

# **SERVICE INFORMATION**

## **NO. SI 42-252**

## **NO. SI 42NG-145**

### **I. TECHNICAL DETAILS**

#### **1.1 Airplanes affected**

All DA 42, DA 42 M, DA 42 NG, DA 42 M-NG airplanes

#### **1.2 Subject**

Closing and latching the passenger door

ATA-Code: 52-00

#### **1.3 Reason**

Diamond Aircraft has received reports about un-latched passenger doors. In some cases this has led to separation of the door in flight. This Service Information aims to increase the awareness of pilots, operators and maintenance organizations on the importance of correct latching procedures.

Diamond Aircraft encourages all pilots to familiarize themselves with the content of this Service Information, all operators and maintenance organizations to distribute the content within their organizations.

#### **Key Knowledge Items:**

**Do not try to close the passenger door in flight, when found unlatched.**

**When the passenger door is found unlatched, land as soon as practicable.**

**Verify before each flight, that the passenger door is fully closed and latched by**

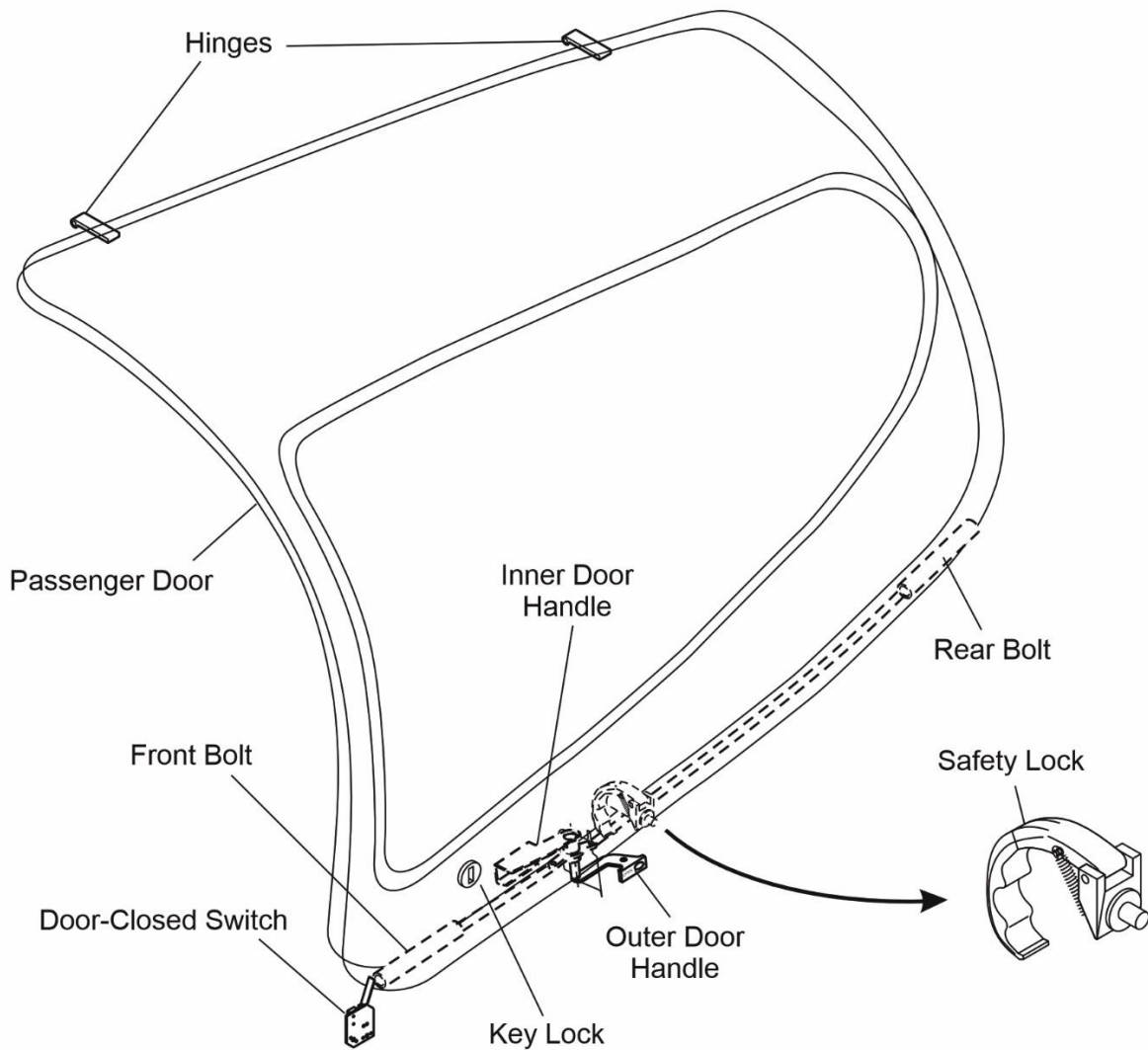
- **touching it from the inside,**
- **visually checking that the door handle is properly latched position and,**
- **the DOOR OPEN warning on the Primary Flight Display (PFD) is extinguished.**

## 1.4 Information

### **Closing and Latching the Passenger Door**

The passenger door of the DA 42 must be closed and properly latched during ground and air operation.

The door latching mechanism consists of the red door handles, the latching mechanism, the red safety hook and the key lock.



When the passenger door is closed, the red safety hook engages. The safety hook shall prevent inadvertent opening of the passenger door, when the door is not properly latched.

To latch the passenger door from the inside, the red door handle must be moved in flight direction until a noticeable stop is reached. When the door handle is in the fully latched position, the inside door handle points towards the front of the airplane, refer to the pictures below.

**initial design of door latching mechanism – MÄM 42-097 not installed**



properly latched



not latched

**new design of door latching mechanism – MÄM 42-097 installed**



properly latched



not latched

To latch the passenger door from the outside, the red door handle must be moved to the aft of the airplane until a distinct stop is reached. In the latched position the face of the door handle is essentially parallel to the fuselage shell, refer to the pictures below.

When you verify that the door handle is in the fully latched position, make sure that the face of the door handle is essentially parallel to the fuselage shell and the handle has reached the distinct stop.



properly latched



not latched

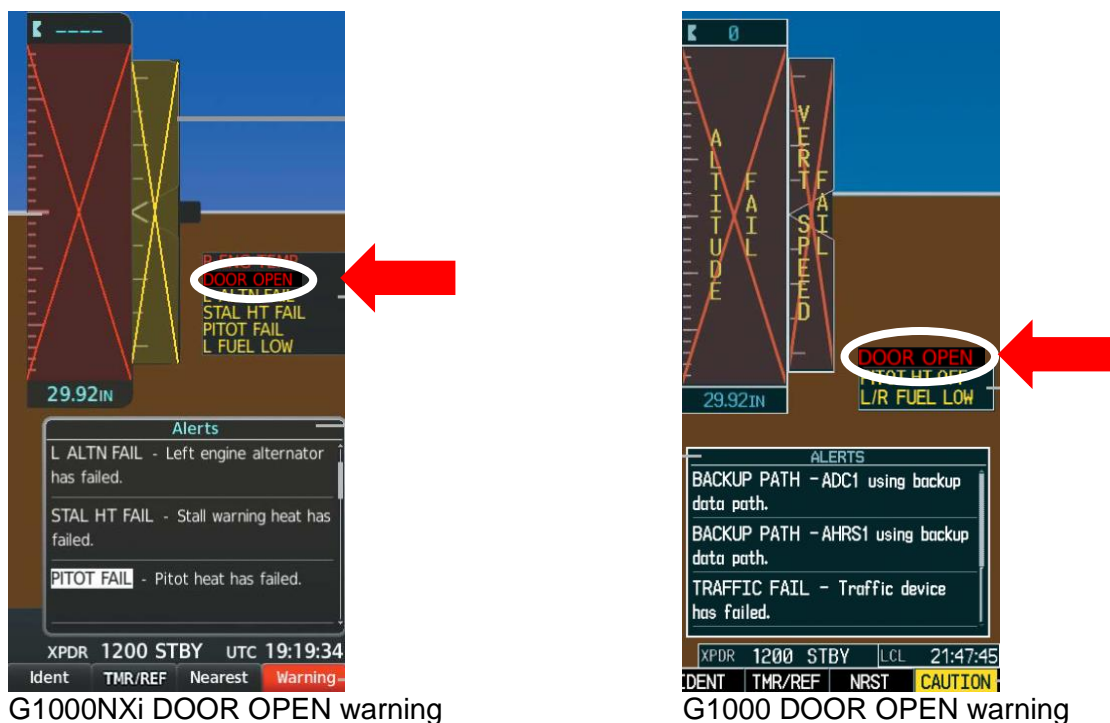
When the keylock is locked, the passenger door is secured against unauthorized access from the outside. The passenger door can be opened from the inside by pulling the handle on the door handle. During flight the keylock must be unlocked at any time to allow access from the outside to emergency services and first responders.

## DOOR OPEN warning

### DOOR OPEN

When the front locking pin of the passenger door engages into the door frame, an electric contact is closed. This contact is connected to the red DOOR OPEN warning displayed on the PFD. When the canopy, the passenger door or the nose baggage compartment is not latched the DOOR OPEN warning is displayed. When the system starts to display the DOOR OPEN warning alert, it is additionally accompanied by a continuous aural tone. The DOOR OPEN warning is an additional means to warn against an unlatched passenger door, canopy or baggage door. The aural warning can be acknowledged. When the door open warning is present during G1000 system start-up, the aural warning will be automatically acknowledged.

Using the canopy slightly opened will cause the DOOR OPEN warning to illuminate and can reduce the alertness to the DOOR OPEN warning. **If the DOOR OPEN warning persists after closing the canopy, the aural warning will not sound again.**



### Operating procedures

The normal operating procedures 4A.6.2 BEFORE STARTING ENGINE and 4A.6.6 BEFORE TAKE-OFF instruct to verify that the passenger door is closed and latched and that the DOOR OPEN warning is not displayed before each flight. It is important to follow each step of the operating procedures.

Pilots should make sure that they

- Confirm that the passenger door is properly latched before each flight by visually checking the inner door handle position.
- Verify that the DOOR OPEN warning is not displayed on the PFD before each take-off.

**Door – Handle – Warning – Check (initial design – MÄM 42-097 not installed)**

**1. Check the Door:**

Touch the door from the inside firmly. The door must not move.



**2. Check the Door Handle position:**

Visually confirm that the door handle of the passenger door is in the fully latched position.



**3. Check the Warning on the G1000:**

Confirm that the DOOR OPEN Warning is not shown on the Garmin G1000 notification window.



**Door – Handle – Warning – Check (new design – MÄM 42-097 installed)**

**1. Check the Door:**

Touch the door from the inside firmly. The door must not move.



**2. Check the Door Handle position:**

Visually confirm that the door handle of the passenger door is in the fully latched position.



**3. Check the Warning on the G1000:**

Confirm that the DOOR OPEN Warning is not shown on the Garmin G1000 notification window.



**What to do, when the passenger door is found unlatched in flight:**

AFM Emergency procedure 3.12.2 UNLOCKED DOORS lists the instructions how to proceed, if the passenger door is found unlatched during flight:

**3.12.2 UNLOCKED DOORS**

1. Airspeed ..... reduce immediately
2. Canopy ..... check visually if closed
3. Rear passenger door ..... check visually if closed
4. Front baggage doors ..... check visually if closed

Canopy Unlocked

5. Airspeed ..... below 140 KIAS
6. Land at next suitable airfield.

Rear Passenger Door Unlocked

5. Airspeed ..... below 140 KIAS
6. Land at next suitable airfield.

**WARNING**

Do not try to lock the rear passenger door in flight. The safety latch may disengage and the door opens. Usually this results in a separation of the door from the airplane.

**NOTE**

If door has been lost the airplane can be safely flown to the next suitable airfield.

It is important to point out that by adherence to this procedure the risk of inadvertent opening of an unlatched passenger door is minimized.

The emergency procedure warns against the attempts to close and latch the passenger door and instructs to reduce airspeed and to land at the next suitable airfield.

**WARNING Do not try to latch the passenger door, if found unlatched during flight.**

Attempts to latch an unlatched passenger door in flight may lead to disengaging the safety hook. This can lead to inadvertent opening and separation of the passenger door during flight.

The reduced airspeed will lower

- the forces acting on the passenger doors,
- vibration and buffeting,
- the effects of gust encountered during flight, and
- noise entering the cabin.

With an unlatched passenger door the DA 42 airplane can still be operated without appreciable effects on flight performance and flight characteristics. The procedure instructs to land at the next suitable airfield. A completion of the planned flight is not recommended unless the unlatched door is detected when the planned destination is considered the next suitable airfield.



## Recommendations to pilots

- Make it a habit to board the airplane as last person and check yourself that the door is closed and fully latched from the outside. Before taking seat, even when flying alone, walk back on the wing and check physically with your hand and by visually checking that the door is actually closed and the passenger door handle is in the correct position. Feel that the door sits snug and tight, and that the outer door handle is essentially parallel with the fuselage wall and at its distinct stop.
- Include verification that the passenger door is in the fully latched position and that the DOOR OPEN warning is extinguished in each Before Take-Off Check (**Door – Handle – Warning - Check**). It is vital for safe operation to be familiar and to follow the procedures in the Airplane Flight Manual.
- Before using the canopy cooling gap position reassure yourself that the passenger door is closed and fully latched by visually checking the door handle position and that the DOOR OPEN warning is extinguished. (**Door – Handle – Warning - Check**)

Note: Using the canopy cooling gap position will cause the DOOR OPEN warning to illuminate and can reduce the alertness to the DOOR OPEN warning.

**If the DOOR OPEN warning persists after closing the canopy, the aural warning will not sound again.**

After closing the canopy reassure yourself that the passenger door is closed and fully latched by visually checking the door handle position and that the DOOR OPEN warning is extinguished. (**Door – Handle – Warning - Check**)

- Recurring familiarization with the emergency procedure for unlatched doors.
- Include in each passenger briefing not to attempt to close the passenger door in-flight, if found unlatched.
- A key-locked passenger door restricts outside access by emergency services and first responders in case of an emergency. Always open a key-locked passenger door with the key from the outside before flight.

## Recommendations to operators

Include the following items in the initial familiarization and recurring training programs for DA 42 aircraft to emphasize the pilots focus on:

- Visual verification that the passenger door is in the fully latched position and that the DOOR OPEN warning is extinguished in each Before Take-Off Check. (**Door – Handle – Warning - Check**)
- Before using the canopy cooling gap position to reassure that the passenger door is closed and fully latched by visually checking the door handle position and that the DOOR OPEN warning is extinguished. (**Door – Handle – Warning - Check**)

Note: Using the canopy cooling gap position will cause the DOOR OPEN warning to illuminate and can reduce the alertness to the DOOR OPEN warning.

**If the DOOR OPEN warning persists after closing the canopy, the aural warning will not sound again.**

After closing the canopy pilots shall reassure that the passenger door is closed and fully latched by visually checking the door handle position and that the DOOR OPEN warning is extinguished. (**Door – Handle – Warning - Check**)

- Recurring familiarization with the emergency procedure for unlatched doors.

## Recommendations to maintenance technicians and organizations

- Pay particular attention to the passenger door latching functions and the associated inspection and maintenance procedures. Refer to AMM Sections 05-28-50 and 52-10.
- Make sure that the latching mechanism works correctly. Refer to AMM Section 05-28-10.
- Make sure that the safety hook engages when the door is closed.
- Lubricate the red safety hook button to ensure proper function. Refer to AMM Section 12-20.

## II. OTHERS

In case of doubt contact Diamond Aircraft Industries GmbH.