IN FLIGHT PERFORMANCE PLANNING

Good performance planning covers all anticipated mission contingencies. If the mission parameters or environmental conditions change significantly, the aircraft must be maneuvered within its new available power margin. A DES initiative offers an alternative to pulling out the operator's manual and stubby pencil in flight. This technique assures aircrews, at a glance, they have a sufficient power available margin before committing to an unexpected mission change or maneuver. Although based on the UH-60, some of these principles may apply to other models. We've talked the PPC talk, can we walk the walk? Let's work through a practical exercise and see what you think. Here's what is needed: TM 1-1520-237-10 Operator's Manual and Change 1 to TM 1-1520-237 CL – PPC tabulated data section. The example features A model data but is the same in principle for the L model. PA = +2,000 FAT = +15 Aircraft GWT = 17,500 lbs including 2,300 lbs of fuel. ATF = .90 Based on the preceding data, check the following figures in your –10. TR = .93 Max Trq 30 min = 98% Max GWT OGE = 20,400 IGE = 22,000 GO-NO-GO Hover OGE = 84% IGE = 92% Predicted Hover = 68% Now, let's compare these figures with the check list charts. Turn in the checklist to page P-25. At +2,000 and +15 note the Max Trq available entry of 98%, with the TR correction already applied for you. Next turn to page P-35. Note the Max allowable OGE GWT entry of 20,400lbs. Since Max OGE GWT (at and below Max allowable by chapter 5) is determined with Max Trq available, note the redundancy of the 98% entry between hover OGE and Max Trq available. Also note that the 84% entry correlates with the OGE GO-NO-GO power at 10', *not* the IGE GO-NO-GO power of 92%. Performing the hover power check confirms the accuracy of the planned GWT. Here's something new from DES; compute the fuel empty gross weight: 17,500 – 2,300 = 15,200lbs Write that number down crew chief or co-pilot. As long as the loading configuration does not change, the exact aircraft GWT may be determined any time simply by adding the fuel weight to 15,200 lbs. Scenario - a mission change comes across the radio. Fly up to Mt Observation and pick up a soldier who needs to go on emergency leave. As you perform the high reconn, you note the PA = 8,000 and the FAT = +10. Turn to page P-26 and you see the Max Trq available has dropped to 81%. The fuel quantity is 1100lbs so the aircraft now weighs 16,300lbs (15,200 + 1100). Now turn to page P-36. Note the redundancy of the 81% entry for hover OGE as described before. Note the Max GWT OGE is 16,600lbs and that the OGE hover trq is 81%. This tells us we have OGE power available but marginally. A careless application of power while still in OGE conditions could easily droop the rotor. The approach should be planned to maximize affects of ETL and wind direction. Also, plan a go around procedure should problems arise during the approach. After landing, the aircraft is loaded with passenger, duffel bags, footlocker, TV, ice chest, barbecue and golf clubs (it's a pilot). At a 10' hover, the PDU reads 69% trq. A glance at page P-36 shows an IGE entry of 69%. Remember, this is the OGE GO-NO-GO value for 16,600lbs at a 10' hover. This indicates we're right at the max GWT OGE and our departure needs the same careful planning considerations as the approach. Let's stop and review what's been covered so far. We performance plan as we normally do. From the initial hover GO-NO-GO check, our zero fuel weight is determined. Throughout the mission, provided our loading configuration has not changed, our exact aircraft weight is found by adding the fuel remaining to this figure.

By checking the CL charts, the aircrew may then determine if hover OGE power is available. This is critical if the environmental conditions change significantly. When the hover check indicates an unplanned GWT, or a change in load configuration occurs, a hover chart is required to determine the zero fuel weight. A copy of the appropriate chapter 7, hover chart may be folded and inserted in the CL. Check the PA and FAT, note the hover power, then reference the hover chart. Enter at the hover trq, up to the appropriate wheel height line, then over to the intersection from the FAT and PA reference. This is your weight with fuel. Now subtract the lbs of fuel to determine your zero fuel weight. Recommend you select several different sets of environmental factors, compute PPC data and compare with the checklist charts until you're comfortable with their use. One last thing. Try adding this statement to the before landing check as follows: 3. crew, passengers, mission equipment, and *power for approach* - check. Crew coordination considerations would be power management and maneuver technique. So, what do you think? DES is soliciting response. Please forward your ideas to CASSD so we may consolidate and forward to DES. If you think that Max torque available figures should reflect the actual value rather than the 100% or 120% limit, that has already been 2028'd.