BUS OF TOMORROW CONTEST

Chicago Transit Authority Employe Suggestion Plan

CONTENTS

1. INTRODUCTION

The Chicago Transit Authority's Employe Suggestion Committee, as directed by the General Manager, Mr. Walter J. McCarter, conducted a "Bus of Tomorrow" contest in cooperation with the Bus Design Committee of the American Transit Association.

The purpose of the contest was to stimulate and collect ideas for the design of a new transit vehicle.

At a meeting of the Suggestion Committee on October 25, 1955 plans were approved for the promotion of the contest and awards totalling $2000.00 were authorized. At a later date authority was granted to increase this amount to $2375.00. The contest was conducted between November 1, 1955 and December 12, 1955.

2. CONTEST PROMOTION

Announcement Posters

In order to stimulate the greatest amount of interest at the start of the contest, a "king" size (42" x 84") poster was prepared and displayed in conspicuous locations at all Stations, Terminals, Shops, Garages, Offices, and other work locations throughout the property. All told, some 186 posters were distributed.

During the last 10 days of the contest this poster was revised and brought up to date by means of a 32" x 42" overlay which called attention to the fast approaching closing date.

Mailing Folder

At the time the announcement poster was being displayed, a four-page folder was sent by first-class mail to the homes of all CTA employes and pensioners. This folder included a letter from the General Manager explaining the purpose of the contest and inviting the employe's participation. It also contained the detailed objectives of the contest and the contest rules and major prizes. The last page consisted of a suggestion form which could be detached and used by the employe in submitting his ideas. A copy of the folder is included in the Appendix.

Suggestion Bulletin Board Posters

After the initial announcement poster and the mail folder had been distributed a series of weekly posters promoting the contest was begun. These posters, prepared by the CTA Training Department, were displayed on the 98 Suggestion Bulletin Boards located throughout the property. The posters were designed to emphasize various aspects of the contest and served as a new and continual stimulus to the contest. Sample copies of the posters are included in the Appendix.

Supervisory and Employe Contacts

With the start of the contest, meetings of the General Staff, Station and District Superintendents and Shop & Equipment Superintendents, were held at which details of the contest were explained by the General Manager and other Department Heads. These Superintendents in turn discussed the contest with their employes and invited their participation in the contest. Also, during the last week of the contest copies of a small, handout reminder were distributed by supervisory personnel to all employes.

3. CONTEST RESULTS

The total number of entries received during the contest amounted to 431. Of this number, 44 consisted of over-all bus designs, while the remainder dealt with ideas, 169 in number, relating to specific features of a new bus. All told, 1127 ideas including duplications were submitted. Table I, following, shows that the majority of the entries (236 or 55%) were submitted by employes of the Transportation Department, while the next largest group (95 or 22%) were received from employes of the General Offices.

TABLE I

ENTRIES RECEIVED

Department	Number	Percent of Total
Transportation	236	55
Shops & Equipment	47	11
Way & Structures	4	1
General Offices	95	22
Miscellaneous	49	11
Total	431	100

When the ideas submitted were classified in accordance with the specific objectives of the contest, they could be conveniently grouped as follows:

Faster loading and unloading	37
Better passenger accommodations	28
Improved safety features	27
Increased Driver visibility	19
Miscellaneous features	58

It is significant to note that the improvement recognized by the greater number of contestants was the need for improved loading and unloading facilities. Unquestionably, this was prompted by the increase in competition with other vehicles for street space and the related desire on the part of the Operator to reduce passenger interchange time and keep his bus moving "on time". The motives for the second and third groups were to make riding more

attractive and safer, and thus increase the volume of riders. The other groups have the objectives of making the Operator's job easier and more effective.

To indicate the significance of the problems of the average Operator and the ideas proposed as solutions to such problems, a record was kept of the number of times each idea was submitted. Table II, page 14 shows, in the order of their frequency of submission, the many ideas which were received. A group of ideas mostly mechanical in nature, not pertinent to the objective of the contest have been omitted in the interest of brevity.

4. EVALUATION OF ENTRIES

Preliminary Screening

As the entries were received they were reviewed by a sub-committee which determined their eligibility for further consideration in the contest. This screening process resulted in the elimination of some 148 entries which proposed changes in matters such as scheduling, service, routes, operating procedures, etc., which were not pertinent to the contest objective of an improved bus design. The remaining 283 entries were then referred to committees which selected the ideas and over-all bus designs to be forwarded to the American Transit Association.

A copy of Mr. McCarter's letter submitting the meritorious ideas and over-all bus designs to the American Transit Association, along with copies of the drawings, is included in the Appendix, page 28.

Judging of Entries

Entries were judged and awards made on the basis of which the ideas best fulfilled the objectives of the contest. A list of ideas for each objective, Table III, page 19, was prepared according to the Committee's recommendations submitted by Mr. McCarter to the American Transit Association. Those entries which contained the ideas listed were compared and ranked in order of merit. A value of $5.00 to $25.00 was then assigned to each idea. In order to establish a uniform scale of values covering all objectives, adjustments in the award values were made as necessary. Those entries which consisted of sketches or descriptions of an over-all bus design were grouped and judged on that basis, with awards ranging from $25.00 to $250.00.

5. AWARDS

A summary of the awards, as approved by the Employe Suggestion Committee is shown by Table IV below:

TABLE IV

SUMMARY OF AWARDS

Award	Number	Total Amount
$250.00	1	$ 250.00
150.00	1	150.00
100.00	1	100.00
75.00	1	75.00
50.00	2	100.00
40.00	5	200.00
35.00	1	35.00
30.00	5	150.00
25.00	6	150.00
20.00	5	100.00
15.00	19	285.00
10.00	20	200.00
5.00	116	580.00
Totals	183	$2375.00

An analysis of the awards, indicating the comparative performance of the various departmental employe groups is shown by Table V, page 22. It shows that on the basis of the total number and amount of awards, the Transportation Department leads all other departments. However, the General Office group of employes accounted for a greater proportion of awards, a greater amount of awards, and the largest average award value. Having submitted 22% of the entries, the General Office employe group was awarded 40% of the prize money, and had the high average award value of $23.17.

A list of award winners is shown by Table VI which follows. Also, a numerical list of entries showing the amount of award for each idea is included in the Appendix as Table VII, page 23.

TABLE VI

AWARD WINNERS

Employe's Name	Department	Amount	Suggestion Number
Adams, M.	Tspt., North Side	$ 5.00	91
Amann, G.	Pensioner	15.00	241
Andrews, H.W.	W&S, Lincoln	5.00	262
Anschuetz, P.W.	S&E, 52nd	10.00	376
Balog, S.	Pensioner	5.00	182
Barker, F.J.	Acc. Prev.	5.00	398
Beard, D.R.	Tspt., 69th	5.00	358
Becker, H.W.	Tspt., Archer	5.00	156
Bell, H.J.	Tspt., 77th	15.00	222
Bey, H.G.	Tspt., Kedzie	5.00	4
Bittourna, J.J.	Personnel	10.00	40
Bochinski, J.	Accounting	5.00	122
Borowczyk, E.J.	Engineering	40.00	392
Boyce, J.F.	Acc. Prev.	35.00	321,388,9,390
Braidman, L.	Tspt., Kedzie	5.00	162
Braidman, M.	Tspt., Kedzie	5.00	97
Broadnax, J.W.	Tspt., Limits	5.00	368
Buehring, C.W.	Tspt., Lawndale	5.00	215
Burda, H.F.	Public Information	10.00	128
Carabine, T.J.	Pensioner	5.00	16
Cardillo, A.	Personnel	15.00	60
Cash, G.	Pensioner	5.00	130
Chasseur, G.M.	South Shops	5.00	147
Chasseur, M.C.	South Shops	5.00	188
Childress, G.C.	Tspt., North Ave.	5.00	339
Christensen, F.M.	Tspt., 77th	5.00	223
Clarke, M.E.	Acc. Prev.	5.00	410
Clay, C.	S&E, Laramie Ave.	5.00	74
Cook, H.A.	Tspt., North Park	10.00	49
Cordek, C.	Tspt., North Ave.	5.00	319
Coulter, T.J.	Tspt., 77th	5.00	324
Cowgill, T.T.	Schedule	50.00	287,9,304,5, 6 & 334
Dartsch, R.A.	Tspt., 77th	5.00	72
Decker, A.	Tspt., Lawndale	5.00	261
DeCook, C.	Tspt., North Park	10.00	167
DeLaurentis, H.	Acc. Prev.	5.00	315
DeSalvo, S.	Schedule	5.00	168
Dillard, R.C.	Tspt., North Park	30.00	408
Dolph, W.B.	Tspt., 69th	5.00	41
Donovan, J.J.	Acc. Prev.	10.00	381,384
Elenbogen, J.	Skokie	5.00	378
Evans, W.B.	Tspt., 52nd	5.00	430

Farrell, E.P.	Tspt., North Park	$ 5.00	267
Feldner, M.	S&E, Lawndale	5.00	94
Ferraro, M.	W&S, 69th&Emerald	15.00	374
Fischer, F.	Tspt., North Park	5.00	29
Forbrich, W.E.	Tspt., North Ave.	10.00	70
Froehlich, C.V.	Tspt., 77th	30.00	192
Garfield, G.E.	Tspt., 52nd	15.00	298,300
Gerhardt, F.C.	Tspt., Laramie Ave.	10.00	33
Glover, S.	Skokie	5.00	141
Grier, J.B.	Tspt., North Ave.	5.00	194
Grimm, W.C.	Tspt., North Park	5.00	412
Grygiel, L.T.	Tspt., Loomis St.	5.00	142
Gunn, L.T.	Tspt., 77th	150.00	413
Guy, E.M.	Public Information	5.00	231
Hale, L.A.	Pensioner	5.00	112
Hannigan, R.M.	Skokie	5.00	245
Hansen, W.H.	Tspt., Archer	5.00	116
Harris, W.	Tspt., 52nd	10.00	347
Havlik, R.F.	Training	10.00	291
Hawke, H.	Skokie	5.00	417
Helle, P.	Tspt., North Ave.	5.00	362
Henderson, W.	Tspt., 77th	5.00	35
Higgins, A.J.	Tspt., Keeler	20.00	104
Hill, C.R.	Agent	5.00	45
Hill, R.L.	Accounting	5.00	119
Hirsch, E.L.	Training	5.00	387
Hoeppner, H.J.	Tspt., North Ave.	25.00	266
Hoffman, G.A.	Pensioner	5.00	99
Holtz, C.F.	Pensioner	5.00	159
Houle, J.H.	Tspt., 77th	5.00	6
Humphries, A.W.	Tspt., Archer	5.00	349
Hunsche, F.	Electrical	5.00	420
Hunt, M.J.	Tspt., North Ave.	5.00	155
Jackson, A.	Tspt., Beverly	5.00	176
Janssen, W.C.	Electrical	5.00	169
Jobaris, J.N.	Engineering	100.00	369
Johnson, H.G.	Tspt., 54th Ave.	5.00	177
Johnson, H.N.	Tspt., Howard	5.00	414
Johnson, J.E.	Tspt., Howard	15.00	301,302,303
Jones, L.P.	Tspt., Archer	5.00	415
Kasper, C.	Tspt., North Ave.	5.00	227
Kelly, R.J.	Acc. Prev.	10.00	336,370
Kendall, W.R.	Acc. Prev.	40.00	58,59,174,5
Klosowski, D.V.	Accounting	5.00	402
Kolb, G.	Tspt., North Ave.	5.00	139
Kozlowski, J.S.	Tspt., Archer	5.00	123
Krause, F.W.	Tspt., 77th	20.00	171
Kremeyer, T.J.	Tspt., Limits	5.00	164
Kruty, J.H.	Accounting	15.00	406
Kucera, C.J.	Tspt., Lawndale	15.00	79

Lamping, R.	Tspt., Keeler	$ 25.00	244
Lemm, D.P.	Training	15.00	394
Levens, S.	Claim	40.00	247,8,9
Lewis, L.P.	Tspt., 77th	15.00	8
Ley, W.H.	Tspt., North Ave.	5.00	10
Lipari, R.P.	Tspt., North Ave.	5.00	67
Loftus, J.M.	Tspt., Archer	5.00	208
Lucchesi, N.	S&E, North Ave.	5.00	100
Lusk, C.	Tspt., Archer	5.00	425
Maginnis, S.W.	Training	5.00	395
Majszak, J.	Tspt., North Ave.	5.00	320
Maringer, L.J.	Tspt., North Park	30.00	165
May, G.T.	Tspt., Limits	15.00	263
Mayer, G.P.	Tspt., North Park	5.00	366
McCarthy, J.	Tspt., Archer	5.00	118
McDermott, J.J.	Skokie	5.00	53
Mitaraky, J.	Tspt., Limits	20.00	426
Moog, W.	W&S, 39th&Halsted	5.00	341
Moseley, D.	Tspt., Kedzie	10.00	338
Mueller, O.E.	Pensioner	5.00	20
Mulvihill, M.	Tspt., Kedzie	5.00	203
Murphy, W.J.	Tspt., 52nd	5.00	61
Musgrave, G.	Tspt., Beverly	5.00	364
Napravnik, F.J.	Tspt., North Ave.	5.00	15
Noreen, R.J.	Tspt., Limits	40.00	316
Northcutt, P.	Tspt., Kedzie	15.00	322
O'Brien, E.	West Shops	5.00	229
O'Connor, J.J.	Tspt., 52nd	5.00	323
O'Shaughnessy, I.P	Electrical	20.00	428
Paakonen, J.	Tspt., Devon	5.00	357
Paholke, A.R.	South Shops	5.00	90
Parker, F.H.	Tspt., 77th	5.00	352
Pold, C.C.	Tspt., 69th	40.00	279,80,82,85
Porter, L.	Tspt., 52nd	30.00	407
Priggee, M.A.	Training	5.00	396
Qualiardi, C.	Skokie	10.00	187
Radke, W.	West Shops	5.00	342
Raffin, D.	S&E, North Park	5.00	1
Rath, J.	West Shops	5.00	92
Ray, W.	Tspt., 77th	5.00	106
Richter, H.	S&E, Keeler	15.00	308
Riecke, F.E.	Tspt., Beverly	15.00	14
Riendeau, L.D.	Public Information	10.00	63,95
Rivers, E.	Tspt., 77th	5.00	157
Roczkowski, W.J.	Tspt., Archer	5.00	296
Rogers, R.	Tspt., Archer	5.00	329
Ross, J.D.	Tspt., 52nd	15.00	108
Rossborough, A.	Tspt., 54th Ave.	5.00	423
Roth, J.P.	Law	5.00	293
Rozak, G.M.	Tspt., 69th	15.00	110
Ruehl, W.G.	Tspt., 63rd&Loomis	5.00	85

Sansone, T.	Tspt., Devon	$ 5.00	3
Schaeffer, D.N.	South Shops	30.00	256,58,60,68
Schageman, R.	Electrical	10.00	196
Schrecke, L.E.	Schedule	5.00	143
Selvaggio, S.	S&E, Pulaski	5.00	228
Siebert, H.R.	Pensioner	5.00	166
Simpson, A.R.	Tspt., 77th	5.00	404
Slate, G.	S&E, Rosemont	25.00	158
Smith, C.M.	Acc. Prev.	15.00	311,409
Srebalus, A.	Tspt., Lawndale	10.00	150
Stacey, W.J.	Tspt., North Park	25.00	264
Streckel, E.R.	Pensioner	5.00	199
Stitt, D.	Tspt., 54th Ave.	5.00	138
Storcz, P.	Tspt., Archer	10.00	68
Storke, E.	Tspt., North Ave.	5.00	28
Strowhorn, P.D.	Tspt., 77th	5.00	345
Sypnienski, C.A.	Tspt., Keeler	10.00	82
Tiffy, J.F.	Tspt., 69th	5.00	195
Tocci, E.C.	Tspt., 69th	20.00	360
Tretton, J.P.	Acc. Prev.	5.00	371
Trombino, S.	West Shops	5.00	25
Twardzik, S.	Tspt., Keeler	5.00	253
Uding, G.B.	Engineering	75.00	270
Vaisvilas, E.	Tspt., Archer	5.00	221
Valdez, G.	Tspt., Archer	15.00	205
Wagner, D.L.	Tspt., Lawndale	15.00	126
Waldock, M.	S&E, North Park	5.00	295
Warnstedt, R.	Acc. Prev.	25.00	137,265,294
Wiesmeyer, I.	Skokie	5.00	12
Will, J.E.	Tspt., Archer	5.00	309
Willem, J.	Acc. Prev.	5.00	312
Williams, E.R.	Tspt., 69th	10.00	361
Williams, H.G.	Engineering	50.00	314
Wing, D.E.	Tspt., North Ave.	5.00	178
Wolf, A.E.	Engineering	250.00	313
Wyncott, T.	Electrical	5.00	401
Zapel, J.C.	Pensioner	5.00	17
Zasadney, T.	Tspt., Limits	25.00	335
Zbroskewich, F.A.	Tspt., 69th	10.00	340
Zimmerman, F.R.	Claim	5.00	232

APPENDIX

TABLE II

Suggestions received, in order of their frequency of submission.

51 - Additional exit door - (at front)

43 - Wrap-around windshield with no blind spots

43 - Turnstiles at doors

41 - Microphone and loudspeakers

37 - Lower steps - Lower floor

33 - Additional exit door - (at rear)

32 - Automatic, coin changing, transfer issuing fare box

31 - Wider doors

23 - Railing at front to separate boarding and alighting

22 - New seat arrangement

22 - Steps lower with door

21 - Package rack, overhead or underseat

21 - Air conditioning

20 - Push back seats

19 - Power steering

18 - Larger, better lighted, more visible destination signs

17 - Driver's position more forward

17 - Larger windows for standee visibility

16 - Roof of glass or plastic

16 - Wider aisles

16 - Sliding doors

15 - Fluorescent lights

15 - Tinted, glare proof windows

15 - Right hand mirrors

13 - Entrance door at center/rear

13 - Foam rubber padding on dash, bulkheads, seats, fare boxes,etc.

13 - Improved ventilation

13 - Larger loading area at front

13 - Air cushion springs

13 - Contour type seats

12 - Double Deck bus

11 - Electric eye door controls

11 - Treadle operated doors

11 - Radio telephone to Dispatcher

11 - Distinctive marker light on roof

10 - Wheel sander/salter

10 - Bright, distinctive (reflective) paint on exterior

9 - Driver's position up higher

9 - Body of aluminum

9 - Passenger radios

9 - Less standing room at front of bus, i.e., force riders to rear

9 - Fog lights

9 - Engine exhaust at top of bus - less fumes

9 - Curb lights, door actuated

8 - Shades or sun visors

8 - Illuminated route maps

8 - Power brakes

7 - Body of plastic

6 - Adjustable seats

6 - Continuous grab rails

6 - Movies, newsflashes, etc.

6 - Street name signs in bus

6 - Larger, brighter, stop signs

6 - Torsion bar spring suspension

6 - Larger, more powerful motors

5 - Distinctive horn or signal device

5 - Additional exit door at center of bus

5 - Destination sign readable from inside

5 - Driver's position to right side

5 - Tamden wheels at rear

5 - Non-slip floor covering

5 - Escalators to double deck

5 - Larger bumpers

4 - Doors in front (not side) of bus

4 - Passenger grab handles from center ceiling

4 - Public telephones

4 - Two fare boxes, or fare box with two coin slots

4 - Turn indicator lights on sides of bus

4 - Conveyor belt aisle floor

4 - Grated stepwell or floor

4 - Obstacle detector on right side (electric eye)

4 - Left foot pedals for door control

3 - Doors that open overhead

3 - Television

3 - Clocks in bus

3 - Four wheel steering

3 - Oscillating light on rear of bus

3 - Safety belts for Operator and/or Passengers

3 - Hydraulic bumper

3 - Vending machines on bus

3 - Sign indicating vacancies in bus

2 - Doors on left side of bus

2 - Push out body escape panels

2 - Destination signs at rear of bus

2 - Mirrors in bus for passenger's use

2 - Air scoop around exhaust pipe

2 - Dead man brake pedal

2 - Double ended bus (2 motors, 4 doors, etc.)

2 - Deep dish safety steering wheel

2 - Radar operated emergency brake

2 - Curb feelers

2 - Window guards

2 - Exhaust heaters

2 - Gas turbine engine

2 - Baseboard type heaters around bus

2 - Automatic pilot steering

2 - Swivel seat for Operator

1 - Doors of plexiglass

1 - Power operated adjustments for Driver's seat

1 - Disappearing passenger seats

1 - Roll back roof

1 - Windows that lower rather than rise

1 - Radiant heat coils in floor of bus

1 - Steps of phosphorescent "glowing" material

1 - Three-wheeled bus

1 - Rear window wipers

1 - Fare Boxes which collect fares based on length of ride

1 - Buzzer signals and lights for backing up

1 - Headlights that turn with bus

1 - Anti-sway gyrostabilizers

1 - Dirt repellant body paint

1 - Push-button emergency brake

1 - Single trouble light on dash

1 - Folding, accordian type doors

1 - Individual motors at rear wheels

1 - Periscopic viewing mirror

1 - Electrically heated (current carrying) windshields

1 - Left foot emergency brake

1 - Airplane type controls

1 - Smoking compartment

1 - Individual, "no draft" window ventilators

TABLE III

AWARD WINNING IDEAS

Objective 1 - Improved appearance.

Objective 2 - A lighter vehicle.

Objective 3 - Easier and faster loading and unloading.

1. Additional exit door at front of bus
2. Turnstiles or railings to enforce use of proper exits
3. Additional exit door at center or rear of bus
4. Increased width of doors
5. Sliding doors with sensitive edges
6. Larger passenger loading area at front of bus

Objective 4 - Improved safety features.

1. A lower floor and/or step level for easier curb loading.
2. Stepwells and/or floor to be grated to prevent accumulation of ice, snow, dirt, water, etc.
3. Foam rubber padding for dash boards, bulkheads, seat backs, stanchions and other obstacles,
4. Blinking lights on street side of bus to indicate "pulling away from curb", and
5. Blinking lights and buzzers to signal pedestrians in crosswalk at "right turn" intersections.
6. Larger, brighter, full width of bus rear stop lights.
7. Headlights that turn with front wheels of bus.
8. Electric eye beam along right side of bus to indicate obstacles and prevent "caught in door" accidents.
9. Additional stanchions or handrails.
10. Curb lights, door actuated.
11. Dead man emergency brake and/or ignition cutout.

Objective 5 - Quicker and easier fare collection.

1. Change-making, transfer issuing, fare boxes.

Objective 6 - A quieter bus.

Objective 7 - More comfortable seats & Passenger accommodations.

1. Push back, theatre type seats, reversible cushions
2. Package racks, overhead or under seats
3. Tinted, glare proof glass
4. An intercommunication system for talking between driver and passenger
5. Destination signs larger, better lighted, and located for greater visibility, readable from inside bus
6. Fluorescent lighting.
7. An illuminated route map showing route and "at point" location of bus.
8. "Identification" light - a distinctive colored or flashing light on top of bus
9. Improved seating arrangements
10. Improved passenger ventilation facilities.

Objective 8 - Less engine fumes.

1. Scoops or funnels at exhaust to diffuse fumes.
2. Engine exhaust at top of bus to disperse fumes.

Objective 9 - Improved visibility for driver.

1. Driver's position raised and/or moved forward to enable him to see over traffic and boarding passengers' heads (also directly down in front of bus)
2. Wrap-around windshield with no blind spots, of thermopane glass, and slanted in at bottom to prevent accumulation of snow, rain, ice.
3. Dual windshield wipers (inside and outside).

4. Folding doors, all plastic or glass doors.

5. Improved lighting in driver's area.

6. Periscopic viewing devices.

Objective 10 - Other features to bring about a new look for Transit buses.

1. A distinctive horn or signal device so that motorists and waiting riders would be able to recognize the approach of a bus

2. Simplified controls, such as an airplane control stick. Stick movements to control acceleration, braking, turning, etc.

3. Double deck bus with forwarding facing seats on lower deck with low ceiling over seats and high ceiling over center aisle. Upper deck to have longitudinal seats down center of deck (above high ceiling of lower deck) with a low floor at each side over lower deck seats.

4. Individual motors connected to each rear wheel, making it unnecessary for a full width axle and differential.

5. Radiant heat, hot water pipes in floor of bus, heaters using heat from engine exhaust.

ANALYSIS OF AWARDS

Department	Entries	% of Total	No. of Awards	% of Total	Total Amount	% of Total	Average Award
Transportation	236	55	105	57	$1155.00	49	$11.00
Shops & Equipment	47	11	24	13	185.00	8	7.70
General Offices	95	22	41	22	950.00	40	23.17
Way & Structures	4	1	3	2	25.00	1	8.33
Miscellaneous	49	11	10	6	60.00	2	6.00
Totals	431	100	183	100	$2375.00	100	$12.97

TABLE V

TABLE VII

AWARD WINNING SUGGESTIONS

Suggestion Number	Amount of Award	Objective Number	Employe's Name
1	$ 5.00	10 - 1	D. Raffin
3	5.00	9 - 1	T. Sansone
4	5.00	9 - 2	H. G. Bey
6	5.00	7 - 5	J. H. Houle
8	10.00	4 - 4	L. P. Lewis
8	5.00	4 - 6	L. P. Lewis
10	5.00	9 - 1	W. H. Ley
12	5.00	4 - 3	I. Wiesmeyer
14	5.00	9 - 1	F. E. Riecke
14	10.00	9 - 2	F. E. Riecke
15	5.00	3 - 2	F. J. Napravnik
16	5.00	7 - 1	T. J. Carabine
17	5.00	7 - 4	J. C. Zapel
20	5.00	10 - 3	O. E. Mueller
25	5.00	10 - 1	S. Trombino
28	5.00	4 - 3	E. Storke
29	5.00	7 - 5	F. Fischer
33	10.00	4 - 4	F. C. Gerhardt
35	5.00	4 - 1	W. Henderson
40	10.00	7 - 1	J. J. Bittourna
41	5.00	3 - 2	W. B. Dolph
45	5.00	3 - 1	C. R. Hill
49	10.00	3 - 1	H. A. Cook
53	5.00	7 - 2	J. J. McDermott
58	10.00	3 - 1	W. R. Kendall
59	10.00	7 - 5	W. R. Kendall
60	15.00	7 - 7	A. Cardillo
61	5.00	7 - 8	W. J. Murphy
63	5.00	7 - 1	L. D. Riendeau
67	5.00	3 - 4	R. P. Lipari
68	5.00	3 - 5	P. Storcz
68	5.00	4 - 1	P. Storcz
70	10.00	8 - 1	W. E. Forbrich
72	5.00	3 - 5	R. A. Dartsch
74	5.00	3 - 2	C. Clay
79	15.00	3 - 6	C. J. Kucera
82	10.00	4 - 7	C. A. Sypnienski
85	5.00	3 - 2	W. G. Ruehl
90	5.00	3 - 2	A. R. Paholka
91	5.00	7 - 4	M. Adams
92	5.00	3 - 3	J. Rath
94	5.00	3 - 2	M. Feldner
95	5.00	9 - 2	L. D. Riendeau
97	5.00	3 - 3	M. Braidman
99	5.00	3 - 2	G. A. Hoffman
100	5.00	7 - 1	N. Lucchesi

104	$ 20.00	7 - 8	A. J. Higgins
106	5.00	3 - 2	W. Ray
108	15.00	3 - 1	J. D. Ross
110	15.00	3 - 1	G. M. Rozak
112	5.00	3 - 3	L. A. Hale
116	5.00	4 - 2	W. H. Hansen
118	5.00	4 - 11	J. McCarthy
119	5.00	3 - 2	R. L. Hill
122	5.00	3 - 3	J. Bochinski
123	5.00	3 - 2	J. S. Kozlowski
126	15.00	4 - 6	D. L. Wagner
128	5.00	9 - 1	H. F. Burda
128	5.00	9 - 2	H. F. Burda
130	5.00	3 - 1	G. Cash
137	15.00	4 - 7	R. Warnstedt
138	5.00	4 - 11	D. Stitt
139	5.00	4 - 3	G. Kolb
141	5.00	3 - 3	S. Glover
142	5.00	3 - 3	L. T. Grygiel
143	5.00	7 - 1	L. E. Schrecke
147	5.00	4 - 1	G. M. Chasseur
150	5.00	9 - 2	A. Srebalus
150	5.00	9 - 7	A. Srebalus
155	5.00	3 - 2	M. J. Hunt
156	5.00	3 - 1	H. W. Becker
157	5.00	3 - 2	E. Rivers
158	15.00	3 - 1	G. Slate
158	10.00	3 - 6	G. Slate
159	5.00	3 - 3	C. F. Holtz
162	5.00	7 - 1	L. Braidman
164	5.00	7 - 7	T. J. Kremeyer
165	30.00	Comp.	L. J. Maringer
166	5.00	4 - 11	H. R. Siebert
167	10.00	4 - 10	C. DeCook
168	5.00	9 - 1	S. DeSalvo
169	5.00	3 - 2	W. C. Janssen
171	10.00	4 - 3	F. W. Krause
171	10.00	4 - 8	F. W. Krause
174	10.00	4 - 2	W. R. Kendall
175	10.00	8 - 1	W. R. Kendall
176	5.00	9 - 2	A. Jackson
177	5.00	4 - 8	H. G. Johnson
178	5.00	7 - 2	D. E. Wing
182	5.00	7 - 8	S. Balog
187	10.00	7 - 5	C. Qualiardi
188	5.00	3 - 5	M. C. Chasseur
192	30.00	Comp.	C. V. Froehlich
194	5.00	8 - 2	J. B. Grier
195	5.00	4 - 8	J. F. Tiffy
196	5.00	7 - 1	R. Schageman
196	5.00	9 - 1	R. Schageman
199	5.00	7 - 4	E. R. Steckel

203	$ 5.00	4 - 6	M. Mulvihill
205	10.00	9 - 1	G. Valdez
205	5.00	9 - 2	G. Valdez
209	5.00	4 - 9	J. M. Loftus
215	5.00	4 - 6	C. W. Buehring
221	5.00	4 - 8	E. Vaisvilas
222	5.00	4 - 10	H. J. Bell
222	5.00	4 - 11	H. J. Bell
222	5.00	7 - 8	H. J. Bell
223	5.00	4 - 1	F. M. Christensen
227	5.00	3 - 1	C. Kasper
228	5.00	3 - 1	S. Selvaggio
229	5.00	8 - 2	E. O'Brien
231	5.00	4 - 8	E. M. Guy
232	5.00	4 - 4	F. R. Zimmerman
241	5.00	7 - 5	G. Amann
241	10.00	9 - 2	G. Amann
244	15.00	4 - 1	R. Lamping
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245	5.00	7 - 5	R. M. Hannigan
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248	15.00	4 - 6	S. Levens
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253	5.00	4 - 1	S. Twardzik
256	5.00	4 - 3	D. N. Schaefer
258	5.00	7 - 7	D. N. Schaefer
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261	5.00	3 - 2	A. Decker
262	5.00	7 - 1	H. W. Andrews
263	5.00	3 - 5	G. T. May
263	5.00	7 - 2	G. T. May
263	5.00	9 - 8	G. T. May
264	25.00	Comp.	W. J. Stacey
265	5.00	4 - 10	R. Warnstedt
266	25.00	Comp.	H. J. Hoeppner
267	5.00	3 - 2	E. P. Farrell
268	5.00	9 - 2	D. N. Schaefer
270	75.00	Comp.	G. B. Uding
279	5.00	9 - 2	C. C. Pold
280	5.00	7 - 8	C. C. Pold
282	10.00	4 - 2	C. C. Pold
285	10.00	3 - 2	C. C. Pold
285	10.00	4 - 2	C. C. Pold
287	5.00	9 - 8	T. T. Cowgill
289	10.00	7 - 1	T. T. Cowgill
291	10.00	10 - 3	R. F. Havlik
293	5.00	4 - 3	J. P. Roth
294	5.00	4 - 3	R. Warnstedt
295	5.00	4 - 1	M. Waldock
296	5.00	3 - 2	W. J. Roczhowski
298	5.00	4 - 11	G. E. Garfield
298	5.00	9 - 12	G. E. Garfield
300	5.00	7 - 2	G. E. Garfield

301	$ 5.00	10 - 3	J. E. Johnson
302	5.00	3 - 3	J. E. Johnson
303	5.00	10 - 3	J. E. Johnson
304	10.00	9 - 6	T. T. Cowgill
305	5.00	10 - 5	T. T. Cowgill
306	10.00	10 - 4	T. T. Cowgill
308	15.00	4 - 2	H. Richter
309	5.00	9 - 6	J. E. Will
311	5.00	7 - 8	C. M. Smith
312	5.00	9 - 8	J. Willem
313	250.00	Comp.	A. E. Wolf
314	50.00	Comp.	H. G. Williams
315	5.00	3 - 5	H. DeLaurentis
316	40.00	Comp.	R. J. Noreen
319	5.00	3 - 3	C. Cordek
320	5.00	4 - 4	J. Majszak
321	10.00	10 - 2	J. F. Boyce
322	5.00	4 - 3	P. Northcutt
322	5.00	4 - 9	P. Northcutt
322	5.00	9 - 2	P. Northcutt
323	5.00	9 - 2	J. J. O'Connor
324	5.00	3 - 2	T. J. Coulter
329	5.00	9 - 2	R. Rogers
334	10.00	10 - 2	T. T. Cowgill
335	25.00	Comp.	T. Zasadney
336	5.00	7 - 1	R. J. Kelly
338	10.00	10 - 1	D. Moseley
339	5.00	3 - 2	G. C. Childress
340	10.00	9 - 4	F. A. Zbroskewich
341	5.00	8 - 2	W. Moog
342	5.00	7 - 5	W. Radke
345	5.00	3 - 3	P. D. Strowhorn
347	10.00	7 - 9	W. Harris
349	5.00	4 - 1	A. W. Humphries
352	5.00	3 - 2	F. H. Parker
357	5.00	4 - 1	J. Paakonen
358	5.00	4 - 6	D. R. Beard
360	10.00	3 - 1	E. C. Tocci
360	5.00	4 - 11	E. C. Tocci
360	5.00	7 - 5	E. C. Tocci
361	10.00	3 - 2	E. R. Williams
362	5.00	3 - 5	P. Helle
364	5.00	9 - 2	G. Musgrave
366	5.00	3 - 3	G. P. Mayer
368	5.00	3 - 1	J. W. Brodnax
369	100.00	Comp.	J. N. Jobaris
370	5.00	4 - 3	R. J. Kelly
371	5.00	9 - 2	J. P. Tretton
374	15.00	3 - 1	M. Ferraro
376	10.00	10 - 1	P. W. Anschuetz
378	5.00	3 - 2	J. Elenbogen
381	5.00	7 - 1	J. J. Donovan
384	5.00	9 - 2	J. J. Donovan
387	5.00	7 - 10	E. L. Hirsch

388	$ 10.00	3 - 6	J. F. Boyce
389	10.00	4 - 1	J. F. Boyce
390	5.00	4 - 9	J. F. Boyce
392	40.00	Comp.	E. J. Borowczyk
394	15.00	10 - 5	D. P. Lemm
395	5.00	7 - 7	S. W. Maginnis
396	5.00	7 - 9	M. A. Priggee
398	5.00	4 - 8	F. J. Barker
401	5.00	3 - 3	T. Wyncott
402	5.00	3 - 3	D. V. Klosowski
404	5.00	7 - 7	A. R. Simpson
406	15.00	7 - 9	J. H. Kruty
407	30.00	Comp.	L. Porter
408	30.00	Comp.	R. C. Dillard
409	10.00	4 - 9	C. M. Smith
410	5.00	3 - 1	M. E. Clarke
412	5.00	4 - 2	W. C. Grimm
413	150.00	Comp.	L. T. Gunn
414	5.00	3 - 6	H. N. Johnson
415	5.00	4 - 9	L. P. Jones
417	5.00	4 - 11	H. Hawke
420	5.00	4 - 1	F. Hunsche
423	5.00	3 - 3	A. Rossborough
425	5.00	9 - 2	C. Lusk
426	5.00	4 - 8	J. Mitaraky
426	5.00	7 - 10	J. Mitaraky
426	10.00	9 - 6	J. Mitaraky
428	10.00	7 - 2	I. P. O'Shaughnessy
428	10.00	7 - 9	I. P. O'Shaughnessy
430	5.00	4 - 9	W. B. Evans

December 21, 1955

Mr. A.W. Baker, General Secretary
American Transit Association
292 Madison Avenue
New York, N.Y.

Subject: "Bus of Tomorrow" Contest

Dear Mr. Baker:

Under separate cover, I am submitting for consideration and appraisal by your committee a limited number, (six), of overall designs entered by Chicago Transit Authority employes in our recent "Bus of Tomorrow" contest.

This letter is a supplemental report to acquaint you with our reactions to the results obtained, and to give you comprehensive lists of the improvements suggested by the relatively large number of contestants who confined their suggestions to one or several categories, or to specific points.

Frankly, I was somewhat disappointed in the relatively small number of worthwhile overall bus designs. Perhaps I was "shooting too high" - expecting too much from the rank and file of our personnel. Those of us who went through the conversion of the old two-man street car to the modern P.C.C. type of car surely must be mindful of the fact that this outstanding advance in the art did not come from the "rank and file" but actually was the product of cooperative effort by recruited trained experts. This approach was confirmed by a number of our entrants who in the opening sentence of their suggestion said, "I'll leave design, appearance and engineering for the professionals but to me the feature to be corrected is....."

I was disappointed too in the number of participants in our contest. My disappointment is tempered, however, by the realization that our employes have received, accepted and placed in operation more modern, up-to-the-minute vehicles than ever before attempted by any company in such a relatively short period of time. They have had to absorb all of these recent innovations -- new types of equipment, new servicing, maintenance repair and operating procedures. Consequently, one cannot reasonably expect them to come forward at this time with an abundance of ideas for superlative improvements.

In our company we have approximately 15,000 employes. Of this employe group, 431 participated in the contest submitting some 1127 ideas (including many duplications). A preliminary screening resulted in 148 entries being eliminated because they pertained to matters such as scheduling, routing, service changes, operating procedures, grievances and like matters foreign to the purpose of the contest. Of the remaining 283 participants, 44 entries made reference to an overall design, 6 of which are the ones I referred to in the fore part of my letter. The remaining 239 entries, dealing with specific features, can conveniently be grouped as follows:

1 - Faster loading and unloading.....67 entries
2 - Better passenger accommodations.....40 "
3 - Improved Safety Features.....26 "
4 - Increased driver's visibility and operating efficiency.....14 "
5 - Miscellaneous features.....92 "

It is significant to note that the improvement recognized by the majority of contestants was the need for improved loading and unloading facilities. Unquestionably, this was prompted by the increase in competition for street space and the desire on the part of the operator to reduce passenger interchange time to a minimum and to keep "on time". The motives behind the second and third groups were to make riding more attractive and safer, and thus increase the volume of riders. The other groups have the objectives of making the operator's job easier and more effective.

The ideas most frequently submitted in relation to faster loading and unloading were:

1 - Additional exit door at front
2 - Turnstiles and railings to enforce use of exit doors
3 - Additional exit door at rear
4 - Wider doors
5 - Sliding doors
6 - Larger loading area at front
7 - Doors on left side of bus for use when operating on left side of one-way streets

The next largest group of ideas related to the improvement of passenger accommodations and included such features as:

1 - Push back, theatre type, seats
2 - Package racks, overhead or under seats
3 - Tinted, glare proof glass
4 - An intercommunication system for talking between driver and passenger
5 - Destination signs larger, better lighted, and located for greater visibility, also to be readable from inside bus
6 - Fluorescent lighting
7 - An illuminated route map showing route and "at point" location of bus

In order to accommodate waiting passengers it was surprising to receive a number of suggestions to improve destination signs and provide "identification" signs. This latter ides amounted to some type of distinctive light, either of a special color, a flashing, or a rotating nature. This light would be mounted on top of the bus and would enable waiting passengers to identify, in heavy traffic or poor weather, an approaching bus. This would give the waiting passenger some method of measuring probable waiting time, and a means of determining whether to seek other transportation, such as a taxi cab, etc. A variation of the use of this light would be to make it an emergency "blinker" to notify police that the driver was in trouble (unruly passenger, holdup, etc.) and needed assistance.

The next group of suggestions dealt with improved safety features. Included were such ideas as:

1 - A lower floor and/or step level for easier curb loading
2 - Stepwells and floor to be grated and heated to prevent accumulation of dirt, snow, ice, water, etc.
3 - Foam rubber padding for dash boards, bulkheads, seat backs, stanchions and other obstacles
4 - Blinking lights on street side of bus to indicate "pulling away from curb", and
5 - Blinking lights and buzzers to signal pedestrians in cross-walk at "right turn" intersections.
6 - Larger, brighter, full width of bus "rear stop lights"
7 - Headlights that turn with front wheels.
8 - Electric eye beam along right side of bus to indicate obstacles and prevent "caught in door" accidents

The group of suggestions dealing with improved visibility for the operator included:

1 - Driver's position raised and/or moved forward to enable him to see over traffic and boarding passengers' heads (also directly down in front of bus)
2 - Wrap-around windshield with no blind spots
3 - Thermopane windshields and side windows to eliminate frosting
4 - Dual windshield wipers (inside and outside)
5 - Windshield slanted inward at bottom to avoid accumulation of snow and rain
6 - All plastic or greater glass areas in front doors

Among the group of suggestions relating to miscellaneous features were such ideas as: passenger radios, television, public telephones, two-way radio to dispatchers, simplified controls such as airplane stick for power, brake and turning, individual motors

at each rear wheel, roll back open air tops, driver's controls at each end to eliminate turn-arounds, radiant heat hot water pipes in floor, door operated curb lights, etc.

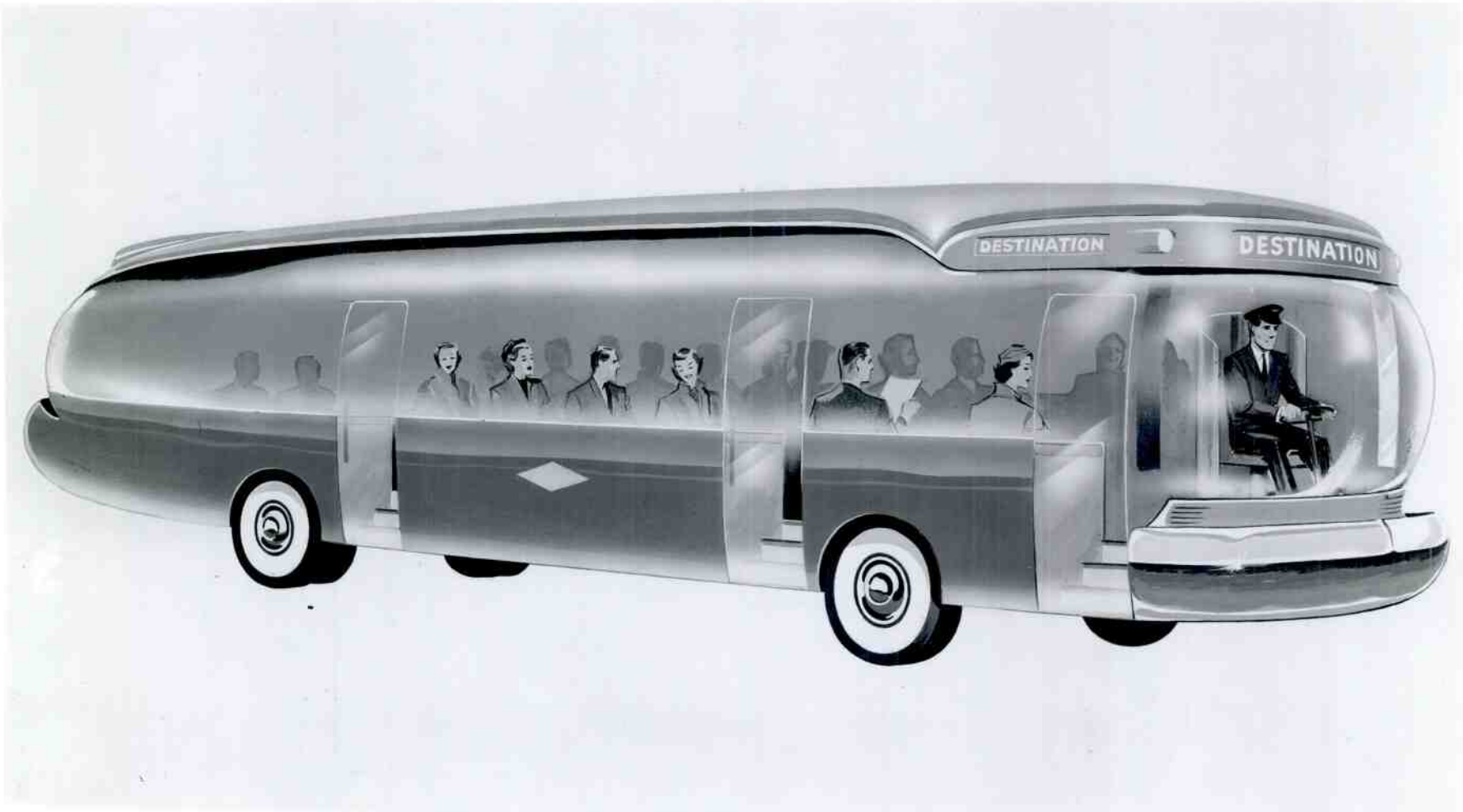
On the following pages are a few figures which present a statistical picture of the ideas received as a result of our contest and from whence they came.*

Yours very truly,

W. J. McCarter
General Manager

Copy to Mr. Jesse L. Haugh

* See Table I, page 4, and Table II, page 14 of this report.


DESTINATION
DESTINATION

Suggestion No. 313

SUGGESTED FEATURES FOR THE BUS OF TOMORROW

STEERING - Automatic pilot for straight-ahead operations in exclusive transit bus lanes; manual over-rule power steering for turns.

OPERATOR'S AREA - Located at front center to improve overall visibility and allow stream of passengers on either side.

OPERATOR'S VISIBILITY - Operator's area enclosed on front and sides by transparent non-glare laminated structure. Bonding material between laminations in front sections to be good electrical conductor to allow passage of current to heat structure and prevent formation of ice.

MIRROR - One full rear view mirror forming arc over front of bus and extending downward to steering wheel height on each side. Wing sections adjustable from 90 degree swing to flush with bus body.

OPERATOR'S BARRIER - Curved barrier behind operator with one-way vision glass to minimize interference from passengers and afford him full view of bus interior while furnishing some privacy.

PASSENGER VISIBILITY - Transparent, non-glare, shatter-proof sections from top of seat back to roof. No opaque material at joints.

ILLUMINATIONS - Indirect, uniform lighting reflected from ceiling to illuminate standee areas as well as seat areas.

LOUDSPEAKERS - Provided so that passengers can hear operator call streets and make announcements above noise level.

DESTINATION SIGNS - Electric letters spelling out destination on front, rear and sides. Selected by operator from control keyboard.

DOORS - Duplicate sets of doors located on each side of bus to permit bus traffic to load and unload on both sides of one-way streets. Except at front, doors to be familiar single-panel, outward-swing, house-hold type; customer operated, operator locked and unlocked. Front door to be slide-to-rear type and controlled by operator. All panels to be completely transparent.

TURNSTILES AND FARE VENDING MACHINES - Two-way Perey Kompak type turnstiles at each door, free turning for exit and operated by coins or tokens for entrance. Device controlling turnstile also able to issue transfers, make change, and issue tokens. Device at front door also to punch transfers after they are ready by operator.

GRAB RAILS AND STANCHIONS - Horizontal stanchions approximately 3 feet from floor, beginning at each door, and, except for passage gaps, converging into one section running full length of bus.

SEATS- One row of individual pedestal-base seats along each wall; second row of individual seats on one side only with theatre-type inward folding cushions to allow persons to leave wall side seats without anyone pivoting and striking persons in aisle. Longitudinal seats over one front and one rear wheelhousing.

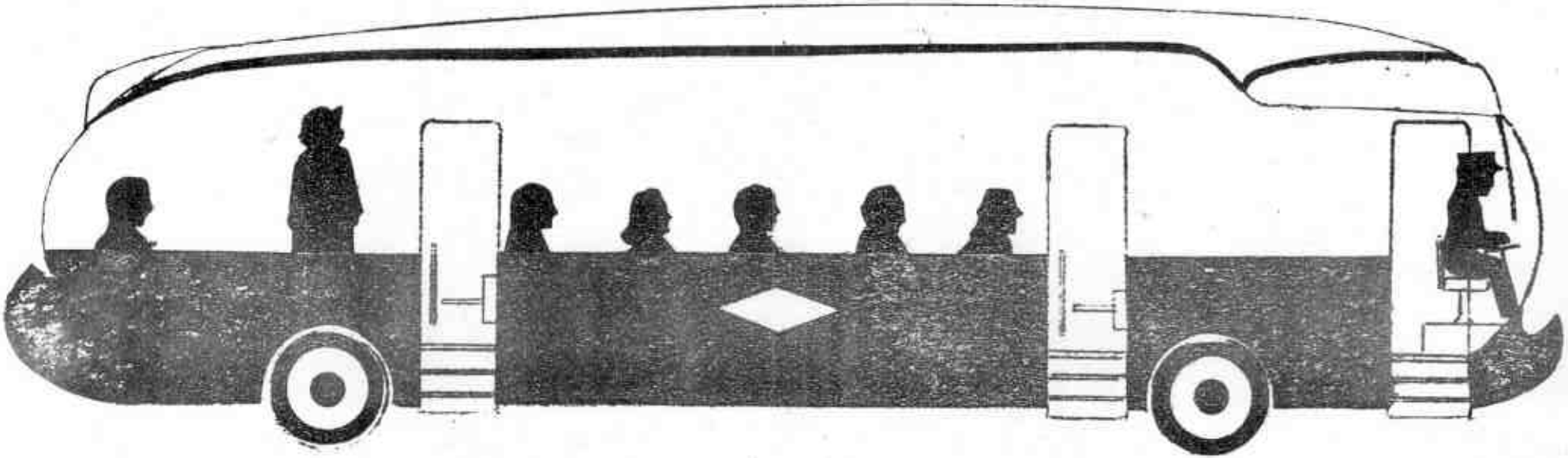
AIR-CONDITIONING - Electro-mechanical units of the freon-charged type.

HEATING - Uniform radiant heating from floor eliminating hot and cold spots.

BAGGAGE RACKS, VENDING MACHINES AND DISPOSAL UNITS - Space for baggage, vending machines (candy, newspapers, etc.) and waste paper disposal over one front and one rear wheelhousing.

* DOORS -Three on each side.

*OPERATOR'S AREA - At front center.



* MIRRORS - Wrap around overhead and at sides.

*DESTINATION SIGNS - Electric, at front, sides and rear.

*VISIBILITY - Transparent sides from seat height to roof.

THE BUS OF TOMORROW

Suggestion No. 413

I SUGGEST THAT the following changes be incorportated in the design of the "Bus of Tomorrow";

1. A rounded front end with a single (curved and slanted) windshield, with operator's seat on platform about 18 inches above floor level of bus, in center of bus; front windshield to extend upward thru space now occupied (in most city buses) by front sign, giving full forward view to standing passengers; a solid protecting partition to be built behind operator; permanently mounted mirrors to be mounted outside of bus on special corner posts just outside of edges of windshield — forward turn signals to be mounted below mirrors on this post showing turn indication from both front and rear, so that turn signals can be seen by operators of vehicles which have started to pass. (On each of the two mirror columns, upper mirror would give operator a forward view past large vehicles). (Lower mirror would show rear view).

2. Entrance and exit doors on left side of bus as well as right side, for use in places where left-hand curb stops are desirable — such as on one-way streets in the Loop or center islands or parkway strips. (Single front-left entrance door and single rear-left exit).

3. Double front door (ahead of front wheels) for loading with controls to permit opening only the forward half of this door at points where this is found necessary to protect the revenue.

4. Hand rails curving from front of each front door (right and left) to driver's seat, to assist passengers in holding on while paying and at the same time keep passengers from blocking operator's view to either side; 2 fare boxes (both registering on a single register if possible), one on each side of operator, just ahead of hand rail.

5. Three exit doors (treadle or push-out), each located behind wheel of bus rather than ahead to reduce danger of passenger slipping and being run over after leaving thru exit door. Right hand exit doors; (1) Just behind front-right wheel; (2) Just behind rear-right wheel — Left hand exit door; (3) Just behind rear-left wheel. Rear-right (#(2)) and rear left (#(3)) doors to be equipped so they can be opened by loader's key.

6. Sand boxes ahead of rear dual wheels, with spouts ahead of each rear wheel, for added traction in emergencies.

7. Roof roll-sign, enclosed in glass, readable and lighted from front and rear, across front part of roof in same location as present metal "shuttle-service" signs (now mounted on some buses); this single sign to replace present front and side signs.

Suggestion No. 270

I SUGGEST THAT for the "BUS OF TOMORROW", that the windows be as large as the bus design will permit without sacrificing body strength, they should be in as large sections as possible, without top and bottom divisions, they should be permanently fixed and should be double thermopane. The windows should be large so that standing passengers as well as seated passengers will have an unobstructed view to the outside. They can be permanently fixed because with air-conditioning there will be no reason to open them eliminating the need for window latches and sash. Thermopane would enable the windows to be large and keep out most of the sun's heat and yet leave in the light.

The above suggestions would add to the beauty of the vehicle, eliminate much window maintenance and be easier to keep clean as glass is easier to keep clean than paint.

I hope to see the bus equipped with the new turbo engine, now being developed, as I believe this engine will be easier to maintain not having pistons, cylinders, spark plugs, etc.

The engine will be located in the rear of the bus, allowing the floor level to be lower.

The exhaust pipe will extend through the roof of the bus which will dissipate the exhaust fumes quickly, keep fumes away from following vehicles and not contaminate the air at pedestrian level. The exhaust pipe shall be enclosed in an insulated chamber, the chamber to be equipped with a blower to direct the warm air from the exhaust pipe to heat the interior of the bus. There is sufficient heat given off by even the exhaust pipe of a propane engine, which is at the present time wasted, to heat an entire bus and will develop heat much quicker than the present hot water system. The exhaust temperatures from the turbine engine would be much higher and there would be heat to spare.

The chassis would be of a sturdy, heavy design, so that the body would not be called upon to carry any of the stresses and loads as I propose that the body be designed to ride on the chassis and not be an intergral part of the chassis so as to give a smoother, softer ride. The body could be hung on the chassis or set on torsilastic, air, or some other type of suspension, so that all the road shocks are absorbed by the chassis.

The air intake for the engine would be at the roof level where there is less dust and the intake could more easily protected from direct wind.

As shown by the sketch, the floor level would be either 12" or 22" above the street level with one or no steps, which would allow for easier, more comfortable loading and leave more room for passengers to stand inside the bus with no danger of falling off a step. Behind the rear door the floor level would be raised one step height to allow for room for the rear end and drive shaft. There would be a horizontal stanchion in the center of the aisle at the step for passenger safety.

The sketch will show a radical change in the pitch of the windshield which I believe will keep the sun from shining into the operator's eyes and also, the edge of the roof, over the windshield would act as a sun visor. I also believe that with this pitch of the windshield there would be less reflections into the operator's eyes from the interior of the bus as well as from the outside.

The bus should be completely air conditioned so that the windows need not be opened thereby keeping out much of the dust and dirt.

As shown by the sketch, the destination signs will be below the windshield and below the side windows where they will be closer to eye level and will be easier and more naturally read without the need for making a special effort to remember to look up and read the sign and where even when a person is hurrying to catch the bus they cannot help but be able to read the sign.

I suggest a speaker at the rear door for passengers to announce the street at which they wish to get off and so they may ask directions of the operator without the need for standing around the operator and obscuring his vision or distracting him from his driving. Also, a speaker at the operator's position to allow him to announce streets, answer questions and give out any other information he might deem necessary.

Power steering is a must on the Bus of Tomorrow.

Operator's seat will also have full power adjustments for ease of adjusting the seat and many more adjustments are available in power adjustment.

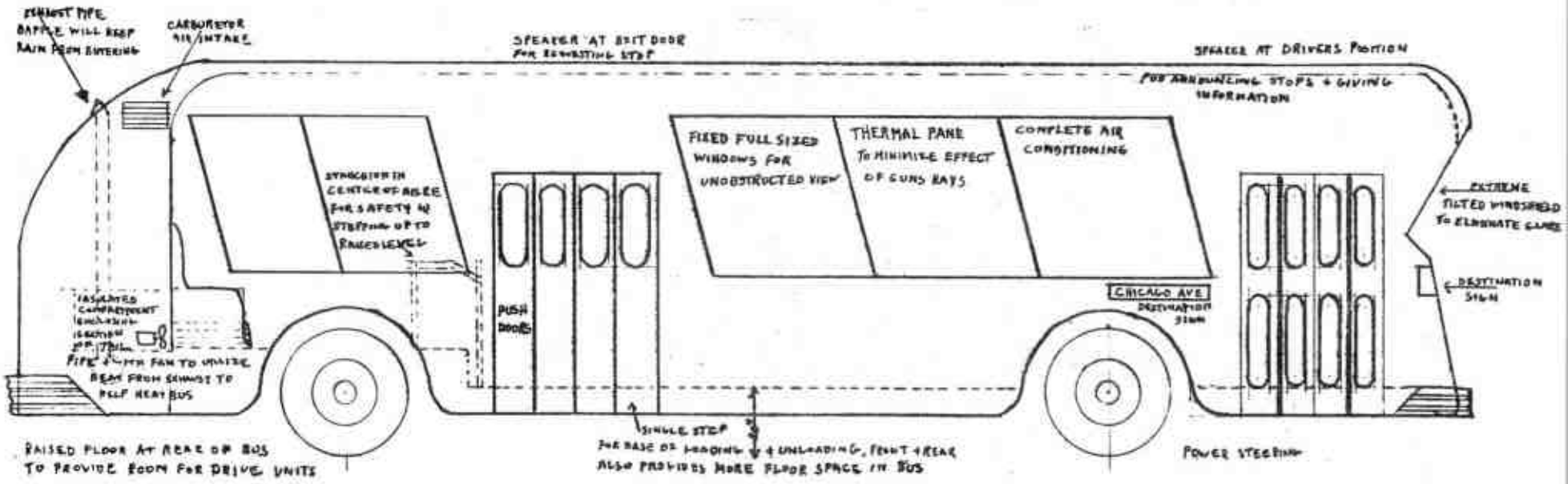
An added note on the pitch of the windshield, it would keep the entire front end of the bus, clear down to the street, entirely within the operator's vision.

I would eliminate air on the Bus of Tomorrow, as air is a constant source of trouble and maintenance. I would operate all equipment with electric power, doors, windshield wipers, brakes, etc.

I propose electric and magnetic brakes which could be operated with or without brake shoes and use either hydraulic brakes on the wheels or drive shaft for emergency brakes.

In regard to fare collection, I visualize a Public Transportation System operated solely on taxes where everyone will pay a transportation tax and at the time the taxes are paid they will be issued a card stating they have paid their taxes and this they will show the operator as they board the bus. The only fares the operator will be called on to collect will be those they carry no card.

SUGGEST BODY BE SET ON HEAVY CHASSIS, WITH SPRINGS OR SOME TYPE SUSPENSION SO THE CHASSIS AND SPRINGS WILL ABORB ROAD SHOCK AND BODY WILL BE SEPARATE UNIT AND NOT SUBJECT TO ROAD CRACKS. AT PRESENT TIME THE BODY IS AN INTEGRAL PART OF THE CHASSIS AND SUBJECT TO THE SAME ABUSE



Suggestion No. 314

The following suggestions are submitted for investigation as to their merit for use with the design and "makeup" of the Bus of Tomorrow:

1. Self-aligning, coin slots at fare box, so passengers may drop coins into a reasonably large opening where coins would be directed into fare box coin slots. Fare boxes should be standardized.

2. Indirect lighting to be installed above cardracks with prismatic reflectors.

3. Formica ceiling.

4. Floyd Gibbons type windshield on left side of bus, similar to windshield on Marmon-Herrington Trolley buses.

5. Engine fan should have automatic fan blade control to save horsepower and control engine water temperature.

6. Brake drums or wheels should have cooling vanes.

7. Operator should have microphone and one speaker installed at rear of bus to direct passengers as to stops, movement through bus, destination of bus, or alighting instructions.

8. A baggage dompartment or racks should be provided.

9. Photo-electric cell control of accelerator from rear door position.

10. Front and rear doors to be fabricated from moulded or formed rubber.

11. Perimeter heating in place of unit heaters.

12. Front doors should slide or be suspended on Otis elevator type roller assembly. Front doors could be shaped to fit contour of bus body, similar to European train doors.

13. Fuel tank capacity should be approximately 200 gallons.

14. Engine connections should be "quick disconnect" type to facilitate engine removal, similar to engine removal on Greyhound Scenic Cruisers.

15. Engine compartment should be equipped with automatic fire detector device to extinguish fires at engine when specific temperature is exceeded.

16. Ambient heat in engine compartment should be carried to road surface for melting snow and ice in Winter, and carry away engine heat from bus body in Summer season.

17. Engine and accessory drive belts should have compensating, spring loaded idle pulleys for individual adjustments.

18. Road speed governor should be equipped with alarm, when exceeding specified m.p.h. in case of governor failure.

19. Brakes and controls should be designed to operate without use of air. Eliminate costly air piping and compressor maintenance.

20. Springs or suspension should be self-adjusting or compensating type.

21. Bus should be equipped with alarm and ignition interrupting circuit, in case bus is being run through water of a pre-determined depth.

22. Operator should have transfer dispenser, clock driven, push button operated.

23. Exterior lights should be provided to illuminate the loading area at front doors and alighting area at rear doors. These lights would only be energized while doors are open or set to open.

24. Operator should be provided with head crash pad behind him and forward if possible.

25. Bumper brackets should be mounted in rubber to cushion impact.

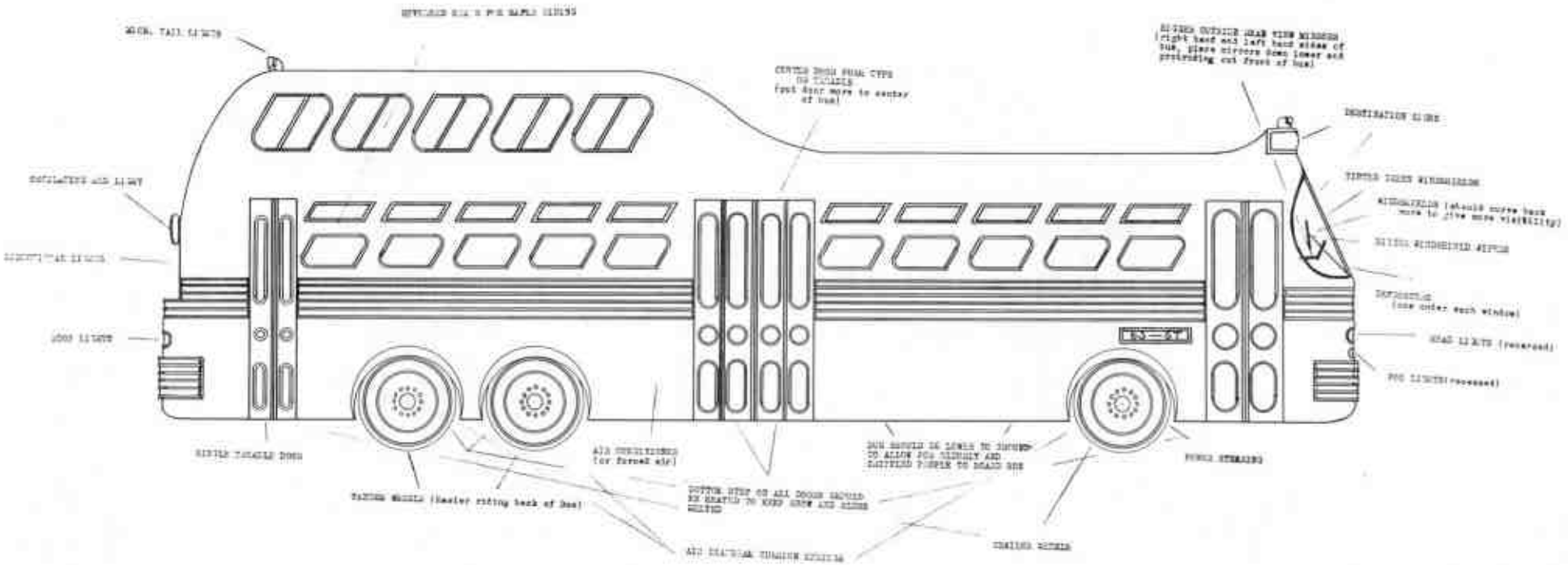
26. Present hand brake should be replaced by device which could apply or release emergency brakes by use of left foot.

27. Interior advertising should be cylinder-lens projection type, located near front center of bus at ceiling. This would give reel type advertising which could be changed periodically and would not become monotonous as present displays. May incorporate sound.

28. Horn audible sound should be of a range entirely divorced from passenger cars.

29. Torque Converter manufacturers should be encouraged to develop a fluid drive unit which would give many more miles of service from a maintenance standpoint. This may require the omission of some refinements which now are a maintenance problem and could be left out.

30. Air from engine fuel should be cleansed before entering plenum chamber by precipitron or similar method to remove foreign particles from atmospheric air.



Suggestion No. 392

I SUGGEST THAT:

(1) Power steering,

(2) E-Z eye glass with wrap-around windshield with 6 inch overlap on left side,

(3) Wrap-around turning indicators,

(4) Dual beam headlights,

(5) Non-opening windows with E-Z push out safety glass for emergency exit. Windows don't open because of air conditioning,

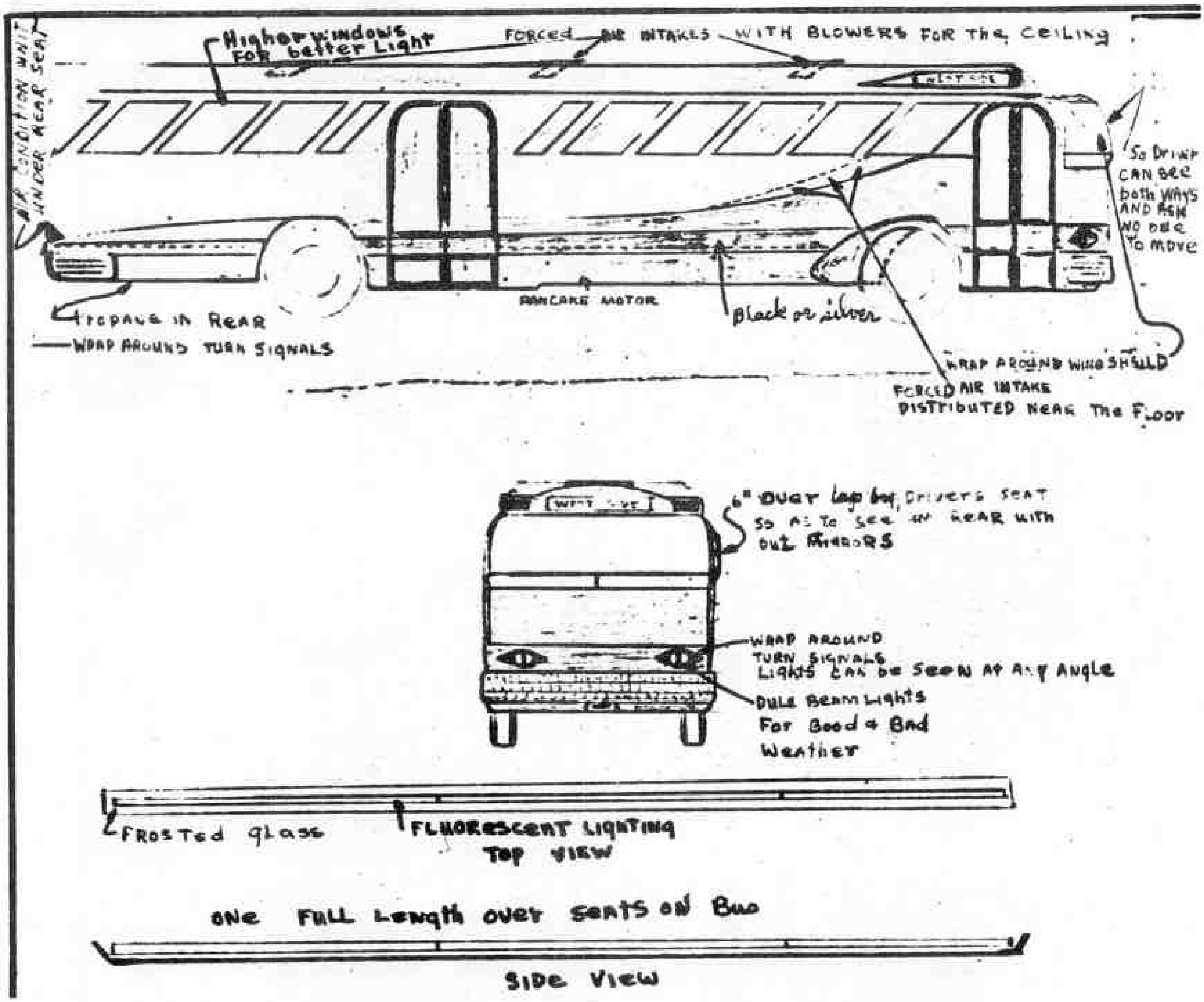
(6) Bus weights are O,K.

(7) Just put a lower gear in motor for faster pick-up <u>not speed</u>,

(8) The length and width is O.K., otherwide it would be harder to maneuver on streets,

(9) Make 1 ft. higher only for tall people and,

(10) Racks for small packages.


AIR CONDITION UNIT UNDER REAR SEAT
Higher windows For better Light
FORCED AIR INTAKES WITH BLOWERS FOR The CEILING
So Driver CAN See both WAYS AND ASK NO ONE TO MOVE
Propane in Rear
WRAP AROUND TURN SIGNALS
PANCAKE MOTOR
Black or silver
WRAP AROUND WINDSHIELD
FORCED AIR INTAKE DISTRIBUTED NEAR The Floor
6" Over lap by Drivers SEAT So AS To See in REAR with out MIRRORS
WRAP AROUND TURN SIGNALS LIGHTS CAN be Seen At Any Angle
DULE BEAM Lights For Good & Bad Weather
FROSTED glass
FLUORESCENT LIGHTING
TOP VIEW
ONE FULL Length over SEATS ON BUS
SIDE VIEW

Chicago Transit Authority

Employes Suggestion Plan

Date _____

Mr. Walter J. McCarter

WHAT
SHOULD BE DONE

WHY
SHOULD IT BE DONE

WHERE
SHOULD IT BE DONE

WHO
WILL BENEFIT

I SUGGEST THAT _____

Attach additional sheets or sketches if necessary.

Name _____ Clock or Badge No. _____

Department _____ Location _____

Home Address _____ Zone _____

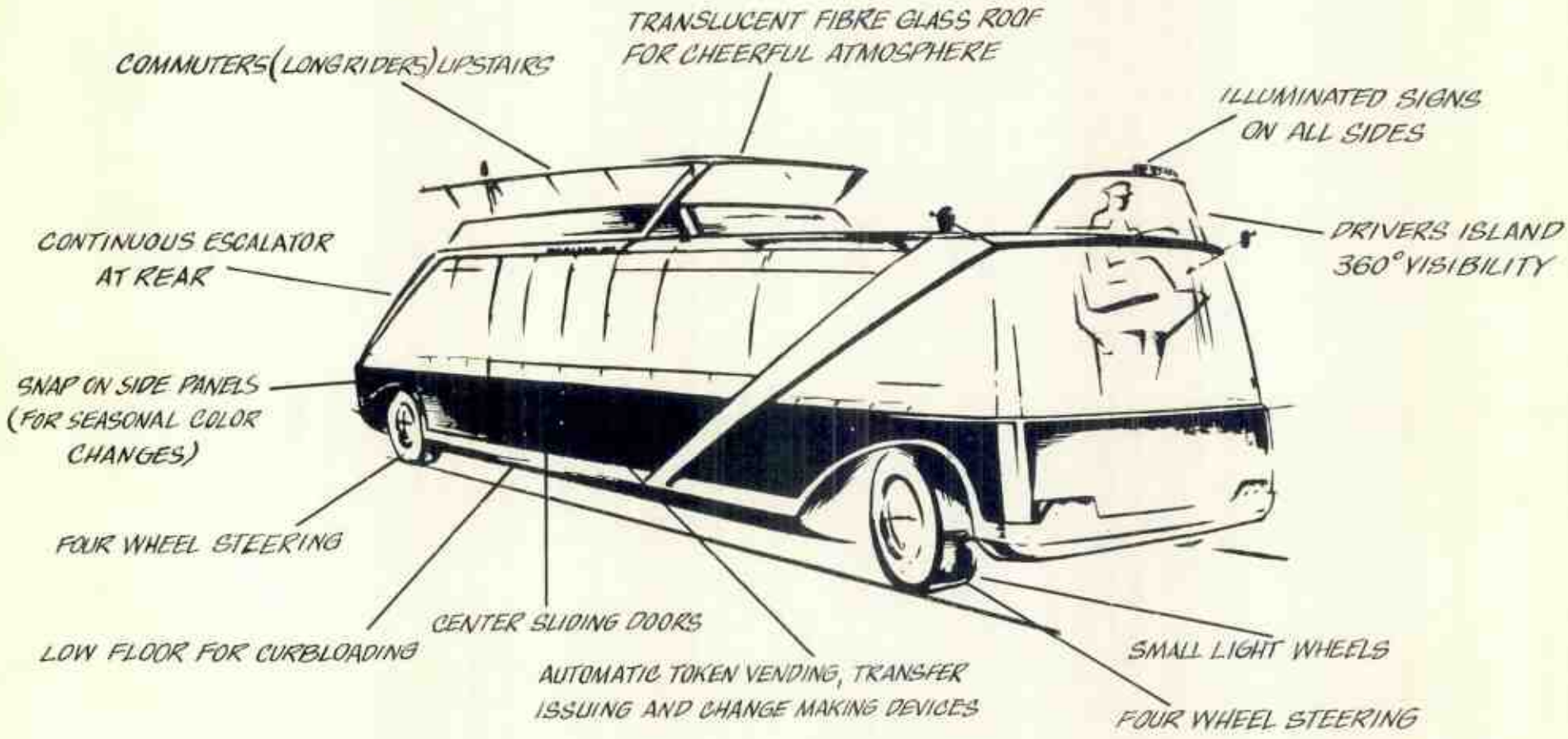
Date Received _____ Date Acknowledged _____

Referred to _____

CTA 7866

Just one man's idea of

THE BUS OF TOMORROW



$2,000.00 in Prizes to CTA Employes

CHICAGO TRANSIT AUTHORITY

MERCHANDISE MART PLAZA, CHICAGO 54, ILLINOIS

Address Mail to P. O. BOX 3555 *Telephone,* MO HAWK 4-7200

November 1, 1955

TO ALL CTA EMPLOYES

The transit industry, through the American Transit Association's Committee on Bus Design is engaged in a program of stimulating and collecting ideas for the design of a new transit vehicle to be known as the Bus of Tomorrow. The Committee is of the opinion that a new bus having greater passenger appeal, better safety features, and improved operating performance will be helpful in RETAINING OUR PRESENT RIDERS AND ATTRACTING MORE RIDERS.

The Chicago Transit Authority is cooperating in this program by conducting a "Bus of Tomorrow" contest. Substantial prizes will be awarded for the best ideas submitted. This contest presents an unusual opportunity for each of you to benefit from your experience and to demonstrate your ability for constructive, imaginative thinking.

On the opposite page are listed objectives of the Design Committee. You may find them helpful, but do not confine your thinking to them alone. Surely there are other problems needing attention, and by allowing free and full expression of your imagination, new and advanced ideas will be forthcoming. However, one point should be stressed - What is wanted most at this time are ideas for a new and different appearing, a safer operating and better performing bus from the point-of-view of present and prospective riders. The goal is ideas and imaginative creations-not perfected mechanical details.

Keep these objectives in mind, draw upon your operating experience--talk it over with your family, your friends and your passengers. Let your imagination soar free and try to come up with some really new ideas in bus design. We'll all benefit--you, the CTA, and the transit industry. This is your opportunity to make an important contribution to this industry.

It would be personally gratifying to me to see this contest have the enthusiastic support of every employe.

Sincerely,

W. J. McCarter

General Manager

OBJECTIVES OF THE CONTEST

1. Improved appearance, more eye appeal.
2. A lighter vehicle (chassis, frame, engine).
3. Easier and faster loading and unloading.
4. Improved safety features to reduce "on-board" accidents.
5. Quicker and easier fare collecting.
6. A quieter bus.
7. More comfortable seats and passenger accommodations.
8. Less engine fumes.
9. Improved visibility for Driver.
10. Any other features to bring about a new look for transit buses.

PRIZES AND CONTEST RULES

1. All CTA employes (including pensioners), except members of the Employe Suggestion Committee, are eligible to participate.
2. Entries should be submitted on a CTA Employe Suggestion form (use the back of this page). If sketches or drawings are submitted they should be accompanied by a suggestion form. Mail entries to: CTA Employe Suggestion Committee, P.O. Box 3555, Chicago 54, Illinois. Additional forms and envelopes are available at Suggestion Plan Bulletin Boards or from your Supervisor or Foreman.
3. All entries become the property of the Chicago Transit Authority. Those entries which, in the opinion of the Employe Suggestion Committee, best fulfill the objectives of the contest will be forwarded to the ATA Bus Design Committee. Decisions of the Employe Suggestion Committee will be final.
4. Entries will be judged and awards made on the basis of how the ideas best fulfill the objectives listed above. Awards will total $2000.00 divided as follows - 1st prize $250.00, 2nd $150.00, 3rd prize $100.00, and many additional special prizes totaling $1500.00.
5. The Contest closes at midnight December 12, 1955.

FOR IMMEDIATE RELEASE

In cooperation with the nation's transit industry, Chicago Transit Authority is seeking ideas for the Bus of Tomorrow, and will distribute approximately $2,000 in prizes among active and retired CTA employes for the best suggestions submitted.

CTA General Manager Walter J. McCarter said today that the objective is development of a local transit bus that will enable the transit industry to regain at least a substantial part of the intra-city riding it has lost to the private automobile.

All worthwhile ideas received from CTA employes are to be sent to the American Transit Association's special committee on the design of the Bus of Tomorrow. This committee is sponsoring the nation-wide search for ideas.

Mr. McCarter, who is a member of the ATA committee, said: "We're going to give automobile designers some competition. We are looking for a design that will produce the utmost in attractiveness and eye appeal. We want a more maneuverable, lighter and quieter bus (reduced weight in the chassis, frame and engine), easier and faster loading and unloading, improved safety features to reduce "on-board" accidents, quicker and easier fare collections, more comfortable seats and other improved facilities for passengers, less engine fumes, and improved visibility for operators."

The contest, which closes at midnight Monday, December 12, is being supervised by CTA's Employes Suggestion Plan office which operates on a permanent year-round basis to receive, screen and evaluate suggestions from employes that benefit CTA operations.

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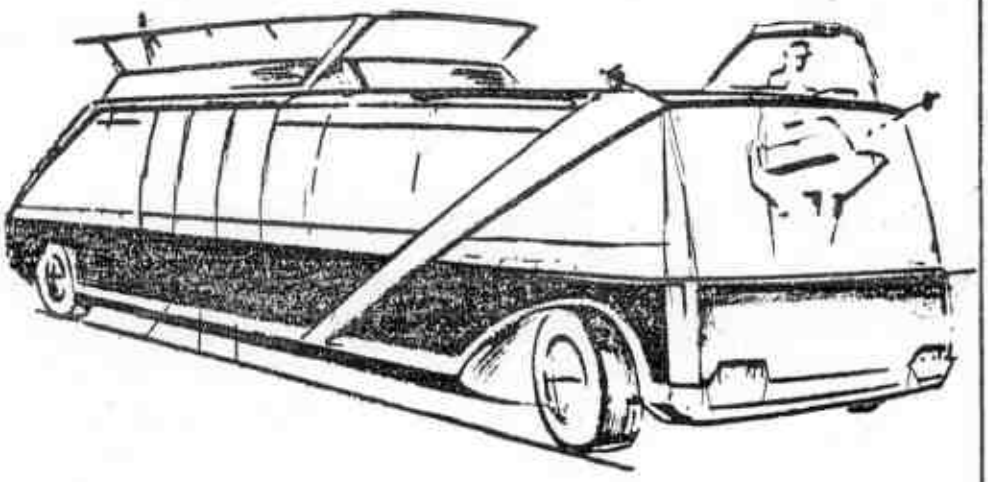
FROM: CHICAGO TRANSIT AUTHORITY, DEPARTMENT OF PUBLIC INFORMATION
H. L. POLLAND, DIRECTOR - MDSE. MART PLAZA, P.O. BOX 3555, CHICAGO
TELEPHONE: MOHAWK 4-7200
11/3/55

What are your ideas for

THE BUS OF TOMORROW



$2,000.00 in prizes to CTA employes

FRONT

Remember - -

Awards of $250.00, $150.00 and $100.00 will be made for ideas which best fulfill the objectives of the contest. Send in as many ideas as you can for each objective: (1) better seating, (2) faster loading, (3) easier fare collection, (4) greater safety, (5) better visibility, (6) improved appearance, and other features for a new look in buses. Don't delay, contest closes December 12. Use forms available at Suggestion Bulletin Boards.

BACK