The background features a large, semi-transparent watermark of the Georgia Institute of Technology seal. The seal is circular and contains the text "GEORGIA INSTITUTE OF TECHNOLOGY" around the top edge and "1885" at the bottom. In the center, there is a shield with a torch and a gear, and the motto "PROGRESS AND SERVICE" is written across the shield.

Evaluation
ME – 2110
Creative Decisions and Design

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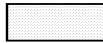




Atlanta, Georgia USA

First Level Evaluation Matrix

Concept	1	2	3	4	5
Criteria					
A	D				
B	A				
C	T				
D	U				
E	M				
F					
$\Sigma +$					
$\Sigma -$					
ΣS					

+ = better than datum; - = worse than datum; S = same as datum

First Level Evaluation Matrix, Example

Concept	1	2	3	4	5
Criteria					
A	D	+	-	-	+
B	A	+	S	S	-
C	T	-	+	-	S
D	U	-	+	-	S
E	M	+	-	-	S
F		-	-	+	+
$\Sigma +$		3	2	1	2
$\Sigma -$		3	3	4	1
ΣS		0	1	1	3

+ = better than datum; - = worse than datum; S = same as datum

Car Horn Concepts

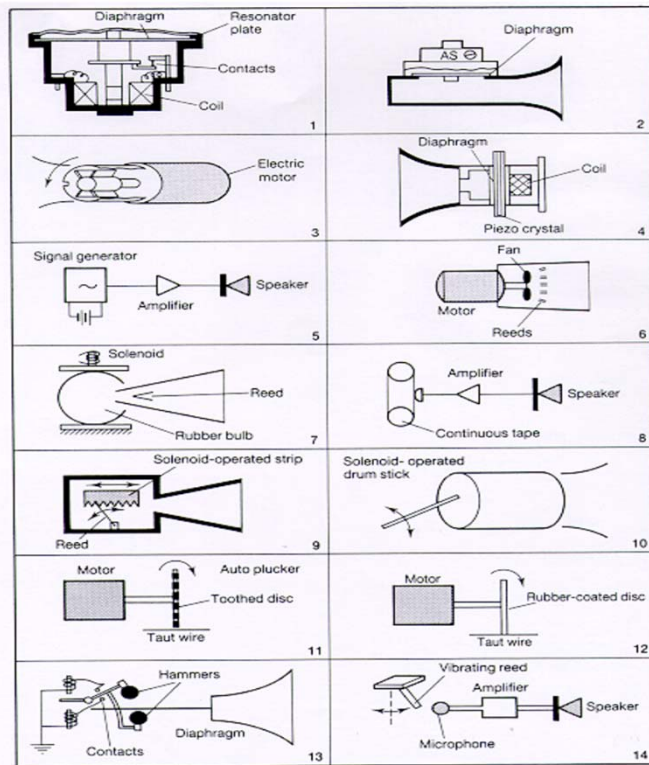





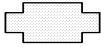

Figure 4.3 Comparable concepts produced by one group for motor horn.

Concept		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Ease of achieving 105-125 dBA		S	-		+	-	+	+	-	-	-	-	S	+
2	Ease of achieving 2000-5000 Hz		S	S	N	+	S	S	+	S	-	-	-	S	+
3	Resistance to corrosion, erosion and water		-	-	O	S	-	-	S	-	+	-	-	-	S
4	Resistance to vibration, shock and acceleration	D	S	-	T	S	-	S	-	-	S	-	-	-	-
5	Resistance to temperature	A	S	-		S	-	-	-	S	S	-	-	S	S
6	Response Time	T	S	-		+	-	-	-	-	S	-	-	-	-
7	Complexity: number of stages	U	-	+	E	S	+	+	-	-	-	+	+	-	-
8	Power consumption	M	-	-	V	+	-	-	+	-	-	-	-	-	+
9	Ease of maintenance		S	+	A	+	+	+	-	-	S	+	+	S	-
10	Weight		-	-	L	+	-	-	-	S	-	-	-	-	+
11	Size		-	-	U	S	-	-	-	-	-	-	-	-	-
12	Number of parts		S	S	A	+	S	S	-	-	+	-	-	S	-
13	Life in service		S	-	T	+	-	S	-	-	-	-	-	-	-
14	Manufacturing cost		-	S	E	-	+	+	-	-	S	-	-	-	-
15	Ease of installation		S	S	D	S	S	+	-	S	-	-	-	S	-
16	Shelf life		S	S		S	S		-	S	S	S	S	S	S
	Σ+		0	2		8	3	5	3	0	2	2	2	0	4
	Σ-		6	9		1	9	7	12	11	8	13	13	8	9
	ΣS		10	5		7	4	4	1	5	6	1	1	8	3

Value Scales

Pts.	Meaning	Pts.	Meaning
0	absolutely useless solution	0	unsatisfactory
1	very inadequate solution		
2	weak solution	1	just tolerable
3	tolerable solution		
4	adequate solution	2	adequate
5	satisfactory solution		
6	good solution with few drawbacks	3	good
7	good solution		
8	very good solution	4	very good (ideal)
9	solution exceeding the requirement		
10	ideal solution		

Second Level Evaluation Matrix

Concept	1	2	3	4	5
Criteria					
A: low material cost	3	1	4	4	3
B: easy assembly	3	4	4	4	3
C: short testing time	4	1	3	4	4
D: simple construction	2	3	4	3	3
E: functional safety	2	2	2	2	2
F: simple operation	3	3	3	3	2
Total	17	14	20	20	17
Relative = Total/24	0.71	0.58	0.83	0.83	0.71

Third Level Evaluation Matrix

	<i>WEIGHT</i>	C-1	C-2	C-3
<i>WORKING PRINCIPLE:</i>				
CRITERION #1				
CRITERION #2				
<i>EMBODIMENT:</i>				
CRITERION				
<i>PRODUCTION:</i>				
CRITERION #1				
CRITERION #2				
<i>ASSEMBLY:</i>				
CRITERION				
<i>OPERATION:</i>				
CRITERION #1				
CRITERION #2				
<i>MAINTENANCE:</i>				
CRITERION				
<i>SAFETY:</i>				
CRITERION #1				
CRITERION #2				
TOTAL POINTS:				

Pencil Example

	WEIGHT (0-4)	C1 (RUB ON - RUB OFF)	C2 (PLACE ON - TAKE OFF)	C3 (PLACE ON - RUB OFF)
WORKING PRINCIPLE:				
MAKES ERASABLE MARK	4	4	4	
REMOVES ERASABLE MARK	4	3	3	
EMBODIMENT:				
HOLDS POINT	3	2	4	
PRODUCTION:				
FEW PARTS	4	3	2	
SIMPLE TO MAKE	4	2	2	
ASSEMBLY:				
EASY		3	3	
OPERATION:				
COMFORTABLE TO USE	2	2	3	
LOW USE FORCE	3	3	4	
MAINTENANCE:				
SHARPENABLE	4	4	4	
SAFETY:				
DOESN'T HARM USER BY BREAKING INTO SMALL, HARMFUL PARTS	4	3	4	
NOT POISONOUS	0	4	3	
TOTAL POINTS:		95	106	