

Orlando Flight Standards District Office



Federal Aviation  
Administration

# Accident / Incident Review

Presented to: Orlando FSDO Pilot Examiners

By: Larry Enlow

Date: January 22, 2015



# ORLANDO FSDO

## Flight Training Accident & Incident Analysis



# *ACCIDENT & INCIDENT ANALYSIS*

The Orlando FSDO has carefully analyzed **437** flight training accidents & incidents occurring within the district since the beginning of FY 1999 to determine:

**Causal Factors**  
**Trends**  
**Training Deficiencies**  
**Airworthiness Issues**



# ORLANDO FSDO ACCIDENT & INCIDENT SUMMARY

## FLIGHT TRAINING ACCIDENTS & INCIDENTS

<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
60	38	24	28	22	18	12
<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
18	25	30	44	24	32	33
<u>2012</u>	<u>2013</u>	<u>2014</u>				
17	17	25				



# ORLANDO FSDO ACCIDENT & INCIDENT SUMMARY

## MECHANICALLY CAUSED FLIGHT TRAINING ACCIDENTS & INCIDENTS

<u>2012</u>	<u>2013</u>	<u>2014</u>
13	8	9



# FY 2007 ACCIDENT & INCIDENT DETAILED SUMMARY

<u>OCCURRENCE</u>	<u>STUDENT &amp; CFI</u>	<u>SOLO STUDENT</u>
COLLISION ON GND		1
GO AROUND (single eng.)	1	
HELO HOVER	3	
HELO SLOPE LND	1	
HELO AUTOROTATION	1	1
WAKE TURBULENCE	1	
FUEL EXHAUSTION	1	
GEAR-UP	3	
HARD LANDING (180 accu. lnd.)	1	
LANDING (loss of control)	2	14



# FY 2008 ACCIDENT & INCIDENT DETAILED SUMMARY

<u>OCCURRENCE</u>	<u>STUDENT &amp; CFI</u>	<u>SOLO STUDENT</u>
COLLISION ON GND	1	3
HELO HARD LANDING	1	
HELO AUTOROTATION	1	
HELO GROUND VIBRATION		1
UNLATCHED CANOPY / DOOR	1	1
SR-20 BRAKE FIRE		1
LOSS OF POWER (water in fuel)	1	
TAKEOFF		3
GEAR DOWN WATER LANDING	1	
GEAR-UP	6	
HARD LANDING		2
LANDING (loss of control)	2	19



# FY 2009 ACCIDENT & INCIDENT DETAILED SUMMARY

<u>OCCURRENCE</u>	<u>STUDENT &amp; CFI</u>	<u>SOLO STUDENT</u>
COLLISION ON GND	1	1
HELO (dynamic rollover)		1
HELO (hard landing)	1	
FUEL EXHAUSTION		1
STALL / SPIN	1	
TAKEOFF (loss of control)	1	
GLIDER (off airport landing)	1	
GEAR-UP	6	
HARD LANDING	3	
LANDING (loss of control)	2	5



# FY 2010 ACCIDENT & INCIDENT DETAILED SUMMARY

<u>OCCURRENCE</u>	<u>STUDENT &amp; CFI</u>	<u>SOLO STUDENT</u>
COLLISION ON GND		1
HELO (hard landing)	3	
FUEL MISMANAGEMENT	1	1
TAKEOFF (loss of control)		1
GEAR-UP	4	
LANDING (loss of control)	6	15



# FY 2011 ACCIDENT & INCIDENT DETAILED SUMMARY

<u>OCCURRENCE</u>	<u>STUDENT &amp; CFI</u>	<u>SOLO STUDENT</u>
COLLISION ON GND	1	
STALL / SPIN	2	
FUEL EXHAUSTION	1	
HELICOPTER AUTOROTATION	1	
HELICOPTER GRASS FIRE		1
GEAR-UP	4	
LANDING (loss of control)	3	20



# FY 2012 ACCIDENT & INCIDENT DETAILED SUMMARY

<u>OCCURRENCE</u>	<u>STUDENT &amp; CFI</u>	<u>SOLO STUDENT</u>
COLLISION ON GND	1	1
HELICOPTER HARD LANDING	2	
HELICOPTER DYNAM. ROLL.	1	
ENGINE FIRE	1	
ABORTED TAKEOFF		2
GEAR-UP	2	1
HARD LANDING	2	
LANDING (loss of control)		4



# FY 2013 ACCIDENT & INCIDENT DETAILED SUMMARY

<u>OCCURRENCE</u>	<u>STUDENT &amp; CFI</u>	<u>SOLO STUDENT</u>
COLLISION ON GROUND		4
PA-28 ENGINE FIRE	1	
TAKEOFF (loss of control)		2
GEAR-UP		1
HARD LANDING	1*	4
* during practical test		
LANDING (loss of control)	1	3



# FY 2014 ACCIDENT & INCIDENT DETAILED SUMMARY

<u>OCCURRENCE</u>	<u>STUDENT &amp; CFI</u>	<u>SOLO STUDENT</u>
COLLISION ON GROUND	1	1
LOST DOOR IN FLIGHT	1	
ENG. FIRE (CARB. FLOODING)	2	
STALL DURING TAKEOFF	1	
GLIDER LANDING (hit building)		1
GEAR-DOWN WATER LANDING		1
GEAR-UP LANDING	2	
HARD LANDING	4	3
HARD LANDING (HELO)	2	
LANDING (loss of control)	3	3



# *FY 2015\* ACCIDENT & INCIDENT DETAILED SUMMARY*

<u>OCCURRENCE</u>	<u>STUDENT &amp; CFI</u>	<u>SOLO STUDENT</u>
HARD LANDING	1	2
LANDING (loss of control)	1	1

\* As of 01-22-2015



# Orlando FSDO Flight Training Accidents & Incidents Involving Landings

Student & CFI hard landings, gear-ups, & loss of control

<u>Year</u>	<u>Total Events</u>	<u>Landing Events</u>	<u>Ratio</u>
2007	30	20	67 %
2008	44	30	68 %
2009	24	16	67 %
2010	32	25	78 %
2011	33	27	82 %
2012	17	9	52 %
2013	17	10	58 %
<u>2014</u>	<u>25</u>	<u>19</u>	<u>76 %</u>
	<b>222</b>	<b>156</b>	<b>70 %</b>



# *Opportunities for Improvement*

**70 %** of our district's flight training accidents and incidents are still due to **landing mishaps.**



# *Opportunities for Improvement*

“If we test, they will train”

More

*Notices of Disapproval*

for landing related tasks

# *Opportunities for Improvement*

*Think PINK*



# *Additional Contributors to Orl FSDO Flight Training Accidents & Incidents*

## Other Aircraft Flight Training & Testing

*Gliders*

*Helicopters*



# *Additional Contributors to Orl FSDO Flight Training Accidents & Incidents*

## Glider Events

- 2009 Off-airport landing with CFI aboard
- 2014 Student pilot hit building during landing



# *Additional Contributors to Orl FSDO Flight Training Accidents & Incidents*

## Helicopter Hard Landing, Hover, and Autorotation Events

<u>Year</u>	<u>Total Events</u>	<u>Helo Events</u>	<u>Ratio</u>
2007	30	5	17 %
2008	44	3	7 %
2009	24	2	8 %
2010	32	3	9 %
2011	33	2	6 %
2012	17	3	18 %
2013	17	0	0 %
<u>2014</u>	<u>25</u>	<u>2</u>	<u>8 %</u>
	222	20	9 %



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# Mechanically Caused Accident / Incident Review

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# *AIRWORTHINESS INITIATIVE*

The Orlando FSDO continues to place special emphasis on the airworthiness compliance of flight training aircraft.

## Increased Inspections

Analysis of mechanically caused flight training accidents and incidents



# *FY 2012 MECHANICALLY CAUSED ACCIDENT & INCIDENT DETAILED SUMMARY*

## OCCURRENCE

## CAUSE

1 SR-20 emer. landing on road	Engine failure
1 CE-172 emer. landing in field	Engine failure
1 HU-269 emer. autorotation into field	Engine failure
1 CE-172 smoke in cockpit	Voltage reg. failure
1 CE-172 RG right gear collapse	Gear trunion failure
1 BE-76 nose gear jammed	Improper maint.
1 PA-44 nose gear collapse	Improper maint.
1 PA-44 nose gear collapse	Drag link bolt failure
1 Light Sport nose gear collapse	Gear component fail.
1 CE-162 door opened in flight	Latch design
4 PA-28 engine fires while starting	Carb. flooding
1 SR-20 brake failure	Overheated brakes
1 PA-28 propeller blade broke off	Undetermined



# *FY 2013 MECHANICALLY CAUSED ACCIDENT & INCIDENT DETAILED SUMMARY*

## OCCURRENCE

## CAUSE

1	UC-1 left brake failure	Loss of brake fluid
1	PA-34 smoke in cockpit	Panel light control
1	PA-28R loss of power	Fuel inject. system
1	PA-44 right main gear collapse	Locking bracket fail.
1	CE-172RG left main gear collapse	Gear strut pin failure
1	CE-172 emer. land. (oil on windshield)	Engine case crack
1	HU-269 emergency autorotation	Engine failure
1	PA-34 rudder trim tab control rod failure	Corrosion



# *FY 2014 MECHANICALLY CAUSED ACCIDENT & INCIDENT DETAILED SUMMARY*

## OCCURRENCE

## CAUSE

1	SR-20 left brake failure	Brake cylinder fail
1	PA-44 left main gear collapse	Trunion attach. fail.
1	CE-182RG nose gear collapse	Locking pin failure
1	HU-269 engine failure	Undetermined
1	PA-28 engine failure	Oil drain plug
1	Weight Shift lost power on takeoff	Undetermined
1	BE-76 Nose Gear collapse	Improper maint.
1	DA-42 engine failure	ECU wiring harness
1	PA-44 nose gear collapse	Gear switch “ground”

