THE CIVIL AVIATION AUTHORITY OF THAILAND

SIMULATOR EVALUATION AND CERTIFICATION CHECKLIST/REPORT

SIMULATOR EVALUATION AND CERTIFICATION	NAME OF OPERATOR / CERTIFICATE HOLDER	
	LOCATION	DATE
TYPE OF A/C SIMULATOR ☐ FFS ☐ FTD ☐ FNPT ☐ BITD	TYPE OF TEST ☐ INITIAL ☐ RENEW ☐ UP GRADE	INSPECTOR

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	II	MCC		
1. PREPARATION FOR FLIGHT											
1.1 Preflight. Accomplish a functions check of all switches, indicators, systems, and equipment at all crew members' and instructors' stations and determine that:											
(a) the flight deck design and functions are identical to that of the aeroplane or class of aeroplane simulated											
(b) design and functions represent those of the simulated class of aeroplane											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
2. SURFACE OPERATIONS (PRE-TAKE-OFF)											
2.1 Engine start											
(a) Normal start											
(b) Alternate start procedures											
(c) Abnormal starts and shutdowns (hot start, hung start, tail pipe fire, etc.)											
2.2 Pushback / Powerback											
2..3 Taxi											
(a) Thrust response											
(b) Power lever friction											
(c) Ground handling											
(d) Nosewheel scuffing											
(e) Brake operation (normal and alternate/emergency)											
A. Brake fade (if applicable)											
B. Other											
3. TAKE - OFF											
3.1 Normal											
(a) Aeroplane / engine parameter relationships											
(b) Acceleration characteristics (motion)											
(c) Acceleration characteristics (not associated with motion)											
(d) Nosewheel and rudder steering											
(e) Crosswind (maximum demonstrated)											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(f) Special performance (e.g. reduced V1, max de-rate, short field operations)											
(g) Low visibility take-off											
(h) Landing gear, wing flap leading edge device operation											
(I) Contaminated runway operation											
(j) Other											
3.2 Abnormal/emergency											
(a) Rejected											
(b) Rejected special performance (e.g. reduced V1, max de-rate, short field operations)											
(c) With failure of most critical engine at most critical point, continued take-off											
(d) With wind shear											
(e) Flight control system failures, reconfiguration modes, manual reversion and associated handling											
(f) Rejected, brake fade											
(g) Rejected, contaminated runway											
(h) Other											
4. CLIMB											
4.1 Normal											
4.2 One or more engines inoperative											
4.3 Other											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
5. CRUISE											
5.1 Performance characteristics (speed vs. power)											
5.2 High altitude handling											
5.3 High Mach number handling (Mach tuck, Mach buffet) and recovery (trim change)											
5.4 Overspeed warning (in excess of V mo or M mo)											
5.5 High IAS handling											
6. MANOEUVRES											
6.1 High angle of attack, approach to stalls, stall warning, buffet, and g-break (take-off, cruise, approach, and landing configuration)											
6.2 Flight envelope protection (high angle of attack, bank limit, overspeed, etc.)											
6.3 Turns with/without speedbrake/spoilers deployed											
6.4 Normal and standard rate turns											
6.5 Steep turns											
6.6 Performance turn											
6.7 In-flight engine shutdown and restart (assisted and windmill)											
6.8 Manoeuvring with one or more engines inoperative, as appropriate											
6.9 Specific flight characteristics (e.g. direct lift control)											
6.10 Flight control system failures, reconfiguration modes, manual reversion and associated handling											
6.11 Other											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
7. DESCENT											
7.1 Normal											
7.2 Maximum rate (clean and with speedbrake, etc.)											
7.3 With autopilot											
7.4 Flight control system failures, reconfiguration modes, manual reversion and associated handling											
7.5 Other											
8. INSTRUMENT APPROACHES AND LANDING											
Only those instrument approach and landing tests relevant to the simulated aeroplane type or class should be selected from the following list, where tests should be made with limiting wind velocities, wind shear and with relevant system failures, including the use of flight director.											
8.1 Precision											
(a) PAR											
(b) CAT I/GBAS (ILS/MLS) published approaches											
A. Manual approach with/without flight director including landing											
B. Autopilot/autothrottle coupled approach and manual landing											
C. Manual approach to DH and G/A all engines											
D. Manual one engine out approach to DH and G/A											
E. Manual approach controlled with and without flight director to 30 m (100 ft) below CAT I minima											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(I) with crosswind (maximum demonstrated)											
(I I) with wind shear											
F. Autopilot/autothrottle coupled approach, one engine out to DH and G/A											
G. Approach and landing with minimum/standby electrical power											
(c) CAT II/GBAS (ILS/MLS) published approaches											
A. Autopilot/autothrottle coupled approach to DH and landing											
B. Autopilot/autothrottle coupled approach to DH and G/A											
C. Autocoupled approach to DH and manual G/A											
D. Autocoupled/autothrottle Category II published approach											
(d) CAT III/GBAS (ILS/MLS) published approaches											
A. Autopilot/autothrottle coupled approach to land and rollout											
B. Autopilot/autothrottle coupled approach to DH/Alert Height and G/A											
C. Autopilot/autothrottle coupled approach to land and rollout with one engine out											
D. Autopilot/autothrottle coupled approach to DH/Alert Height and G/A with one engine out											
E. Autopilot/autothrottle coupled approach (to land or to go around)											
(i) with generator failure											
(ii) with 10 kts tail wind											
(iii) with 10 kts crosswind											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
8.2 Non – precision											
(a) NDB											
(b) VOR, VOR/DME, VOR/TAC											
(c) RNAV (GNSS)											
(d) ILS LLZ (LOC), LLZ(LOC)/BC											
(e) ILS offset localizer											
(f) direction finding facility											
(g) surveillance radar											
NOTE: If Standard operating procedures are to use autopilot for non-precision approaches then these should be evaluated.											
9. VISUAL APPROACHES (SEGMENT) AND LANDINGS											
9.1 Manoeuvring, normal approach and landing all engines operating with and without visual approach aid guidance											
9.2 Approach and landing with one or more engines inoperative											
9.3 Operation of landing gear, flap/slats and speedbrakes (normal and abnormal)											
9.4 Approach and landing with crosswind (max. demonstrated for FFS)											
9.5 Approach to land with wind shear on approach											
9.6 Approach and landing with flight control system failures,(for FFS – reconfiguration modes, manual reversion and associated handling (most significant degradation which is probable)											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
9.7 Approach and landing with trim malfunctions											
(a) longitudinal trim malfunction											
(b) lateral-directional trim malfunction											
9.8 Approach and landing with standby (minimum) electrical/hydraulic power											
9.9 Approach and landing from circling conditions (circling approach)											
9.10 Approach and landing from visual traffic pattern											
9.11 Approach and landing from non-precision approach											
9.12 Approach and landing from precision approach											
9.13 Approach procedures with vertical guidance (APV), e.g., SBAS											
9.14 Other											
10. MISSED APPROACH											
10.1 All engines											
10.2 One or more engine(s) out											
10.3 With flight control system failures, reconfiguration modes, manual reversion and for FFS - associated handling											
11. SURFACE OPERATIONS (POST LANDING)											
11.1 Landing roll and taxi											
(a) Spoiler operation											
(b) Reverse thrust operation											
(c) Directional control and ground handling, both with and without reverse thrust											
(d) Reduction of rudder effectiveness with increased reverse thrust (rear pod-mounted engines)											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(e) Brake and anti-skid operation with dry, wet, and icy condition											
(f) Brake operation, to include auto-braking system where applicable											
(g) Other											
12. ANY FLIGHT PHASE											
12.1 Aeroplane and powerplant systems operation											
(a) Air conditioning and pressurisation (ECS)											
(b) De-icing/anti-icing											
(c) Auxiliary powerplant/auxiliary power unit (APU)											
(d) Communications											
(e) Electrical											
(f) Fire and smoke detection and suppression											
(g) Flight controls (primary and secondary)											
(h) Fuel and oil, hydraulic and pneumatic											
(I) Landing gear											
(j) Oxygen											
(k) Powerplant											
(l) Airborne radar											
(m) Autopilot and flight director											
(n) Collision avoidance systems (e.g. GPWS, TCAS)											
(o) Flight control computers including stability and control augmentation											
(p) Flight display systems											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(q) Flight management computers											
(r) Head-up guidance, head-up displays											
(s) Navigation systems											
(t) Stall warning/avoidance											
(u) Wind shear avoidance equipment											
(v) Automatic landing aids											
12.2 Airborne procedures											
(a) Holding											
(b) Air hazard avoidance. (traffic, weather)											
(c) Wind shear											
12.3 Engine shutdown and parking											
(a) Engine and systems operation											
(b) Parking brake operation											
12.4 Other as appropriate including effects of wind											
13. VISUAL SYSTEM											
13.1 Functional test content requirements (levels C and D)											
(a) two parallel runways and one crossing runway displayed simultaneously; at least two runways should be lit simultaneously											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(b) runway threshold elevations and locations should be modelled to provide sufficient correlation with aeroplane systems (e.g., HGS,GPS, altimeter); slopes in runways, taxiways, and ramp areas should not cause distracting or unrealistic effects, including pilot eye-point height variation											
(c) representative airport buildings, structures and lighting											
(d) one useable gate, set at the appropriate height, for those aeroplanes that typically operate from terminal gates											
(e) representative moving and static gate clutter (e.g., other aeroplanes, power carts, tugs, fuel trucks, additional gates)											
(f) representative gate/apron markings (e.g., hazard markings, lead-in lines, gate numbering) and lighting											
(g) representative runway markings, lighting, and signage, including a wind sock that gives appropriate wind cues											
(h) representative taxiway markings, lighting, and signage necessary for position identification, and to taxi from parking to a designated runway and return to parking; representative, visible taxi route signage should be provided; a low visibility taxi route (e.g. surface movement guidance control system, follow-me truck, daylight taxi lights) should also be demonstrated											
(i) representative moving and static ground traffic (e.g., vehicular and aeroplane)											
(j) representative depiction of terrain and obstacles within 25 NM of the reference airport											
(k) representative depiction of significant and identifiable natural and cultural features within 25 NM of the reference airport											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(l) representative moving airborne traffic											
(m) appropriate approach lighting systems and airfield lighting for a VFR circuit and landing, non-precision approaches and landings, and Category I, II and III precision approaches and landings											
(n) representative gate docking aids or a marshaller											
13.2 Functional test content requirements (levels A and B) NOTE: The following is the minimum airport model content requirement to satisfy visual capability tests, and provides suitable visual cues to allow completion of all functions and subjective tests described in this appendix. FSTD operators are encouraged to use the model content described below for the functions and subjective tests.											
(a) representative airport runways and taxiways											
(b) runway definition											
(c) runway surface and markings											
(d) lighting for the runway in use including runway edge and centreline lighting, visual approach aids and approach lighting of appropriate colours											
(e) representative taxiway lights											
13.3 Visual scene management											
(a) Runway and approach lighting intensity for any approach should be set at an intensity representative of that used in training for the visibility set; all visual scene light points should fade into view appropriately											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(b) The directionality of strobe lights, approach lights, runway edge lights, visual landing aids, runway centre line lights, threshold lights, and touchdown zone lights on the runway of intended landing should be realistically replicated											
13.4 Visual feature recognition NOTE: Tests 4(a) through 4(g) below contain the minimum distances at which runway features should be visible. Distances are measured from runway threshold to an aeroplane aligned with the runway on an extended 3-degree glide slope in suitable simulated meteorological conditions. For circling approaches, all tests below apply both to the runway used for the initial approach and to the runway of intended landing											
(a) Runway definition, strobe lights, approach lights, and runway edge white lights from 8 km (5 sm) of the runway threshold											
(b) Visual approach aids lights from 8 km (5 sm) of the runway threshold											
(c) Visual approach aids lights from 5 km (3 sm) of the runway threshold											
(d) Runway centreline lights and taxiway definition from 5 km (3sm)											
(e) Threshold lights and touchdown zone lights from 3 km (2 sm)											
(f) Runway markings within range of landing lights for night scenes as required by the surface resolution test on day scenes											
(g) For circling approaches, the runway of intended landing and associated lighting should fade into view in a non-distracting manner											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
13.5 Ariport model content Minimum of three specific airport scenes as defined below;											
(a) terminal approach area											
A. accurate portrayal of airport features is to be consistent with published data used for aeroplane operations											
B. all depicted lights should be checked for appropriate colours, directionality, behaviour and spacing (e.g.,obstruction lights, edge lights, centre line, touchdown zone, VASI, PAPI, REIL and strobes)											
C. depicted airport lighting should be selectable via controls at the instructor station as required for aeroplane operation											
D. selectable airport visual scene capability at each model demonstrated for : (i) night (ii) twilight (iii) day											
E. (i) ramps and terminal buildings which correspond to an operator's LOFT and LOS scenarios											
(ii) terrain- appropriate terrain, geographic and cultural features											
(iii) dynamic effects - the capability to present multiple ground and air hazards such as another aeroplane crossing the active runway or converging airborne traffic; hazards should be selectable via controls at the instructor station											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(iv) illusions - operational visual scenes which portray representative physical relationships known to cause landing illusions, for example short runways, landing approaches over water, uphill or downhill runways,rising terrain on the approach path and unique topographic features	■	■			■	■	■	■	■	■	
13.6 Correlation with aeroplane and associated equipment											
(a) visual system compatibility with aerodynamic programming					■	■	■			■	
(b) visual cues to assess sink rate and depth perception during landings. Visual cueing sufficient to support changes in approach path by using runway perspective. Changes in visual cues during take-off and approach should not distract the pilot	■				■	■	■			■	
(c) accurate portrayal of environment relating to FSTD attitudes					■	■	■			■	
(d) the visual scene should correlate with integrated aeroplane systems, where fitted (e.g.terrain, traffic and weather avoidance systems and head-up guidance system (HGS))	■	■			■	■	■	■	■	■	
(e) representative visual effects for each visible, ownship, aeroplane external light	■				■	■	■	■	■	■	
(f) the effect of rain removal devices should be provided	■	■			■	■	■	■	■	■	
13.7 Scene quality											
(a) surfaces and textural cues should be free from apparent quantisation (aliasing)	■	■			■	■	■	■	■	■	
(b) system capable of portraying full colour realistic textural cues	■	■			■	■	■	■	■	■	
(c) the system light points should be free from distracting jitter, smearing or streaking					■	■	■	■	■	■	
(d) demonstration of occulting through each channel of the system in an operational scene			■	■	■	■	■	■	■	■	
(e) demonstration of a minimum of 10 levels of occulting through each channel the system in an operational scene	■	■			■	■	■	■	■	■	

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(f) system capable of providing focus effects that simulate rain and light point perspective growth											
(g) system capable of six discrete light step controls (0-5)											
13.8 Environmental effects											
(a) the displayed scene should correspond to the appropriate surface contaminants and include runway lighting reflections for wet, partially obscured lights for snow, or suitable alternative effects											
(b) Special weather representations which include the sound, motion and visu effects of light, medium and heavy precipitation near a thunderstorm on take-off, approach and landings at and below an altitude of 600 m (2 000 ft) above the aerodrome surface and within a radius of 16 km (10 sm) from the aerodrome											
(c) in-cloud effects such as variable cloud density, speed cues and ambient changes should be provided											
(d) the effect of multiple cloud layers representing few, scattered, broken and overcast conditions giving partial or complete obstruction of the ground scene											
(e) gradual break-out to ambient visibility/RVR, defined as up to 10% of the respective cloud base or top, 20 ft ≤ transition layer ≤200 ft; effects should be checked at and below a height of 600 m (2 000 ft) above the aerodrome and within a radius of 16 km (10 sm) from the airport											
(f) visibility and RVR measured in terms of distance. Visibility/RVR should be checked at and below a height of 600 m (2 000 ft) above the aerodrome and within a radius of 16 km (10 sm) from the airport											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
(g) patchy fog giving the effect of variable RVR. Note – Patchy fog is sometimes referred to as patchy RVR.											
(h) effects of fog on aerodrome lighting such as halos and defocus											
(i) effect of ownship lighting in reduced visibility, such as reflected glare, to include landing lights, strobes, and beacons											
(j) wind cues to provide the effect of blowing snow or sand across a dry runway or taxiway should be selectable from the instructor station											
13.9 Instructor controls of:											
(a) Environmental effects, e.g. cloud base, cloud effects, cloud density, visibility in kilometres/statute miles and RVR in metres or feet											
(b) Airport/aerodrome selection											
(c) Airport/aerodrome lighting including variable intensity where appropriate											
(d) Dynamic effects including ground and flight traffic											
13.10 Night visual scene capability											
13.11 Twilight visual scene capability											
13.12 Daylight visual scene capability											
14. MOTION EFFECTS											
The following specific motion effects are required to indicate the threshold at which a flight crew member should recognise an event or situation. Where applicable below, FFS pitch, side loading and directional control characteristics should be representative of the aeroplane as a function of aeroplane type:											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
14.1 Effects of runway rumble, oleo deflections, ground speed, uneven runway, runway centreline lights and taxiway characteristics											
(a) After the aeroplane has been pre-set to the take-off position and then released, taxi at various speeds, first with a smooth runway, and note the general characteristics of the simulated runway rumble effects of oleo deflections. Next repeat the manoeuvre with a runway roughness of 50%, then finally with maximum roughness. The associated motion vibrations should be affected by ground speed and runway roughness. If time permits, different gross weights can also be selected as this may also affect the associated vibrations depending on aeroplane type. The associated motion effects for the above tests should also include an assessment of the effects of centreline lights, surface discontinuities of uneven runways, and various taxiway characteristics.											
14.2 Buffets on the ground due to spoiler/speedbrake extension and thrust											
(a) Perform a normal landing and use ground spoilers and reverse thrust – either individually or in combination with each other – to decelerate the simulated aeroplane. Do not use wheel braking so that only the buffet due to the ground spoilers and thrust reversers is felt.											
14.3 Bumps associated with the landing gear											
(a) Perform a normal take-off paying special attention to the bumps that could be perceptible due to maximum oleo extension after lift-off. When the landing gear is extended or retracted, motion bumps could be felt when the gear locks into position											
14.4 Buffet during extension and retraction of landing gear											
(a) Operate the landing gear. Check that the motion cues of the buffet experienced are reasonably representative of the actual aeroplane											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
14.5 Buffet in the air due to flap and spoiler/speedbrake extension and approach to stall buffet											
(a) First perform an approach and extend the flaps and slats, especially with airspeeds deliberately in excess of the normal approach speeds. In cruise configuration verify the buffets associated with the spoiler/speedbrake extension. The above effects could also be verified with different combinations of speedbrake/flap/gear settings to assess the interaction effects											
14.6 Approach to stall buffet											
(a) Conduct an approach-to-stall with engines at idle and a deceleration of 1 kt/s. Check that the motion cues of the buffet, including the level of buffet increase with decreasing speed, are reasonably representative of the actual aeroplane											
14.7 Touchdown cues for main and nose gear											
(a) Fly several normal approaches with various rates of descent. Check that the motion cues of the touchdown bump for each descent rate are reasonably representative of the actual aeroplane											
14.8 Nose wheel scuffing											
(a) Taxi the simulated aeroplane at various ground speeds and manipulate the nose wheel steering to cause yaw rates to develop which cause the nose wheel to vibrate against the ground ("scuffing"). Evaluate the speed/nose wheel combination needed to produce scuffing and check that the resultant vibrations are reasonably representative of the actual aeroplane											
14.9 Thrust effect with brakes set											
(a) With the simulated aeroplane set with the brakes on at the take- off point, increase the engine power until buffet is experienced and evaluate its characteristics. This effect is most discernible with wing mounted engines. Confirm that the buffet increases appropriately with increasing engine thrust											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
	A	B	C	D	1	2	I	I I	MCC		
14.10 Mach and maneuver buffet											
(a) With the simulated aeroplane trimmed in 1 g flight while at high altitude, increase the engine power such that the Mach number exceeds the documented value at which Mach buffet is experienced. Check that the buffet begins at the same Mach number as it does in the aeroplane (for the same configuration) and that buffet levels are a reasonable representation of the actual aeroplane. In the case of some aeroplanes, manoeuvre buffet could also be verified for the same effects. Manoeuvre buffet can occur during turning flight at conditions greater than 1 g, particularly at higher altitudes											
14.11 Tyre failure dynamics											
(a) Dependent on aeroplane type, a single tyre failure may not necessarily be noticed by the pilot and therefore there should not be any special motion effect. There may possibly be some sound and/or vibration associated with the actual tyre losing pressure. With a multiple tyre failure selected on the same side the pilot may notice some yawing which should require the use of the rudder to maintain control of the aeroplane											
14.12 Engine malfunction and engine damage											
(a) The characteristics of an engine malfunction as stipulated in the malfunction definition document for the particular FSTD should describe the special motion effects felt by the pilot. The associated engine instruments should also vary according to the nature of the malfunction											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
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14.13 Tail strikes and pod strikes											
(a) Tail-strikes can be checked by overrotation of the aeroplane at a speed below Vr whilst performing a take-off. The effects can also be verified during a landing. The motion effect should be felt as a noticeable bump. If the tail strike affects the aeroplane's angular rates, the cueing provided by the motion system should have an associated effect.											
(b) Excessive banking of the aeroplane during its take-off/landing roll can cause a pod strike. The motion effect should be felt as a noticeable bump. If the pod strike affects the aeroplane's angular rates, the cueing provided by the motion system should have an associated effect											
15. SOUND SYSTEM											
15.1 The following checks should be performed during a normal flight profile with motion											
(a) precipitation											
(b) rain removal equipment											
(c) significant aeroplane noises perceptible to the pilot during normal operations, such as engine, flaps, gear, spoiler extension/retraction,thrust reverser to a comparable level of that found in the aeroplane											
(d) abnormal operations for which there are associated sound cues including, but not limited to, engine malfunctions, landing gear/tire malfunctions, tail and engine pod strike and pressurization malfunction											
(e) sound of a crash when the FFS is landed in excess of limitations											
(f) significant engine/propeller noise perceptible to pilot during normal operations											

TABLE OF FUNCTIONS AND SUBJECTIVE TESTS	FFS				FTD		FNPT			BITD	REMARKS
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16. SPECIAL EFFECTS											
16.1 Braking Dynamics											
(a) representative brake failure dynamics (including antiskid) and decreased brake efficiency due to high brake temperatures based on aeroplane related data. These representations should be realistic enough to cause pilot identification of the problem and implementation of appropriate procedures. FSTD pitch, side - loading and directional control characteristics should be representative of the aeroplane											
16.2 Effects of Airframe and Engine Icing											
(a) See Appendix 1 to GM FSTD(A).300 1.t.1.											
NOTE: For level 'A', an asterisk (*) denotes that the appropriate effect is required to be present.											
NOTE: It is accepted that tests will only apply to FTD level 1 if that system and flight condition is simulated. It is intended that the tests listed below should be conducted in automatic flight. Where automatic flight is not possible and pilot manual handling is required, the FTD should be at least controllable to permit the conduct of the flight.											

NOTES:

S = Satisfactory ; U = Unsatisfactory ; N = Not Observed ; N / A = Not Applicable

General: motion and buffet cues will only be applicable to FSTD equipped with an appropriate motion system

1. take-off characteristics sufficient to commence the airborne exercises;
2. for FNPT 1 and BITD only if multi-engine;
3. only trim change is required; and
4. for FNPT, variable intensity airport lighting is not required.