



## ASSESSMENT OF THE RESPONSE FROM TRANSPORT CANADA TO AVIATION SAFETY RECOMMENDATION A04-02

### VALIDITY OF STANDARD WEIGHT VALUES

#### Background

On 17 January 2004, at 1638 eastern standard time, Georgian Express Flight 126 (GGN 126), a Cessna Caravan 208B, C-FAGA, departed Pelee Island, Ontario, en route to Windsor, Ontario. There were nine passengers and one crew member on board. Shortly after take-off, the aircraft struck the ice-covered surface of Lake Erie, fatally injuring all 10 occupants. Although the investigation (A04H0001) is ongoing, there is factual information to suggest that the aircraft's weight was a contributing factor in the accident. The maximum take-off weight in the Cessna aircraft manual is 8750 pounds (cargo pod installed) or 8550 pounds if flying into known icing conditions. The investigation determined that the actual weight of the occurrence aircraft on departure from Pelee Island was approximately 9820 pounds, 1270 pounds over gross weight.

For aircraft under 12 500 pounds, there can be significant deviations from the published standard passenger weights due to the small sample size (nine passengers or fewer). This deviation error is further amplified in small aircraft due to the higher percentage of total aircraft weight that the passengers represent (22% for a Cessna 208 and 9% for a Boeing 747). If a small aircraft is being loaded to maximum gross weight, this discrepancy in passenger weight could result in an overweight condition that adversely affects the safety of the flight.

Although air operators have three options to calculate passenger weight, the most common practice is to use standard weights, as indicated in the Pelee Island operation where standard weights were used for 155 of the 165 flights. The average weight of the passengers on Georgian Express Flight 126 using standard weights was 183.3 pounds (9 men at 188 pounds, 1 woman at 141 pounds). Using actual weights, the actual average passenger weight was 240 pounds.

There have been numerous accidents in Canada related to overweight aircraft. At least five of these accidents involved small aircraft where discrepancies between the standard and actual weight of passengers contributed to the overweight condition and the accident. Four of these accidents were fatal, involving 24 fatalities.



### **Board Recommendation A04-02 (06 October 2004)**

The investigation results indicate that the published standard weights no longer reflect Canadian society. It is therefore likely that many flights conducted in Canada are operating at a heavier weight than calculated. Therefore, the Board recommended that:

The Department of Transport re-evaluate the standard weights for passengers and carry-on baggage and adjust them for all aircraft to reflect the current realities.

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### **Transport Canada Response to A04-02 (22 December 2004)**

In its 22 December 2004 letter, Transport Canada (TC) provided the following comments:

- TC re-evaluated the standard weights for passengers and carry-on baggage and adjusted them for all aircraft to reflect the current realities.
- A Commercial & Business Aviation Advisory Circular (CBAAC 0235) and a Policy Letter were issued in October, and the *Aeronautical Information Publication* (A.I.P.) published weights will be amended January 20, 2005. Operators whose approved weight and balance control program is based on the A.I.P. weights will need to amend their programs to reflect these new weights.

### **Board Assessment of Response to A04-02 (09 February 2005)**

The TC response details actions that fully satisfy the aim of the recommendation. Consequently, the response is assessed as **Fully Satisfactory**.

### **Next TSB Action: A04-02 (09 February 2005)**

None required. This deficiency file is assigned an **Inactive** status.