

Frame:

271

272

273

274

275

276

277

278

The impact of the second shot striking Governor Connally in the right armpit.

Frames 271 to 278 of the Zapruder film.

The vertical black line is a fixed reference line based on the middle of President Kennedy's right ear. The first blue vertical line, moving right, marks the position of the front of Gov. Connally's forehead at Z271 and Z272. Successive blue lines show the forehead in successive frames. The left yellow line is fixed on a point of light on the car in z271. This appears to move to the left as the car moves and the angle of the camera to the car decreases.

The width of the Governor's head provides a rough calibration distance against which the motion can be measured. The distance moved in six frames is about half of the width of the Governor's head, front to back. Based on a head width of 19 cm, the head moved about 9.5 cm in six frames.

During this time, the angle from Zapruder to Gov. Connally changed from 24 degrees to about 20 degrees as the car moved about six feet. This would change the apparent spacing of the Governor and Mrs. Kennedy by about 3.5 cm. so the Governor actually moved about 6 cm. in total or about 1 cm. per frame.

This analysis indicates that the shot occurred between Frames z271 and z272.

Point of light on seat used as reference

Fixed reference pt.

Front of head Z271/2

Z278
Z277
Z276
Z275
Z274
Z273

Back of head Z278
Back of head Z272