistakes, to experience the unexpected without risk to passengers or aircraft. Yet managers are expected to fly their organizations into unknown skies with their only training being management 'ground school' or experience as junior crew members.

**The Real Estate Management Flight Simulator** gives you the opportunity to 'fly' a company yourself. The simulator functions just as an aircraft simulator does. You will take command of a firm in the volatile market for office buildings industry and pilot it from startup to success. You will decide how many existing buildings to buy or sell and how many new permits to request from City Hall. You may face financial crises or unexpected opportunities. You may go bankrupt, or grow to dominate the industry. But there is no winning or losing. The purpose of the simulator is to give you insight into the issues raised by the particular case; to illustrate the difficulties of investing in a volatile market; and to understand the dynamic interconnections among your firm, its market, and its competitors. More fundamentally, the flight simulator is a laboratory in which you can systematically explore the consequences of various strategies without risking the fortunes of the real enterprise.

Most of all, enjoy yourself. Experiment. The first time or two you will want to try to succeed using the strategies you think best. In later trials you may wish to vary systematically aspects of your strategy to identify high-leverage policies. Don't worry if you bankrupt the company. The beauty of a simulator is that you can 'crash' as many times as you wish and walk away every time. Indeed, most of the time real pilots spend in simulators is spent in extreme conditions. You can learn more from piloting the aircraft through rough weather, poor visibility, and with unexpected mechanical failures than in clear skies. Most of your learning will come from understanding what goes wrong. Have fun; you are cleared for takeoff.

# Commercial Real Estate Management Flight Simulator

## ORDER FORM

Commercial Real Estate Management Flight Simulator is a product life cycle simulation including the launch, growth, maturity and decline of the product. It's been tested extensively with students and managers and it's actually being used now by a number of major corporations.

**Hardware Requirements:** *Commercial Real Estate Management Flight Simulator* runs on Apple **MACINTOSH COMPUTERS ONLY**, from the Mac Classic up, including Powerbooks. It is System 7 and 7.5 compatible. It requires only 400K bytes of RAM, and runs in color on color machines. The software comes complete and ready to run (no other applications are needed), and includes a User's Guide and Instructor's Manual.

**NOTE: Available for Macintosh Computers only!**

**Ship To** (please type or print clearly):

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<u>Quantity:</u>	<u>Item:</u>	<u>Amount:</u>
_____	<i>Commercial Real Estate Management Flight Simulator</i> (\$55 for academic and non-profit institutions, \$95 all others)	\$ _____

**TOTAL ENCLOSED:** \$ \_\_\_\_\_

**Make checks payable to "MIT"** drawn in US dollars on a **US bank**. Mail to:

Assistant to Prof. Sterman

617/258-5583

MIT Sloan School of Management

FAX 617/258-7579

E53-350 MIT

Email:

jsterman@mit.edu

Cambridge, MA 02142

Sorry....No credit card orders!

## The Oil Tanker Management Flight Simulator

Our increasingly interconnected and dynamic world challenges managers to find new ways to understand and control change. The accelerating rate of technological, organizational, and social change means managers are faced with situations that are in many ways new, and must increasingly deal with the unexpected. Managers are not alone in facing such daunting tasks. Modern society is built upon systems of enormous complexity, from nuclear power plants to jumbo jets. A pilot, for example, must also control a system of great complexity and be prepared for the unexpected. There is, however, one significant difference between the pilot of a jet and the manager of a business. No airline would dream of sending a pilot up in the real thing before they had had extensive training in the flight simulator on the ground. The simulator allows the pilot to learn, to make mistakes, to experience the unexpected without risk to passengers or aircraft. Yet managers are expected to fly their organizations into unknown skies with their only training being management 'ground school' or experience as junior crew members.

**The Oil Tanker Management Flight Simulator** gives you the opportunity to 'fly' a company yourself. The simulator functions just as an aircraft simulator does. You will take command of a firm in the volatile international shipping industry and pilot it from startup to success. You will decide how many existing tankers to buy or sell and how many new tankers to order from shipyards. You may face financial crises or unexpected opportunities. You may go bankrupt, or grow to dominate the industry. But there is no winning or losing. The purpose of the simulator is to give you insight into the issues raised by the particular case; to illustrate the challenges of investing in a volatile market; and to understand the dynamic interconnections among your firm, its market, and its competitors. More fundamentally, the flight simulator is a laboratory in which you can systematically explore the consequences of various strategies without risking the fortunes of the real enterprise.

Most of all, enjoy yourself. Experiment. The first time or two you will want to try to succeed using the strategies you think best. In later trials you may wish to vary systematically aspects of your strategy to identify high-leverage policies. Don't worry if you bankrupt the company. The beauty of a simulator is that you can 'crash' as many times as you wish and walk away every time. Indeed, most of the time real pilots spend in simulators is spent in extreme conditions. You can learn more from piloting the aircraft through rough weather, poor visibility, and with unexpected mechanical failures than in clear skies. Most of your learning will come from understanding what goes wrong. Have fun; you are cleared for takeoff.



# The Oil Tanker Management Flight Simulator

## ORDER FORM

International Oil Tanker Management Flight Simulator a product life cycle simulation including the launch, growth, maturity and decline of the product. It's been tested extensively with students and managers and it's actually being used now by a number of major corporations.

**Hardware Requirements:** *International Oil Tanker Management Flight Simulator* runs on Apple **MACINTOSH COMPUTERS ONLY**, from the Mac Classic up, including Powerbooks. It is System 7 and 7.5 compatible. It requires only 400K bytes of RAM, and runs in color on color machines. The software comes complete and ready to run (no other applications are needed), and includes a User's Guide and Instructor's Manual.  
**NOTE: Available for Macintosh Computers only!**

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\_\_\_\_\_ International Oil Tanker Management Flight Simulator

\$55 for academic and non-profit institutions, \$95 all others	\$ _____
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**TOTAL ENCLOSED:** \$ \_\_\_\_\_

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