# Case Study
# TransLighting Group, Inc.
# A Small Town, Family Business

Jeff Lowenthal

*TransLighting Group, Inc. consists of two companies all centered around the transportation industry. The original company, TransLighting, was started in 1962 by Henry Phillips. Henry was an engineer with Ford Motor Company specializing in braking wiring systems. Over an eight-year period, he designed and patented several wiring and harness systems that are used in cars as of the 2006 model year. Back in the 1950s Henry had the opportunity to learn about and use LED technology. He even came up with a process using this technology to increase brake light visibility (i.e., the third or middle brake light on most cars). In June 1961 over dinner with another engineering buddy, Bill Acken, Bill figured that they could use this same technology to display roadside messages for motorists. Following license approval from Ford, Bill and Henry started TransLighting in White Lake, Michigan.*

By 2006, TransLighting Group became the leading manufacturer of lighting and interior products for the transportation industry. Today, TransLighting offers lighting, storage, and other innovative products that equip the interior envelope of a transit vehicle; and the company has expanded its product line to include customized air quality and spot extraction systems.

TransLighting Group works very closely with its customers, involving engineering personnel from both groups. Bill and Henry strive very hard to build a strong brand loyalty and their hard work has paid off. By 2005, the company had captured 47 percent of the market in the transportation industry with their closest competitor with only 13 percent market share.

"On Time and Right" is more than a catchy manufacturing mantra at TransLighting. It extends beyond manufacturing and quality assurance. In fact it's part of the culture. It's about doing the right thing for the original equipment manufacturer (OEM), the transit facility, and the end customer.

When Bill and Henry established their partnership, they formed a C corporation issuing 40 percent voting stock to each owner. The remaining 20 percent was put aside for future distribution to individual family members. Over the next 20 years from formation, this "other stock" has been issued to various children who have joined the company and to key employees who have been very loyal to the companies. From a management structure viewpoint, Henry is the president and COO of TransLighting Manufacturing, while Bill is the president and COO of TransEnvironmental Systems. Combined, both companies employ more than 150 people and have sales in the range of $51 million. Both companies are located on the same property and are about 50 yards apart (see Figures 1 and 2).

## TransEnvironmental Systems

As TransLighting was building its customer base, it identified a niche market within its customer's organization. Workers who were installing TransLighting products were operating in dirty and dusty workspaces. There were some major concerns about quality and safety. To keep the company's work environment clean, since its customers demanded a clean product free of dust and wayward debris, TransLighting developed a customized dust control system. Customers started asking where TransLighting obtained its dust control system since they wanted their own employees to work in a clean and safe workspace void of irritants, biological hazards, and respiratory concerns. Seeing a potentially large opportunity for industrial vacuum solutions, TransEnvironmental Systems was created.

TransEnvironmental dust control environmental equipment applies the principle of source capture to eliminate particulate from the workplace by capturing dust and debris at the source. It differs from others on the market in several respects:

- Turnkey: Proven solutions from a single supplier
- Durable and rugged: Its systems withstand the rigors of everyday operation
- Powerful: Strong suction to match the application
- Complete: Fans, pumps, filters, separators, containers, and accessories installed, supported, and serviced
- Quiet: Far below OSHA requirements
- Profitable: Cleanup time is drastically reduced or eliminated. Tool and abrasive life is extended.
- Flexible: From a single user portable to multiple station, facilitywide, central systems

- Support: Nationwide direct sales and service locations
- Proven: More than 14 years in the industry

TransEnvironmental now offers integrated, high-velocity vacuum systems to numerous areas within transit maintenance facilities. Systems can be configured, designed, and installed to service individually or collectively vehicle interior cleaning, soot filter recovery, brake lathe dust control, and body shop dust control.

In 2006, TransEnvironmental Systems employed more than 75 employees and had gross revenues of about $15.7 million. Its market is primarily North and South America, with some business in the EU.

## A Family Affair

[It is three o'clock in the morning on Tuesday and Jack looks over at the very pretty lady lying in bed next to him. He needs to get up in two hours and start getting ready for work. As he wakes up and looks up to the ceiling, Jack wonders how he ever got himself involved sleeping with the president's daughter-in-law and how he will explain this to his brother, who is the vice president of manufacturing and his direct boss. . .]

Working within TransLighting Group is a family affair. At TransEnvironmental, Bill's son, Kevin is the vice president of sales. Running the warehouse is Bill's daughter, Kendra. Kevin has been with the company for the past eight years following his graduation from Michigan State University. His degree was in marketing and logistics and he was a very good student. After working within several departments in the company, he found that his strength was sales and has been working in that area for the past four years. The job has been very demanding requiring him to travel about four days per week. About a year and half ago, he married Jenny, who also worked at the company. Just after getting married, Jenny decided to work at TransLighting, since she did not want to work with her husband and father-in-law, and took over the warehouse.

There are many other "family sets" within both companies. Being located in a small town, the best way to find employees is to seek the friends and family of existing employees. Thus, there are many cousins, brothers, sisters, friends, and neighbors employed within the companies. Figure 1 presents a partial organization chart and shows family relationships.

## TransLighting Manufacturing

Ed Poteau has been with the company for the past seven years and was a friend of Kevin's at school. Ed obtained his degree in supply chain logistics and is now the vice president of manufacturing. Up until six weeks ago, all was going very well. Productivity was up and rework was down by 14 percent. After returning from a week's vacation in the islands, Ed is looking at the production numbers (see Figure 3) and is not happy. "I go away for just one week and all goes to hell around here," Ed thinks to himself. "I need to get a handle on this before Henry draws and quarters me." Looking at the report, the first glaring area is the Light Wiring Department. After noticing that the scrap has gone up 28 percent and rework has doubled, Henry knows it is time to get out from behind his desk and take a walk.

### *Light Wiring Department*

The L20, one of TransLighting's core products, is a multifunctional cove lighting system that provides optimal light levels with a minimal amount of upkeep. This product includes the following key features:

- Condensation does not build up and weep from the pultruded fiber reinforced panel.[2]
- The base panel is vandal resistant and is impervious to most solvents.
- The cove design includes the lighting panel, air duct, and electrical raceway.
- Single pin lighting promotes long life.
- Advanced design and standard ballasts are repairable.
- Designs can be customized to fit the application.

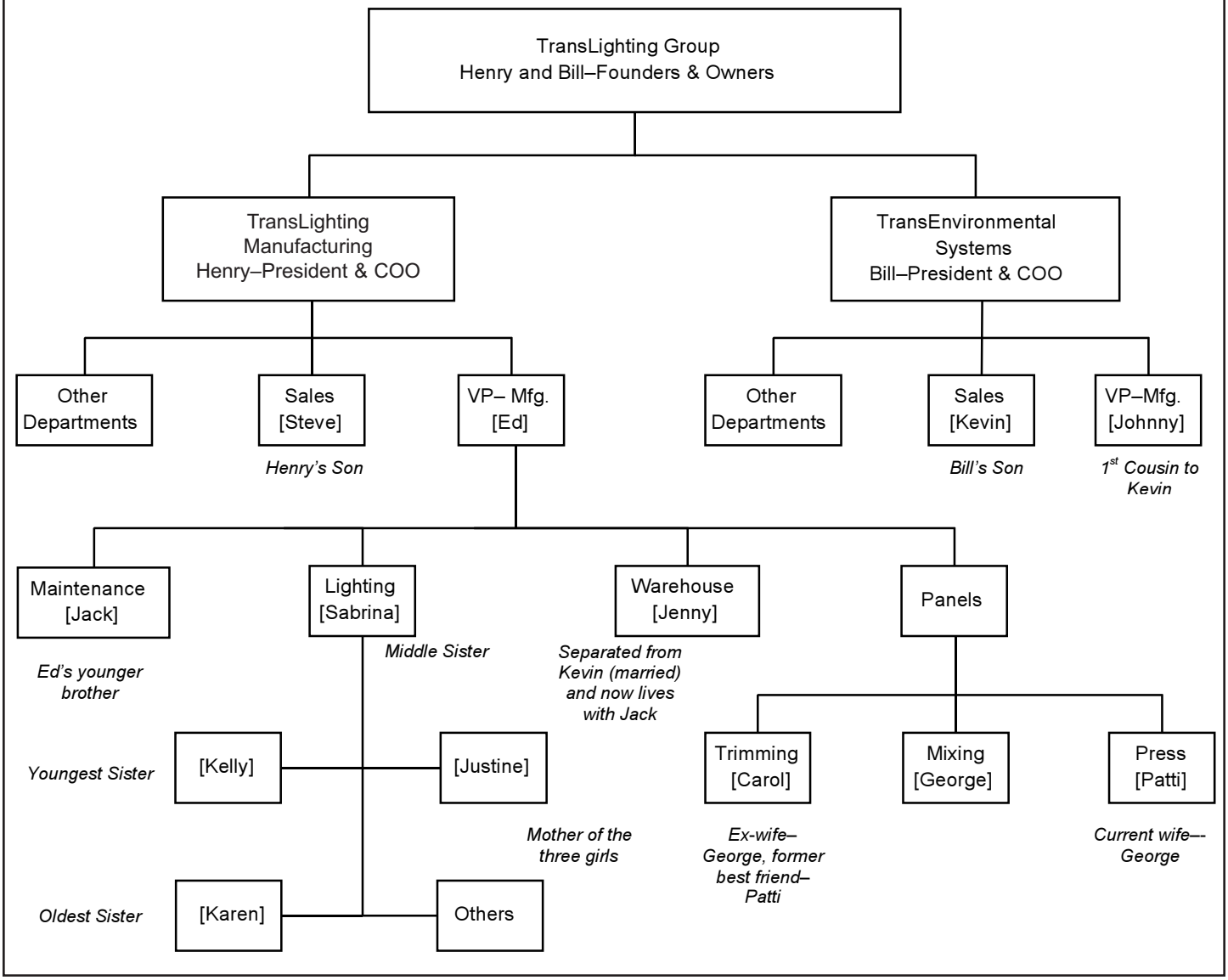
The department that assembles the L20 product consists of 15 workers and is managed by Sabrina. Sabrina has been with the company for the past three years and recently obtained her associate's degree from Oakland Community College. Ed made her supervisor in 2004 after being the only person in the department with a degree, being highly personable, and at her repeated request to move into management. Ed had some initial concern about making her the supervisor due to the various family relationships within the department. Sabrina is 23 years old and currently lives with her boyfriend. Sabrina's older sister (Karen, age 25), younger sister (Kelly, age 21) and mother (Justine, age 46) all work within the department. Having Sabrina supervise her family for the past two years has not been an issue. Ed was hoping that this has not changed.

Talking with Sabrina and others, Ed finds that this scrap and rework issue has been primarily happening within Karen's work area. There was been some problems with wiring connectors in the past but not to this extent. In a close review of the area's materials, nothing seems different nor has a supplier been changed in the recent past. Ed discusses this issue at length with Sabrina asking her to find the root cause of the issue and report back to him by the end of the day. Just before he is ready to leave the area, Justine pulls Ed to the side to talk with him in private.

"I just wanted to let you know that Karen and Sabrina are fighting big time," Justine says.

She continues, "Karen submitted a request about taking

**Figure 1. Organizational Chart and Family Relations**




some vacation time later this month and Sabrina just said no. According to Sabrina, we have a new major contract and have some tight deadlines by the end of the month and no one can take time off until we hit these new production goals."

Ed thinks to himself, "I have no idea about this new contract and will have to explore it at the management meeting this afternoon."

Justine goes on to say, "Karen has been telling everyone that Sabrina is just jealous that she got a new 2006 Firebird and to get back at her, she is not letting her take this vacation to go the Red Hot Chili Pepper's concert."

Ed thanks Justine for the information and started to head over to the panel department.

## *Panel Department*

One of the key features of TransLighting's TransForm material is its versatility. This flexibility encourages endless opportunities for customizing and enhancing interiors.

- The freedom of design capabilities reduces installation labor costs while creating a distinct and appealing image.
- The thermal plastic material is resistant to dents and graffiti.
- Cuts and scratches from vandalism are easily hid due to the through-color material.
- A wide range of colors is available.
- TransForm is the preferred material for structural rigidity and fire- and smoke-safe applications.

**Figure 2. Property Layout**


TransForm uses fiberglass sheets mixed with a special thermal plastic resin to create a product that is resistant to dents and either ink or paint graffiti (see Figure 4 for plant layout). These fiberglass sheets are laid out in the bottom half of a mold in a cross-pattern fashion. Next, the special thermal plastic resin is mixed about 25 yards away from the presses, after which the resin is poured over the mold and sheets. Using a 35-ton Brunner press, the resin and fiberglass are fused using high pressure and high temperature for a period of 15 minutes.

Referring to his notes, Ed reviews that the scrap rate on press #2 has increased by 29 percent during the past month. Walking up to the press, Ed inquires of Patti, the press operator, what is going on with her production.

"There is nothing wrong with the press," Patti snips. "If George (the resin mixer) would get the formulation right, I wouldn't have so many scrap panels!"

Ed shakes his head and wonders what mess he just got himself into. Not only do they work for the same company and work 25 yards apart, Patti and George are a husband and wife team. They have been married for about two years and generally there have been no problems. But this one is costing the company lots of money, producing all that scrap. After talking with Patti a bit longer, Ed heads over to the mixing station to meet with George.

From a distance, Ed can already see that George is in a grumpy mood. The two have worked together for the past eight years and at times, George is known for having wide mood swings. Overall he is a good worker and has a special talent working with the mixers and resins. He seems intuitively to know how to adjust the blend based on weather and internal and external conditions. In the long run, this has saved the company lots of money by keeping production problems to a minimal level. Ed, in a light hearted manner, approaches George.

"How you doing today, George," Ed chimes.

George replies, "I saw you talking with Patti a few minutes ago. Is she griping[3] about me again? It'll be the third time since last week!"

[Patti is George's current wife. George was married to Carol and had three kids. Carol supervises the panel trimming department and works about 25 yards from George, opposite of the presses. Patti and Carol were close friends until Carol found out that George and Patti were having an affair. She threw George out and he moved directly into Patti's house. After the divorce was final, George and Patti got married. There has been an ongoing fight over visitation and child support. At times it has been civil and other times it has been messy.]

After hearing this statement from George, Ed saw no notes about mixing complaints on his desk this morning so he pressed George to explain further.

"There is nothing wrong with my mixing and blends, Patti is just mad at me over Carol and the kids. She has cut me off [sexually] and says I cannot stay focused on my work, which is why my blends are wrong. This scrap problem is going to hurt her bonus and it is all my fault."

Ed shook his head and tells George that he will look into

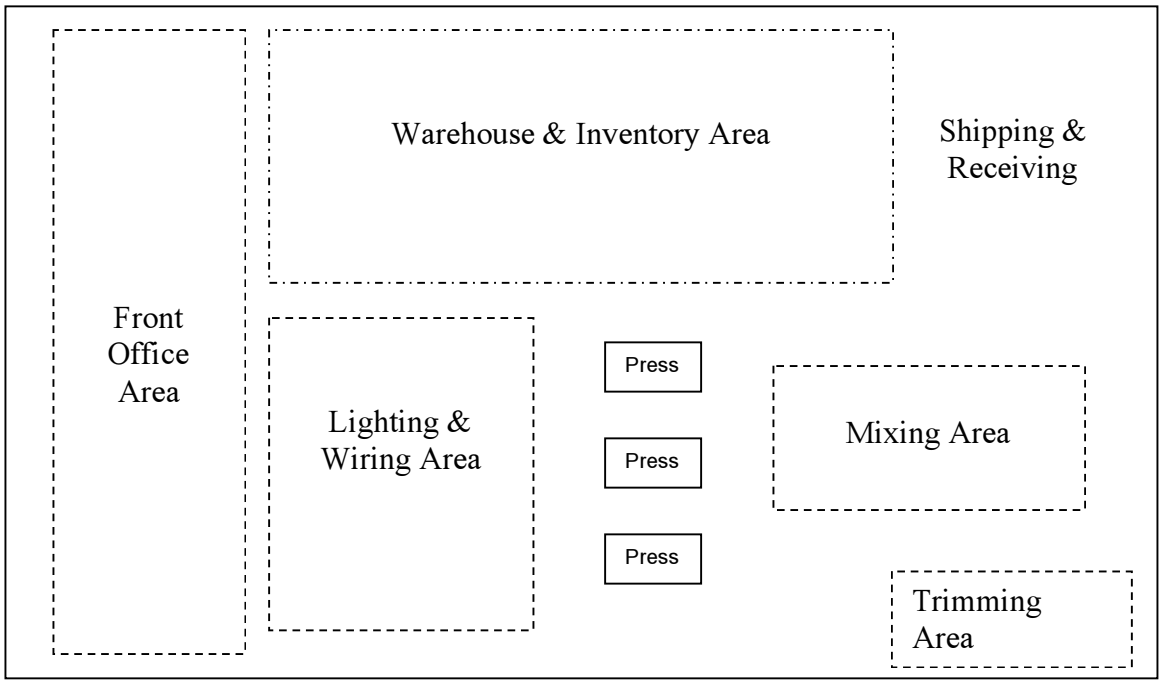
## Figure 3. Production Report

Year: 2006

### TransLighting -- Manufacturing Report

| | MAY | | | | | | | | | | | JUNE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | Current | | | | | Last Year | | | | | SCH | Current | | | | | Last Year | | | | | SCH |
| Wiring -C | WK1 | WK2 | WK3 | WK4 | TOTAL | WK1 | WK2 | WK3 | WK4 | TOTAL | | WK1 | WK2 | WK3 | WK4 | TOTAL | WK1 | WK2 | WK3 | WK4 | TOTAL | |
| L20 | 9 | 3 | 5 | 7 | 24 | 7 | 5 | 0 | 8 | 20 | 25 | 8 | 8 | 3 | 6 | 25 | 9 | 6 | 2 | 8 | 25 | 25 |
| LH16 | 5 | 4 | 6 | 3 | 18 | 6 | 4 | 4 | 6 | 20 | 20 | 3 | 5 | 5 | 7 | 20 | 2 | 4 | 6 | 3 | 15 | 20 |
| 9122-45 | 0 | 4 | 2 | 6 | 12 | 2 | 4 | 3 | 6 | 15 | 14 | 2 | 2 | 1 | 5 | 10 | 1 | 4 | 2 | 5 | 12 | 14 |
| Wiring - RW | | | | | | | | | | | | | | | | | | | | | | |
| L20 | 0 | 2 | 0 | 1 | 3 | 0 | 1 | 2 | 0 | 3 | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | |
| LH16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 2 | 0 | 4 | |
| 9122-45 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 | | 1 | 1 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | |
| Wiring - S | | | | | | | | | | | | | | | | | | | | | | |
| L20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | |
| LH16 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | |
| 9122-45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | |
| Panel - C | | | | | | | | | | | | | | | | | | | | | | |
| Transform 8691 | 25 | 34 | 28 | 26 | 113 | 23 | 31 | 25 | 23 | 102 | 105 | 25 | 30 | 25 | 22 | 102 | 23 | 27 | 23 | 20 | 92 | 105 |
| Transform 8112 ; | 15 | 22 | 11 | 21 | 68 | 14 | 15 | 16 | 15 | 60 | 60 | 15 | 18 | 18 | 11 | 62 | 14 | 13 | 26 | 8 | 60 | 60 |
| Transform 8112 : | 21 | 32 | 26 | 21 | 100 | 13 | 29 | 29 | 19 | 89 | 90 | 21 | 28 | 21 | 18 | 88 | 13 | 25 | 23 | 17 | 77 | 90 |
| AK 92-194 | 17 | 22 | 25 | 23 | 87 | 15 | 13 | 16 | 14 | 59 | 55 | 17 | 15 | 18 | 15 | 64 | 15 | 9 | 11 | 9 | 44 | 55 |
| Reg-17 | 5 | 9 | 5 | 7 | 25 | 4 | 8 | 1 | 10 | 23 | 20 | 5 | 8 | 5 | 4 | 21 | 4 | 7 | 0 | 6 | 18 | 20 |
| Panel - RW | | | | | | | | | | | | | | | | | | | | | | |
| Transform 8691 | 5 | 17 | 8 | 8 | 38 | 6 | 8 | 4 | 4 | 22 | | 6 | 8 | 19 | 13 | 46 | 7 | 4 | 9 | 6 | 26 | |
| Transform 8112 ; | 11 | 19 | 4 | 8 | 42 | 7 | 9 | 2 | 4 | 22 | | 8 | 11 | 17 | 11 | 45 | 5 | 5 | 8 | 5 | 23 | |
| Transform 8112 : | 6 | 15 | 12 | 15 | 47 | 3 | 5 | 4 | 5 | 17 | | 12 | 17 | 12 | 17 | 58 | 6 | 6 | 4 | 6 | 22 | |
| AK 92-194 | 3 | 11 | 5 | 10 | 29 | 5 | 7 | 3 | 6 | 21 | | 1 | 6 | 11 | 5 | 24 | 2 | 4 | 7 | 3 | 16 | |
| Reg-17 | 6 | 8 | 6 | 6 | 27 | 2 | 4 | 3 | 3 | 12 | | 24 | 17 | 11 | 15 | 66 | 8 | 8 | 5 | 7 | 28 | |
| Panel - S | | | | | | | | | | | | | | | | | | | | | | |
| Transform 8691 | 4 | 1 | 5 | 6 | 17 | 3 | 1 | 4 | 5 | 13 | | 8 | 5 | 5 | 3 | 20 | 6 | 4 | 4 | 2 | 16 | |
| Transform 8112 ; | 3 | 4 | 0 | 1 | 8 | 2 | 3 | 0 | 1 | 6 | | 1 | 1 | 4 | 3 | 9 | 1 | 1 | 3 | 2 | 7 | |
| Transform 8112 : | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 1 | 2 | 3 | | 0 | 1 | 1 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | |
| AK 92-194 | 1 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 2 | | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | |
| Reg-17 | 3 | 1 | 0 | 3 | 6 | 2 | 1 | 0 | 2 | 5 | | 1 | 1 | 0 | 1 | 4 | 1 | 1 | 0 | 1 | 3 | |

**Figure 4. TransLighting Manufacturing Plant Layout**




the issues later in the day having just returned from vacation. Walking back to his office, he grabs a cup of coffee and prepares for an upcoming management meeting that will be held in about an hour.

### *Bi-Weekly Staff Meeting*

Management meetings are held biweekly and are typically held in the conference room at the front of the building. Henry usually leads the meeting. In attendance are Bill, Kevin, Johnny (VP of Manufacturing from TransEnvironmental), Steve (VP of Sales from TransLighting), and Ed. The meeting is significantly more brutal than usual that morning. Bill and Kevin seem to be especially harsh on Ed, who is at a total loss over the events at the meeting since he just returned from his vacation. When the meeting was over, Ed calls Steve to the side and asks what went on in the meeting.

"Is there something going on that I don't know about?" asks Ed.

"Have you talked with your brother, Jack, since you returned?" responds Steve.

Ed replies that he has not spoken to Jack. Steve strongly suggests that Ed talk with him right away. Jack is Ed's younger brother by two years and started with TransLighting about one year after Ed started there. Jack is very mechanically inclined and subsequently has taken over the maintenance department.

Leaving the front office, Ed heads right out to the plant and finds Jack. Pulling him off a repair job, he just about yanks him into his office and closes the door.

"Ok little bro, what is going on? I just got beaten up at the management meeting and Steve suggested that I talk with you right away."

Jack looks down at his feet and Ed feels his stomach drop.

"You know how I took off that week skiing about four months ago. Well I met a lady on that trip up north and we hooked up."

Ed looks at him and states, "So, that is no big deal. You are a big boy."

"Well it is. See the lady I hooked up with was Jenny."

Ed's eyes roll up and in a louder voice, "You don't mean Kevin's wife do you?"

"Yep."

"What the heck were you thinking, you dumbhead."

Jack sits back and replies, "Jenny and Kevin have been having some problems for the past eight months. Since I see her [Jenny] just about every day in the plant, we just started talking. We've been just friends ever since. Well one day about five months ago I shared that I was heading up north [northern Michigan] to go skiing and she asked if she could come with me. Joking, I said yes, not thinking that she would really go. After I made my plans with Mike, he and I took off and headed to the lodge. AND Jenny took off that same week as

me and took Alice with her to the same place as Mike and I. And that's where we hooked up."

Ed could not believe what he was hearing. Turning to his brother, "OK, it was a short term, one-time jump in the sack, wasn't it?"

"Ommm, no. Jenny and I have been seeing each other for the past four months."

Ed exploded, "You have been doing what! You have to end it today. Now. No exceptions!"

Looking back down at his feet, Jack says, "It's not that simple. Last week while you were in the islands playing, Jenny left Kevin and moved in with me."

After his brother leaves his office, Ed puts his head in his hands and was shaking. An entire week of relaxation, fun, and rest gone within the first half day of returning to the job. Gaining his composure, he starts to contemplate his next series of actions.

## Endnotes

1. Figure 3 is a reproduction of an actual TransLighting production report. The report displays actual production numbers for a two-month period. In this case, it displays May and June 2006 and 2005 (the prior year). It also shows a production quota (as represented by SCH field). Percentage of change is not included in the report and must be manually calculated.
2. Pultrusion can be defined as a process for producing reinforced plastic geometric shapes in a continuous length by pulling a resin-impregnated fiber reinforcement through a forming and curing die. Pultrusion dates back to the early 1950s when it was initially used to form round bar stock for the fishing rod industry. The systems, method, and apparatus for forming pultruded shapes remained at this level for several years until the late 1960s when improvements allowed manufacturers to form various structural shapes used in a number of applications including corrosive and weather-resistant ladders, gratings, hand rails, hoods, walkway supports, and structural elements for buildings such as greenhouses and the like.
3. The language in this case has been "tempered" to conform to the *Journal*'s policy.

## Acknowledgments

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