

Holiday Cruise Lines

Spreadsheet Design
Introduction:
Dealing With Costs &
Revenues

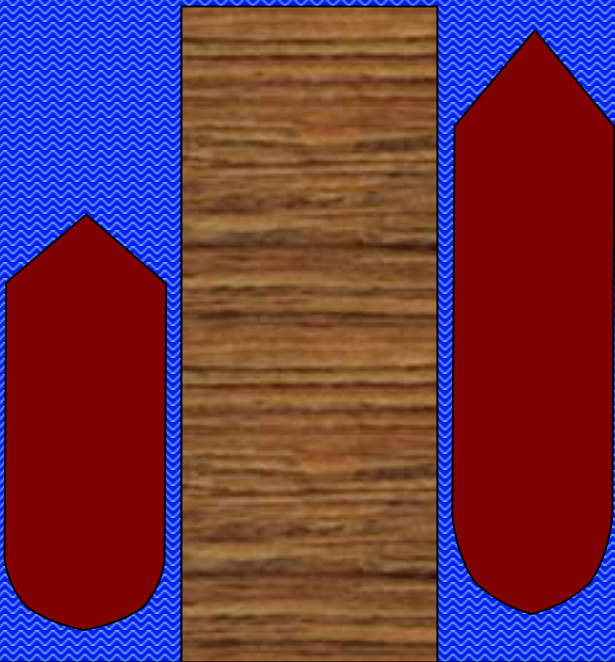
Basic Details About HCL

Holiday Cruise Lines (HCL) has been operating out of Pierpoint City for more than two decades. During most of this time, they have held an exclusive use contract with the City's Old North Cruise Terminal, which is a 900 ft. facility along the northern urban fringe.

Old North Cruise Terminal

Characteristics

- Max. Ship Length: < 900 ft.
- Max. ship arrivals/departures per day: 2 of each
- Porters required per passenger movement: 0.05 (1 porter for every 20 passengers)
 - Porter wage: \$30/hour per porter
 - Porters work 2 hours for departing ships and 3 returning ships
- Lines crew required per ship length: 1 per 150 ft.
 - Lines Crew Wage: \$40/hour per porter
 - Lines Crew Labor Requirement: 8 hour shift
- Annual Exclusive Use Fee: \$400,000
- Maintenance Fee (monthly): \$3,000



Weekly Schedule & Ship Characteristics

	Returns (8AM)	Departures (3pm)
Monday	Washington	Washington
	Lincoln	Lincoln
Tuesday	Clinton	Clinton
Wednesday	Bush	Bush
Thursday	Jefferson	Jefferson
Friday	Nixon	Nixon
	Ford	Ford
Saturday	Fillmore	Fillmore
	Truman	Truman
Sunday	Wilson	Wilson
	Kennedy	Kennedy

Ship List	Size (length)	Trip Duration	Passenger Capacity
Bush	600 ft	7 days	1000
Clinton	600 ft	7 days	1000
Fillmore	800 ft	7 days	1500
Ford	800 ft	7 days	1500
Jefferson	800 ft	7 days	1500
Kennedy	800 ft	7 days	1500
Lincoln	600 ft	7 days	1000
Nixon	800 ft	7 days	1500
Roosevelt	600 ft	7 days	1000
Truman	800 ft	7 days	1500
Washington	800 ft	7 days	1500
Wilson	800 ft	7 days	1500

How to Make Sense of all the Information?

- Simplify. Eliminate extraneous information. We don't *need* to know specific ship name, just relevant characteristics.

- Distinguish between:

 - Costs & Revenues

 - Fixed & Variable

- Organize by:

 - Inputs

 - Calculations

 - Outputs

Some Simplifications in the Cost Structure

We can make this case extremely complicated if we take all potentially relevant issues into consideration. In your own projects, you will have to make a judgment call.

Here, we make some basic assumptions:

1) Consider only four basic costs to the cruise line of using the terminal (2 fixed and 2 variable).

2) There is a constant “operating profit” from general cruise ship operations. In the base case this is equal to:

Cruise Rates Paid by Passenger (a.k.a. Cruise Revenues) -
[Food+Entertainment+Ship Staff+Fuel+Port of Call
Fees+Company Administration+etc....]

HCL's Docking Cost Breakdown

Description	Type (variable or fixed)	If variable, what does it vary with?
Maintenance Fees	Fixed (monthly)	
Porter Fees	Variable	# of Passengers
Lines Crew Fees	Variable	Length of Ship (feet)
Exclusive Use Fee	Fixed (annual)	

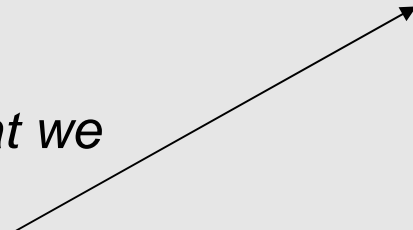
Note: These may not be the actual costs faced by a real cruise line, but capture the idea that some costs tend to vary with # of passengers, some costs tend to vary with size of ship (either length or weight), and some costs are fixed.

Keep Inputs & Calculations Separate

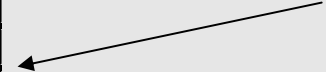
We don't want to start confusing the cells that we can manually change.....(our inputs)

Dock Requirements

Lines Crew	
Crew per ft. of ship	0.00667
Min. shift duration (hours)	8
Wage per Hour	\$ 40.00
Porters	
Crew per passenger (departure)	0.05
Return Shift- Morning (hours)	3
Departure Shift - Afternoon (hours)	2
Wage per Hour	\$30
Maintenance Charge (monthly)	\$1,000
Exclusive Use Contract Fee (annual)	\$400,000
Operating Profits per passenger (After covering ship costs)	\$100



With those that use these inputs for actual calculations.....



Wages/Morning Shift = (Porter Workers/Shift * Shift Length (in hours)/Morning Shift * Wage/Hour)

	Small	Medium	Large	Shift Total
Monday	\$ 4,500	\$ 6,750	\$ -	\$ 11,250
Tuesday	\$ 4,500	\$ -	\$ -	\$ 4,500
Wednesday	\$ 4,500	\$ -	\$ -	\$ 4,500
Thursday	\$ -	\$ 6,750	\$ -	\$ 6,750
Friday	\$ -	\$ 13,500	\$ -	\$ 13,500
Saturday	\$ 4,500	\$ 6,750	\$ -	\$ 11,250
Sunday	\$ -	\$ 13,500	\$ -	\$ 13,500
Total All Shifts				\$ 65,250

Include A Summary Sheet

Most people will not want to dig through all the numbers to find the “punchline.” Provide the key points in an easily printable summary sheet...

OUTPUTS (Based on Results from Calculations Worksheet)

Summary Costs (Annual)

Annual Lines Crew Costs	\$ 887,910
Annual Porter Costs	\$ 5,655,000
Annual Maintenance Costs	\$ 12,000
Annual Exclusivity Costs	\$ 400,000
Total Costs per Year	\$ 6,954,910
Average Cost per Ship	\$ 52,689

Summary Ship Operating Profit (Annual)

Operating Profit Generated by Ships	\$ 75,400,000
Avg. Operating Profit per Ship	\$ 571,212

After-Terminal Costs Profit (Operating Profit - Costs)

Annual After Terminal Costs Profit	\$ 68,445,090
Avg. per ship After-Terminal Profit	\$ 518,523

Simple Sensitivity Analysis Exercise

In the base case, we have only one ship (the Jefferson, classified as Medium size) at the Terminal. What happens if we add another Medium Ship? An additional Small Ship?

- Use Simple Input Worksheet to make the change.
- Since the Summary Results are on the same page, we instantly know the marginal impact of an additional ship.
- Let's try it....(think about difference between Total Cost, Average Cost, and Marginal Cost)

Some Things to Keep in Mind

- Detailed titles & labels such that others (or you!) will not be confused. THIS INCLUDES YOUR NAME, DATE, ORGANIZATION, ETC...
- Keep track of units
- Make as flexible as possible. Everything should be dependent on the basic inputs. You may want to change scenarios later.
- Indicate key assumptions and calculations
- Maintain proper links across related worksheets (things can get pretty messy otherwise.....)
- The “magic” of Logical Structure + “\$”