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EDGCOMB METALS: THE TROY PLANT (A)

Alex Tereszcuk, plant manager of Edgcomb Metals' Troy, Virginia, facility, had a problem. Frank Spencer, considered to be the best and most conscientious of the seven Troy truck drivers, had complained at the July 1983 drivers' meeting that some drivers were not working as hard as others. Spencer went on to point out that a driver who took ten hours to complete a run that could actually be done in eight was *rewarded* with time and a half for the two overtime hours. To investigate these claims, Tereszcuk had compiled data on total hours, total miles, and number of delivery stops for each of several delivery runs made from his facility in recent months. He was now faced with the tasks of analyzing these data and preparing an appropriate response. Tereszcuk wanted to respond to the issue as soon as possible—perhaps at the August meeting.

Company Background

Founded in Philadelphia in 1923, Edgcomb Metals had expanded to 21 service centers serving 37 eastern, midwestern, and southern states, with total sales of over $500 million a year by 1983. These service centers acted as intermediaries between the large metal manufacturers such as US Steel and the myriad of diverse companies using metal products in their operations.

The service centers stored and distributed thousands of standard metal products (steel bars, sheets, and rods) and also provided specialized cutting and shaping services to customer specifications. In total, Edgcomb offered some 15,000 products to 35,000 different customers. The company had a reputation for providing a high-quality product coupled with excellent service and delivery standards.

The Troy plant, constructed in 1976, was Edgcomb's most modern facility. It covered 72,000 square feet and housed a full line of metal-processing equipment. The Troy plant serviced the entire state of Virginia with the exception of a small area bordering Washington, DC.

This case was prepared by Phillip E. Pfeifer, Professor of Business Administration, and was based on the supervised Business Study of Glenn A. Ferguson (MBA '85).

The Distribution System

The state was divided into seven distribution sectors, as shown in **Exhibit 1**. Deliveries were made five days a week, with the busier sectors receiving one or more deliveries daily. Each afternoon the plant scheduler determined which orders would be delivered the following day, grouped the orders into runs within each sector, and carefully sequenced the orders within each run. This sequencing attempted to minimize the amount of time and distance for the run, while at the same time accommodating special customer delivery requests. Trailers were loaded during the night according to this schedule (the last order to be delivered was the first to be loaded into the trailer). The customers took responsibility for unloading their own orders. The scheduler also assigned drivers to runs, trying to achieve an equitable pattern of assignments so that each driver had the same percentage of long (or short) runs.

Because Edgcomb's drivers and semitrailers were the primary representatives of Edgcomb Metals (few customers had ever seen the Troy facility), the company took special pride in their image and appearance. The drivers wore customized uniforms, complete with epaulets and an American flag. The semitrailers were brightly painted with the Edgcomb logo and were replaced every four years. Traffic violations were rare, and the drivers paid their own traffic fines.

Drivers were paid well ($9.50 an hour with a 50% premium for overtime) and received an extensive benefit package. The standard day was eight hours with a half hour for lunch (unpaid) and two paid 10-minute breaks. The eight-hour day was guaranteed, so that a driver finishing early had the option of working in the plant or taking the time off without pay. Approximately one half hour per day was allocated for paperwork, consisting primarily of a daily log that listed customers delivered, miles driven, and hours spent. Overtime was accumulated whenever more than eight hours were worked in a given day. The nonunion Troy drivers accumulated 1,950 overtime hours in the first half of 1983. **Exhibit 2** gives monthly data for total driver hours, overtime, miles, and number of deliveries in that time period.

Edgcomb leased seven trucks and eight trailers at a cost of $1,600 per month for a semitrailer combination. The company estimated variable costs (excluding driver wages) to be $0.27 per mile. The fleet covered 207,293 miles during the first six months of 1983, delivering a total of 15,806 tons of metal and making 4,227 stops.

Drivers' Meeting, August 1983

Shortly after assuming the job of plant manager in July 1982, Tereszcuk initiated a regularly scheduled series of drivers' meetings. He hoped these meetings would facilitate communication between him and the drivers and give the drivers an opportunity to air their gripes and make suggestions. The first few meetings produced a small number of minor complaints and suggestions, and Tereszcuk made several small changes in response. It was not

until the July meeting, however, that the first significant problem was brought up. Frank Spencer, one of the more experienced drivers, stood up during that meeting and spoke:

> First, I'd like to say that I think these drivers' meetings are a real good thing. It's always nice to know that management is willing to listen.
>
> I want to bring up something that bothers me and I know bothers some of the rest of you. Quite simply, I don't think we're all pulling our weight. I work hard and conscientiously and get done in eight hours what takes others ten. We all enjoy our freedom out there on the road, and we also know that the harder we work, the more we deliver and the faster we finish. And we also know that this freedom brings plenty of opportunity to goof off.
>
> What's doubly bad about the situation is that the best drivers, those who finish in eight hours, don't get paid as well as those who take ten and get overtime. It's discouraging to see that I'm penalized for doing a good job.
>
> I enjoy my work and I think we've got real good jobs, but I think there's something wrong and unfair with this system that pays you more if you're not doing your job.

Spencer's comments were seconded by a couple of other drivers, and Tereszcuk got the sense that it was one newer driver in particular, John Williams, who was the target of these criticisms. The meeting ended with a promise from Tereszcuk that he would look into the matter.

Tereszcuk believed that Spencer was probably the best and most conscientious driver in the plant, and he also believed that Williams was as unsatisfactory as Spencer was good. But he did not believe that Williams was intentionally goofing off. He thought it was more a matter of Williams being less energetic and skillful than the others—and just plain slower in general. Tereszcuk could see that Williams was being paid slightly more; Williams had made close to $30,000 a year in 1982 because of overtime. **Exhibit 3** gives the 1983 overtime accumulations of the seven full-time delivery drivers.

Data Analysis

Tereszcuk decided to see what he could learn from Spencer's and Williams's daily logs. The total accumulated overtime had to be judged relative to the number of days worked, the number of miles traveled, and the number of stops made. To do this, Tereszcuk compiled data on hours worked outside the plant (excluding any explainable nonproductive hours such as tire changes, breakdowns, etc.) versus miles driven and stops made over a four-month period (April to July of 1983) for both Spencer and Williams (see **Exhibit 4**.) Several days' data were found to be unusable because of the presence of extenuating circumstances (poor weather, malfunctioning truck, etc.) and were not included.

In the period covered by the daily log data, Spencer averaged 10.06 hours per run while Williams averaged only 9.72, which conflicted with the contention that Williams tended to be slower than Spencer. Tereszcuk wondered whether the four-month period considered might not be representative or whether Spencer's higher time per run might be explained by his larger average number of miles and stops.

To check his belief that sectors made a difference in the number of hours to expect for a given run, Tereszcuk compiled daily data on two sectors: The Virginia Beach/Norfolk sector and the local Charlottesville sectors were picked to represent the extremes. A delivery run to the Charlottesville sector was one of the shortest, while a delivery run to the Virginia Beach sector was one of the longest and most difficult. A comparison of the averages for these two sectors (shown in **Exhibit 5**) confirmed that Virginia Beach runs were indeed longer (both in miles and hours) and required more stops.

If the analysis of these data confirmed Spencer's contentions, Tereszcuk had several options:

- One of the more extreme alternatives was to remove Williams from his position as driver. Tereszcuk wondered whether the data provided enough evidence to support such a decision.
- A second, and less drastic, alternative was to set up some sort of monitoring system that would track the drivers' performances. Tereszcuk envisioned a system that would periodically compare the performance of each driver to a standard. The standard would be based on miles driven and stops made and might also consider the particular sectors in which the driver's runs were made.
- A third alternative was to equip the trucks with tachographs, machines that kept a record of miles per hour over the course of a run. Such a record would provide almost complete information as to the speed and activities of the drivers, but several other plants in the Edgcomb Metals Company had used tachographs with mixed success. After several phone calls to these plants, Tereszcuk learned that drivers universally disliked the little machines. The idea of being "watched" and recorded did not sit well with the drivers, individuals who generally enjoyed the freedom of being alone on the road. There was also some question as to whether overall performance would improve because of the tachographs. From a purely economic standpoint, Tereszcuk wondered if the $75-per-month lease cost of a tachograph could be justified by improved performance. If the installation of tachographs changed Williams's performance to, for example, a level equal to that of Spencer's, would the tachograph be attractive?
- One final alternative that had several attractive features was to change the basis on which drivers were paid. Rather than pay by the hour and reward the poorer performers, Edgcomb might pay instead by the mile and number of deliveries. Paying drivers only for the amount of work accomplished would remove any incentive to stretch out a run in order to incur overtime.

Exhibit 1

EDGCOMB METALS: THE TROY PLANT (A)

Distribution Sectors

Sector Number	General Location	Days Delivered Per Week
1	Virginia Beach/Norfolk	5
2	Richmond	5
3	Charlottesville	5
4	Harrisonburg	3
5	Roanoke	5
6	Lynchburg	5
7	Southwest Virginia	2

Source: All exhibits were created by author.

Exhibit 2

EDGCOMB METALS: THE TROY PLANT (A)

Monthly Data for the Troy Facility

	Month	Tons	Miles	Stops	Regular Hours	Overtime
1983	June	3,043	34,907	719	1,182	362
	May	2,889	38,799	728	1,259	360
	April	2,384	33,367	695	1,230	382
	March	2,500	35,288	763	1,345	283
	February	2,312	29,876	613	1,205	257
	January	2,678	35,056	709	1,253	306
1982	December	1,678	27,171	568	962	187
	November	2,209	29,917	624	915	276
	October	2,382	30,143	713	962	239
	September	2,315	34,771	617	1,091	272
	August	2,624	36,523	724	1,108	283
	July	1,745	34,693	640	1,030	249

Exhibit 3

EDGCOMB METALS: THE TROY PLANT (A)

Overtime by Driver for First Six Months of 1983

Driver	Regular Hours	Overtime Hours
1	960	320
2	924	291
3	969	325
4	896	199
5	928	277
Williams	907	215
Spencer	931	284
Total*	6,515	1,911

* The hours of one other back-up driver are not included in this total.

Exhibit 4

EDGCOMB METALS: THE TROY PLANT (A)

Daily Data for Williams and Spencer: Williams Data

Miles	Stops	Hours	Miles	Stops	Hours
331	3	10.17	176	5	7.75
206	2	8.00	147	7	9.10
221	4	8.25	536	2	13.32
193	4	10.00	55	4	7.50
129	4	7.50	191	6	11.00
208	5	9.33	237	7	10.33
368	3	11.50	258	6	12.17
163	6	8.50	276	1	9.67
264	1	8.00	130	3	9.25
238	3	9.00	241	5	10.00
193	5	9.00	364	8	13.00
145	6	8.00	207	3	7.25
331	5	12.50	251	8	9.75
427	5	14.00	157	5	7.83
204	6	9.00	179	3	7.75
298	4	7.75	335	12	10.67
225	12	13.17	179	2	8.67
203	8	13.08	398	1	10.33
253	6	10.67	147	3	5.42
279	9	12.00	132	4	9.00
193	4	8.00	378	2	10.50
182	8	10.00	218	4	10.00
279	6	10.50	401	4	13.25
177	5	7.50	275	1	9.33
195	5	9.75	123	5	7.67
171	4	9.17	174	8	9.50
223	5	10.00	119	3	8.00
320	4	11.33	261	7	11.40
226	4	8.00	292	3	10.75
193	4	7.75	200	7	10.50
			292	4	11.33

	Miles	Stops	Hours
Average	235.52	4.80	9.72
Standard Deviation	87.48	2.34	1.84
Count	61	61	61

Exhibit 4 (continued)

Daily Data for Williams and Spencer: Spencer Data

Miles	Stops	Hours	Miles	Stops	Hours
182	3	8.25	189	8	8.25
364	9	12.50	326	6	11.00
227	9	10.50	176	7	8.00
188	4	6.50	352	7	11.50
275	6	9.50	197	5	8.00
440	4	11.50	312	10	12.00
214	6	8.50	110	6	6.00
265	4	8.00	334	5	10.50
352	6	10.50	339	9	12.00
321	4	9.00	201	11	9.50
174	8	9.75	340	7	12.00
372	11	13.50	382	4	9.83
188	6	8.00	189	8	8.50
249	2	9.00	262	6	9.50
386	5	14.00	290	2	7.75
112	3	6.00	350	6	10.50
164	6	7.67	286	6	10.00
338	2	10.50	178	3	7.10
522	8	15.75	286	2	9.50
262	6	10.00	292	5	10.00
333	3	9.25	392	5	12.85
321	6	10.50	379	5	11.50
240	3	8.67	199	8	9.50
345	2	8.75	226	9	10.00
262	8	9.25	176	6	8.50
254	3	9.00	379	8	11.00
310	6	10.83	225	4	8.00
203	11	11.50	311	8	11.75
540	11	16.00	186	9	9.00
216	9	9.50	228	10	9.00
415	3	11.75	205	2	8.42
375	2	10.00	346	9	10.00
306	11	11.75	320	9	11.50
341	10	11.50	181	9	9.50
311	9	13.25	369	7	11.75

	Miles	Stops	Hours
Average	284.00	6.29	10.06
Standard Deviation	88.63	2.69	1.99
Count	70	70	70

Exhibit 5

EDGCOMB METALS: THE TROY PLANT (A)

Daily Data by Sector: Sector 1: Virginia Beach/Norfolk

Miles	Stops	Hours	Miles	Stops	Hours
331	3	10.17	366	11	12.50
364	9	12.50	329	4	11.42
304	4	10.00	348	9	11.75
419	7	12.25	368	10	13.00
341	5	9.92	372	9	12.67
349	6	12.25	373	11	13.00
340	7	11.00	416	3	11.75
334	2	9.50	320	4	11.33
368	3	11.50	367	5	12.00
280	3	9.25	399	12	13.83
352	6	10.50	328	1	8.75
339	7	12.00	341	10	11.50
264	1	8.00	353	7	12.00
326	5	11.00	366	9	12.25
420	3	11.67	337	5	12.25
372	11	13.50	288	4	10.00
335	4	9.50	352	7	11.50
273	2	8.00	363	9	11.25
331	6	10.50	373	8	12.75
328	9	13.00	278	4	10.00
331	5	12.50	339	3	11.25
311	4	10.00	312	5	10.75
322	4	9.25	327	5	10.42
338	2	10.50	334	5	10.50
368	4	10.75	360	8	11.75
347	7	12.50	272	4	10.00
347	4	10.00	310	3	11.50
333	3	9.25	276	1	9.67
321	6	10.50	340	7	12.00
335	5	12.00	354	11	15.00
370	10	12.80	276	2	8.25
343	7	12.00	364	8	13.00
353	9	11.75	354	7	13.00
279	9	12.00	343	6	11.00
333	7	12.00	350	6	10.50

	Miles	Stops	Hours
Average	339.27	5.89	11.26
Standard Deviation	33.62	2.80	1.41
Count	70	70	70

Exhibit 5 (continued)

Sector 3: Charlottesville

Miles	Stops	Hours	Miles	Stops	Hours
182	3	8.25	179	4	7.50
131	4	6.75	125	6	6.00
136	4	8.00	149	5	6.50
193	4	10.00	108	5	6.00
129	4	7.50	152	3	6.00
214	6	8.50	55	4	7.50
162	6	8.50	165	4	8.75
227	4	8.75	197	5	8.00
226	5	8.00	131	4	8.50
215	4	8.50	110	6	6.00
197	2	7.50	191	5	8.25
112	3	6.00	105	7	8.00
156	5	7.50	240	3	8.00
204	6	9.00	130	3	9.25
298	4	7.75	265	4	10.60
109	6	7.50	207	3	7.25
231	8	11.08	88	3	5.00
127	5	7.25	178	3	7.08
184	3	7.50	158	5	9.67
89	5	8.00	188	6	8.25
93	3	6.67	151	6	8.75
176	4	7.33	132	4	9.00
131	6	8.50	142	2	6.67
177	5	7.50	204	5	8.50
171	4	9.17	205	6	8.50
223	5	10.00	123	5	7.67
193	4	7.75	180	7	8.25
			62	4	8.00

	Miles	Stops	Hours
Average	163.75	4.53	7.93
Standard Deviation	50.11	1.29	1.19
Count	55	55	55