

FAST<sup>©</sup>

Finance and Accounting Simulation Tool



**BUSINESS  
SCHOOL**

# FAST Workbook

# Startup of Aquasail

## FINANCING

Aquasail's shareholders provide 14,000 to the company

→ Equity: 14,000

Financial institution grants a loan of 24,000

→ Bank loan: 24,000

### Conditions of the bank loan

Contractual term:	8 years
Repayments:	3,000 (per year, Dec. 31)
Interest:	10% (per year)

## INVESTMENTS

Aquasail invests in property, plant & equipment:

→ Land: 4,000

→ Buildings: 8,000

→ Machinery: 4,800

### Depreciation table

	<b>Buildings</b>	<b>Machinery</b>
Acquisition value	8,000	4,800
Expected lifetime	20 years	4 years
Annual depreciation	400	1,200
Quarterly depreciation	100	300

## Budget Aquasail

	Year 1	Year 2
<b>Budgeted costs</b>		
Direct labour costs per boat	500	...
Raw materials per boat	1,000	...
Services per quarter	800	...
Depreciations per quarter	400	...
<b>Purchase of raw materials</b>		
Quarter I (Q I)	4,000	...
Quarter II (Q II)	6,000	...
Quarter III (Q III)	4,000	...
Quarter IV (Q IV)	4,000	...
<b>Payment terms suppliers</b>	Year 1, QI & QII : Cash on delivery Year 1, QIII & QIV - Year 2 : 1 quarter payment delay	
(only for suppliers of raw materials; labour and services are always paid cash on delivery)		
<b>Production schedule</b>	4 boats/quarter	2 boats/quarter
<b>Sales price per boat</b>	2,200	...
<b>Sales</b>	Total sales : 11 boats	Total sales : ... boats
Quarter I	4 boats	... boats
Quarter II	3 boats	... boats
Quarter III	2 boats	... boats
Quarter IV	2 boats	... boats
<b>Payment terms customers</b>	Year 1, Q I – Q III : Cash on delivery Year 1, Q IV & Year 2 : 1 quarter payment delay	
<b>Profit distribution</b>	No dividend payments; all profits are retained	
<b>Other changes in the second year</b>		... (extra debt repayment)

## Cash Book Aquasail (Cash Flow Statement)

Cash inflow		Cash outflow		Cash balance
Description	Amount	Description	Amount	
<i>Equity</i>	...			...
<i>Bank debt</i>	...			...
		<i>Land</i>	...	...
		<i>Buildings</i>	...	...
		<i>Machinery</i>	...	...

## Balance Sheet Aquasail

Assets		Equity & Liabilities	
Cash	...	Equity Capital	...
Total Assets	...	Total Equity & Liabilities	...

Assets		Equity & Liabilities	
Cash	...	Equity Capital	...
		Long term liabilities Bank debt	...
Total Assets	...	Total Equity & Liabilities	...

Assets		Equity & Liabilities	
Land	...	Equity Capital	...
Buildings	...		
Machinery	...	Long term liabilities Bank debt	...
Cash	...		
Total Assets	...	Total Equity & Liabilities	...

## Cash Book (Cash Flow Statement) Aquasail YEAR 1

Cash at start

21,200

	Cash inflow	Cash outflow	Cash balance
Quarter I		<i>R. M. Q1</i> ...	...
		<i>Labour</i> ...	...
		<i>Services</i> ...	...
	<i>Sales Q1</i> ...	...	...
Quarter II		<i>R. M. Q2</i> ...	...
		<i>Labour</i> ...	...
		<i>Services</i> ...	...
	<i>Sales Q2</i> ...	...	...
Quarter III		<i>Labour</i> ...	...
		<i>Services</i> ...	...
	<i>Sales Q3</i> ...	...	...
Quarter IV		<i>R. M. Q3</i> ...	...
		<i>Labour</i> ...	...
		<i>Services</i> ...	...

Cash at end

...

## Cash Book Aquasail – 31/12 YEAR 1

Cash balance

...

Cash inflow	Cash outflow	Cash balance
	<i>Interests</i> ...	...
	<i>Repayment</i> ...	...
	<i>Taxes</i> ...	...

Cash at end

...

## Profit & Loss Statement Aquasail – YEAR 1

### Operating Revenues

	Q I	Q II	Q III	Q IV
Sales	...	...	...	...

### Operating Costs

	Q I	Q II	Q III	Q IV
Raw materials used	...	...	...	...
Labour costs	...	...	...	..
Services	...	...	...	...
Depreciations	...	...	...	...
Total cost of production	...	...	...	...
+ / - Inventory changes finished goods	0	...	...	...
Cost of goods sold	...	...	...	...

Operating Profit (EBIT)

...

...

...

...

...

FULL YEAR

## Profit & Loss Statement Aquasail – YEAR 1 (ctd.)

Operating Profit (EBIT)	...
- Interest Costs	-...
Profit/Loss Before Tax	...
- Taxes (40%)	-...
Profit/Loss After Tax	...

## Balance Sheet Aquasail – 31/12 YEAR 1

Assets		Equity & Liabilities	
<b>Fixed Assets</b>	...	<b>Shareholders' Equity</b>	...
Land	...	Capital	...
Buildings	...	Retained profits	...
Machinery	...		
<b>Current Assets</b>	...	<b>Liabilities</b>	...
Inventories		Long term debt	...
- Raw materials	...	Bank debt	...
- Finished goods	...		
Accounts receivable	...	Current debt	...
Cash	...	Bank debt	...
		Accounts payable	...
<b>Total Assets</b>	...	<b>Total Equity &amp; Liabilities</b>	...



## Cash Book (Cash Flow Statement) Aquasail YEAR 2

Cash at start (10,200 -9,000)

1,200

	Cash inflow	Cash outflow	Balance
Quarter I	Sales Q4 ...		...
		R. M. Q4 ...	...
		Labour ...	...
		Services ...	...
Quarter II	Sales Q5 ...		...
		R. M. Q5 ...	...
		Labour ...	...
		Services ...	...
Quarter III	Sales Q6 ...		...
		R. M. Q6 ...	...
		Labour ...	...
		Services ...	...
Quarter IV	Sales Q7 ...		...
		R. M. Q7 ...	...
		Labour ...	...
		Services ...	...

Cash at end

...

## Cash Book Aquasail – 31/12 YEAR 2

Cash balance

...

Cash inflow	Cash outflow	Balance
	Interests ...	...
	Taxes ...	...
	Repayment ...	...

Cash at end

...

## Profit & Loss Statement Aquasail – YEAR 2

### Operating Revenues

	Q I	Q II	Q III	Q IV
Sales	...	...	...	...

### Operating Costs

	Q I	Q II	Q III	Q IV
Raw materials used	...	...	...	...
Labour costs	...	...	...	...
Services	...	...	...	...
Depreciations	...	...	...	...
Total cost of production	...	...	...	...
+ / - Inventory changes finished goods	...	...	...	...
Cost of goods sold	...	...	...	...

### Operating Profit (EBIT)

...

...

...

...

...

**FULL YEAR**

## Profit & Loss Statement Aquasail – YEAR 2 (ctd.)

Operating Profit (EBIT)	...
- Interest Costs	-...
Profit/Loss Before Tax	...
- Taxes (40%)	-...
Profit/Loss After Tax	...

## Balance Sheet Aquasail – 31/12 YEAR 2

Assets		Equity & Liabilities	
Fixed Assets	...	Shareholders' Equity	...
Land	...	Capital	...
Buildings	...	Retained profits	...
Machinery	...		
Current Assets	...	Liabilities	...
Inventories		Long term debt	...
- Raw materials	...	Bank debt	...
- Finished goods	...		
Accounts receivable	...	Current debt	...
Cash	...	Bank debt	...
		Accounts payable	...
Total Assets	...	Total Equity & Liabilities	...

Aquasail's Liquidity

	Year 1	Year 2
<b>Current Ratio</b> = $\frac{\text{Current Assets}}{\text{Current Debt}}$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots$
<b>Acid Test</b> = $\frac{\text{Accounts Receivable} + \text{Cash}}{\text{Current Debt}}$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots$
<b>Working Capital</b> = Current Assets - Current Debt	$\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$	$\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$
<b>Working Capital Requirement</b> = Accounts Receivable + Inventories - Accounts Payable	$\dots\dots\dots + \dots\dots\dots - \dots\dots\dots = \dots\dots\dots$	$\dots\dots\dots + \dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

# Aquasail's Profitability – YEAR 1

ROA			
Margin	=	$\frac{\text{Operating Profit}}{\text{Sales}}$	= $\frac{\text{.....}}{\text{.....}}$ = ..... %
×			×
Assets Turnover	=	$\frac{\text{Sales}}{\text{Assets}}$	= $\frac{\text{.....}}{\text{.....}}$ = ..... %
Return On Assets (ROA)			
.....%			

Financial Leverage									
ROA		=		.....%		<div>Financial Leverage</div> <div>.....%</div>			
—				—					
Average Cost of Debt		=		$\frac{\text{Interest Costs}}{\text{Debt}}$					
Debt		=		$\frac{\text{.....}}{\text{.....}}$		=		.....%	
Equity		=		.....		=		.....	

ROE before tax		ROE before tax	
ROE (before tax)	=	$\frac{\text{Profit before tax}}{\text{Equity}}$	= $\frac{\text{.....}}{\text{.....}}$
		OR	OR
		ROA + Financial Leverage	.....% + (–.....%)
ROE before tax		ROE before tax	
.....%		.....%	

ROE after tax		ROE after tax	
ROE (after tax)	=	$\frac{\text{Profit after tax}}{\text{Equity}}$	= $\frac{\text{.....}}{\text{.....}}$
ROE after tax		ROE after tax	
.....%		.....%	

# Aquasail's Profitability – YEAR 2

ROA			
Margin	=	$\frac{\text{Operating Profit}}{\text{Sales}}$	= $\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$
×			
Assets Turnover	=	$\frac{\text{Sales}}{\text{Assets}}$	= $\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$
			Return On Assets (ROA)
			$\dots\dots\dots\%$

Financial Leverage			
ROA	=	$\dots\dots\dots\%$	= $\dots\dots\dots\%$
—			
Average Cost of Debt	=	$\frac{\text{Interest Costs}}{\text{Debt}}$	= $\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$
			$\dots\dots\dots\%$
			×
$\frac{\text{Debt}}{\text{Equity}}$	=	$\frac{\dots\dots\dots}{\dots\dots\dots}$	= $\dots\dots\dots\%$
			Financial Leverage
			$\dots\dots\dots\%$

ROE before tax			
ROE (before tax)	=	$\frac{\text{Profit before tax}}{\text{Equity}}$	= $\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$
			OR
			$\dots\dots\dots\%$
			ROE before tax
			$\dots\dots\dots\%$

ROE after tax			
ROE (after tax)	=	$\frac{\text{Profit after tax}}{\text{Equity}}$	= $\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$
			ROE after tax
			$\dots\dots\dots\%$

## Aquasail's Cash Flow

	Year 1	Year 2
Cash flow		
= Revenues – Cash costs		
= Profit (after tax) + Depreciations	= ..... + ..... = ....	= .....+ ..... = .....

## Aquasail's Solvency

	Year 1	Year 2
<b>Debt Ratio =</b> $\frac{\text{Debt}}{\text{Assets}}$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$
<b>Financial Debt Coverage =</b> $\frac{\text{Cash Flow}}{\text{Financial Debt}}$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$
<b>Current Financial Debt Coverage =</b> $\frac{\text{Cash Flow}}{\text{Current Financial Debt}}$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$	$\frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots\%$