

UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE AND ENGINEERING

FINAL EXAMINATION, APRIL 2001
APS185S - TECHNICAL WRITING IN ENGLISH

EXAM TYPE: D
AIDS ALLOWED: Non-electronic English Dictionary

EXAMINERS: U. Erdosy, M. James, K. Tiede, and M. Toomsalu

This examination has two parts and is out of a total of 35 marks. Part 1 (Editing a Report) is out of 10
Part 2 (Writing Problem-Solution Report) is out of 25.

Part 1: Editing a Report (10 marks)

Read the following report and identify 20 problems. These problems may be content, organization, or language related. First, identify the problem on this page. Second, either make the appropriate correction or describe the problem in detail.

Introductory Summary

I was recently asked to check out the Chrysler Windsor Hockey Arena, which Kildare build four years ago. Six months ago Chrysler called Kildare complaining about the arena. This report presents the problems found at the Chrysler Windsor Arena.

Physical Examination of the Windsor Arena

The Roof is Damage

The maintenance instructions specify that excessive snow and ice can damage a roof if it is not cleared. Inspection of the roof area showed several stress fractures in a corner causing a leak. These stress fractures were caused by a heavy ice storm a few months ago where maintenance forgot to clear that corner of the roof. This damage is not Kildare's responsibility.

Cracks in the Floor

During construction there were several cement trucks were delayed and time during pourings was longer than usual, yet all the standards were met. The number of reinforcing bars used for floor concrete was small.

Damage to the Media Room

It appears that the media room damage occurred from water, this water did not come from the roof leak. But from a bathroom above the media room. Apparently, a member of the maintenance crew forgot to turn off a water faucet in the bathroom during cleaning and a flood resulted. This damage is not Kildare's responsibility.

Conclusions and Recommendations

Based on my investigation of the arena I have concluded that the roof and the media room damage is not Kildare's fault but the floor damage is. I recommend that the floor removed and replaced because if concrete is poured over the existing floor, the same problem will recur in two years, around the same time Chrysler will be building their new headquarters in Windsor. Although replacing the floor will cost \$100,000, compared to the cheaper solution of pouring another layer of concrete over the floor, however it will increase Kildare's chances to win the contract for Chrysler's new headquarters.

Part 2: Writing a Report (25 marks)

Write a report based on the following situation.

For the past three months, employees at Mirabel Realty's Toronto office have been complaining of headaches and fatigue, which, they claim, are the results of excessive noise levels. After five employees had handed in their resignations, management finally decided to hire H.L. Winman and Associates to determine if the complaints were justified and, if they were, to suggest ways to reduce noise levels. Your branch manager, Patrick Woo, in turn, has assigned the project, now called Project C62 to you.

At 4:00 p.m., on April 20, you pay an initial visit to Mirabel Realty (Room 221 - 381 Conway Avenue, Toronto, M6G 5T4) to talk to the office manager, Trudy Paterson. As you enter the room, you notice the background hum, which appears to be caused by the air conditioners. When the staff quits at 4:30, however, you realize that you can still hear the hum, even if at a lower level. You now walk around the office with Trudy who thinks the noise levels in the office are actually perfectly acceptable. However, while she is pressing you to agree with her so that she can downplay the staff's complaints, you decide that only actual measurements of noise levels will show if a problem exists. As you near the north wall, you notice that the hum is getting steadily louder, and is clearly not caused by the air conditioners in the room, but seems to come from the neighbouring office. Your suspicions are confirmed when, at 4:45, the noise suddenly dies away.

"What's on the other side of this wall?" you ask.

"Oh, that's Superior Giftware," Trudy explains. "They distribute cheap imports - that sort of thing."

"Have you talked to them about the noise?"

"Yes. I asked Saul Ferguson, the manager. Pretty hostile, he was."

"And what time do they quit work?"

"Right now," Trudy replies. "You can always tell, because they switch their machines off."

At this point you realize that it is absolutely essential to conduct actual measurements, both in the Mirabel Realty office and in the Superior Giftware office next door.

You return the following morning at 11:00 a.m. with a Nabuchi Model 1300 sound-level meter to conduct your measurements (having spent two hours to track down and with great difficulty, convince Saul Ferguson to allow you to measure sound levels in Superior Giftware's office as well). You take sound-level readings at nine locations (as shown in Figure 1 on page 6) location shows the position of an employee within the offices.

You take the measurements at the following times:

1. When only Superior Giftware is working. Note that Superior Giftware's working hours are 8:15-12:15 and 12:45-4:45; those of Mirabel Realty are 8:00 - 12:00 and 12:30 - 4:30. Hence, between 12:00 and 12:15 only Superior Giftware is working.
2. When only Mirabel is working (12:30 - 12:45)
3. When both businesses are working (1:00 - 1:15)
4. When neither business is working (4:45-5:00)

Your measurements are as follows:

Table 1: Sound levels (in dB) at selected locations (cf. Figure 1)

Location	12:00-12:15	12:30-12:45	1:00-1:15	4:45-5:00
<u>Mirabel Realty</u>				
A	73	48	74	11
B	69	51	71	11
C	65	50	66	10
D	61	52	64	10
E	59	51	63	10
F	53	49	59	12
G	49	44	54	12
<u>Superior Giftware</u>				
H	83	13	86	11
I	81	12	83	10

Here are your notes:

- sound levels increase in Mirabel Realty's office nearer the north wall
- noise is transmitted through the air while some is transmitted through the structure
- can feel the tiled floors of both offices vibrating
- source of noise is a packing and sealing machine used by Superior Giftware
- the machine is only 2.5 metres away from the partition
- Mirabel Realty concerned about cost; Trudy insists they can't afford more than what it has already cost them to replace the five employees who quit.
- Trudy estimates that it cost them \$1500 per employee, for a total of \$7500

- general ratings for office noise, from the City of Toronto's Standard Office (ONS -234/2000) are as follows:

Quiet Office: up to 40 dB

Average Office: 40-60 dB

Noisy Office: exceeding 60 dB

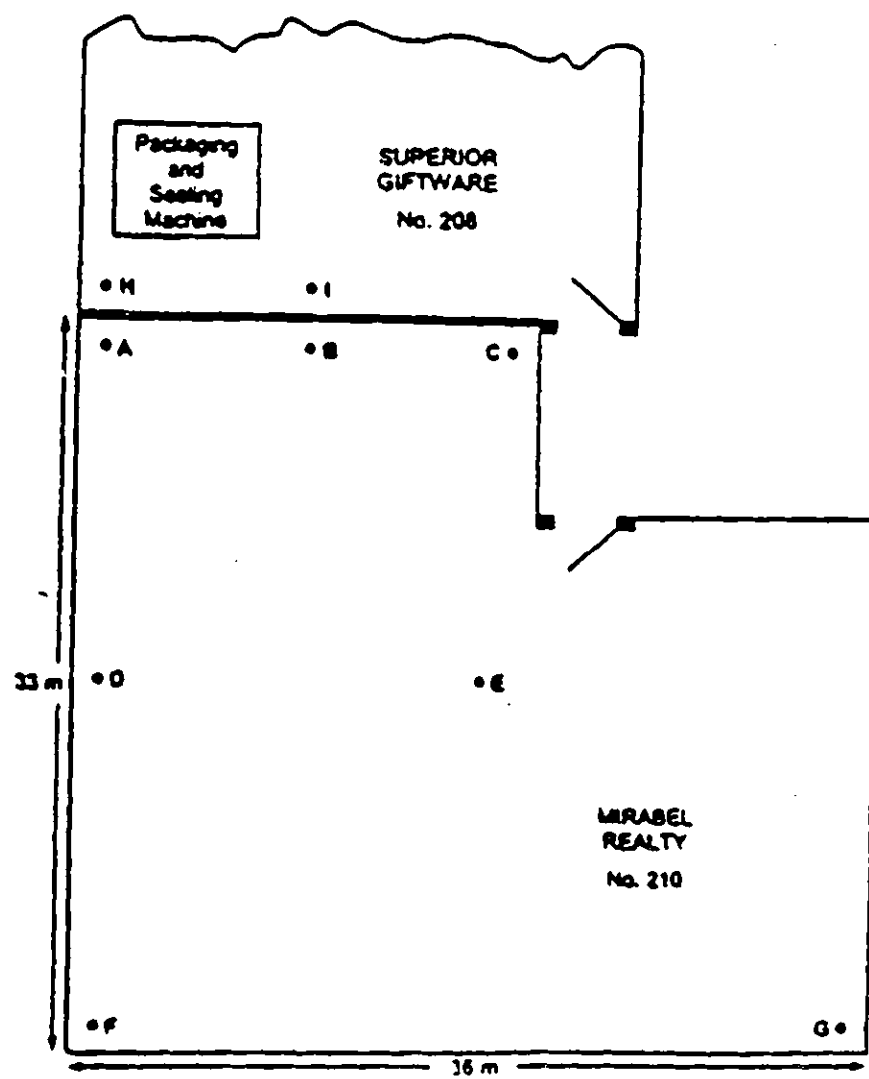
Since the recommended maximum noise level of 60 dB is clearly exceeded at several locations in Mirabel Realty's office, it is not surprising that so many workers have quit. Therefore, you examine the following options:

Solution	Details	Cost	Sound Reduction	Potential Problems
1. Corrugon Wall	a false wall, made of material used in recording studios	\$3700	9-13 dB	<ul style="list-style-type: none"> - in short supply - a newly developed material made in Switzerland - 3 weeks delivery time minimum - may lose more staff while waiting
2. Black Cork Panels	18 mm thick panel glued to the partition wall	\$1600	4-5 dB	<ul style="list-style-type: none"> - cork has an offensive smell to some people - could treat with polymethynol to eliminate the smell, but would cost additional \$1500
3. Wall to wall carpeting	used to cover up the tiled floor	\$13,000	12-15 dB	<ul style="list-style-type: none"> - the cost is high because the carpet must be dense and have good quality rubber underlay
4. Vib-o-rug	mount Superior Giftware's machine on the rug to reduce transmission of vibration through floor	\$950	6-8 dB	<ul style="list-style-type: none"> - depends on the cooperation of Superior Giftware's manager who has been very reluctant to be involved. - if Mirabel pays, he may be agreeable

You recognize that options 1 and 2 are alternatives dealing with sound transmitted through the air, as are options 3 and 4, dealing with sound transmitted through the tiled floor. You also recognize that there are potential problems with all four options.

Prepare a report which describes the problem and presents and evaluates a viable solution. Your solution should reduce the noise levels to a maximum of 60 dB at all locations at Mirabel Realty when both offices are at work, and should not exceed \$7500

Figure 1.



APS20HIS - ENGINEERING WRITING

FINAL EXAM

Examiner: J Gardiner
April 16, 2001

INSTRUCTIONS

- a) Please double space your writing in the examination books provided. Dictionaries are permitted. No other aids are permitted.
- b) The exam is divided into three sections and is worth 35% of the final course mark. Use your time wisely.

QUESTIONS

SECTION ONE (20%)

In paragraph form, describe the characteristics of **four** of the following rhetorical modes or writing strategies:

Definition	Description
Classification	Argument
Compare and Contrast	Problem-Solution
Technical Prose or Writing Style	

SECTION TWO (30%)

Write a brief analysis (one to two pages in essay form) that considers the advantages and disadvantages of **one** of the following:

- i) pedestrian malls and/or pedestrian-oriented spaces
- ii) the first phase of the Open Space Master Plan for the King's Circle Precinct.

SECTION THREE (50%)

Write a technical report that proposes improvements to the portion of Huron Street on the University of Toronto's St. George Campus. These improvements should benefit student pedestrians. In this report, you should consider the changes made to St George Street during its recent revitalization, any of the relevant course readings studied this term as well as related research conducted for your class project. In addition, you must consider and accommodate the unique characteristics and demands of Huron Street.