ICP: The Cash Flow Statement[1]
In-Class Problem[2]

The subject firm in this problem set is Starpine Group, a fictional firm. The Income Statement, Balance Sheet, and Other Financial Information used herein are also used in other In-Class Problems in support of building a body of Corporate Finance In-Class Problems.

Starpine Group, LTD is a Utah based C corporation operating nationally in the oil and gas pipeline sector. The firm is privately held by its founders, key employees and institutional investors. The firm issues quarterly financial statements and informally adjusts the value of its outstanding equity shares at the end of each year[3]. A group of stakeholders have approached management requesting the firm provide a statement of cash flows to gain a better understanding of the source of the cash of the firm's balance sheet. This amount has increased significantly in recent years and some of those stakeholders are interested in having a substantial portion distributed out through an increase in dividends, equity buy back, or reduction of long-term debt.

The firm refinanced its long-term debt at the start of 2020 by issuing $68,548,000 in 20-year, 6.25% corporate bonds[4] to institutional investors in exchange and cannot be called for 10 years from the date of issue. The firm has prudently used commercial mortgage financing at current rates to maintain a high debt ratio on its real asset[5].

The firm also issued preferred stock to investors and issued common shares to the firm's founders and key employees. The founders received shares in exchange for capital contributions to the firm and key employees have received shares exercised through incentive stock option programs and an employee stock ownership (ESOP) retirement program.

1. **Prepare an Excel spread sheet with a separate worksheet for each of the following types of financial statements and submit it along with the completed problem set in the Canvas dropbox provided.** *These sheets should be organized as financial models in which only those cells including blue data or text are original entry values and ALL other cells containing values have been calculated from interacting the original entry values. Visual examples of the Income Statement and Balance Sheet are located on the last page of the problem set. The Cash Flow Statement is an amalgam of data found in the Income Statement and Balance Sheet*

    a. **Income Statement**
    b. **Balance Sheet**
    c. **Cash Flow Statement**

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[1] This problem and solution set is intended to present an abbreviated discussion of the included finance concepts and is not intended to be a full or complete representation of them or the underlying foundations from which they are built.

[2] This problem set was developed by Richard Haskell, PhD (rhaskell@westminstercollege.edu), Gore School of Business, Westminster College, Salt Lake City, Utah (2021).

[3] Starpine senior management and equity stakeholders have agreed on a informal valuation of the firm based on an 8x EBITDA multiple.

[4] The bonds, though not publicly traded, conform with the structure of such bonds.

[5] Current mortgage rates for such debt is 3.125% on a fully amortized basis. A high leverage strategy essentially protects such assets from potential liability claims were any to arise.

2. What is the primary source of the firm's cash flow in 2021?

In 2021 the major contributor to the firm's cash flow is from operations, contributing 50.726 million of the firm's total cash flow for the period of $30.87 million. See Cash Flow Statement.

3. How does "cash flow" differ from profit?

What is commonly referred to as "profit" in a corporation is more accurately recognized as Net Income. It is an input to cash flow, but does not adequately reflect the change in cash the firm experiences in a given period. Cash Flow includes Cash from Operations, Investing and Financing.

4. Explain the intuition behind Cash Flow from Investments. In what does the firm invest and why?

Firms invest in asset useful in producing revenue. These may be tangible depreciable assets, intangible amortizable assets, both of which appear on the firm's balance sheet, and human capital asset, aka employees and not available for direct entry on the firm's balance sheet.

5. How does the value of the firm's employees appear in the firm's financial statements?

Employees represent human capital but given their sentient nature do not appear directly on the balance sheet. Their contribution to the firm may be viewed through the firm's operating income (income statement) and as such are reflected in the retained earnings the firm creates for any given period. These same contributions may then be observed on the balance sheet through the firm's accumulated retained earnings.

6. Explain why an increase in assets and decrease in liabilities on the firm's books are negatively correlated and how each effect the firm's cash flow.

An increase in an asset, such as inventory, requires a commitment to expend cash upon purchase or by some predetermined pre-determined date in the future (think accounts payable). When we pay for these assets we use cash, so an increase in this asset class is negatively correlated with the firm's cash balance.

An increase in a liability, such as accounts payable or long-term debt, suggest the firm has increased its borrowing resulting in an increase in cash.

7. **Why might having a high leverage strategy with respect to the firm's real assets might be labeled as "prudent"?**

   Aggressively leveraging an asset, borrowing a high percentage of the assets value while using the asset as collateral for the loan, is thought to "protect" the asset from other creditors or possible liability claims. Most collateralizable assets are relatively illiquid. Were the asset to be seized through some legal action the party receiving the asset is required to fully satisfy the underlying debt, though they may not have access to the cash to do so. It may be possible to immediately sell the asset to raise the needed cash, but if the debt must be satisfied immediately it is likely the cash raised through an immediate sale may not be sufficient to cover the debt.

8. **As a C corporation, what is the tax effect on the firm with respect to taxable income and dividends and how might this be different were the firm an LLC?** *You may need to do a little self-instruction on this if you don't know from other classes or personal experiences*

StarPine Group, Ltd.
Balance Sheet (millions)
Year Ending December 31

	2020	2021		2020	2021
Current Assets			**Current Liabilitites**		
Cash & Securities	29.875	60.745	Accounts Payable	22.540	23.640
Accounts Receivable	96.447	86.375	Other Current Liabilities	8.150	9.589
Inventory	107.648	111.245	Total Current Liabilities	30.690	33.229
Total	233.970	258.365			
			Long Term Debt		
Fixed Assets			Mortgages	28.495	31.594
PPE	137.130	159.450	Bonds	68.548	68.548
Patents Held	20.399	20.399	Total Long-Term Debt	97.043	100.142
Total Gross Assets	157.529	179.849			
Accumulated D&A	-52.086	-73.626	**Owner's Equity**		
Total Net Fixed Assets	105.443	106.223	Common Stock	65.570	67.435
			Preferred Stock	19.500	19.500
			Accumulated Retained Earnings	126.610	144.282
			Total	211.680	231.217
Total Assets	339.413	364.588	**Total Liabilities and Owner's Equity**	339.413	364.588
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Additional Financial Information

Preferred Stock Value	2020	2021
Shares Outstanding (millions)	19.500	19.500
12/31 Price per Share	6.40	10.687
Market Value (millions)	124.800	208.393
Conversion to Common	1.25	1.25
Common Stock Value		
Shares Outstanding (millions)	32.000	32.364
12/31 Price per Share	5.12	8.549
P/E Multiple	10.1493	15.657
EPS = (NI-Pref Div)/Common Shares	0.5045	0.546
Market Value (millions)	163.840	276.695
Bonds		
Coupon		6.25%
Current Yield		5.75%
Term		20
Year Issued		2020

StarPine Group, Ltd.
Income Statement (millions)
January 1 - December 31

	2020	2021
Revenues		
Product Sales	284.980	315.780
Services	38.436	46.556
Royalties	0.550	0.860
Total Revenue	323.966	363.196
Cost of Goods Sold		
Products & Materials	118.690	130.000
Production Labor	110.000	126.460
Total Cost of Goods Sold	228.690	256.460
Gross Profit	95.276	106.736
Operating Expenses		
Sales & Marketing	25.500	25.364
General & Administrative	24.436	28.296
Depreciation & Amortization	17.850	21.540
Total Operating Expenses	67.786	75.200
Operating Income	27.490	31.536
Non-Operating Expenses		
General Interest	5.857	6.091
Total Non-Operating Expense	5.857	6.091
Taxable Income	21.633	25.445
Taxes Paid	2.990	5.273
Net Income	18.643	20.172
Distribution of Earnings		
Dividends (Common)	0.000	0.000
Dividends (Preferred)	2.500	2.500
Addition to Retained Earnings	16.143	17.672
Gross Margin	29.41%	29.39%
Operating Margin	8.49%	8.68%
Profit Margin	5.75%	5.55%