

ELEVATOR GROUP CONTROL SYSTEM

FIELD

Embodiments described herein relate generally to an elevator group control system comprising a hall destination controller.

BACKGROUND

Recently, elevator systems including a hall destination controller (HDC) capable of directly specifying the destination floor in a hall have been put into practical use. This type of elevator system is called a destination control system (DCS). The DCS selects an optimal car from a plurality of cars based on the destination floor registered by the user in a hall and causes the hall to respond. In this case, the transport efficiency is improved by making the users heading to the same destination floor ride on the same car. Each of the cars is indicated as "car X". The car to which the destination floor (in other words, hall call information including the destination floor) has been allocated is indicated as an allocated car.

In the above DCS, after the allocated car is determined, the allocation of the destination floor may be changed to another car in accordance with the riding state of the originally allocated car. In this case, to prevent the user from riding on a wrong car, the user should be notified of to which car the destination floor has been allocated by the change in allocation.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram showing a configuration of an elevator group control system according to an embodiment.

FIG. 2 is shown for explaining the state of a hall in which a hall destination controller is installed according to the embodiment.

FIG. 3 is a flowchart showing a processing operation of a group controller according to the embodiment.

FIG. 4 is a flowchart showing a process for displaying the result of change in the group controller according to the embodiment.

5 FIG. 5 shows specific examples for explaining the relationship between the originally/newly allocated car and the destination floor in connection with change in allocation according to the embodiment.

10 FIG. 6 shows specific examples for explaining the relationship between the originally/newly allocated car and the destination floor in connection with change in allocation according to the embodiment.

FIG. 7 shows an example of car display which is applied when the allocation has been changed according to another embodiment..

15 SUMMARY

According to one aspect, there is provided elevator group control system for controlling driving of a plurality of cars, the system comprising:

20 a hall destination controller configured to register a destination floor of a user in a hall of an arbitrary floor;

a controller configured to allocate the destination floor registered by the hall destination controller to an optimal car out of the plurality of cars, and to change allocation of the destination floor to another car in accordance with a riding state of the optimal car; and

25 a plurality of displays which are provided in the hall such that the displays correspond to the cars, the displays configured to display a relationship between the originally/newly allocated car and the destination floor in connection with change in allocation in the controller with a basic symbolic indication, wherein

30 the displays include a first display corresponding to the originally allocated car,

the first display displays the destination floor to be deleted by the change in allocation and the newly

allocated car with a predetermined symbolic indication,

the displays further include a second display corresponding to the newly allocated car, and

5 the second display displays the destination floor to be added by the change in allocation and the originally allocated car with a predetermined symbolic indication.

10 There is also provided an elevator group control system for controlling driving of a plurality of cars, the system comprising:

 a hall destination controller configured to register a destination floor of a user in a hall of an
15 arbitrary floor;

 a controller configured to allocate the destination floor registered by the hall destination controller to an optimal car out of the plurality of cars, and to change allocation of the destination floor
20 to another car in accordance with a riding state of the optimal car; and

 a plurality of displays which are provided in the hall such that the displays correspond to the cars, the displays configured to display a relationship between
25 the originally/newly allocated car and the destination floor in connection with change in allocation in the controller with a basic symbolic indication.

DETAILED DESCRIPTION

Embodiments will be described hereinafter with
30 reference to the accompanying drawings.

In general, according to one embodiment, an

elevator group control system controls the driving of a plurality of cars. The system includes a hall destination controller, a controller and a plurality of displays. The hall destination controller is
5 configured to register a destination floor of a user in a hall of an arbitrary floor. The controller is configured to allocate the destination floor registered by the hall destination controller to an optimal car out of the plurality of cars, and to change allocation
10 of the destination floor to another car in accordance with a riding state of the optimal car. The displays are provided in the hall such that the displays correspond to the cars. The displays are configured to display a relationship between the originally/newly
15 allocated car and the destination floor in connection with change in allocation in the controller with a basic symbolic indication.

FIG. 1 is a block diagram showing a configuration of an elevator group control system according to an

embodiment. In the example of FIG. 1, three cars are controlled as a group. However, the present embodiment is not limited to this structure.

5 Car controllers 11a, 11b and 11c are provided such that they correspond to the respective cars (cars 12a, 12b and 12c). Car controllers 11a, 11b and 11c perform control for the respective cars, including control of driving a traction machine (not shown) and control of closing and opening a door. When the traction machine
10 (not shown) is driven, cars 12a, 12b and 12c ascend and descend within a respective elevator shaft. In the example of FIG. 1, car 12a, car 12b and car 12c are car A, car B and car C, respectively.

In a hall 13 of each floor, at least one hall
15 destination controller 14 is installed. The system in which the hall destination controller 14 is installed on each floor is called a full DCS. In the following description, the full DCS is assumed. However, the system does not always have to be the full DCS, and may
20 be a DCS in which the hall destination controller 14 is installed on only an arbitrary floor (standard floor).

The hall destination controller 14 is used by the user to register the destination floor in the hall 13, and includes an operation unit 15 and a display unit
25 16. The user inputs the destination floor to the operation portion 15 by means of a button operation. The method for inputting the destination floor is not limited to the button operation. The destination floor may be input by reading an ID card recorded the
30 destination floor in advance. The display unit 16 is composed of a display panel such as a liquid crystal display (LCD), and displays the destination floor registered by the user and the car to which the destination floor is allocated.

35 Displays 17a, 17b and 17c and speakers 18a, 18b and 18c are installed near the gates (in other words, near the gate doors; not shown) of the cars,

corresponding to the respective cars. These displays and speakers are used as devices to notify the user who waits in the hall 13 of the relationship between the destination floor and the cars. In practice, displays 17a, 17b and 17c and speakers 18a, 18b and 18c are installed in the hall 13 of each floor.

Displays 17a, 17b and 17c are simplified displays called hall indicators, and are composed of segment displays using, for example, a light emitting diode (LED). Displays 17a, 17b and 17c display the driving direction and the current position of the cars. In addition, here, when the allocation has been changed, displays 17a, 17b and 17c display the relationship between the originally/newly allocated car and the destination floor with a basic symbolic indication.

Speakers 18a, 18b and 18c output audio announcement related to the driving of the cars. Here, speakers 18a, 18b and 18c are used as audible-alarm generators which generate an audible alarm when the allocation has been changed.

Each of car controllers 11a, 11b and 11c, the hall destination controller 14, displays 17a, 17b and 17c and speakers 18a, 18b and 18c is connected to a group controller 20.

The group controller 20 is a higher-level device which controls the driving of the cars (cars 12a, 12b and 12c) as a group. In the present embodiment, the group controller 20 includes a call management module 21, an allocation controller 22, a riding state detector 23, a driving monitor 24, a display controller 25 and a warning module 26. These modules are processors which are executed by software in a microprocessor. Data can be exchanged between these modules.

For the sake of convenience, in this specification, all of the call management module 21, the allocation controller 22, the riding state detector

23, the driving monitor 24, the display controller 25
and the warning module 26 are provided in the group
controller 20. However, they are not necessarily
provided in the same device. They may be provided in
5 different devices.

The call management module 21 stores, in a table
21a, the user's destination floor registered by the
hall destination controller 14 in association with the
car to which the registered destination floor is
10 allocated (in other words, in association with the
allocated car).

The allocation controller 22 allocates the
destination floor registered by the user to an optimal
car out of the cars. Specifically, for example, the
15 allocation controller 22 obtains the evaluation value
of each car based on the current position and the
driving direction of each car and the user's
destination floor, and allocates the car having the
evaluation value indicating the highest evaluation as
20 the optimal car. The allocation controller 22 changes
the allocation of the destination floor allocated to
the car to another car in accordance with the riding
state of the originally allocated car detected by the
riding state detector 23.

25 The riding state detector 23 detects the riding
state of each car. Specifically, the riding state
detector 23 obtains the number of current passengers
from hall call information in the table 21a of the call
management module 21. Based on the obtained number of
30 passengers, the riding state detector 23 determines
whether or not the riding state is a full state or
close to a full state. Since some users ride on the
elevator without registering the destination floor by
means of the hall destination controller 14, the value
35 of load amount obtained by a load sensor (not shown)
provided in each car is also taken into consideration
to detect the number of passengers. When the number of

passengers is equal to or close to the rated number of passengers of the car, the riding state is determined as a full state or a state close to a full state.

5 The driving monitor 24 monitors the driving state of each car. The driving state of each car includes the current position, the driving direction, etc.

10 The display controller 25 performs control for displaying the relationship between the originally/newly allocated car and the destination floor in displays 17a, 17b and 17c of the cars with a basic symbolic indication in connection with the change in allocation in the allocation controller 22. The basic symbolic indication includes, for example, a number and an alphabetical letter. The warning module 15 26 generates an audible alarm by means of speakers 18a, 18b and 18c of the cars when the allocation of the destination floor has been changed.

20 FIG. 2 is shown for explaining the state of the hall 13 in which the hall destination controller 14 is installed.

When the user registers the destination floor by operating the operation unit 15 of the hall destination controller 14, hall call information is transmitted to the group controller 20 shown in FIG. 1. In the hall call information, two information items which are the registered destination floor and the registration floor (indicating the floor on which the destination floor is registered) make a set. In this manner, the group controller 20 allocates the destination floor obtained as the above hall call information to the optimal car out of the cars, and causes the registration floor on which the user waits for the car (allocated car) to respond.

35 The display unit 16 of the hall destination controller 14 displays the destination floor registered by the user as well as the car to which the destination floor is allocated. Displays 17a, 17b and 17c

installed in the hall 13 display the destination floor allocated to the respective cars.

For example, when the second floor is registered with the hall destination controller 14 as the
5 destination floor of the user, and car A is the allocated car, the display unit 16 of the hall destination controller 14 operated by the user firstly displays the symbolic indication "2" indicating the destination floor registered by the user and secondly
10 displays the symbolic indication "A" indicating the allocated car. Display 17a corresponding to car A displays the symbolic indication "2" indicating the destination floor.

In the DCS, each car is efficiently driven by, for
15 example, allocating the same destination floor to the same car. However, if many users ride on the car without registering the destination floor, a user who registers the destination floor on a different floor and waits for the car cannot ride on the car. In this
20 case, the allocation of the destination floor of such a user is changed to another car.

At this time, there is a need to immediately notify the user of the newly allocated car. However, in general, displays 17a, 17b and 17c installed in the
25 hall 13 are simplified displays and are capable of displaying characters in only one line. Since an expensive display such as an LCD is not used, detail notification cannot be performed by means of a message.

In consideration of the above factors, when the allocation has been changed, the display in the
30 originally/newly allocated car is performed as follows.

<Display in originally allocated car>

Alternate display of "[destination floor to be deleted]" and "[→] + [newly allocated car]"

35 When the originally allocated car has passed the registration floor (indicating the floor on which the destination floor had been registered), the display in

the originally allocated car is deleted.

<Display in newly allocated car>

Alternate display of "[originally allocated car] +
[→]" and "[destination floor to be added]"

5 When the newly allocated car has arrived at the
registration floor and left the registration floor, the
display in the newly allocated car is deleted.

10 When the newly allocated car has arrived at the
registration floor and left the registration floor
prior to the originally allocated car, the display in
the originally allocated car is performed as follows.

<Display in originally allocated car>

Alternate display of "[destination floor to be
deleted]" and "[→] + [X]"

15 The symbolic indication "X" indicates that the
newly allocated car has already left.

The operation of this system is explained in
detail below.

20 FIG. 3 is a flowchart showing the processing
operation of the group controller 20 in this system.

25 When the user registers the destination floor by
operating the hall destination controller 14 (Yes in
step S11), hall call information including a set of two
information items which are the destination floor and
the registration floor is transmitted to the group
controller 20. The hall call information is stored in
the table 21a of the call management module 21 and is
given to the allocation controller 22.

30 When the allocation controller 22 receives new
hall call information, the allocation controller 22
allocates the destination floor included in the hall
call information to one of cars 12a, 12b and 12c (step
S12). In this case, the car which can respond earlier
than the others in consideration of the destination
35 floor of the user is determined as the allocated car.

When the allocated car is determined, the
information of the destination floor and the allocated

car is stored in the table 21a of the call management module 21 such that the destination floor is associated with the allocated car. The display unit 16 of the hall destination controller 14 displays the destination floor registered by the user and the allocated car. Since the method for displaying the destination floor and the allocated car in the hall destination controller 14 is not directly related to the present embodiment, the explanation of the method is omitted.

When the destination floor of the user is registered with the hall destination controller 14 installed in the hall 13 of, for example, the first floor, and car A is allocated, the group controller 20 causes display 17a of car A installed on the first floor to display the destination floor by means of the display controller 25 (step S13). Specifically, a plurality of digits of segments included in display 17a are controlled to display the number indicating the destination floor of car A in a predetermined color (for example, yellow). When the allocated car A has arrived at the first floor (Yes in step S14), the display of the destination floor is deleted from display 17a of car A (step S15).

When the riding state detector 23 detects the full state or a state close to the full state in the allocated car A before the arrival of car A (Yes in step S16), the allocation controller 22 changes the allocation of the destination floor allocated to car A (specifically, hall call information including the destination floor) to another car (step S17). In this case, an optimal car is selected in consideration of the driving state (including the current position and the driving direction) and the riding state of the cars (here, cars B and C) other than car A. The allocation of the destination floor is changed to the selected car. In connection with this change in allocation, the table 21a of the call management module 21 is updated.

The group controller 20 displays, in the hall 13 of the registration floor, to which car the allocation of the destination floor registered by the user is changed (step S18). When the originally allocated car is car A, and the newly allocated car is car B, display 17a of car A and display 17b of car B in the hall 13 of the registration floor display the destination floor of each car with a basic symbolic indication in connection with the change in allocation.

FIG. 4 shows the process performed in the above step S18, specifically, the process for displaying the result of change. The process for displaying the result of change is separated in accordance with the originally allocated car and the newly allocated car (step S21). In the following description, the first floor is considered as the registration floor (indicating the floor on which the destination floor is registered). Further, car A and car B are considered as the originally allocated car and the newly allocated car, respectively.

With regard to the originally allocated car A, the group controller 20 causes, by means of the display controller 25, display 17a of car A of the first floor to display the destination floor which should be deleted by the change in allocation with a symbolic indication in a form different from that of a normal case out of the destination floors which are currently displayed (step S22). Further, the newly allocated car is displayed with a symbolic indication (step S23).

Specifically, the group controller 20 controls a plurality of digits of segments included in display 17a of car A of the first floor in the following manner: the destination floor which should be deleted by the change in allocation is shown by a number, and the newly allocated car is shown by an alphabetical letter with an arrow (for example, "→B"). At this time, the symbolic indications indicating the destination floor

and the car are displayed alternately at predetermined time intervals since display 17a is a simplified display and cannot display a large amount of information at once. Moreover, the symbolic
5 indications are displayed in a color (for example, red) different from that of a normal case in order to indicate the change in allocation.

The group controller 20 notifies the user that the allocation of the destination floor has been changed to
10 another car by generating an audible alarm having a predetermined tone from speaker 18a of car A of the first floor by means of the warning module 26 (step S24).

The display of the above steps S22 and S23 is
15 repeated until the originally allocated car A passes the first floor (No in step S27). The audible alarm in step S24 may be generated only once when the allocation is changed. The audible alarm may be generated at predetermined time intervals.

20 When the newly allocated car B has arrived at the first floor and left the first floor before the originally allocated car A passes the first floor (Yes in step S25), the group controller 20 causes, by means of the display controller 25, display 17a of car A to
25 display a symbolic indication that the newly allocated car has already left (step S26). Specifically, the symbolic indication "X" indicating that the newly allocated car has already left is displayed in the same color (red) in place of the symbolic indication "B"
30 indicating the newly allocated car.

When the originally allocated car A has passed the first floor (Yes in step S27), the group controller 20 deletes the display of the destination floor and the newly allocated car from display 17a of car A by means
35 of the display controller 25 (step S28).

With regard to the newly allocated car B, the group controller 20 causes, by means of the display

controller 25, display 17b of car B of the first floor to display the destination floor which should be added by the change in allocation with a symbolic indication in a form different from that of a normal case (step S29). Moreover, the originally allocated car is displayed with a symbolic indication (step S30).

Specifically, the group controller 20 controls a plurality of digits of segments included in display 17b of car B of the first floor in the following manner: the destination floor which should be added by the change in allocation is shown by a number, and the originally allocated car is shown by an alphabetical letter with an arrow (for example, "A→"). At this time, the symbolic indications indicating the destination floor and the car are displayed alternately since display 17b is a simplified display and cannot display a large amount of information at once. Moreover, the symbolic indications are displayed in a color (for example, green) different from that of a normal case and the originally allocated car in order to indicate the change in allocation.

By generating an audible alarm having a predetermined tone from speaker 18b of car B of the first floor by means of the warning module 26, the group controller 20 notifies the user that the allocation of the destination floor has been changed to the car (step S31). The audible alarm which is generated at this time has a tone different from that of the originally allocated car. For example, when an audible alarm "dong-ding" (consisting of a low note followed by a high note) is generated by speaker 18a of the originally allocated car A in step S24, an audible alarm "ding-dong" (consisting of a high note followed by a low note) is generated by speaker 18b of the newly allocated car B.

The display of the above steps S29 and S30 is repeated until the newly allocated car B arrives at the

first floor (No in step S32). The audible alarm in step S31 may be generated only once when the allocation is changed. The audible alarm may be generated at predetermined time intervals.

5 When the newly allocated car B has arrived at the first floor (Yes in step S32), the group controller 20 deletes the display of the destination floor and the originally allocated car from display 17b of car B by means of the display controller 25 (step S33).

10 The specific examples are shown in FIG. 5 and FIG. 6.

 Now, this specification explains the relationship between the originally/newly allocated car and the destination floor in connection with the change in allocation, looking at display 17a of car A and display 15 17b of car B in the hall 13 of the twentieth floor.

 (1) It is assumed that the tenth, eighteenth and nineteenth floors are registered on the twentieth floor as the destination floors. When the eighteenth and 20 nineteenth floors are allocated to car A out of the destination floors, display 17a of car A of the twentieth floor displays the symbolic indication "18 19" indicating the destination floors of car A (see a1 in the figure). When the tenth floor is allocated to 25 car B, display 17b of car B of the twentieth floor displays the symbolic indication "10" indicating the destination floor of car B (see b1 in the figure).

 (2) It is assumed that car A becomes full when car A responds to a different hall call which is registered 30 on the twenty-third floor. Essentially, in the DCS, to avoid a full state, the allocation is dispersed, and the destination floor is allocated to another car. However, there is a possibility that car A becomes full in the following cases.

35 When a plurality of users ride on a car on the same floor, the DCS requires each user to register the destination floor once. However, when a user rides on

car A without registering the destination floor, the actual number of passengers is greater than the number of passengers recognized by the DCS.

<Example 1>

5 When a group of five people goes to the first floor, only the representative person registers the destination floor. All of the five people ride on car A simultaneously when car A has arrived at the twenty-third floor.

10 <Example 2>

 At the time of arrival of car A at the twenty-third floor, a user who looked at the display of the destination to the first floor with the indicator lit in the downward direction rides on car A without
15 registering the destination floor.

<Example 3>

 In a state where the passengers heading to the first floor are allocated to cars A and B on the twenty-third floor, a user who is supposed to ride on
20 car B gets on car A which arrives at the twenty-third floor earlier than car B.

<Example 4>

 A user to whom a car different from car A is allocated on the twenty-third floor rides on car A by
25 mistake.

<Example 5>

 A user to whom a car different from car A is allocated on the twenty-third floor rides on car A on purpose because the user wants to move to a lower floor
30 quickly by means of car A which is also descending.

 Here, it is assumed that the allocation of the eighteenth and nineteenth floors which are the destination floors is changed to car B because the state of car A becomes a full state or a state close to
35 a full state on the twenty-third floor.

 Display 17a of car A of the twentieth floor alternately displays the symbolic indication "18 19"

indicating the destination floors which should be deleted by the change in allocation and the symbolic indication " $\rightarrow B \rightarrow B$ " indicating the newly allocated car in red (see a2 in the figure). Display 17b of car B of the twentieth floor alternately displays the symbolic indication "18 19" indicating the destination floors which should be added by the change in allocation and the symbolic indication " $A \rightarrow A \rightarrow$ " indicating the originally allocated car in green (see b2 in the figure). Since the tenth floor has been already allocated to car B, the symbolic indication "10" indicating the tenth floor is fixedly displayed in yellow.

The position of the arrow added to the alphabetical letter indicating each car distinguishes the originally allocated car from the newly allocated car. When the arrow is added before the alphabetical letter indicating the car as with " $\rightarrow B$ ", the display is performed in the originally allocated car. When the arrow is added after the alphabetical letter indicating the car as with " $A \rightarrow$ ", the display is performed in the newly allocated car.

Moreover, an audible alarm is generated by speaker 18a of car A and speaker 18b of car B. In this case, an audible alarm "dong-ding" (consisting of a low note followed by a high note) is generated by speaker 18a of the originally allocated car A. An audible alarm "ding-dong" (consisting of a high note followed by a low note) is generated by speaker 18b of the newly allocated car B. Thus, the originally allocated car is distinguished from the newly allocated car by the difference in the audible alarm.

(3) When car B has not arrived at the twentieth floor before car A passes the twentieth floor, display 17a of car A of the twentieth floor continuously performs the same display as the above (2) (see a3 in the figure). Display 17b of car B of the twentieth

floor also continuously performs the same display as the above (2) (see b3 in the figure).

5 (4) When car B has arrived at the twentieth floor before car A has passed the twentieth floor, display 17a of car A of the twentieth floor displays the symbolic indication "X" indicating that the newly allocated car has already left in red in place of the symbolic indication "B" indicating the newly allocated car (see a4 in the figure). When the symbolic
10 indication "X" is displayed, car B has already left the twentieth floor. If the user does not ride on car B, the user needs to register the destination floor again.

The symbolic indication that the newly allocated car has already left is not limited to the alphabetical
15 letter "X" and may be another symbolic indication such as "x" and "-".

When car B has arrived at the twentieth floor and left the twentieth floor, the display of the destination floors and the originally allocated car is
20 deleted from display 17b of car B of the twentieth floor (see b4 in the figure).

(5) Car A passes the twentieth floor in a full state and heads to the first floor. When car A has
25 passed the twentieth floor, the display of the destination floors and the newly allocated car is deleted from display 17a of car A of the twentieth floor (see a5 in the figure).

Car B leaves the twentieth floor and stops at the nineteenth, eighteenth and tenth floors. The display
30 of the destination floors and the originally allocated car has been already deleted from display 17b of car B of the twentieth floor (see b5 in the figure).

As described above, when the allocation has been changed, the relationship between the originally/newly
35 allocated car and the destination floor is displayed with a basic symbolic indication, etc. Thus, it is possible to accurately inform to which car the

allocation of the destination floor has been changed by only using a simplified display commonly used for a hall without requiring a display capable of performing detailed display.

5 Since many users wait in a hall at peak times such as the morning rush hour, each user needs to immediately find out the car to be ridden on and wait in front of the car. Some users may miss the car or ride on a wrong car as it takes time to recognize the
10 car by message display. However, the system of the present embodiment employs symbolic display. Thus, it is possible to immediately recognize to which car the allocation of the destination floor has been changed. In addition, any user can know the car to be ridden on
15 by merely looking at symbolic indications without the use of languages.

 According to at least one of the above embodiments, it is possible to provide an elevator group control system which uses a simplified display
20 installed in a hall, notifies the user of the destination floor of each car in connection with change in allocation and prevents the user from riding on a wrong car.

 In the above embodiments, the destination floors
25 are shown by numbers, and cars are shown by alphabetical letters. However, they may be shown by symbolic indications other than numbers or letters.

 The display form which is applied when the allocation has been changed is not limited to the
30 method of changing the display color. As shown in the example of FIG. 7, the display of change in allocation may be emphasized by applying reversing display to the newly allocated car and the originally allocated car. FIG. 7(a) shows an example of the display of the newly
35 allocated car. For example, reversing display is applied in red. FIG. 7(b) shows an example of the display of the originally allocated car. For example,

reversing display is applied in green.

While certain embodiments have been described,
these embodiments have been presented by way of example
only, and are not intended to limit the scope of the
5 inventions. Indeed, the novel embodiments described
herein may be embodied in a variety of other forms;
furthermore, various omissions, substitutions and
changes in the form of the embodiments described herein
may be made without departing from the spirit of the
10 inventions. The accompanying claims and their
equivalents are intended to cover such forms or
modifications as would fall within the scope and spirit
of the inventions.

WHAT IS CLAIMED IS:

1. An elevator group control system for controlling driving of a plurality of cars, the system comprising:

5 a hall destination controller configured to register a destination floor of a user in a hall of an arbitrary floor;

 a controller configured to allocate the destination floor registered by the hall destination
10 controller to an optimal car out of the plurality of cars, and to change allocation of the destination floor to another car in accordance with a riding state of the optimal car; and

 a plurality of displays which are provided in the
15 hall such that the displays correspond to the cars, the displays configured to display a relationship between the originally/newly allocated car and the destination floor in connection with change in allocation in the controller with a basic symbolic indication, wherein

20 the displays include a first display corresponding to the originally allocated car,

 the first display displays the destination floor to be deleted by the change in allocation and the newly allocated car with a predetermined symbolic indication,

25 the displays further include a second display corresponding to the newly allocated car, and

 the second display displays the destination floor to be added by the change in allocation and the originally allocated car with a predetermined symbolic
30 indication.

2. The elevator group control system of Claim 1,
wherein

the first display alternately displays the
destination floor to be deleted by the change in
5 allocation and the newly allocated car, and

the second display alternately displays the destination floor to be added by the change in allocation and the originally allocated car.

5 3. The elevator group control system of Claim 1, wherein

the first display displays the destination floor to be deleted by the change in allocation and the newly allocated car in a first color different from a color of a normal case, and

10 the second display displays the destination floor to be added by the change in allocation and the originally allocated car in a second color different from the first color.

15 4. The elevator group control system of Claim 3, wherein

the first display emphasizes the change in allocation by applying reversing display to the newly allocated car, and

20 the second display emphasizes the change in allocation by applying reversing display to the originally allocated car.

5. The elevator group control system of Claim 1, wherein

25 the first display displays the destination floor to be deleted by the change in allocation and the newly allocated car with the predetermined symbolic indication until the originally allocated car passes a floor on which the destination floor is registered, and

30 the first display displays another symbolic indication in place of the symbolic indication, indicating the newly allocated car when the newly allocated car arrives at the floor and leaves the floor before the originally allocated car passes the floor.

35 6. The elevator group control system of Claim 1, wherein

the first display deletes display of the symbolic indication of the destination floor to be deleted by

the change in allocation and the newly allocated car when the originally allocated car passes a floor on which the destination floor is registered, and

5 the second display deletes display of the symbolic indication of the destination floor to be added by the change in allocation and the originally allocated car when the newly allocated car arrives at the floor and leaves the floor.

10 7. The elevator group control system of Claim 1, wherein

 the first display displays the destination floor to be deleted by the change in allocation with a number and displays the newly allocated car with an alphabetical letter, and

15 the second display displays the destination floor to be added by the change in allocation with a number and displays the originally allocated car with an alphabetical letter.

20 8. The elevator group control system of Claim 1, further comprising a plurality of generators which are provided in the hall such that the generators correspond to the cars, the generators configured to generate an audible alarm when allocation is changed by the controller.

25 9. The elevator group control system of Claim 8, wherein

 the generators include a generator which corresponds to the originally allocated car and generates a first audible alarm, and

30 the generators further include a generator which corresponds to the newly allocated car and generates a second audible alarm having a tone different from a tone of the first audible alarm.