FOR BUSINESS SCHOOLS · READY TO TEACH

Run an airline, see the business

Homework students can’t hand to AI. Pick a week’s topic, students run an airline, and they explain decisions only they made: pricing, cost, capacity, risk and competition.

Juan Fernando Juliao · maydaycontrol.com



THE AI HOMEWORK PROBLEM

Every student has AI. This homework still has to be their own.

THEIR OWN NUMBERS

Questions arrive filled in

When a simulation ends, each question carries that student’s own figures: their fare change, their cash, their worst round. A generic AI answer does not fit.

THEIR OWN DECISIONS

Explain the why

Students apply the week’s concept to choices only they made. AI can polish the wording, but it cannot invent the decisions.

CHECKABLE

Matched to the record

Each answer sits next to the student’s simulation summary, so the instructor can check it against what actually happened.

Every week: play, then explain your own results with that week’s concept. An MBA economics professor saw this as his answer to AI-written homework.

PLUG AND PLAY

Ready to teach: nothing to build, nothing to write from scratch

1

Plan

Copy a sample course plan from the catalog and adjust any week, or build a custom program around your syllabus with us.

Once per course

2

Week

Choose this week’s topic. Its features switch on and off to match, so students focus on one concept.

One click a week

3

Limit

A 30 to 120 minute clock for a class session, or a number of rounds for homework.

Fits your schedule

4

Play

Students play alone against computer airlines, in teams on one laptop, or against each other online.

In class or at home

5

Grade

Built-in questions with each student’s numbers, a guide to a strong answer, a score and a CSV export.

On the class page

A custom program: send your syllabus topics to support@maydaycontrol.com and we build the weeks with you. **See it in 3½ minutes:** the instructor’s guide video at maydaycontrol.com.

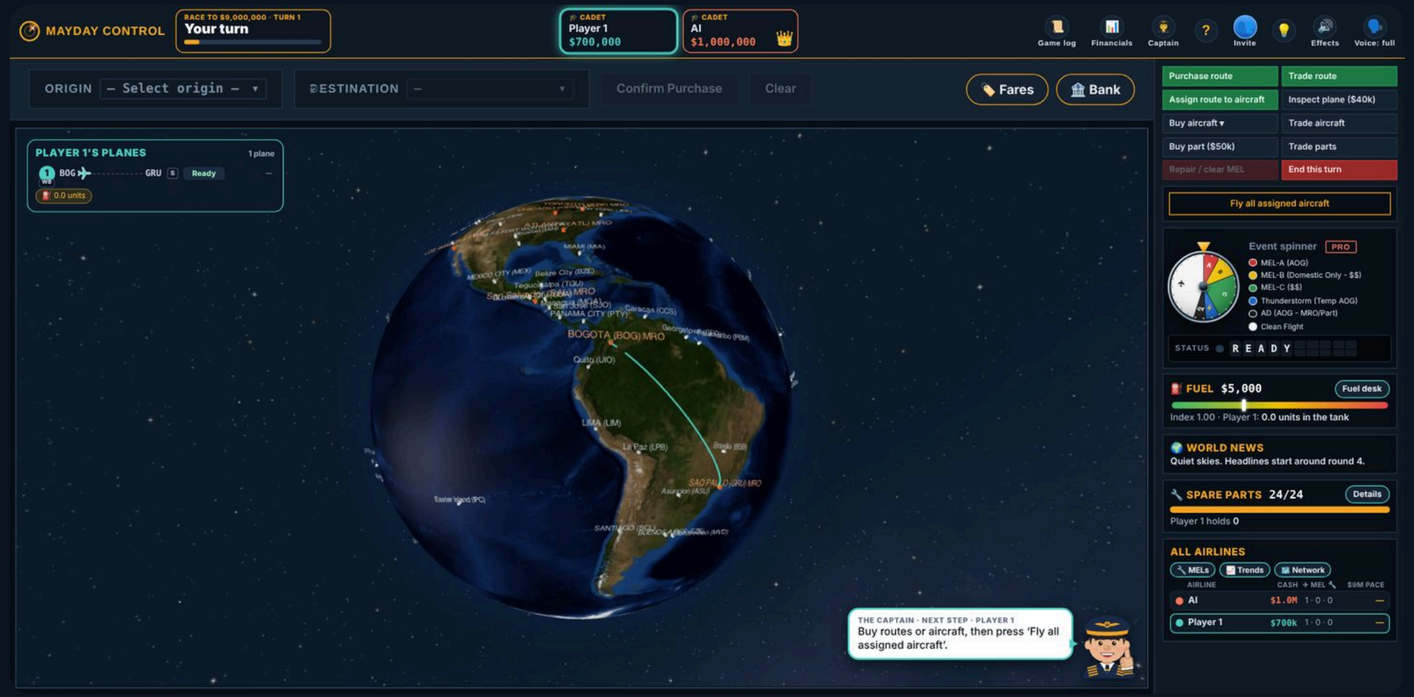
ACROSS THE CURRICULUM

One simulation, many business courses

Course	Concepts	What students do in Mayday Control
Managerial economics	Demand, elasticity, market power, oligopoly	Set fares by route; compete on price with rival airlines at shared cities
Operations management	Capacity, reliability, scheduling	Assign aircraft, defer or fix defects, keep the fleet flying through storms and groundings
Supply chain	Scarcity, inventory, lead time	Buy spare parts from a shared warehouse whose price rises as stock runs out
Finance and accounting	Statements, leverage, hedging	Read a P&L for every plane, borrow from the bank, lock fuel prices
Strategy	Networks, entry, auctions, negotiation	Build hubs and feeder routes, bid for sponsorship deals, trade with rivals
Risk and analytics	Uncertainty, scenario thinking, data	React to world news and disruptions; analyze every round in Excel

THE SIMULATION IN ONE MINUTE

Students run an airline against rival airlines



EVERY TURN

Buy routes and aircraft, set fares, buy fuel and parts, borrow, repair. Each choice has a price and an opportunity cost.

EVERY RESULT

Each plane has its own profit and loss. Financial statements export to Excel.

Browser based, no install. Quick Start takes about 6 minutes; Standard and Pro are full simulations with computer or human rivals.

HOW IT WORKS

How one turn works



The Standard screen: planes on the left, the 3D globe under a real star sky, race and airline cards on top, fuel, parts and rivals on the right

How to play in 8 languages: maydaycontrol.com/howto.html

1 Buy what your cash allows

Routes ($15k to $100k), a widebody ($400k) or narrowbody ($150k), spare parts (from $50k), repairs, inspections, fuel, trades and bank loans. Every plane costs to run each turn.

2 Fly

Press Fly all: every plane flies its own route. Narrowbodies feed the hubs; longer routes pay more.

3 Spin the event wheel

On hub-to-hub flights, six outcomes decide whether the flight is clean, restricted or grounded. A departures-style board shows the result.

4 Resolve the result

Fly to an MRO station and use a spare part to clear the fault, or sit grounded.

Try the guided tour

Realism: the event wheel

The six segments mirror real maintenance practice. Each flight ends with a spin.

Segment	What it represents	Effect in the simulation
White	Clean flight	Full revenue
Red: MEL-A	Deferral category A, aircraft on the ground (AOG)	No revenue; may only fly toward an MRO
Yellow: MEL-B	Deferral category B	Same-continent routes only, 50% revenue
Green: MEL-C	Deferral category C	Half revenue
Blue	Severe thunderstorm	Grounded for a turn, $50k fee
Black	Airworthiness directive	Diverted to an MRO, no pay, $50k clearing fee

Each slice carries a symbol (A, B, C, a lightning bolt for the storm, AD, a plane for a clean flight). When the wheel stops, the winning slice lights up and a split-flap **status board** flips its letters like an airport departures board: CLEAN 100%, MEL-B 50%, MEL-A AOG, STORM HOLD, AD DIVERT.



The wheel stops, the slice lights up, the board flips

Teaching point: an open fault stays on the aircraft until it is repaired, and faults stack: the worst one sets what the aircraft may do. The report tracks revenue lost to a fault left open from an earlier spin, so students learn when to pay now and when to defer.

ECONOMICS · SUPPLY, DEMAND AND SCARCITY

Demand shifts and scarcity show up in the price

DEMAND SHIFTS · WORLD NEWS (PRO)

Headline, announced a round ahead	Route pay
Regional boom	+25%
Regional slump	−20%
Conflict	−40%
Natural disaster	−50%
Pandemic (rare, worldwide)	−35%

Students decide whether to move planes toward the boom or ride out the slump.

SCARCITY · SPARE PARTS

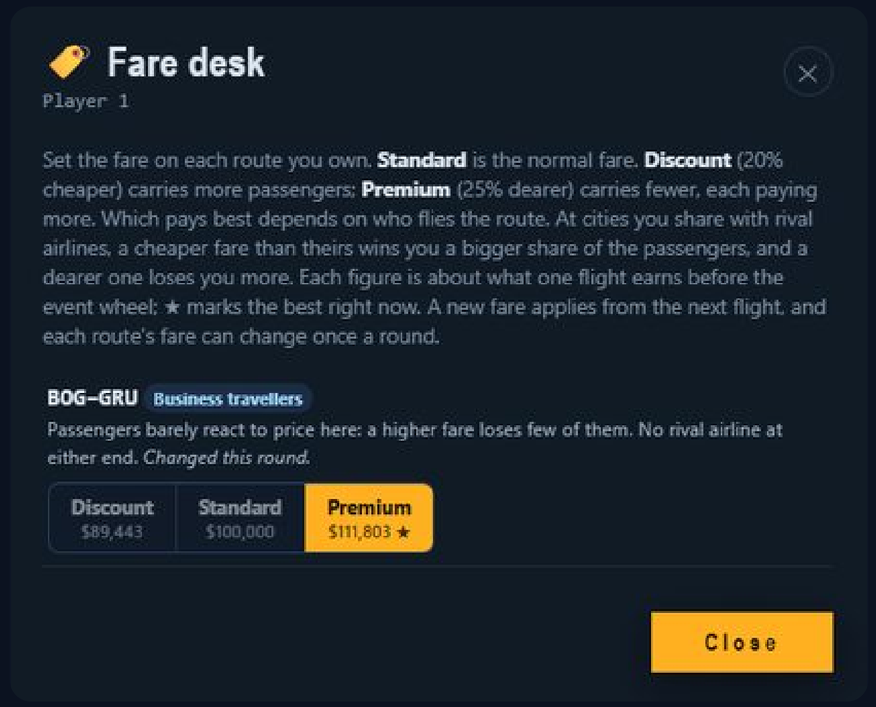
One shared warehouse of parts for all airlines: 40 in Standard, 24 in Pro. The price rises as stock runs out, so buying early is a bet on rivals' demand.

OPPORTUNITY COST · CASH

A $400k widebody, two narrowbodies, or routes and parts: every dollar has another use, and the race counts cash minus debt.

PRICING · DEMAND ELASTICITY · NEW IN PRO

The Fares desk: the right price depends on elasticity



Revenue = P × Q ∝ P^(1 − e)

Route (travellers)	e	Discount −20%	Premium +25%	Best alone
Long hub-to-hub (business)	0.5	−10.6%	+11.8%	Premium
Other hub-to-hub (business)	0.7	−6.5%	+6.9%	Premium
Longer regional (leisure)	1.0	0%	0%	Any
Short regional (leisure)	1.15	+3.4%	−3.3%	Discount

Revenue per flight compared with the Standard fare, with no rival at either city. Inelastic demand rewards a higher price; elastic demand rewards a lower one.

OPERATIONS · PRODUCTION AND COST

Fixed cost, running cost and the value of a network

FIXED COST

$400k

A widebody for hub-to-hub routes. A narrowbody costs $150k. Routes are bought once.

COST PER TURN

$20k

Running cost of a widebody each turn ($6k for a narrowbody), plus fuel, inspections ($40k in Pro) and repairs.

ECONOMIES OF SCOPE

50 → 100%

A hub-to-hub flight pays half with no feeder routes at its hub, and in full with four, flown by one narrowbody.

A marginal question students can answer from their own data: is a $150k narrowbody worth $6k a turn if it lifts every flight out of a hub from 75% to 100%?

Market power lasts until a rival enters the city

ALONE AT BOTH CITIES

Pricing power

Each route belongs to one airline. With no rival at either end, a business route earns 11.8% more at Premium: $100,000 becomes $111,803 a flight.

ENTRY

Each rival takes a share

Every rival airline at either end city takes about 25% of the route’s pay at equal fares. More rivals push pay per flight toward running cost.

DISCUSSION

When a rival enters your hub, do you match its fare, undercut it, or move your aircraft to a city you have to yourself?

STRATEGY · OLIGOPOLY AND GAME THEORY

Students play the oligopoly, not just read about it

When two airlines share a city, each one’s best fare depends on the other’s. The Fares desk makes that interdependence a decision every round.

GAME THEORY · THE SIMULATION’S OWN PAYOFFS

On a hub-to-hub route, a fare war is a prisoner’s dilemma

	Rival: Discount	Rival: Standard	Rival: Premium
You: Discount	**70 · 70** Equilibrium	77 · 65	82 · 59
You: Standard	65 · 77	75 · 75	82 · 70
You: Premium	59 · 82	70 · 82	**80 · 80** Best for both

Discount is each airline’s best reply to a rival on Discount or Standard, so both end at 70.

Both on Premium would earn 80, but each is tempted to undercut.

Pay per flight as a % of a Standard flight with no rival (you · rival). Two airlines sharing one city, business demand (e = 0.7).

GAME THEORY · SAME RULES, DIFFERENT MARKETS

Elasticity decides how the airlines compete

LONG HUB-TO-HUB · e = 0.5

A coordination game

Matching the rival’s fare is always the best reply. All three pairs are equilibria; both on Premium pays most (84 each vs 67 on Discount).

OTHER HUB-TO-HUB · e = 0.7

A prisoner’s dilemma

Undercutting pays for each airline, so both land on Discount at 70, below the 80 they could earn together on Premium.

SHORT REGIONAL · e = 1.15

Discount dominates

Leisure travellers respond so strongly that Discount is best whatever the rival does, and it grows the market for both (78 vs 75).

The computer airlines reprice every round. Each picks its best reply to the fares it sees; bold rivals lean to Discount, careful ones to Premium.

PRICING · SEEING THE RESULT

Every fare decision shows up in the numbers



ROUNDS 5–7

Premium on hub-to-hub routes: about 10% fewer passengers, yet more revenue. Inelastic demand at work.

ROUND 8 ON

Discount on the regional feeders: about 16% more passengers and still more revenue. Elastic demand rewards the lower price.

IN CLASS

Students bring this chart from their own simulation and explain each bar with the course’s concepts.

MACROECONOMICS AND FINANCE

The economy around the airline moves too

BUSINESS CYCLES

Booms and slumps

Regional booms and slumps, and a rare pandemic that cuts every route by 35%: a demand shock students must ride out.

CAPITAL

Interest rates

Borrow up to half of what the airline owns, at 5% a turn in Standard or 8% in Pro. The race counts cash minus debt.

COST SHOCKS

Cost shocks

Fuel prices move every round. In Pro, a hedging desk offers tank buys and fixed-price contracts.

INTERNATIONAL

A global network

Routes span continents, and news hits one region at a time, so diversification matters.

BEYOND ECONOMICS

One simulation for operations, finance and strategy

OPERATIONS AND SUPPLY CHAIN

Keep the fleet flying

Defer a minor defect or fix it now, find a maintenance station, hold spare parts or risk a grounding.

FINANCE AND ACCOUNTING

Read the numbers

Income statement, balance sheet and a profit and loss for every plane; loans and fuel hedging.

STRATEGY

Choose where to compete

Hubs and feeder networks, entry into rivals’ cities, sealed-bid auctions and trades between airlines.

ANALYTICS

Learn from the data

Every round exports to Excel; the comparison view explains each turn in every airline’s cash.

HOW IT CAN RUN IN A COURSE

Three ways to use it, from one session to a graded week

IN CLASS · ONE SESSION

Against the clock

Each student plays alone against computer airlines with a 60-minute limit. The last round finishes and the highest owner’s equity wins.

ACROSS THE WEEK

Homework in rounds

A round limit for play at home, alone against the computer or against classmates online with 24-hour turns.

GRADED

Built-in questions

Up to eight questions from the bank, filled in with each student’s numbers and graded on the class page.

Sample questions, as a student sees them: “Your fares changed your revenue by +$11,803, and you carried 6% fewer passengers than at Standard fares. Was demand elastic or inelastic?” “You took 2 loans and paid $38,400 in interest. Was borrowing worth it?”

FOR THE INSTRUCTOR

One class page: the week, answers, grades

Class code

K7TQ4M

Copy invitation

Strategy and Operations 501

THIS WEEK'S MODULE

Managerial economics (6 weeks) · Week 2: Price elasticity of demand

On: Fares desk · Off: World news, Fuel desk, Bank loans

Limit: 60 minutes · 5 questions

ANSWERS AND GRADING

Student	Simulation	Score
Ana	Week 2 practice	88
Ben	Week 2 practice	To grade

Download answers and grades (CSV)

Illustration: the class, code and names are examples.

SET UP

Name the class, share the six-character code, and build a course plan from the catalog.

THIS WEEK

The topic, its features, a time or round limit and the questions. The server keeps them fixed.

GRADE AND PRIVACY

Score, comment, export to your gradebook. Instructors see names, never emails or ages.

IN THE CLASSROOM

One week of the course, in five steps

1
Choose
Pick the week from your course plan and click “Use for this class”. Every new class room follows it.

Before the session

2
Brief
When students start, a briefing shows the topic, what to watch, the features on and the questions to come.

First minute

3
Play
A clock shows the time left. When it runs out, the round finishes and the highest owner’s equity wins.

In class or across the week

4
Answer
The questions open with each student’s own numbers filled in, beside their simulation summary.

Same day

5
Grade
Read each answer next to a guide to a strong answer, give a score and a comment, and export a CSV.

On the class page

FOR THE DEBRIEF · FINANCIAL STATEMENTS

Every airline side by side, one click away

Key figures

	Player 1	AI
Revenue	$956,881 ★	$489,337
Operating expenses	−$215,393 ★	−$234,770
Operating income	$741,488 ★	$254,567
Operating margin	77% ★	52%
Loan interest	$0	$0
Invested (aircraft, routes, bids)	$0	−$181,000
Fuel cost	−$87,393	−$74,770 ★
Disruption fees	$0	$0
Fares vs Standard (whole game)	$163,664 ★	$8,521
Cash now	$1,281,460 ★	$1,014,978
Debt now	$0	$0
Owner's equity now	$2,411,460 ★	$1,994,978
Aircraft	3	2
Routes	9	4
Open MELs	0 ★	1

THE KEY FIGURES

Income statement and balance sheet lines for every airline, with ★ on the best one for each line.

ANY PERIOD

This round, the last four rounds or the whole simulation.

READY FOR CLASS

Prints as a one-page handout or downloads for Excel.

FOR THE DEBRIEF · TURNING POINTS

Why each airline’s cash changed direction



MARKER 6 · AI, ROUND 9

Cash peaked at $1,278,385, then fell $336,972.

MARKER 7 · PLAYER 1, ROUND 10

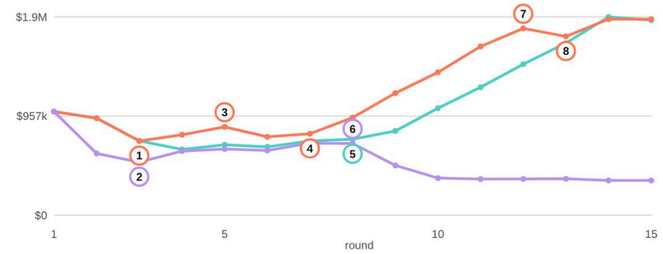
Cash stopped falling at $539,977, then rose $269,800.

Each numbered turn is explained in a log below the chart: the main drivers from that round’s ledger (revenue, aircraft bought, disruption fees) and the key moments (groundings, STAR contracts won, world news).

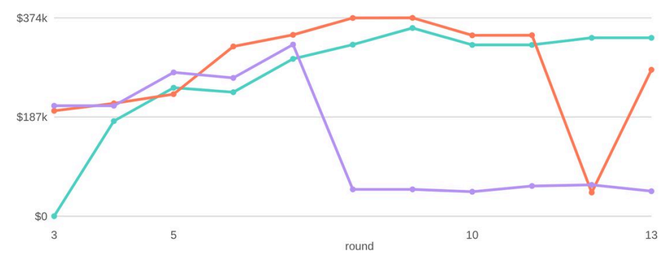
FOR THE DEBRIEF · ROUND BY ROUND

Cash, revenue and operating income, every airline

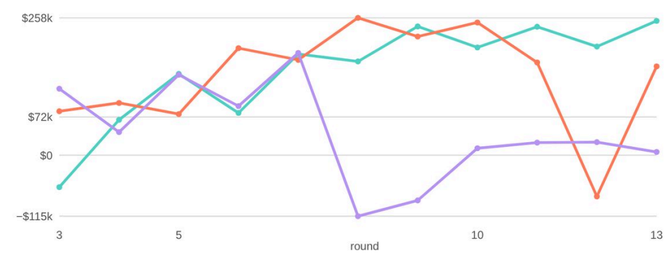
CASH



REVENUE PER ROUND



OPERATING INCOME PER ROUND



Player 1 Player 2 Player 3

READ ACROSS

Player 3’s revenue collapsed in round 8, its income went negative and its cash slid from then on.

ONE BAD ROUND

Player 2 led on revenue, yet one disrupted round sent its income negative. Cash barely noticed.

ANY TIME

All three open from Financials during the simulation, and print or download for Excel.

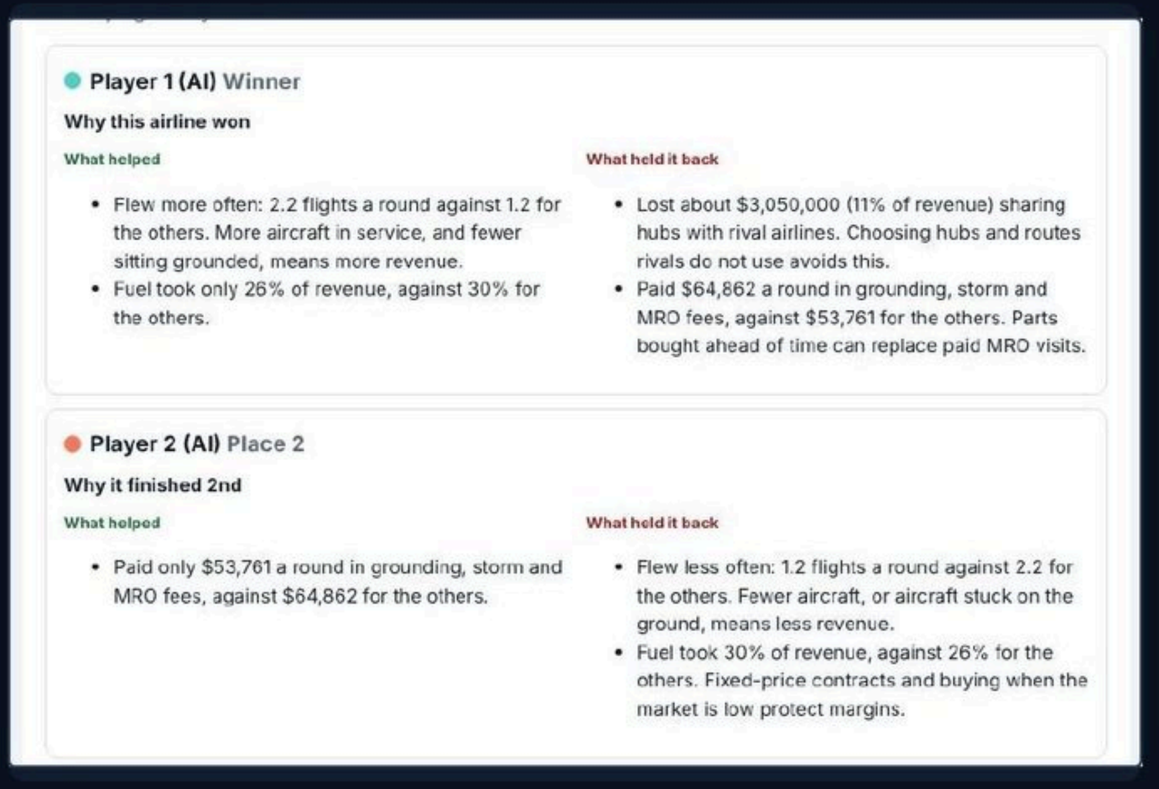
REAL OUTPUT FROM A TEST SIMULATION

Post-simulation report: a worked example

Where the money came from and went

Category	Player 1	Player 2
Route revenue	$17,390,000	$10,831,250
STAR contracts and mail pay	$313,750	$15,000
Fuel recovered in fares	$6,266,685	$3,864,132
Fuel (bought or settled)	-$6,121,853	-$4,479,367
Disruption fees (grounding, storm, AD, cargo penalty)	-$4,100,000	-$4,750,000
MRO service fees	-$2,970,000	-$1,110,000
Spare parts (bought, net of sales)	-$900,000	-$1,085,000
Aircraft purchases	-$1,200,000	-$1,200,000
Routes (bought, net of sales)	-$540,000	-$490,000
STAR contract bids	-$125,000	-$20,000
Change in cash over the game	**$8,013,583**	**$1,575,996**

Where the money went. Route revenue, fuel, fees, repairs, parts, aircraft, routes and auctions, side by side for each airline.



Why each airline finished where it did. The notes compare each airline with the average of the others. Here the winner flew 2.2 times a round against 1.2, despite paying more in fees. The notes explain the numbers; they do not judge every decision.

Both airlines in this sample simulation were played by the computer. Figures are generated by the simulation from its own record of each flight and purchase.

THE PRACTICAL DETAILS

What a class needs to run it

COST

One course license

Every level for each enrolled student, the class page and support. Quick Start is always free to try.

DEVICES

A browser

Laptop, tablet or phone. Nothing to install and no lab needed.

TIME

6 minutes to a few weeks

A 30 to 120 minute clock for a class session, or a number of rounds for homework.

ACCESS AND PRIVACY

Approved instructors

Instructor accounts are approved one by one. Simulated dollars are score only.

NEXT STEPS

A pilot in your course

TRY IT

maydaycontrol.com: Quick Start is free, and Pro includes one free simulation.

WATCH

The instructor’s guide, 3½ minutes, on the home page of maydaycontrol.com.

GUEST SESSION

A free guest session: a live simulation session and how airlines really manage reliability, fuel and pricing.

Juan Fernando Juliao · juanjuliao@maydaycontrol.com