

**HONG KONG SPECIAL ADMINISTRATIVE REGION
PEOPLE'S REPUBLIC OF CHINA
AERONAUTICAL INFORMATION SERVICE**

PHONE: (852) 2910 6174
FAX: (852) 2910 1180
TELEGRAPHIC ADDRESS:
AFS VHHHYOYX
COMM. AIRCIVIL HONG KONG

AIR TRAFFIC MANAGEMENT DIVISION
CIVIL AVIATION DEPARTMENT
HONG KONG INTERNATIONAL AIRPORT

AIC
09/02
13 June 2002

**Hong Kong International Airport
Aircraft Docking Guidance System
(Safegate Docking System)**

1. General

1.1 At Hong Kong International Airport passenger apron all frontal parking bays are equipped with a docking guidance system, (Safegate Docking System), to enable wide-body aircraft to park at the correct position on the parking bays without the assistance of a marshaller. In addition, four frontal parking bays (E16R, E17R, S29R and S31R) are equipped with the docking guidance system for narrow-body aircraft at the off-centre parking position.

1.2 All remote parking bays on the passenger apron are equipped with the docking system to the centreline parking position. The docking guidance system is not provided at remote parking bay off-centre parking positions, and a marshalling service is provided at these locations. A docking guidance system is not provided at cargo apron parking bays and a marshalling service is provided at these locations.

2. Description of Safegate Docking System

2.1 The Safegate Docking System consists of a display screen and laser scanner located at the head of the parking bay to ensure the aircraft stops in the correct location relative to the airbridges.

2.2 When the system is activated by the marshaller the following information will be displayed on the LED screen :

- a) type of arriving aircraft;
- b) sequential arrows to indicate the system is active;
- c) lateral guidance with an illuminated 'T' when the aircraft is within 80 metres of the correct parking position;
- d) display of the distance to go when the aircraft is within 9m of the correct parking position;
- e) STOP indication when the aircraft is at the correct parking position.

3. Operation of Safegate Docking System

3.1 TYPE OF AIRCRAFT

3.1.1 Before the aircraft approaches the parking bay the marshaller enters the type of aircraft into the system and it is displayed on the LED screen (Fig 1). When the aircraft turns into the parking bay and the system starts tracking the aircraft, and the laser scanner identifies the type of aircraft.

3.1.2 If the laser unit detects that the type of aircraft corresponds to the type entered into the system, the docking system will continue to function normally (Fig 2). If the laser unit detects a discrepancy in the type of aircraft or cannot identify the aircraft, the message 'STOP' will be displayed on the LED screen (Fig 3).

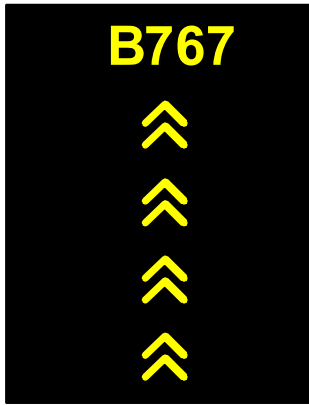


Fig.1

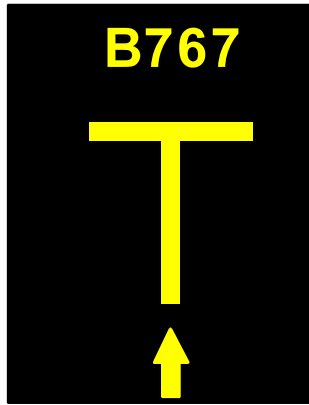


Fig.2

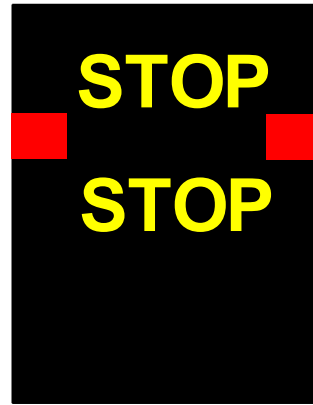


Fig.3

3.2 TRACKING MODE

3.2.1 When the system is activated by the marshaller the laser automatically scans the pre-defined docking area in the parking bay to detect the arriving aircraft (Fig 1). When the aircraft is approximately 80 metres from the correct parking position the laser starts tracking the aircraft and displays information on the lateral position of the aircraft relative to the parking centreline. An arrow represents the location of the aircraft (Fig 2). The system continues to track the aircraft to the 'STOP' position.

3.3 AZIMUTH GUIDANCE INDICATOR

3.3.1 Azimuth guidance is displayed on the LED screen when the aircraft is within 80 metres of the correct parking position. An arrow and a chevron indicate the relative position of the aircraft to the centreline 'T' symbol (Fig 4, Fig 5 and Fig 6).

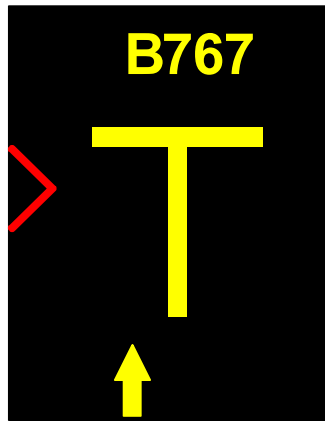


Fig.4 Aircraft
left of centreline

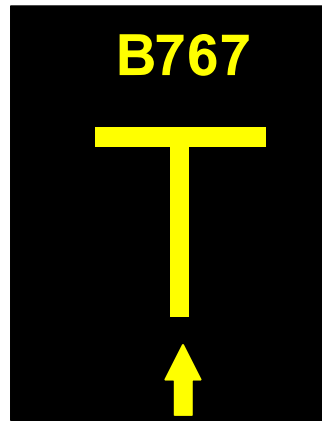


Fig.5 Aircraft
on centreline

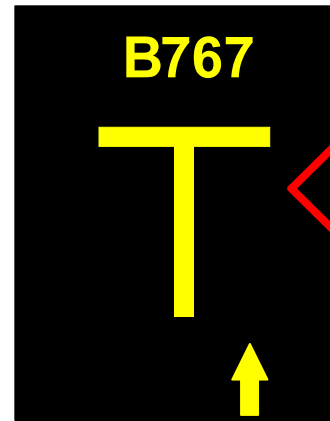


Fig.6 Aircraft
right of centreline

3.4 DISTANCE TO GO INDICATOR

3.4.1 Distance to go information is displayed on the LED screen when the aircraft is within 9 metres of the correct parking position. The distance is displayed above the 'T' symbol at 1 metre intervals between 9 metres - 2 metres (Fig 7 and Fig 8), then at 0.2 metre intervals up to the STOP position (Fig 9).

3.4.2 The closing rate to the correct parking position is shown by the proportional reduction in length of the centreline 'T' symbol when the aircraft is within 9 metres of the 'STOP' position.

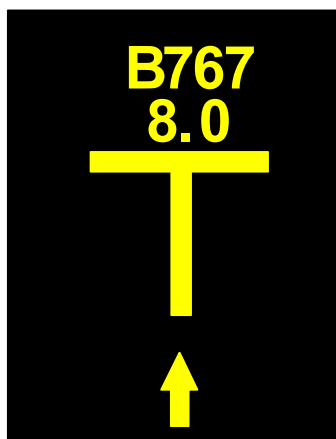


Fig.7

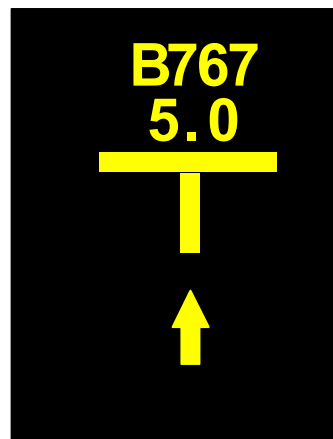


Fig.8

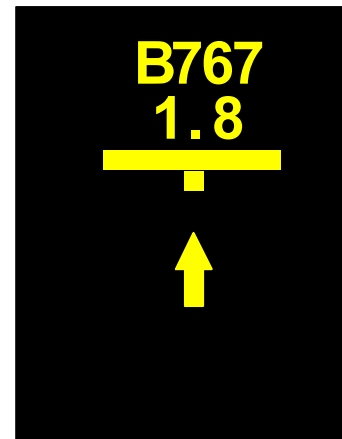


Fig.9

3.5 STOP POSITION INDICATOR

3.5.1 The correct parking position is displayed on the LED screen by a 'STOP' message replacing the azimuth guidance and distance to go information.

3.5.2 The 'STOP' message indicates the exact location of the aircraft nose wheel at the correct parking position (Fig 10).

3.5.3 When the system detects the aircraft has stopped, an 'OK STOP' message indicates the aircraft is correctly parked (Fig 11). A 'TOO FAR STOP' message indicates the aircraft has overshoot the correct parking position (Fig 12).



Fig.10



Fig.11



Fig.12

4. Pilot Procedures

4.1 Pilots must follow the parking bay lead-in ground markings as they approach the parking bay to ensure the docking guidance system laser unit starts tracking the aircraft.

4.2 Pilots must check that the correct type of aircraft is displayed on the LED screen.

4.3 Pilots should maintain a speed of 6 kt whilst using the docking guidance system and slow down to halt when the 'STOP' message is displayed.

5. Further Information

5.1 Further information on the Safegate Docking System may be obtained from :
Airport Authority Hong Kong,
1 Cheong Yip Road,
Hong Kong International Airport,
Lantau, Hong Kong.

This Circular is issued for information, guidance and necessary action
for and on behalf of Airport Authority Hong Kong