15. (5.75 points)

Consider the following series of events:

- An insurance company began operating on January 1, 2014. The company began with cash of $200 and policyholders' surplus of $200.
- On April 1, 2014, the company wrote its first and only insurance policy — a 12-month workers' compensation policy — for $1,000 of premiums and paid $100 of commission to the agent.
- On May 1, 2014, a loss occurred, and a direct case loss reserve of $400 and direct IBNR loss reserve of $100 were posted. The ultimate loss of this claim remained unchanged throughout the year.
- Unearned premium reserves were calculated under the monthly pro rata method, and there are no income taxes.

Reinsurance information

- On January 1, 2014, the company entered into a quota share reinsurance agreement with an authorized, unaffiliated reinsurer, covering 50% of all business written during 2014, excluding LAE.
- The reinsurance contract stated that the reinsurer would pay a fixed ceding commission of 15%.
- At the middle of each month from June through December 2014, $50 was paid to the claimant to cover the May 1, 2014 loss, and the reinsurance recoverable was billed and due on that day.
- The reinsurer reimbursed the company each month's paid loss on the 120th day after the due date and did not dispute any reinsurance recoverable on paid losses.

Investment information

- On February 1, 2014, the company bought two shares of common stock of an unaffiliated company for $100 a share. Six months later, the company received cash dividends of $10 ($5 per share), and then sold one share of common stock for $95 on the same day.
- As of year-end 2014, the fair value of the common stock is $98, and no other investments were made during 2014.

Incurred expense information (from Company's 2014 IEE Part 1)	
Loss adjustment expense	$30
Taxes, licenses & fees	$21
Investment expenses	$8
General expenses	$40

<<QUESTION 15 CONTINUED ON NEXT PAGE>>

15. (continued)

a. (2.25 points)

Identify and calculate the two changes in the company's surplus that do not flow through to the Statement of Income in the company's 2014 Annual Statement.

b. (2.5 points)

Calculate the company's 2014 change in policyholders' surplus.

c. (1 point)

Discuss two major factors that contributed to the change in the company's policyholders' surplus during 2014.

CONTINUED ON NEXT PAGE

QUESTION 15	
TOTAL POINT VALUE: 5.75	LEARNING OBJECTIVE: C1 / C3

SAMPLE ANSWERS

Part a: 2.25 points

The company's changes in unrealized capital gains and changes in provision for reinsurance do not flow through to the income statement.

Change in unrealized capital gain = $98 - $100 = -$2.
It was also acceptable to include the deferred tax asset. -$2*(1-.35)=-$1.3

Provision for reinsurance

Month	Days Overdue	Recovered	Received within 90 days
Jun	195	yes	yes
Jul	165	yes	yes
Aug	135	yes	yes
Sep	105	not yet	
Oct	75	not yet	
Nov	45	not yet	
Dec	15	not yet	

Reinsurance recoverable on paid loss & LAE more than 90 days overdue = $25.

Total reinsurance recoverable on paid loss & LAE + amounts received in the 90 days prior to December 31, 2014 = $25 * 4 + $25 * 3 = $175.

Test ratio = $25 / $175 = 14.3%

The reinsurer is non-slow paying because 14.3% < 20%.

Provision for reinsurance = (recoverable on paid loss & LAE more than 90 days overdue, excluding amounts in dispute + recoverable on paid loss & LAE in dispute) * 20% = $25 * 20% = $5.

Change in provision for reinsurance = prior year's – current year's = $0 - $5 = -$5.

Part b: 2.5 points

Sample Solution 1 (using income):

Gross premiums earned during 2014 = $1,000 * (1/24 + 1/12 * 8) = $708.

Gross losses paid during 2014 = $50 * 7 = $350.

Gross losses unpaid as of December 31, 2014 = $400 + $100 - $350 = $150.

Gross losses incurred during 2014 = gross losses paid during 2014 + change in gross losses unpaid = $350 + ($150 – 0) = $500.

Net premiums earned = $708 * 50% = $354.

Net losses incurred during 2014 = $500 * 50% = $250.

Net commission incurred = direct commissions incurred – ceded commissions incurred = $1,000 * 10% - $500 * 15% = $25.

Other underwriting expenses incurred during 2014 = net commission incurred + general expenses + taxes, licenses and fees = $25 + $40 + $21 = $86

Net investment income earned = total gross investment income – investment expenses = dividend incurred – investment expenses = $10 - $8 = $2.

Change in realized capital gain / (loss) = $95 - $100 = -$5.

Net income = premiums earned – losses incurred – LAE incurred – other underwriting expenses incurred + net investment income earned + net realized capital gains = $354 – $250 – $30 – $86 + $2 + -$5 = -$15.

Change in policyholders' surplus = net income + change in net unrealized capital gains + change in non-admitted assets + change in provision for reinsurance = -$15 + -$2 + 0 + -$5 = -$22.

Sample Solution 2 (using assets and liabilities):

Assets:			
	Stock purchased	-200	
	Gross WP	1000	
	Ceded WP	-500	
	Commission	-100	
	Ceding commission	75	from 15% of 500
	Expenses	-99	from 30+21+8+40
	Paid loss	-350	from 7*50
	Reins recovered	75	from 3*25
	Reins recoverable	100	from 4*25
	Stock sold	95	
	Common Stock held	100	from book value of stock bought on 2/1/14
	Dividends	10	
	Total Assets	206	
Liabilities:			
	UEPR	146	from gross EP=1000*(1/24+8/12)= 708 Gross UEP= 1000-708=292 Net UEP= 292/2=146
	Loss reserves	150	from (400+100)-350
	Ceded loss reserves	-75	from 150/2
	Total Liabilities	**221**	

Change in PHS from Balance Sheet: **-15** from 206+(-221)

Change in PHS from non-Balance Sheet items: **-7**

Change in provision for reinsurance	-5	
Change in Unrealized capital gains	-2	
Total	-7	
Total Change in PHS:	**-22**	from -15+(-7)

Part c: 1 point

- The provision for Reinsurance decreases the Surplus and Ceding Commission paid by the reinsurer provided Surplus aid to the PHS. Net Income was negative due to high loss ratio (80%) and high Commissions (10%) on the whole amount of premium (no DPAC for SAP)
- U/W Losses are too high. Expenses are incurred immediately and not amortized so EP is not enough to cover losses and expenses. Slow paying reinsurer increases the provision for Reinsurance which adversely changing surplus.
- Insurer entered into reinsurance agreement to provide surplus relief. PHS increased due to the treaty. Investment in common stock – change in value impacts the surplus along with dividends earned.
- The reinsurance paid a fixed commission which immediately increases assets & increases surplus. If the reinsurer is slow paying and results in an increase to the reinsurance provision which is a liability that decreases surplus.
- Reinsurance Company paying after 90 days is contributing significantly to the decrease in the SAP surplus. The ceding Commission from the reinsurance contract is providing significant surplus relief. W/o this the surplus would have decreased even further.

EXAMINER'S REPORT

Part a

- The candidate was expected to be able to identify and calculate the unrealized capital gain. The candidate was also expected to identify the change in the provision for reinsurance and know the required calculations.
- Some candidates included the calculation of the change in the reinsurance provision in part b instead of part a; credit was awarded in either case.
- Common errors included:
  - determining the provision but not identifying the change in provision which is the adjustment to the surplus
  - not including the correct amounts in the numerator and the denominator of the slow paying ratio

Part b

- The candidate was expected to recognize all the relevant components of the income statement and how to calculate them.
- The more challenging aspects were the monthly pro rata earning routine and the determination of the ceding commission.
- Common errors included incorrect calculation of the gross earned premium and incorrect calculation of net commission amount (agent and ceding).

Part c

- The candidate should be able to identify two different factors that contribute to the change in the PHS.
- The most common error was providing answers that were very generic instead of ones

related to this specific company.