

Scenario:*Up until today*

One year ago you graduated with your BSME from PSU. You now are a design engineer at Daimler Trucks of North America (DTNA). Your first assignment was a relatively simple upgrade to the windshield wiper mechanism on one of Daimler's medium duty trucks. For the past month, you have been working on your first big project, the development of a new mirror system for Consolidated Freightways (CF), one of the major customers of DTNA.

The new mirror system needs to have two independently adjustable mirror segments, whereas the current design has just one. Like the current design, the orientation of two mirror segments will be adjusted by remote control inside the cab. Although the design concept seems straightforward, the new system has to fit in the existing enclosure, which is mounted to the front fenders. The current enclosure is packed full with the motor, positioning mechanisms and weather sealing. Until earlier this week you have been stuck because you could not find a motor small enough that two copies would fit in the enclosure. You ordered some sample motors and are ready to start a redesign of the mechanism. This will not be easy, but isn't this just the kind of problem that you've studied hard to tackle? Too bad it took you so long to find motors that might work. Your mirror development project is three weeks behind schedule.

Meanwhile, a crucial sheet metal part of the windshield wiper (the one you worked on for your first project after arriving at DTNA) has been arriving at the DTNA assembly factory with a large variance in a key dimension. The part reject rate is unacceptably high. Today you are on a connecting flight from Portland to San Francisco, where you will board a flight to Shanghai. Your assignment is to visit the factory in Shanghai that makes the sheet metal part, trouble-shoot the problem, and persuade the plant supervisor to make whatever changes are necessary to bring the part back into specification.

This is your first trip to China, and you are travelling alone. Your excitement with the adventure is tempered by stress of having to solve this new problem while your mirror design problem is three weeks behind schedule. Will you be able to diagnose the problem in the five days you will be on site? Will you be able to convince the highly experienced plant manager with a reputation for stubbornness to make the necessary changes? As you try to relax with a copy of *Machine Design* on the flight from PDX to SFO, you're amazed by the level of responsibility you have suddenly earned. Who could have imagined that just 14 months ago you were arguing with your Capstone team on the choice of aluminum versus steel for the jack stand you designed?

And then, this afternoon...

When you land at SFO, you check your phone to find three text messages and an email from your manager, Jane Jones. Bob Smith, the purchasing manager for CF will be in Portland tomorrow, and he wants to see your progress on the mirror redesign. Your manager, who is tied up in annual budget review meetings all week, will not be able to

talk on the phone during your layover at SFO. Her text messages reveal her concern about the importance of CF as a customer. You know that she is very busy with the budget meetings and she has only limited chance to deal with this issue during the day today. Remember, CF is going to show up tomorrow at 8:30 AM.

Your immediate task

You have one hour between flights to write two email messages

1. To your manager, Jane Jones, and your lead technician, Bill Johnson.
2. To the purchasing manager at Consolidated Freightways.

In class Assignment:

Take 10 minutes to outline (or list bullet points) for one of the email messages.

Advice:

Although your project is behind because it was difficult to find a suitable motor, spend no more than one or two sentences of your discussing the current problem. The rest of the message should involve suggestions for action.

Be careful to strike the right tone when making your suggestions for action. You must solve this problem by listing clear steps to take before the meeting tomorrow. However, don't be bossy to either your manager or the technician. They are helping you when you really need it. You don't want to sour your relationship with either of them.

Don't make excuses to the purchasing manager of Consolidated Freightways. For example, *do not* say that this is your first project and you are under a lot of stress. Treat the purchasing manager with respect, while being realistic about the status of your project.

Go.