NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

February 21, 2015

Attachment 7 – Ground Training Syllabus

OPERATIONAL FACTORS

DCA15MA019

ACADEMIC TRAINING RECORD

1. NAME	2. AIRCRAFT SpaceShipTwo	3. CREW POSITION □PILOT □FTE □Other	4. TYPE OF TRAINING □PIC □SIC □FTE □Other

Aircraft (General)	Instructor	Date	Time
1. Overview / Structure			
2. Flight controls			
a) Elevons, rudder, dampers			
b) Stab trim (primary, secondary, roll boost)			
c) Reaction Control System			
d) Speedbrake			
3. Pneumatic System			
4. Electrical System			
5. Environmental Control System			
a) Mated			
b) Unmated			
6. Landing Gear and Brakes			
7. Rocket MotorTwo System			
a) Overview			
b) CTN (general, sensors, breech detect)			
c) MOT general, fill, dump, vent, pressure relief			
d) FPT general, fill, vent			
e) RMC			
f) PSC			
8. DAS / NAV AERO (T-PAD)			
9. Avionics			
a) MFDs			
b) DAUs			
c) INS/GPS			
d) COMM / NAV radios			
e) Transponder (MFD and Remote)			
f) ADC and FADS			
g) Plan page setup and use			
h) CDI / VDI guidance – intent & limitations of during (DROP, BOOST, ENTRY, APPROACH)			
i) S.A. displays (IIP, cardioid, elephant trunk, energy – and limitations thereof)			
j) Other (specify)			
Flight Manual (POH)			
a) Operating Limitations (including the adverse effects of exceeding any limitation)			
b) Runway requirements and limitations (minimum length & crosswind limits)			
c) Performance charts (trim, Vref, etc.)			

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	Instructor	Date	Time
Normal Procedures			
a) Preflight			
b) Start / Taxi			
c) Takeoff/Climb/Cruise			
d) Glide flight flying qualities / techniques			
e) Nominal vs abort weight/CG flying/landing considerations			
f) Boost flying techniques			
g) COAST (RCS) flying qualities/techniques			
h) Feather operations (to include differences between glide and space flights)			
i)			
j)			
Emergency Procedures (discuss all in EP checklist)			
a) Ground Emergencies			
b) Takeoff Emergencies (WK2 abort scenarios)			
c) In-flight Emergencies			
d) Landing Emergencies			
e) Boldface / Memorized Action Procedures			
f) Divert considerations			
Miscellaneous			
a) Federal aviation regs (to include AST pertinent)			
b) Security / ITAR requirements			

SIMULATOR TRAINING EVENT RECORD

1. NAME	2. AIRCRAFT SpaceShipTwo	3. CREW POSITION PILOT	4. TYPE OF TRAINING PIC – Experimental Authorization (EA)

TRAINING EVENTS	Qty Req	# and DATE1	# and DATE2	# and DATE3
GENERAL				
a) Simulator Training Events				
a) Basic familiarization and FQ (glide)	3			
b) Approaches (nominal wt/CG and positioning)	12			
c) Off nominal (high and low energy starts @ HK360°)	12			
d) Opposite-side “on the blue line” approach setups (e.g. north of the field until on the 180° energy line for HK360 RWY30 approach)	3			
e) Abort landing (heavy weight / aft CG)	6			
f) Divert operations / late runway changes (cardioid, APPR, etc.)	3			
g) Approach – Low ceiling (<300 ft AGL)	2			
h) Powered flight (nominal burn)	3			
i) PSC disabled burn (prior to gamma turn)	1			
j) Stab trim failures	2			
k) Roll boost failures	2			
l) Flutter procedures (boost and glide)	2			
m) Out of control flight (boost)	1			
n) Out of control flight (glide)	2			
o) RM2 dump/vent malfunctions	2			
p) Overweight/forced landing	2			
q) Electrical failures	2			
r) DAU failures	2			
s) Feather fails to raise / lower	2			
t) Feather fails to unlock / lock	2			
u) Feather down reentry	2			
v) Premature release (broken arrow)	1			
w)				
x)				
y)				
z)				

SIMULATOR TRAINING EVENT RECORD

1. NAME	2. AIRCRAFT SpaceShipTwo	3. CREW POSITION PILOT	4. TYPE OF TRAINING PIC – Experimental Authorization (EA)

TRAINING EVENTS	Qty Req	# and DATE1	# and DATE2	# and DATE3
b) Glide flight (nominal CG)	1			
a) Release	1			
b) 3-axis doublets @ 150 KEAS	1			
c) Approach to stall (CG considerations)	1			
d) Steady Heading (track) Sideslips (roll boost OFF, then roll boost ON)	1			
e) High q flight (250 – 300 KEAS)	1			
f) Maneuvering flight pull-up (3.5g ± 0.2g)	1			
g) Maneuvering flight pushover (-0.5g ± 0.2g)	1			
h) Wind up turn @ 200 KEAS	1			
i) Bank capture tasks (45° - 45°) (roll boost OFF, then ON)	1			
j) Simulated flare with speedbrake	1			
k) Energy management to high key	1			
l) Approach and landing	1			
c) Glide flight (abort weight / CG)	1			
a) Release	1			
b) 3-axis doublets @ 150 KEAS	1			
c) Approach to stall (CG considerations)	1			
d) Steady Heading (track) Sideslips (roll boost OFF, then roll boost ON)	1			
e) High q flight (250 – 300 KEAS)	1			
f) Maneuvering flight pull-up (3.5g ± 0.2g)	1			
g) Maneuvering flight pushover (-0.5g ± 0.2g)	1			
h) Wind up turn @ 200 KEAS	1			
i) Bank capture tasks (45° - 45°) (roll boost OFF, then ON)	1			
j) Simulated flare with speedbrake	1			
k) Energy management to high key	1			
l) Approach and landing	1			

AIRCRAFT or SIMULATOR GRADESHEET

1. NAME	2. AIRCRAFT SS2	3. CREW POSITION □PILOT □FTE □Other	4. TYPE OF TRAINING □PIC □SIC □FTE □Other

SIM #___ or FLIGHT #____	Instructor	Date
MISSION OVERVIEW:		
STRENGTHS:		
WEAKNESSES:		
RECOMMENDATIONS FOR NEXT SIM/FLIGHT:		

INSTRUCTOR'S SIGNATURE	DATE
TRAINEE'S SIGNATURE	DATE
DIR FLIGHT OPERATIONS' SIGNATURE	DATE

SIM #___ or FLIGHT #____	Instructor	Date
MISSION OVERVIEW:		
STRENGTHS:		
WEAKNESSES:		
RECOMMENDATIONS FOR NEXT SIM/FLIGHT:		

INSTRUCTOR'S SIGNATURE	DATE
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