TABLE C3D—FUNCTIONS AND SUBJECTIVE TESTS—Continued

QPS requirements					Information
Entry No.	Motion system (and special aerodynamic model) effects	Simulator level			Notes
		B	C	D	
1	**Runway rumble, oleo deflection, ground speed, uneven runway, runway and taxiway centerline light characteristics:** Procedure: After the helicopter has been preset to the takeoff position and then released, taxi at various speeds with a smooth runway and note the general characteristics of the simulated runway rumble effects of oleo deflections. Repeat the maneuver with a runway roughness of 50%, then with maximum roughness. Note the associated motion vibrations affected by ground speed and runway roughness	X	X	X	If time permits, different gross weights can also be selected as this may also affect the associated vibrations depending on helicopter type. The associated motion effects for the above tests should also include an assessment of the effects of rolling over centerline lights, surface discontinuities of uneven runways, and various taxiway characteristics.
2	**Friction Drag from Skid-type Landing Gear:** Procedure: Perform a running takeoff or a running landing and note an increase in a fuselage vibration (as opposed to rotor vibration) due to the friction of dragging the skid along the surface. This vibration will lessen as the ground speed decreases		X	X	
3.	**Rotor Out-of-Track and/or Out-of-Balance condition:** Procedure: Select the malfunction or condition from the IOS. Start the engine(s) normally and check for an abnormal vibration for an Out-of-Track condition and check for an abnormal vibration for an Out-of-Balance condition	X	X	X	Does not require becoming airborne. The abnormal vibration for Out-of-Track and Out-of-Balance conditions should be recognized in the frequency range of the inverse of the period for each; i.e., 1/P for vertical vibration, and 1/P for lateral vibration.
4.	**Bumps associated with the landing gear:** Procedure: Perform a normal take-off paying special attention to the bumps that could be perceptible due to maximum oleo extension after lift-off	X	X	X	When the landing gear is extended or retracted, motion bumps can be felt when the gear locks into position.
5.	**Buffet during extension and retraction of landing gear:** Procedure: Operate the landing gear. Check that the motion cues of the buffet experienced represent the actual helicopter	X	X	X	
6.	**Failure of Dynamic Vibration Absorber or similar system as appropriate for the helicopter (e.g., droop stop or static stop):** Procedure: May be accomplished any time the rotor is engaged. Select the appropriate failure at the IOS, note an appropriate increase in vibration and check that the vibration intensity and frequency increases with an increase in RPM and an increase in collective application	X	X	X	
7.	**Tail Rotor Drive Failure:** Procedure: With the engine(s) running and the rotor engaged—select the malfunction and note the immediate increase of medium frequency vibration	X	X	X	The tail rotor operates in the medium frequency range, normally estimated by multiplying the tail rotor gear box ratio by the main rotor RPM. The failure can be recognized by an increase in the vibrations in this frequency range.
8.	**Touchdown cues for main and nose gear:** Procedure: Conduct several normal approaches with various rates of descent. Check that the motion cues for the touchdown bumps for each descent rate are representative of the actual helicopter	X	X	X	