

Inbound Freight Issue Analysis

For Baxter Healthcare (Allegiance)

Hospital Supply/Scientific Products Division Integration - March/April 1995

Baxter's live date for integration of their major divisions, Hospital Supply (HS) and Scientific Products (SP) was April 1995. By March, most of the technological implications were resolved, but the handling of certain pricing and invoicing issues required further research and documentation to justify the implemented logistics.

One such issue was **Inbound Freight**, which is the cost of shipping product to Baxter's distribution centers. Some suppliers added this charge to their invoices rather than including it in acquisition cost. Regardless, the cost varied by shipment so factors were used representing an average inbound freight. HS applied this according to vendors and SP based it on regions. Such an average amount was used for sales orders, GP calculations and for cost-of-goods-sold bookings.

To consolidate HS and SP systems, integrators needed to consider both where the charge was placed and how it differed by region/vendor. The consolidation was looked upon as an opportunity to more accurately represent acquisition cost.

We were engaged to research and analyze the effectiveness of the new inbound freight methodology so that justification could be substantiated to any who might question the rationale of the implementation. Sales, where commissions are figured on GP calculations, might want justification that the averaging did not unfairly represent the cost of goods in certain regions where freight costs might be higher.

The following abstracts include:

- ***Justification narrative***
- ***Spreadsheet detail narrative***
- ***Spreadsheet representation of the methodology***

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General Office/Information Technology

Inbound Freight Factor Methodology

(Standardized as of 01/01/95 to coincide with the normal price change from suppliers.)

Justification Narrative

To accommodate the combined Hospital Supply (HS) and Scientific Product (SP) businesses, the cost of shipping product to our distribution centers has been revised as an average per FOB source vendors. The new assessment of 2.5% will be included in the standard cost on the Product Database to more accurately represent the actual cost to Baxter for product shipped from these vendors. This actual cost figure is used for sales orders, GP calculations, and cost-of-goods-sold bookings. Freight factors have been set to 0 for most FOB destinations, corporate, and BDX vendors since freight cost is already included in the acquisition cost in those instances. The AP System will use separate bounce codes to book freight costs for PPV reporting and transportation cost update purposes. "Cost plus" and other pricing rules will be adjusted accordingly as well as the Invoice Database screens/fields and the SP Product Database.

HS: Factors were updated for FOB source vendors to more closely equal the actual national average cost of inbound freight. For most FOB destination vendors, no freight factors have been added to the standard cost. However, this cost and the acquisition cost may not always appear equal because the standard cost is figured as basic u/m (selling1), while the acquisition cost is figured according to the P.O. u/m (price class 1,2,3 etc.).

SP: The weighted average for inbound freight of the 1994 regional average (2.5%) plus SP's 1995 acquisition cost equals the standard cost for FOB source vendors. (In 1996 all SP FOB source vendors will be set to the national average by vendor.)

The actual factor overall for an SP region will be a combination of 2.5%, 0, & a nat'l avg. (Because the 2.5% was figured and loaded prior to the DII (Dade purchase) change from 5.1 to 0, there will be a skewing downward depending upon the mix in some regions.)

Though bottom line GP on P&L is not impacted by the SP Freight cost rate changeover, there might be a difference between calculated freight and actual freight totals that would have an effect on commissional GP from which sales rep quotas are figured, particularly in SP standalone regions where the HS rates already known will not have the leveling influence as in HS/SP combined regions.

Spreadsheet Detail Narrative

We prepared a spreadsheet to indicate an inbound freight differential in SP regions as a percent of change when compared to '94 factors . An effort has been made to compare HS/S joint regions along with SP standalones. (GL bookings have been combined for joint regions, making equal comparisons difficult.)

Baxter online systems, General Ledger - query and reporting, P&L, EUC and the fiche archive library were utilized for research. Subject matter experts in General Office Marketing and Accounting, Sales, and Information Technology were invaluable sources for history and interpretation.

The following describes the source and calculations used (per Jan/Feb YTD 94,95), detailed by spreadsheet column heading:

- **Regions** - 22 SP Standalone and Combined HS/SP (NY is represented as combined in 94, standalone in 95);
- **94 Avg. Freight Factors** - Published 93 factors (Since the 94 published factors are only temporary due to upcoming integration they were not used, instead 93 factors, calculated as of a 91 database, were maintained.);
- **95 Freight Factors** - Set at 2.50% for all.
- **1994 - Last YTD - Freight In (A)** - General Ledger account # 36220 representing 94 Actual Freight In was queried for Last YTD, by center, via the GLM system on-line.

Those totals were used to compare with totals from the Earnings Statement 94 Current YTD Freight In, in order to make a parallel comparison to COG. (The GLM report number and region designations are given in the column heading.)

- **1994 - Last YTD - Cost of Goods (B)** - The AIS financial system P&L online for Chart of Accounts Structure 20 was queried for Cost of Goods Current YTD and Prior YTD. This structure was set up for 95 and is usable for 94 before profit split adjustment. The structure includes RRRRXX (total system) with components RRRRUS-HS/S, RRRRIN-ind, RRRRSH-sh&pb.

Business units were combined and those totals for 94 were compared to Cost of Goods totals for SP Current YTD from the archive history fiche 94 Earnings Statement (D030-002) comprising 0(reg)XX0-bio, 0(reg)XX9-joint expenses bio&ind, 7(reg)XX0-ind, 3(reg)XX0-sh&pb.

Though the SP standalone totals matched, combined regions totals did not, due to the inclusion of HS on the AIS P&L. For this reason, totals from the 94 earnings statements were used for Column B;

- **1994 - Last YTD - 94 Factor (C)** - Column A as a % of Column B.

- **1995 - Current YTD (D)** - GLM account # 36194 minus the IF line (PPV variances other than freight costs) representing *95 Inventory Freight* (actual charges) was queried for *Current YTD* by center. Those totals plus an adjusted SH & PB freight amount plus an added Dade relief amount credited monthly to 36220 (eventually to be charged to Dade).
- **1995 - Current YTD (E)** - To reach a COG without freight costs, *Earnings Statement 95 Cost of Goods* for SP standalones had to be reduced by a *Tot FrtIn Cost* found on the final pages of Jan and Feb accounting report MI530-04. For combined regions, freight costs in column D were subtracted.

The DII *Sum xtended Std Cost* to include *Participation & Deal* costs for both standalone and combined regions queried via the EUC online system, were used to calculate a Dade factor (determined to be 76.2% of Std Cost, because 23.8% has been established by General Office Accounting as the increase relationship to last year costs).

This amount was subtracted from the spreadsheet adjusted *cost of goods*. (An audit trail has been noted at the bottom of the individual Standalone and Combined spreadsheets.)

- **1995 - Current YTD (F)** - Column D divided by Column E.
- **Inbound Freight Differential** - % Differentials are Column F minus Column C.

Accounting Summary

From an accounting standpoint, 94 and 95 Standalone region results are consistent with earnings statement totals and are fair representations of freight and cost of goods amounts so that their factor %'s can be considered valid from which to extrapolate conclusions.

94 Combined region amounts are also consistent with the earnings statement.

The same cannot be said for 95 Combined region COG, since HS and SP cannot be separated. Inventory has been kept separate and a % could be devised by region to closely approximate actual SP versus HS COG. Project time was not extended to do this.

Executive Summary

This project was initiated because there was some concern about the results of setting the national average at 2.5% for all, even though Sales Reps had been given new costs and should have marked up prices accordingly.

Calculated freight this year for Standalone regions would equal the total actual effect of the 2.5%, the common vendor %'s and the corporate item zero %'s. Comparison of this to 94 actual was to eliminate the effect of cost changes and volume changes. Mix

changes would still have an impact. To determine how much, the idea was to compare calculated freight * this year to actual last year which was supposed to be very close to the SP calculated freight factor.

Conclusions:

(A) Actual freight by region was not that close to calculated (the result of using a 91 database);

(B) Most regions were very close in the differential column; (should be little cause for commissional concern).

(C) The combination of account statements to review are extremely complex, convoluted and distorted by Dade sale, network sales, etc., making a truly accurate accounting an almost impossible task. The project to date has taken 6 weeks.

* **Consultant note:** As it happens, Acct 31964 - Inventory Freight, represents ACTUAL freight costs not CALCULATED, so the comparison here is one of actual costs and not a test to see if calculated freight was close to actual. Therefore, the differentials (where representational of SP only) are accurate indications of costing variations with regard to 95 versus 94 freight factors assigned.

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Spreadsheet examples

**HS/S Inbound Freight Differentials
(Combined - Summary)**

SP Region	1994						1995			Inbound Freight Differential (F - C)
	94 Avg Freight Factors	95 Freight Factors	Last YTD			Current YTD				
			(A) Freight In	(B) Cost of Goods	(C) 94 Factor	(D) Inventory Freight	(E) Cost of Goods	(F) 95 Factor		
* Standalone 94 & 95 # Standalone 95	(83 Factors from 92 Database which were same as 91)	95 Freight Factor 2.50% for all	CYTD Earnings Statement D030-006 0(reg)XX0(bio) 0(reg)X9(joint bio&Ind) 3(reg)XX0 (sh&pb)	CYTD Earnings Statement D030-002 X(reg)XXX (\$P op reg) & D030-018 3(reg)XX0 (sh&pb)	(A) as a % of (B)	CYTD GLM Acct 96194 minus other PPV's + Dade Frt credited to 36220	CYTD Erngs Stmt D010-24491 for RRRRXX (US,SH) & 7XXX (IND) minus AcctRpt#MS530-04 TotFrtIn for SP (Col D & SHFrt for Comb) minus Dade Adj(76.2% of StdCst) from EUC Query	(D) as a % of (E)		
# NY (11) 11	2.12%		\$240,128	\$16,831,527	1.43%	\$318,332	\$21,832,084	1.46%	0.03%	
BOS (13) 13	2.23%		\$147,052	\$6,741,492	2.18%	\$204,709	\$14,950,959	1.37%	-0.81%	
*DC (23) HD	2.19%		\$183,492	\$7,887,040	2.33%	\$240,364	\$9,520,688	2.52%	0.20%	
*CHAR (23) HC	2.79%		\$154,376	\$6,960,957	2.22%	\$155,722	\$7,967,767	1.95%	-0.26%	
*ATL (21) HA	2.25%		\$200,375	\$9,925,435	2.02%	\$244,387	\$12,087,010	2.02%	0.00%	
*OCALA (21) 25	3.68%		\$237,119	\$8,459,095	2.80%	\$188,663	\$7,382,969	2.56%	-0.25%	
*CHI (CG) 31	1.21%		\$189,337	\$13,994,902	1.35%	\$188,324	\$14,789,152	1.27%	-0.08%	
COL (CG) 33	2.66%		\$222,602	\$8,388,430	2.65%	\$223,007	\$8,418,365	3.47%	0.82%	
DET (CG) 34	2.58%		\$100,110	\$5,092,793	1.97%	\$154,817	\$7,670,459	2.02%	0.05%	
*MPLS (32) HZ	2.77%		\$108,199	\$5,142,686	2.10%	\$145,165	\$5,648,444	2.57%	0.47%	
STL (32) 35	2.51%		\$53,484	\$2,850,273	1.88%	\$91,615	\$15,208,162	0.54%	-1.34%	
*KC (32) HS	2.99%		\$79,931	\$3,963,095	2.02%	\$100,404	\$4,479,609	2.24%	0.22%	
DAL (41) 41	2.66%		\$245,040	\$10,421,421	2.35%	\$296,520	\$8,102,255	4.86%	2.51%	
*NO (44) HG	3.61%		\$94,325	\$3,495,797	2.70%	\$103,978	\$3,863,709	2.69%	-0.01%	
*HOU (44) HP	4.19%		\$105,484	\$3,918,235	2.69%	\$77,776	\$3,788,683	2.05%	-0.64%	
*DEN (45) HR	4.37%		\$96,802	\$2,948,575	3.28%	\$73,388	\$3,296,042	2.23%	-1.06%	
SEA (45) 53	4.31%		\$204,673	\$4,469,461	4.56%	\$198,323	\$19,486,583	1.02%	-3.54%	
PHX (45) 54	2.81%		\$123,079	\$5,138,440	2.40%	\$229,486	\$22,775,712	1.01%	-1.39%	
SLC (45) 56	4.27%		\$54,167	\$1,645,450	3.29%	\$82,646	\$22,049,439	0.37%	-2.92%	
SF (51) 51	3.18%		\$224,271	\$9,154,480	2.45%	\$386,812	\$4,555,923	8.49%	6.04%	
LA (51) 52	2.49%		\$304,264	\$12,550,327	2.42%	\$304,433	\$8,151,161	4.95%	2.52%	
HAW (51) 55	8.46%		\$47,064	\$498,423	9.44%	\$125,724	\$9,913,271	1.27%	-8.17%	
	2.44%	Totals	\$3,415,374	\$150,498,334	2.27%	\$4,124,615	\$229,938,445	1.78%		

HS/S Inbound Freight Differentials (Combined - Detail)

SP Region	95 Structure 20	1994			1995			Inbound Freight Differential				
		94 Avg Freight Factors	95 Freight Factors	Last YTD			Current YTD					
				(A)	(B)	(C)	(D)		(E)	(F)		
				Freight In	Cost of Goods	94 Factor	Inventory Freight	Cost of Goods	95 Factor			
				CYTD Earnings Statement D030-006 D(reg)XX0(bio) D(reg)X9J0int bio(lind) S(reg)XX0 (sh&pb)	CYTD Earnings Statement D030-002 X(reg)XXX (SP op reg) & D030-018 S(reg)XX0 (sh&pb)	(A) as a % of (B)	* See Detail Below	**See Detail Below	(D) as a % of (E)	(F - C)		
* Standalone 94 & 95 # Standalone 95	(93 Factors from 92 Database which were same as 91)	95 Freight Factor 2.50% for all										
# NY	11	2.12%		\$240,128	\$16,831,527	1.43%	\$318,332	\$21,832,084	1.46%	-0.03%		
BOS	13	2.23%		\$147,052	\$6,741,492	2.18%	\$204,709	\$14,950,959	1.37%	-0.81%		
COL	33	2.66%		\$222,602	\$8,388,430	2.65%	\$223,007	\$6,418,365	3.47%	0.82%		
DET	34	2.58%		\$100,110	\$5,092,793	1.97%	\$154,817	\$7,670,459	2.02%	0.05%		
STL	35	2.51%		\$53,484	\$2,850,273	1.88%	\$81,615	\$15,208,162	0.54%	-1.34%		
DAL	41	2.66%		\$245,040	\$10,421,421	2.35%	\$296,520	\$6,102,255	4.86%	2.51%		
SEA	53	4.31%		\$204,673	\$4,489,461	4.56%	\$198,323	\$19,486,583	1.02%	-3.54%		
PHX	54	2.81%		\$123,079	\$5,138,440	2.40%	\$229,486	\$22,775,712	1.01%	-1.39%		
SLC	56	4.27%		\$54,167	\$1,645,450	3.29%	\$82,646	\$22,049,439	0.37%	-2.92%		
SF	51	3.18%		\$224,271	\$9,154,480	2.45%	\$386,812	\$4,555,923	8.49%	6.04%		
LA	52	2.49%		\$304,264	\$12,550,327	2.42%	\$304,433	\$6,151,161	4.95%	2.52%		
HAW	55	8.46%		\$47,064	\$498,423	9.44%	\$125,724	\$9,913,271	1.27%	-8.17%		
		2.65%	Totals	\$1,966,934	\$83,802,517	2.35%	\$2,606,424	\$157,114,373	1.66%			
	* Detail Col D:			InvFrt GLM Acct 26184 minus IF line (other PPV's) & SH Adj Frt	Plus Dade Relief Credited to GLM Acct 38220	Equals (D Above)	** Detail of Col E:	Reference: 95 Jan/Feb DI Std Cat From EUC Query	CYTD 2/28/95 Earnings Statement D010-24491 for RRRRXX (US,IN,SH) minus Col D (Inv Frt)	DI Adj (76.2% of Jan/Feb YTD xtnd std cat) fm EUC	(E Above)	
	11	\$259,125	\$59,207	\$318,332	\$14,713,462	\$33,043,742	\$11,211,658	\$21,832,084				
	13	\$188,892	\$15,817	\$204,709	\$4,075,083	\$18,056,173	\$3,105,213	\$14,950,959				
	33	\$185,592	\$37,415	\$223,007	\$9,884,177	\$13,950,108	\$7,531,743	\$6,418,365				
	34	\$135,348	\$19,469	\$154,817	\$4,643,576	\$11,208,864	\$3,538,405	\$7,670,459				
	35	\$74,497	\$7,118	\$81,615	\$1,435,481	\$16,301,999	\$1,093,836	\$15,208,162				
	41	\$259,261	\$37,259	\$296,520	\$7,024,147	\$11,454,655	\$5,352,400	\$6,102,255				
	53	\$187,270	\$11,053	\$198,323	\$2,386,816	\$21,305,337	\$1,818,754	\$19,486,583				
	54	\$221,631	\$7,855	\$229,486	\$2,360,726	\$24,574,585	\$1,798,873	\$22,775,712				
	56	\$79,264	\$3,382	\$82,646	\$540,009	\$22,460,926	\$411,487	\$22,049,439				
	51	\$386,364	\$20,448	\$386,812	\$3,067,708	\$6,893,516	\$2,337,593	\$4,555,923				
	52	\$276,014	\$28,419	\$304,433	\$6,422,187	\$11,044,868	\$4,893,707	\$6,151,161				
	55	\$123,674	\$2,050	\$125,724	\$493,089	\$10,289,004	\$375,734	\$9,913,271				
		\$2,366,932	\$249,492	\$2,606,424	\$57,046,462	\$200,583,777	\$43,469,404	\$157,114,373				

SP Inbound Freight Differentials (Summary and Detail)

SP Region		1994						1995			Inbound Freight Differential (F - C)	
		Last YTD			Current YTD							
		94 Avg Freight Factors	95 Frt Fctr	(A) Freight In	(B) Cost of Goods	(C) 94 Factor	(D) Inventory Freight	(E) Cost of Goods	(F) 95 Factor			
*Indicates Standalone		(93 Factors not changed since #1)	Set at 2.60% for all	CYTD Earnings Statement D030-006 0(reg)XX0(bio) 0(reg)XX0(joint bio&ind) 3(reg)XX0 (sh&pb)	CYTD Earnings Statement D030-002 X(reg)XXX (SP op reg) & D030-018 3(reg)XX0 (sh&pb)	(A) as a % of (B)	* See Detail Below	**See Detail Below	(D) as a % of (E)			
*DC	HD (12)	2.19%		\$183,492	\$7,887,040	2.33%	\$240,364	\$9,520,688	2.52%	0.20%		
*CHAR	HC (23)	2.79%		\$154,376	\$5,960,957	2.22%	\$155,722	\$7,967,767	1.95%	-0.26%		
*ATL	HA (21)	2.25%		\$200,375	\$9,925,435	2.02%	\$244,387	\$12,087,010	2.02%	0.00%		
*OCALA	ZB	3.68%		\$237,119	\$8,459,095	2.80%	\$188,663	\$7,382,969	2.56%	-0.25%		
*CHI	31	1.21%		\$189,337	\$13,994,902	1.35%	\$188,324	\$14,789,152	1.27%	-0.08%		
*MPLS	HZ (32)	2.77%		\$108,199	\$5,142,686	2.10%	\$145,185	\$5,648,444	2.57%	0.47%		
*KC	HS (42)	2.99%		\$79,931	\$3,963,095	2.02%	\$100,404	\$4,479,609	2.24%	0.22%		
*NO	HG	3.61%		\$94,325	\$3,495,797	2.70%	\$103,978	\$3,863,709	2.69%	-0.01%		
*HOU	HP (44)	4.19%		\$105,484	\$3,916,235	2.69%	\$77,776	\$3,788,683	2.05%	-0.64%		
*DEN	HR (45)	4.37%		\$96,802	\$2,948,575	3.28%	\$73,388	\$3,296,042	2.23%	-1.06%		
		2.65%	Sum	\$1,449,440	\$66,695,817	2.17%	\$1,618,191	\$72,824,073	2.08%			
Other - SP Joint		2.20%		\$1,965,934	\$83,802,517	2.35%	\$2,606,424	\$167,114,373	1.66%			
		2.44%	Totals	\$3,415,374	\$150,498,334	2.27%	\$4,124,615	\$229,938,446	1.79%			
*Detail Column D:				**Detail Column E:								
95 CYTD Inv Frt GLM		Region		CYTD 94/95 Earnings Statement D010-24491 for RRRXX- US,IN,SH			95 Jan-Feb Tot Frtln Cost Acctg Report M150-04		DI Adj (76.2% of Jan/Feb YTD std and cat) from EUC Query		E (Above)	Reference: 95 Jan/Feb DI Std Cat From EUC
Acc 36184 minus IF line (PPV's) plus SH Adj Frt	Plus Dede Frt Credited to 38220 for eventual charge to Dede											
\$216,266	\$24,098	HD	\$13,434,868	\$97,238	\$13,337,630	\$3,816,941	\$9,520,688	\$5,009,109				
\$134,132	\$21,590	HC	\$11,595,210	\$93,528	\$11,501,682	\$3,533,916	\$7,967,767	\$4,637,685				
\$214,305	\$30,082	HA	\$17,001,750	\$144,406	\$16,857,344	\$4,770,334	\$12,087,010	\$6,260,281				
\$165,067	\$23,596	ZB	\$11,875,832	\$184,638	\$11,691,194	\$4,308,225	\$7,382,969	\$5,653,839				
\$148,328	\$39,996	31	\$21,974,048	\$172,855	\$21,801,193	\$7,012,041	\$14,789,152	\$9,202,154				
\$130,444	\$14,741	HZ	\$8,571,544	\$72,248	\$8,499,296	\$2,850,852	\$5,648,444	\$3,741,276				
\$87,997	\$12,407	HS	\$7,317,158	\$48,365	\$7,268,793	\$2,789,184	\$4,479,609	\$3,660,346				
\$90,595	\$13,383	HG	\$5,967,968	\$41,256	\$5,926,712	\$2,063,003	\$3,863,709	\$2,707,353				
\$64,930	\$12,846	HP	\$5,357,016	\$33,263	\$5,323,753	\$1,535,071	\$3,788,683	\$2,014,528				
\$62,813	\$10,575	HR	\$4,966,317	\$38,514	\$4,927,803	\$1,631,760	\$3,296,042	\$2,141,418				
\$1,314,877	\$203,314		\$108,061,711	\$926,310	\$107,135,401	\$34,311,328	\$72,824,073	\$45,027,989				

