Aircraft Accident

Wings Jamaica Limited
Cessna 150 J 6Y-JPM
August 09, 1998.
Local Time: 0845
Operation: Flight Training
Damage: Substantial.
Pilot License: Commercial
Pilot License: Student

Injuries:	Fatal	Serious	Minor/None	
Crew:	2	-	-	-
Passenger:	-	-	-	-

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Analysis

Subsequent to the impact, a post fire erupted and destroyed approximately 90 % of the aircraft.

Indications are the aircraft impact the ground left wing low and the nose at approximately 45-60 degree angle, and cart wheeled 180 degrees opposite the direction of flight and the point of impact.
The aircraft nose wheel impact the ground first, displacing the axle, buckled the engine mount resulted in the fork moving backwards into the belly. The left main wheel, left wing and left hand horizontal stabilizer striking the ground. The wing being the longest arm initiates a spinning motion of the aircraft. The left main wheel axe broke off the gear leg on impact. Neither the wheel nor the axe was recovered at the crash site. The nose wheel was found approximately 100 feet in the ditch from the crash site. Section of both halves of the nose wheel was broken from the impact.

Examination of damages of the left wing indicate that there is troughlike wrinkles running from tip to inboard and towards the trailing edge of the lower surface signifies that the aircraft was in a forward motion instead of a direct nose dive into the ground. The left hand leading edge and aft skin separated from the front spar. The left wing dug in first pivoting the aircraft anti-clockwise 180 degrees on the crankshaft and propeller spinner, then came to rest on the main gear up against the road bank.

The propeller spinner and backing plate were still attached to the dislocated crankshaft flange from the impact. The propeller blade appears to have impacted the ground at approximately 3 o'clock and 9 o'clock position. The engine was not developing power based on the damages on the blades. The blade at the 9 o'clock position sustained damage from the impact and separated from the crankshaft. Examination on the propeller flange indicates that it separates on impact with the ground and the aircraft pivoted about longitudinal axis. The blade at the 3 o'clock position got bent at the outboard section and seperated from the crankshaft during the pivoting of the aircraft.

The damage on the blade at the 9 o'clock position indicates that it seperated on impact and remained at or near the impact site and away from where the aircraft finally came to rest. The propeller was not damaged by the fire.

The tail broke off just forward of the bulkhead which the vertical and horizontal stabilizer are attached in the initial impact. This is evident from the elevator, trim and rudder cables cutting into the skins through which they run.

At the crash site, traces of oil were found on the ground from the aircraft impact point to where it finally came to rest. On impact the number 4 cylinder , vacuum pump, carburetor, exhaust stacks and oil tank ruptured which may have started the fire or attributed to sustaining the fire. The impact of the nose gear strut and fork ruptured the fuel filter and main fuel line on initial impact.

Possible Cause:

The post fire may have been ignited by wires from the battery source and fuel fed from the broken fuel line of the right hand fuel tank.

The crew may have had difficulty getting out the cabin because of the following reasons:

a) The force from the impact displaced the engine and firewall back into the cabin reducing the space between the console and their seats. The rudder pedals may have trapped the crew legs making it difficult to move.
b) They may have been un-conscious from the impact, rendering them incapable of undoing their seat belts and shoulder harnesses.
c) The cabin doors may not have been unlatched causing them to jam. It is required that, in preparation for an emergency landing without engine power, on final approach for a forced landing that the doors should be unlatched. The copilot's door was not destroyed by the post fire, however was recovered with a large buckle at the bottom edge. It appears that some force had been applied from the inside, possible by the copilot trying to egress the cabin post impact.
d) The aircraft's portable fire extinguisher was recovered discharged with its controlled nozzle damaged by heat along side the aircraft. It could not be determined if an attempt was made to extinguish the post fire, which in turn delayed either crewmember from getting out of the aircraft before the cabin was engulfed in flames.

There may not have been enough time to carry out in its entirety the emergency landing check due to an attempt to restart the engine, if there was an engine failure and /or the lost of altitude. The position of the fuel shut-off valve at the time of the crash could not determined as the burnt remains concealed the area where the valve is located on the floor adjacent to the seat.

Findings

The copilot's door, which was separated from the aircraft but was not destroyed by the post fire, indicates some buckling and signs of impact from inside out.

The shoulder harness buckles were found fastened.

A fire extinguisher was available and may or may not have been discharged by the crew. It was recovered discharged with it controlled nozzle damaged from the fire.

The engine number 3 cylinder, top spark plug had popped out of the cylinder threaded insert. The spark plug thread was bent at the first quarter of an inch.

The engine number 4 cylinder suffered impact damage, which fractured a portion of the cylinder head near the spark plug hole. It could not be determined if the fracture was caused prior to the impact. The top spark plug was dislodged from the cylinder threaded insert. The insert was also partially dislodged from the cylinder.

The left hand forward wings attach fittings seperated on intact and severed the left main fuel tank supply line. The left-hand wing strut (fuselage to wing) was still attached.

The right hand wing strut was separated closest to the fuselage by the fire sustained by fuel from the right fuel tank pouring on it. There was minimal damage to the right wing, except that the fire consumed the wing's lower section through the tank, flap from the root to the flap actuator assembly. The right hand fuel tank cap was blown off as a result of the fire. The wing seperated from the aircraft after the cabin was consumed by the fire.

The flap motor and drive was in the full up position. It could not be determined if the crew had set up the aircraft for best gliding distance to reach a particular landing site. (Location of flap motor and push pull rod drive in right hand wing not destroyed by the fire. See photo)

The elevator trim tab was discovered set at the neutral position. (Elevators and trim tab was undamaged)

The entire cockpit, cabin and baggage area was destroyed by fire. The main gear collapsed subsequently.

Small amounts of the crew clothing were recovered after the bodies were removed.

The Emergency Locator Transmitter was destroyed by the post fire.