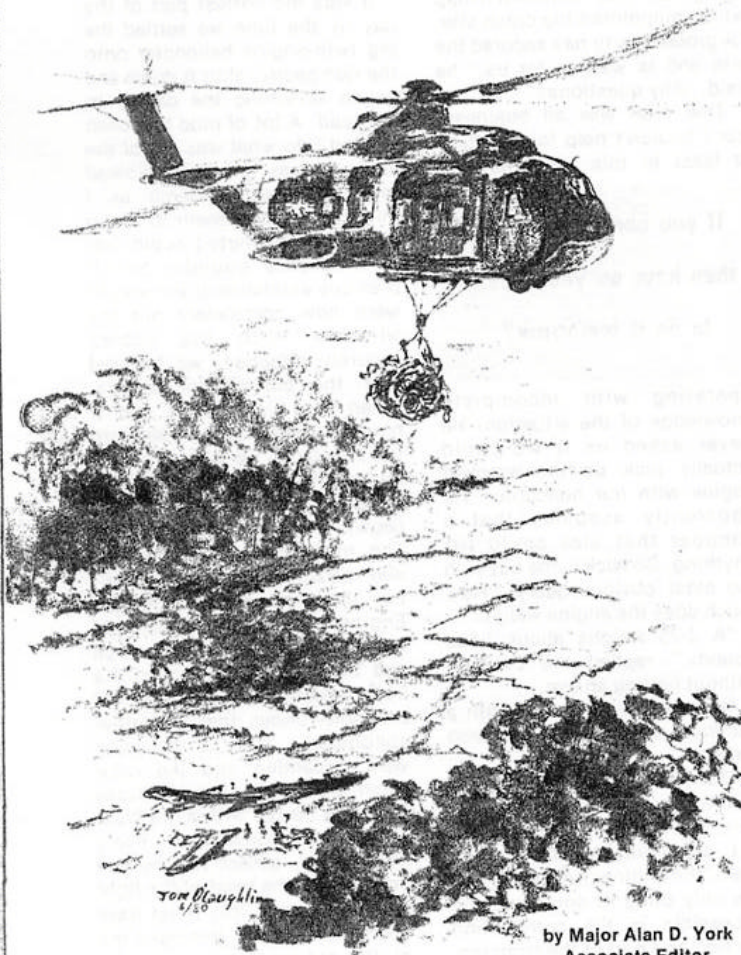


I'm a firm believer in using helicopter performance charts to plan sling missions, but they can't tell you that much if the weight of the load is an . . .

Unknown Quantity



by Major Alan D. York
Associate Editor

Nick Conti and I stepped outside the Udorn Officers Club after a leisurely breakfast and were hit between the eyes by the heat. It was going to be another scorcher. Even though the sun had barely cleared the tops of the aircrew hooches behind the club, the temperature and humidity were already building like a freshly stoked furnace. I could smell smoke from the burning rice paddies that would later form a haze and settle over the steamy landscape. Not even a hint of a breeze stirred the sultry air—a real Siamese sauna.

One of the subjects at the breakfast table earlier was the F-105 that had gone down about 20 miles northwest of the base the day before. We overheard someone say the Thud itself augered into a recently drained rice paddy after its engine flamed out for no apparent reason. Luckily, the pilot ejected and was recovered safely by the local base rescue folks. Accident investigators were anxious to recover enough wreckage to try and find out what went wrong. The Thai farmer who owned the paddy was equally anxious for the debris to be cleared away so he could get on with the yearly

ritual of burning the rice stubble in preparation for the next planting.

After clambering aboard the step van, we made our way to the flight line on the other side of the runway. Dust billowed up alongside the van, and without a breeze it hung in the air and drifted in through the open windows and doors as we bounced along the perimeter road. It was as fine as talcum powder and when combined with the heat and humidity made the weather feel much more stifling.

Sure enough, by the time we got to work, the fighter wing folks had already called our H-3 squadron requesting help in recovering the engine. Nick enjoyed sling-load work, so he volunteered to fly the mission—which meant that, because I was his brown-bar copilot at the time, I automatically volunteered as well. Like so many experienced helicopter pilots at that time, Nick had a lot of flying time in both H-21s and H-19s, so over the years he had developed a healthy respect for the power limitations of helicopters under high density altitude conditions.

After preflighting our aircraft, we sat in the small air conditioned operations shack waiting for our briefers. They were supposed to get in around noon and the control center insisted we wait for them so they could talk to us before we flew out to the crash site. While we were cooling our heels in ops, I pulled out my performance charts and also checked the latest weather, especially the pressure altitude and temperature, which was steadily climbing outside as we waited for the "fast movers" to arrive.

Finally, along about 1400, a crusty lieutenant colonel swept into the room followed by three other officers in flight suits. The colonel was obviously in charge; he was the only one wearing a tan, 1505 uniform, an outfit rarely seen in Thailand in 1966. After introductions, the colonel, who I thought looked like an aging Rex Riley, unfolded a map which pinpointed the crash site. "A ground party has secured the site and is waiting for us," he said. "Any questions?"

This man was all business, but I couldn't help feeling that, at least in this case, he was

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operating with incomplete knowledge of the situation. He never asked us if we could actually pick up the wrecked engine with our helicopter. He apparently assumed that a chopper that size could lift anything. So Nick came out with the most obvious query: "How much does the engine weigh?"

"A J-75 weighs about 7,500 pounds," replied the colonel, without batting an eye.

"Uumm," Nick mused with a skeptical squint and furrowed brow.

Then, one of the other officers in the group spoke up bravely. "Sir, that's with the afterburner, but according to the ground team, the engine came apart and the only thing in one piece and accessible is the combustion section and part of the compressor section. Probably weighs between 3,000 and 5,000

pounds," he concluded.

I was busily doing my copilot thing, going through the charts with the different weights being bandied about when Nick announced, "All we can do is go out and try it and see what happens." This seemed to satisfy everyone so we all headed for the aircraft.

It was the hottest part of the day by the time we settled the big twin-engine helicopter onto the rice paddy, shut it down and began attaching the cables to the load. A lot of mud had been sucked into what was left of the engine when the F-105 plowed into soft earth. Search as I might, I couldn't seem to find a chart that converted cubic feet of mud into pounds, so all previous estimates of the weight were now completely out the window. With the cables securely attached, we hovered over the burned out engine. When the flight mech had it hooked to the sling underneath the fuselage, we began slowly raising the helicopter. The cable pulled taught, and the rotor rpm began drooping toward 100%. The marshaller out front was still motioning us to come up, but the load wouldn't budge. Engine temperature climbed into the five-minute-limit range and the torque approached the 94% maximum power we had available under these weather conditions. The transmission was screaming and the rotor wash blew every hat off those standing nearby with a hot blast of hurricane-force wind. Every hat that is, except for the one perched on the head of the light colonel in tans, his must have been glued on. It reminded me of the old westerns where the hero's white hat is never dislodged even during the worst

saloon brawl.

The marshaller finally signaled us that the load was about six inches above the ground. Now the trick was to move forward enough to gain translational lift. Nick eased forward on the cyclic ever so gently, but we could feel the load drag as we descended. In that heat, any forward movement of the cyclic caused a descent. Nick lowered the mud-caked engine to give our straining helo a rest and squinted out the windscreen. He was looking for any sign of a breeze we could turn the aircraft toward to give us the extra lift we needed. "Maybe a knot or two out of the southwest by the looks of those trees," he surmised, turning the helicopter into that phantom zephyr which only experienced chopper pilots can detect. The load came up a few more inches—maybe just enough so we could move forward without it dragging the ground. Very slowly we eased forward and were moving about five knots when the dangling engine hit a small dirt dike surrounding the rice paddy. We were coming to the end of the five-minute limit for our engine temperatures, so Nick repositioned the load in the center of the paddy and released the cables. Hovering over to the adjacent paddy, we landed and shut it down. The fighter folks sauntered over and asked what the problem was. When Nick told the colonel we couldn't get enough forward speed to start flying, expressions of disdain crept over their faces. "But you had it off the ground," the Thud pilot pressed. "I don't see the problem." Truer words were never spoken. Nick told the gathering that we could come back early the next morning and

pick it up with no difficulty because the temperature would be a lot cooler then. With that the colonel made a statement that's forever etched in my memory. "I don't see how that's going to make any difference," challenged the fighter jockey with undisguised irritation. "If you can't do it now, then how do you expect to do it tomorrow."

"Trust me, colonel, I guarantee we'll be able to lift it right out of here in the morning," pledged Nick.

Clearly not satisfied with the way things were going, the fast movers slowly shook their heads

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and offered several alternative solutions to our problem, none of which we found acceptable. On the flight back, Nick reminded me of the many times he had been asked to do something with a helicopter by people who simply didn't understand either the capabilities or limitations of vertical lift. "Some people think helicopters can do all kinds of strange things," Nick mused, "It's as if they believe we aren't subject to the same laws of physics as anything else that flies. This colonel," he continued, "is obviously a very intelligent and professional fighter pilot who probably knows that on a hot day, his takeoff distance will increase because of higher density altitude. He probably takes the temperature and pressure altitude into consideration if he is landing at a high

altitude base too. But, for some reason he doesn't think the same thing applies to a helicopter."

"Don't you think he was probably just trying to be helpful when he suggested we use two H-3s hovering side-by-side with the external load hung between them?" I couldn't resist adding with a wink.

"Yeah," Nick smiled. "When I heard that, I knew it was time to call it quits for today." I couldn't have agreed more.

None of the fixed-wingers volunteered to go out with us the next morning. We never found out why, although the fact that we told them they might have to ride back from the crash site in a truck could have had something to do with it. They were probably as dubious about the helicopter's capabilities as we were about their well-intentioned but hare brained schemes to jury rig the load between two helicopters. Anyway, at first light, with the air still reasonably cool, we again positioned our H-3 over the mud-encrusted F-105 engine, hooked it to the sling and smoothly brought it to a hover 20 feet above the rice paddy—with power to spare. Nick eased forward on the cyclic and gained translational lift without losing an inch of altitude. It was an excellent demonstration of what a helicopter, even an old C-model, could do under the right conditions, and with a savvy old "rotor head" at the controls.

Unfortunately, the people who might have learned the most from the density altitude display were not there. They had reached the verdict and dismissed the jury before all the evidence was in.

