



## Chapter 4

### THE FORTUNE COOKIE

Fate is like a fortune cookie. No one at the table knows what the message will read, but you are at a Chinese restaurant and the cookies come with the meal. By breaking it open, you dare to invite the demon of consequence to participate in your life. The small slip of paper declares your fate. Is it served cold (“You will get a new job”)? Or hot (“Beware a chance meeting”)?

Each time you walk to an aircraft and prepare it for flight, you are picking up at least one metaphorical fortune cookie, perhaps more. The message or messages are written by an unknown hand whose presence is evident in the message, but hidden from you. Their tidings have been transcribed from a pen dipped in a well of complex contents: climate, human elements, and a perplexing machine that defies gravity and wars with the elements to meet its purpose. Any of those variables may crack the cookie and spill out the message fate has written there. It may well be an outcome or a dilemma you don’t understand. It may also come with the force of total surprise as it reveals itself.

In everyday life, but most certainly during war, many more variables may be added to the ingredients of fate. These missives are still hidden within the remaining cookies you carry aloft in your hypothetical bag. Some might return with you unbroken, but once opened, the message inside may plunge you into a critical circumstance or a puzzling challenge that you must solve correctly, or die trying.

Tail-rotor loss is an example of fate served hot. Helicopters need tail rotors. Without them, the fuselage rotates in the opposite direction of the main rotor blades, the passengers are unhappy, and the ride becomes ferocious, pointless, and even life-threatening. A few helicopter designs have opposing main rotor blades that cancel the powerful torque of a flying or hovering helicopter, but whenever you see a helicopter with a spinning blade on its tail, know that it is a key component of successful flight.

One of my earliest experiences with a tail-rotor predicament occurred in Vietnam. We had landed as a team of two Cobras to arm and refuel near the Cambodian border at a remote jungle airstrip just a couple of thousand feet long. Our flight of two was part of a good-size operation that day. Late morning,

the stiff breeze had already begun to dry out the steamy air as the sun climbed toward its zenith in a deep blue sky.

When we arrived, helicopters were lined up and down one side of the landing strip that was defined by partially buried and rusted PSP underlying the packed gravel and scraggly clumps of grass along its length. Every refueling pad was already filled with an idling helicopter. Others were parked on the strip, waiting their turn to hover onto the fueling pads. Our team of two helicopters split up to find openings in the line.

The wind socks at either end of the short runway stood out in opposite directions. Since we were parked at the base of a low, rocky hill, the fickle wind was ricocheting in undetectable directions.

The first models of the AH1-G (Cobra) had tail rotors without enough bite (pitch) in the blade to maintain tail rotor authority and keep the helicopter from turning uncontrollably if the wind or the rotor wash of another helicopter blew from behind.

The wind continued to swirl any which way with considerable intensity, gusting fiercely at times. With so many running helicopters coming and going and a wind with no definable direction, concern over losing control of the helicopter was nerve racking. Losing control in such a crowded gaggle of machines would be catastrophic.

We had finished fueling. Our rocket pods were fully loaded. The mini-gun ammunition had been replenished, stored in boxes beneath the aluminum floor of our cockpits. Its flat metal links filled with thousands of bullets were fed via chutes to the underslung weapon in the nose turret. We were heavy laden with explosives and combustibles and ready to depart.

I gradually rolled on the throttle to the left. The main rotors gathered themselves, the slow rhythmic sound of the idling blades changing to an urgent throbbing. I pulled up on the collective, and we left the ground cautiously, inching toward the open runway.

A one-foot hover seemed safest since the machine promptly began twitching from side to side, indicating the onset of the tail-rotor losing its authority in the conflicted airflow around its spinning blades. I was pulling most of the available engine power just to hover, which meant the tail rotor blades were close to maximum pitch. I slowly slid the helicopter sideways away from the fueling pad into the clear space at the center of the runway.

As I hovered away from the line of refueling aircraft, the Cobra that had been parked next to us in line came to a hover. Someone or something had cracked open a fortune cookie. The rotor wash of his heavily loaded Snake spread out as a great gust of wind, catching our machine squarely in its rear quarter. Our helicopter, placed abruptly on what seemed like an icy road, began a gradual revolution to the right. Full left pedal (maximum tail rotor blade pitch) would not stop the tendency, so the machine continued toward an uncontrolled spiral.

I began lowering the collective to slide the aircraft onto the runway in a sideward touchdown. Otherwise, waiting would increase our rotation as we lost total authority for the tail-rotor. If we began

to turn with any greater velocity, it would become impossible to put the helicopter on the ground without rolling it over on its side, spinning blades and all.

The increasing velocity to the right of the heavily loaded Snake's nose startled the young Captain (aircraft commander by rank) in the front seat. Some of the young officers thought it was "cool" to sit in the front and direct the mission while having the guy in the back do all the work.

The Captain grabbed the Cobra's front seat flight controls and yelled, "I've got it! I've got it!"

I felt his rough inputs and released the stick. I took my feet off the pedals that controlled the tail rotor pitch. They began marching harshly full right, then full left as they were rapidly pumped by the Captain struggling to reclaim control. A second cookie was opened.

There was no point at all in wrestling for control of the aircraft at this critical juncture. Communicating, even briefly, while the aircraft was still manageable would have saved us, but rash action came first. Panic is never the correct response. It gives fate the upper hand even before you start.

We staggered to a high hover. He must have pulled the collective lever against the stops, introducing even more torque. The helicopter made a complete turn to the right. We had not lost the tail rotor itself; however, the sudden application of full power to the main rotors amid the rotor downwash from the helicopter behind us overwhelmed our spinning tail rotor. It became useless as an anti-torque device. We were now at the mercy of uncontrolled torque, which had turned violent in the extreme.

Suddenly, I felt like I was astride a berserk pachyderm. The Cobra's normal flight comportment had been shredded. It whirled and bucked like the mad elephant I imagined. I was just along for the ride!

Looking into the front cockpit, I got a glimpse of the struggling Captain. One of his hands gripped the short collective on the left, in front of the armrest, while his right hand radically moved the stick in front of the other armrest. This unusual design for an AH1-G made room for the movable gun site that sat between the front pilot's legs.

His position, viewed from behind, reminded me of someone leaning back in an armchair with a beer in one hand and a sandwich in the other, his gaze frozen on a TV screen where a 50 yard pass had just been thrown. The helicopter went around again, even faster. In a state of unbelievable calm, I reached to lock my shoulder harness. This was not going to end well. It was getting hard to think or even reason, given the pace at which the situation was deteriorating.

We were winding up like a top spinning faster and faster. A blur of green mixed with other spinning rotor blades swept past the canopy. Each rotation caused us to spin faster and the rotor rpm to decay further. If the Captain didn't do something soon, we would fall from the sky like a brick. His helmet was bobbing from side to side, blocking a clear view of the front cockpit. Was there a brain in there that was going to act? That was the question. What could I do? How do I decide what is next? We were rapidly reaching the point where nothing we did would matter. The size of the fireball would be the measure of our failure to act sooner.

Not wanting to touch the gyrating joy stick in front of me to press the mic button, I leaned back and yelled, “Split the needles! Split the needles!” The centrifugal force from the whirling machine made it impossible to get my foot anywhere near the floor switch that activated the intercom.

Splitting the needles (disconnecting the engine drive from the main rotor blades through a clutch arrangement) was our only option for removing the unrestrained torque that threatened us. The helicopter would stop spinning and just before we touched down—if he pulled the collective with all he was worth—the main blades would take a great bite out of the air, slowing our descent. Then, if he timed it right the helicopter would have just begun to turn again as the skids touched the ground. The crisis would be over.

Whether it was my screamed demands or a message from his own brain, the Captain’s left hand snapped the throttle to the right. The aircraft immediately stopped spinning. We were still high, very high for a vertical landing, but the green blur outside of the canopy suddenly came into focus.

We fell fast from at least thirty feet—our trajectory straight down. There soon would be a loud explosion or just maybe the young Captain would get it “kind of right” and return us in one piece. We were going to land where we were going to land. There was no time to pick a spot and move over it.

Seconds later, we crunched into the ground hard and slid backwards into a ditch, the nose of the Cobra pointed upward. The Captain re-engaged the main rotor. Holding his cyclic control as far forward as possible to hold our position, he shouted orders almost hysterically, “Get out! Get out! Check the damage!”

I was glad I couldn’t see his face. His eyes were likely disconcerting, void of any reason. I unlatched the canopy, stood up, and straddled the cockpit rail, carefully searching out the first step with my foot. I was not really sure how stable the helicopter was, given its high nose angle—would it slide backward even farther? We were much closer to the ground, and I wasn’t exactly sure why. I let myself down into the thick grass.

We had semi-crashed into a depression within a sloped ditch. The tail rotor blades were spinning normally but just inches from where the bottom of the ditch began to rise. Both skids were bent upward into the bottom of the short wings. The surrounding tall grass lay flattened from the strong downward thrust of air from the main rotor. What a sight!

The helicopter was still running, but looked humiliated in its ridiculous position, almost like a drunken man who had fallen into a hole and was staring up in embarrassment.

I climbed up the side of the machine and stuck my head into the cabin to shout my report over the sound of the running helicopter. The Captain’s face was still locked straight ahead, as if searching the space before him for a solution to our dilemma. I would soon discover that his agitated thoughts were not founded in reason, but at that moment based more on hysteria.

Unbeknownst to me, he was reaching deep into our mythical bag of fortune cookies. Without realizing it, he intended to crack one open and hand me its message to read.

He ordered me back into the helicopter. That seemed strange to me, as I was outside and in one piece. Why re-enter what just minutes before had felt like a coffin about to be dropped into a grave?

I reluctantly clambered into a cockpit that now had an upward slanting floor and fell back into the pilot seat. I assumed I was here to assist in the machine's shutdown. Without saying a word or asking my opinion, the Captain took us into the air and rolled the nose over for takeoff, which we did.

Any witnesses on the ground must have been astounded by this action. You couldn't have made this scenario up, but it really happened. I fumbled to secure my seat belt and chicken plate, and then I plugged in my mic cord.

"Where are we headed?" I spit out in total surprise. "Back to base," he said in a high voice I didn't recognize.

"Sir, we have warning lights and a couple of bells going off back here. I doubt we can make it that far," I warned.

We were joined by our wing ship. They flew close to inspect the damage.

"Damn! Your ship's pretty screwed up! How're you gonna land with the skids gone?"

There was no answer from the front seat. The Captain still held the flight controls in a death grip. Giving control back to me would have made more sense under the circumstances, as the back seat controls had a ratio of four to one in terms of authority over the front ones, thus reducing the attention needed to control the ship, but no orders or requests were forthcoming. He was determined to run this emergency on his own.

Getting the Snake back into the air and hoping we could fly a fairly long distance to our base at Phuoc Vinh had been the wrong choice. The fateful timing of the helicopter picking up behind us at just the wrong moment had deposited us on a path of poor choices that were increasing the possibility that the plight the Captain had created would soon concoct a dismal disaster.

I was losing it myself, staring at the warning lights and gauges.

Finally, the intercom came to life.

"What warning lights are on?" he asked.

I looked at the panel of lights that were blinking yellow with the occasional red glimmer.

"All of them!" I said with alarm.

Just then, the voice from the wing ship came across the radio with the same question.

"What all is showing on your panel?" The radio crackled in my ear like a voice from outer space.

"Everything," I declared.

Wow, we were gonna blow up any minute! Take a deep breath, man. Get it together. With some difficulty, I tried to stay calm. Up front, the Captain had yet to tell me what he planned to do next.

I suddenly realized that I had been leaning forward and squashing the test button with my gloved finger, producing the alarming display of warning lights. Now who was panicking?

No reply came from the other Cobra, flying close by. I could see the pilots' reactions to my declaration of "all of them," their mouths open in astonishment. They both stared at our mangled machine as they slid their helicopter farther away from ours. They either believed me, which was really scary, or they thought further inquiry would result in a situation overload for us. We flew on.

Adding to my concern was my total lack of trust in the intentions and decisions of the inexperienced Captain in charge of our ship. No verbal connection had transpired, which would at least open a communication link that could lead to a mutual decision or purpose, a plan of sorts.

Recently, an order had come down from the Colonel that all commissioned officers flying with Warrant Officers would automatically become the Aircraft Commander regardless of experience by virtue of their superior rank. I considered briefly the chance of the Colonel's perspective being changed by the current situation? Doubtful.

Our wing ship's Aircraft Commander was an experienced pilot and leader. He was a first lieutenant, and his calm and measured assessment of the emergency created by the young Captain who outranked him was a breath of cool air rushing into the overheated sphere in our cockpit.

The young Captain was still frozen with indecision. The lieutenant flying our wing-ship took control by alerting a nearby Green Beret outpost that we were coming their way with a stricken ship. We didn't hear that conversation, but were given a new compass heading by the Lieutenant's steady voice coming through the radio. He also relayed the plan of how we would land once we reached the outpost.

Twenty minutes later, we briefly circled the small outpost where they had built up a "cradle" of sandbags inside their perimeter. We were going to land the Cobra in that cradle and hope it held and didn't collapse under us. There were no Army manuals for its construction. This was an emergency set-up all around and had been completed in the short timespan since the first radio call.

Our badly shaken Captain wobbled down from our low altitude to attempt a shallow approach to where the sandbags had been placed. Nothing crackled over the intercom. He was still in his own world.

The closer we got to the sandbags, the more the ship staggered. The Cobra's unique flight controls made landing difficult enough under normal conditions. This poor pilot had been gripping the controls for more than twenty-five minutes. Relaxing his grip at this point was probably beyond his ability.

Finally, the intercom came to life! "You take it!" came the voice from the front seat.

I was more than happy to take control. More than half of my fears had been erased by the pile of dusty, red sandbags in front of us. For one thing, the tail boom or some other such part was not going to

suddenly come off and send us cartwheeling through the air to disintegrate in the jungle below. At this point, we had more than a fighting chance of living, no matter what happened. Hope is a powerful force. It was now magnified in the narrow confines of our ship and brought freedom from our recent dark fears.

Our wing ship circled low above us. The crew was watching intently, no doubt, to see if our aircraft was going to settle into the sandbag cradle and stay or just roll over into the red dirt and turn into a pile of useless parts.

The compound had been emptied of personnel. Likely someone there had seen a helicopter come apart and knew the air would be filled with flying shrapnel and ammunition and had warned the others. Not that they didn't believe they had done a good job with the sandbags, but one never knew, in a war zone, what might come next.

I hovered the Cobra over the sandbag cradle despite the cloud of red dust that billowed up. The cloud was created by rotor blades almost as wide as the cabin itself. I cautiously centered the fuselage with its curled-up skids over the cradle and lowered the collective. Then I very gingerly descended, and letting the weight of the helicopter gradually transfer itself onto the gritty pile of bags, feeling for any slippage or unsteadiness. Hopefully this would work the first time, since the other option was to hover outside of the compound and then roll the machine onto its side while running. No one wanted to see that happen.

When I finally rolled off the throttle, the Cobra had settled snugly onto the mound, only tilting slightly to the left as the blades coasted to a stop. Even the rocking motion of the shutdown had not dislodged the machine from its resting place. We got out. The outpost grunts had been good engineers. It worked.

Once we were shut down and the blades had stopped turning, our wing ship left in the direction of our base. Later, the Colonel's Huey showed up to take us back "home." The Colonel wasn't on it, thankfully! The Captain didn't speak to me, then or on the way back.

I assume the helicopter was recovered from the compound by a large, twin-rotor Chinook, whose pilots would have peered out their side window to see it twisting around and around at the end of a 200-foot cable on its way back to Phuoc Vinh.

When the other Cobra picked up behind us at the critical moment, he broke open a fortune cookie. Fate moved before the thirty seconds we needed to depart came around and set off a twenty minute drama that had dire consequences folded into the initial choices being made. A good wing ship commander stepped into the unraveling situation and directed fate away from our destruction. A precise plan evaporated the short message on the slip of paper that popped out of the cookie at the airstrip.

If we had stayed in the tall grass of the sloping ditch, as humiliating as it was, the bird would have been returned to service by a safer route than the one we took. When there is a weak link in a chain, it snaps quickly under strain. The results hastily tumble into a trajectory that sweeps fear, confusion, and most likely danger along with it, producing unintended consequences. In our situation, the break in the

link may have been forestalled by taking a brief minute to consider the options, but who knows where the weak links are in a tether until they snap? In war, you must suspect it and do what you can to strengthen it before the chain snaps. Often, you don't anticipate it. Its sudden and then the wheels come off.

The bird was out of action for a month—one of our newer ships—I remember the number on the tail, “206.” It never failed to come back, nor did it kill anyone after that day, but it almost always came back early from a mission with something wrong with it. That had been a hell of a fall. Number 206 was never the same.

In war, you learn, when possible, not to react without purpose. Waiting an extra second to be sure can change your path significantly. This decision-making process saved me during numerous civilian flight experiences in situations as extreme as helicopter logging, flying small, commuter planes during bad weather in and out of small airports with uncommon approaches, and towing practice torpedoes along the surface of the ocean at zero elevations.

One such situation found me grinding my way north through a significant Pacific storm headed toward the US Navy's shallow water, torpedo testing range. I skimmed the wave tops of the crashing surf as it pounded the sands and log-jammed beaches along the occasionally steep cliffs of the northwest Washington coastline.

I was flying a Soloy Hiller 12E on floats. The Soloy company had replaced the standard piston engine of this model Hiller with a turbine engine that burned jet fuel. Dragging along those two pale, rubber carcasses—one on each side—through the spray-filled air further restrained the helicopter's already slow progress. While immersed in such an environment, it occurred to me that most callings in aviation pitted man and machine against some combination of the elements. Who rules in these contests, nature or you? It is your innate task as a pilot to avoid being overwhelmed or disabled by nature's unforgiving bias. It is a match where only the tools and knowledge you have acquired by hours in the air can find a way through. Winning is vital when survival is the goal.

I was turned out in a bulky, bright orange float suit common to crews in danger of being washed overboard or who intended to abandon ship. It was a combination loose-fitting wet suit and life jacket. My white flight helmet topped off my resemblance to the Pillsbury dough boy.

Upon reaching the US Navy's torpedo test range near La Push, I would spend two weeks performing aerial tasks involving the calibrating of the range and recovery of torpedoes. Not included in the contract and unbeknownst to me at the time would be an unarmed aerial assault against the Russians!

It had been a ferry trip whose course had not been direct. I had left the small town airport where the helicopter service was based near the Puget Sound, holding a course northwest toward the Pacific coast. The weather had precluded a straight line over the Olympic Range, so I intersected the coastline through a somewhat twisted route, dodging low clouds and fog generated by the incoming storm. I would now simply have to fly along the shoreline until I reached the naval base.

It was going to be a long flight. I had topped off my single fuel tank and filled fuel jugs before departure. I checked over the machine. The helicopter, with floats attached, wallowed from side to side. It was like walking on a waterbed as you moved around checking the rotor head, etc. during your preflight. One of them even looked smaller than the other one, but what did I know? I hadn't flown this type of set-up before.

The small, two-helicopter outfit I worked for usually spent long days with both machines flying, slinging bundles of cedar bolts that dangled from the end of various lengths of cable secured to the helicopter's main hook. A second hook at the bottom of the cable was controlled electrically by the pilot to release the load of cedar bolts without dropping the cable itself.

The bolts (short, three-foot chunks of cedar) were cut from ancient downed cedar trees half buried in the moss and undergrowth of the Northwest rain forests. Moisture doesn't rot cedar like it does other wood. Each bundle of bolts was worth about \$300. Once delivered, the bolts were then trucked to a mill and hand split into roof shakes. The money was good, and we filled truck after truck. Each had clawed its way over old, potholed logging roads to get as near as possible to the source of wood, rain or shine. And in a rain forest, the rule was gray overcast with rain almost every day.

On occasion, other charter or contract opportunities would come up. As the new pilot, I was assigned when the time came to show up at La Push. Choices were often limited by others, including the boss. The significant demands of learning yet another flying technique on my own was not picked by me, but assigned based on the higher financial return produced by a more experienced pilot hauling cedar.

The Navy contract had been signed the previous year. In addition to recovering practice torpedoes, I would be supporting the Navy's test range by dragging a small torpedo back and forth out in the ocean on a cable attached to the helicopter. The Navy Range technicians would carefully calibrate the range for the moment when actual torpedoes without warheads would be launched. With a correctly calibrated range, they could track with precision the underwater maneuvers of the torpedo as it attacked a US Navy cruiser's attempted evasion.

Bundled up in my "float/dry suit," I would drag a practice torpedo on various headings assigned by the shore team. Again, no GPS, meaning you relied on a compass heading or heading indicator adjusted for wind and variation that you computed by the seat of your pants, charts, and your best guess.



*Hiller 12E Soloy—Picking Up Torpedoes*

Hiller 12E Soloy—Picking Up Torpedoes Of course, the ocean’s surface is never flat or still. Undulating water of an active sea rises and falls continuously. The nose of the single-engine Hiller was always tipped steeply toward the dark water as it rose and fell.

Pulling a large metal cylinder twenty feet under water, no matter how light, was a tremendous drag on forward flight. So these flights were very slow, maybe fifteen knots, and they lasted a good part of the day with a fuel stop every hour and a half. As the sea surged higher on some days, it was a constant challenge to keep it from striking the bottom of the aircraft. Only one hard slap of seawater would erase controlled flight.

Later in the operation after the range had been calibrated, the shore crew launched dummy torpedoes much smaller than the full-blown version, to run through the course. When the run was complete, the dummy torpedoes were programmed to come to the surface and float vertically, nose up. My job was to locate the bobbing shiny metal nose of the drone torpedo somewhere across the vast ocean range, using radioed guidance from the technicians on shore.

On these recovery missions, I flew a triangular rope cage that dangled from the end of a one hundred foot cable attached to the belly hook of the helicopter. The “floor,” or bottom of the net enclosure, would be pulled up by a tag-line to a vertical position alongside the net itself. This arrangement exposed an opening on one-side of the cage so that the whole device could be lowered over the torpedo. Once the nose of the torpedo touched the inside limit of the triangular net, I electrically released the tag-line, which in turn released the “floor” of the rope cage, causing it to swing level and enclose the drone. I would then lift the torpedo clear of the water and return it to shore. This procedure as described seems straightforward and easily accomplished.

Not really! To fully appreciate the task, imagine drinking a fifth of any kind of liquor before you start in order to appreciate the challenges involved in looking down through an open doorway (the door itself remains onshore), past the flapping, rubber float into the rolling waves.

The rotor wash and steady sea breeze buffets the swinging net far below. There is no solid peripheral reference, which is mandatory for a steady hover. With no fixed references, the effort of hovering over moving water is like trying to balance on a basketball on a moving conveyor belt. You are attempting the impossible. Between the waves going up, down, and sideways and the constantly changing floor angle of the helicopter, you struggle. The torpedo floats nearby, with its silver head bobbing in and out of the sea in a taunting game of hide and seek. All of this must somehow come together at one time to capture the torpedo.

In addition, you are in a Hiller helicopter, whose flight controls seem to have a one-minute delayed reaction after your manual input. You are reduced to feeling like a well-developed drunk stabbing at a moving fish. This is painful at the very least, and at best, frustrating beyond imagination.

Again, no one sat beside you for the first few hours of this unique operation, nor was there a manual on recovering torpedo drones at sea. You knew how to fly a helicopter, so you were expected to figure out the rest without risking the machine, or secondarily, your neck!

Training cost money, but losing a helicopter cost much more. Unlike the airline industry, helicopter companies generally offered no specialized training before you left on an assignment. No doubt just keeping a very complicated and expensive aircraft in the air was straining most owner's pocketbooks as well as their imaginations. Additional costs that could bring beneficial future returns were seldom considered.

Most tasks were very close to the ground with few options if things went bad. It boiled down to two vital rules in a helicopter, no matter what you were doing: One—keep the rotor rpm in the green. Two—maintain control of the machine. After that, there were literally hundreds of techniques for completing a certain kind of job with a rotor-wing machine. No one wanted to share secrets. If they told you what they knew, you might end up knowing more than they did. Ah, human reason at work.

During the final days of the contract, I was finally free of a dangling cable under the helicopter. The time had arrived when the purpose of all this preparation was at hand, and a real torpedo (minus the warhead) was about to be launched onto the range. A US Navy Cruiser had shown up in the night and was anchored offshore. I assumed my contract tasks were complete as a larger helicopter had flown in for a single day to recover the much bigger torpedo after it surfaced, nose bobbing up and down, depleted of fuel. The authentic torpedo would perform unbelievable maneuvers underwater in its attempt to close with the Navy ship.

Just before the launch of the torpedo, the horizon filled with dozens and dozens of ships. They appeared suddenly as if they had risen straight out of the ocean at exactly the same moment. They were Russian trawlers.

If the torpedo turned into a "runaway," it would be in international waters and legally salvageable by anyone out there. The Russians hoped for a runaway. They were set up to capture it immediately, if that happened.

Although I was flying the least formidable of helicopters, floats and all, I was approached and ordered to fly out to the Navy Cruiser, land on its rolling aft deck, and pick up an officer. We would then fly at least fifteen miles offshore and challenge the Russians' fishing fleet.

We circled, dove at, and flew close to virtually every ship. The Navy officer with me was looking for certain types of antennas and deck configurations. Although disguised as fishing vessels, apparently there were "wolves" among the flock capable of recovering an errant torpedo. What were we going to do about it? I had no idea.

I am sure the Russians understood the game that was being played and were thoroughly unimpressed by my seventy knots of airspeed and two rubber accomplices charging at their ships. They ignored us. No one turned and pointed up at us from the closely watched decks of the trawlers. After more than an hour of "play," we returned for fuel and made another pass before I flew the Navy officer back to shore. He ducked under the turning blades and walked over to naval operations, entering by the side door. The international incident was concluded peacefully. Nuclear war had been averted! Fortune cookies served cold?

The demanding tasks of the contract paled in comparison to the trial of the inbound trip to La Push at the beginning of the contract.

As I flew along the coast on my way to the Navy test site to start the contract, I chose to fly about fifty yards offshore beyond the breaking surf rather than snake along the shoreline where swirling eddies of foam and surf concealed most patches of exposed sand. My altitude was just two hundred feet. Poor visibility and heavy rain kept me close to the wave tops.

The fuel gauge showed I was getting low on fuel, but I was only a 15-minute flight from my destination. Even if I could find a place to land on the stormy shore, it would be difficult in the driving rain to clamber over the "waterbed" attached to my helicopter while attempting to refuel from the jugs strapped to the side racks.

The fuel tank on this machine was a rectangle about twelve inches deep with the fuel pickup located at the rear of the tank. Flying with floats kept the nose even lower than normal. A fortune cookie waiting to open? In this configuration, the fuel gauge was giving questionable readings at best. As I mentioned earlier, helicopter pilots figured out this stuff on their own. There were no lined charts—time versus fuel—or blinking gauges to compute fuel burned and time left before reaching empty. Bare bones was the theme in this helicopter cockpit.

Basic configurations left the pilot with more interpretive choices and judgment considerations which led to more small slips of white paper popping from the cookie.

One accessory the helicopter did carry on the panel was a re-ignition device, attached to the igniter on the turbine engine. If the turbine fire died, the igniter—charged with electricity—automatically clicked away. If the fuel flow had been interrupted with a small amount of water or air, the continuous igniter

spark would re-light the fuel again after the interruption. Because of this instrument, one less cookie was carried aloft.

Pressing forward in the wind and just beyond the crashing waves hitting the beach, the engine's high whine ceased suddenly. The aircraft began to drop from the sky. Normal procedure was to immediately lower the collective to save rotor rpm, but I was only two hundred feet in the air. Slamming down the collective would immediately put me into the wild sea. I turned toward shore, lowering the collective with trepidation. I was going to land in the churning waves of the heavy storm surf directly ahead.

At least I would have the shore in front of me. Less than thirty seconds of continued flight would have put me behind a jagged rock formation towering out of the sea, and I would have been unable to turn toward shore. Fate smiled briefly. Such rock formations dotted this part of the coast infrequently, but dramatically where the waves dashed against them..

In my headset, I could hear the constant "clicking" of the re-ignition system, but during this particular moment of peril, it didn't register. I was more focused on the sad realization that I had run out of gas. That even with floats the giant waves would not be kind to the aircraft or to me. We were about to drop into a furious, watery hell.

As I leveled the aircraft for the final step of the very brief autorotation, perhaps ten feet above the water and just before being swallowed by the wind-torn surf, the engine surged to life. Leveling the aircraft must have suddenly washed any remaining fuel across the fuel pick-up point at the rear of the tank. The auto re-ignition system had restored power just at the right moment, as designed.

Even if your equipment is basic, attention to the important components that support continuous flight, once airborne, should never be overlooked by an owner, and in this case, it wasn't. Score one for the company! Good fortune emerging from a cookie on its tiny slip is always a win.

With the helicopter level just feet away from the rolling surf, I attempted to freeze its level attitude and move at a high hover toward shore. I immediately spotted a small circle of brown sand, defined by the foam and sea water swirling around its edges. It was free of driftwood fragments and formed a slight mound on the beach. I hovered over it, and just as I started down, the engine quit again. The floats broke my fall. The helicopter rocked quietly back and forth in the moaning wind as the rotors, after a prolonged freewheeling rotation, coasted to a stop above my head. Man-made noises had fled with only the sounds of crashing waves and piercing wind remaining.

More profoundly thankful than ecstatic—that would come later—I unlatched the cabin door and stepped over the wobbly float and its false assurance that any landing in the water would be safe. I unlashed the three fuel jugs from the side racks and assembled them near the filler neck of the gas tank. Using a large rag, I attempted to shield the fuel tank opening from the rain as I emptied all three jugs into the tank. Then, I tightly screwed on the tops and re-lashed the jugs to the racks.

Next, I found a wrench. I had seen how mechanics, after working on the engine, removed the ignitor from the combustion chamber and then cleared it of air by switching on the fuel pump in the cockpit until a steady flow of fuel passed from the hose into a scavenged container.

So I climbed up and knelt on the soft rubber float near the back of the engine and loosened the ignitor/fuel line. No fuel came out. Placing the end of the hose into the container I had scrounged from the cockpit, and as best I could, stumbled along the top of the float to the front of the aircraft, then carefully opened the flimsy cabin door, gripping it against the gusting wind. I switched on both the battery and fuel pump, then struggled the five feet back to the rear of the engine to glare at the hose, watching for fuel flow.

Shortly, a steady stream of fuel drained into the container. I tasted it to be sure. I quickly emptied the container onto the sand and lurched along the float back to the cabin to shut off the battery. Then I dried the end of the hose and reattached it to the combustion chamber, cinching it tightly with the wrench.

Despite the bulky suit that made it so awkward to get around, I did not resent it. At such moments, if the incident had ended differently, it would have provided my only chance of survival, but only after getting clear of the spinning rotor blades beating the surrounding water into geysers of saltwater.

The engine started normally. I knew exactly how much fuel and thus how much time I had left in the air, as well as how far away the base was located. I lifted off, tucked the nose over, and again merged with the storm, clawing up the coast against the force of the wind.

This same 12E had a sad ending just two years later. Another new employee/pilot, married with children like myself, left La Push when the contract was over to ferry the aircraft across the remote Olympic Peninsula. He never showed up. After an exhaustive search, neither the pilot nor helicopter was ever found. The fortune cookies that carry the messages of fate on any flight are never to be taken lightly or ignored; your very life may rest among them.

The conversion from a piston engine in the original airframe to a turbine engine by the Soloy Company had made the 12E more reliable and improved its performance. The company followed that same calculation into other rotor wing airframes.

As an aviation engineering company, Soloy first took horizontally opposed piston engines out of Cessna airplanes like the models 180, 206, and 207, replacing them at the time with the Allison 250, 420hp jet turbine engine commonly found in the Bell 206 helicopter. This re-engineering of the power plant to a jet turbine engine reduced the weight significantly, and although the overhaul cost was much higher, the turbine engine lasted much longer. Its takeoff performance became literally amazing with the addition of a huge, three-bladed propeller and an extra 120hp under the cowling.

They also accomplished this same enterprise with three helicopter models, including the Eurocopter AStar D model. The Eurocopter, factory-installed Lycoming 101 turbine engine was replaced by Soloy

with an Allison engine also, but it was the larger 250M model of over 700hp. The Lycoming engine had been very problematic, and both owners and operators were looking for reliability.

I had joined Soloy as a demonstrator/sales person for the Bell 47 helicopter that Soloy had converted to a turbine. Before coming to Soloy, I had purchased and operated one for a large mining corporation, so I knew the machine's performance parameters well.

Subsequently, I was asked by Soloy to be the test pilot for the AStar conversion. With no formal training as a test pilot, I followed the instructions of the resident engineer in the back seat of the helicopter who ran all the electronic equipment, but that did not prevent many terrifying moments of attempting to carry out the maneuvers asked of me. Such instances never seemed to rattle the engineer. In fact, I didn't know some of the maneuvers were even possible. Live and learn, the key word being live!

Once the AStar conversion had an up-and-running engine installation, the company, even before FAA certification, was anxious to market it widely.

One very gray overcast day, Mr. Soloy himself decided to fly the prototype. It had been painted a bright yellow and white in the livery colors of PHI, the biggest helicopter company on the Gulf of Mexico, their targeted buyer for hundreds, if not dozens, of the type.

Mr. Soloy's son owned a helicopter company in Alaska and just before the promotional flight for the new AStar conversion, had one of his helicopters flown down from Alaska, a Hughes 500D. The plan was to make an aerial video of the newly converted AStar.

A Tyler Mount for securing a movie camera was fixed to the floor of the 500D and partially protruded into the slipstream where the right rear cabin door had been removed. This was the same model flown in Magnum P.I. If you are a Tom Selleck fan, you'll know the type. The mount had a swivel seat, and the camera was fastened to it outside the helicopter with the operator sitting half in and half out of the aircraft. This arrangement gave the camera lens an unobstructed view of the subject being filmed.

All the wires and cables were draped over the back of the right front seat where the director/technician would hold the TV monitor on his lap. After a successful installation, the small cabin of the 500D was stuffed full of people and equipment.

Mr. Soloy, the film crew, and I discussed the general outline for gathering aerial footage of the AStar flying at treetop level across a fir tree plantation that ran parallel to an old taxiway along the eastern edge of the airport. It was a wide swath of concrete and was not currently operational.

I took on a light load of fuel. The filming area and plantation were only one hundred yards behind the factory hangar. The office area at the back of the hangar had a large picture window where factory staff and others were already lined up for a good view of the proceedings. I took the 500D up to three hundred feet, passing over the six to eight foot fir trees, lined up like soldiers on parade. I came to a high hover and waited for the AStar to appear. Minutes later, I heard Mr. Soloy on the company frequency, announcing his departure.

The yellow and white aircraft with PHI painted on its fuselage came hovering around the corner of the hangar and then began its first run below us, crossing just fifty feet over the small pines at a moderate speed. The business of focus, position, and how the AStar should proceed next filled the airwaves between the two helicopters. I kept a constant altitude, maneuvering here and there at a fast hover, as the aircraft below crisscrossed the plantation.

Ordered to the center of the filming area, I flew directly there and put the helicopter into a sliding right flare as I came into the wind.

Pulling the collective up to set the engine at high power arrested our sideward movement and stabilized the 500D in a hover. When I pushed the left pedal, the tail rotor blades bit solidly into the damp air for only a fraction of a second, but as we came to a stabilized hover, the left pedal went clear to the stops. I stared at it. "That wasn't right," I said to myself.

I had no time to ponder my surprise. The helicopter had begun a rapid right turn toward the cameraman positioned outside of the machine, strapped to the Tyler mount. He was about to experience the ride of a lifetime. We learned later that a nut located in the helicopter tail boom had come off a critical bolt that fastened the control rod, which manipulated tail rotor pitch to the pedals in the cockpit. The bolt must have dropped clear of the control rod just as we came to a hover. The small white slip from the broken cookie read, "Inattention to detail, possible consequences dire."

In the rotor wing world, if something went wrong, it went wrong immediately and usually violently. All the parts were a complex team of moving and turning components that shared one purpose—make this thing fly! With few exceptions, all parts were required to be present for duty. There was rarely time to consult a flight manual as you fell towards earth. You were in a swirling, gyrating machine. Instinct was your best bet under the circumstances, as your senses were being trashed by either noise, wild movement, or raw gut-wrenching fear.

Myself, I go icy in a bad situation. I think it was the way the Army trained us. Fear or suppressed panic does surface in me, but usually about two days later, when I can hardly stand up at the thought of the emergency I have just lived through.

As we spun faster, I tuned out the screams of my two companions. I left the power in. We came straight down from three hundred feet. We were not in free fall, since I still had power to the main blades, but down was the only way out. It felt like we turned twenty times in those three hundred feet, but it was probably more like four or five. I had no idea where I was going to hit. The high probability was that we would land in the pines that blanketed the ground beneath us.

As the blur of the earth came closer and got darker, I "split the needles," taking the torque that was spinning us completely out of the flight equation. The helicopter straightened, and I pulled up on the collective lever. We landed rather lightly on the slanting embankment along the only road in the plantation. Fate can also be kind. As it landed, the helicopter rocked up on one skid, but came back down on both skids, meeting solid ground at the same time. We were down! The five narrow rotor blades coasted to a stop as I opened the cabin door and jumped to the ground.

The camera operator was unhurt, but pale as a ghost. He looked at me with a frantic stare that seemed to beg the question, "What just happened?" He had ridden the spinning "bull" from inside the tightening circle of centrifugal force. I helped release him from his three-point harness and held onto his arms as he wiggled limply from behind the camera onto terra firma. Unable to stand, he collapsed in a heap, struggling for breath, but for all practical purposes, he was okay.

The director/technician appeared from around the front of the helicopter, great relief smeared across his face and grinning from ear to ear.

"I'll be sending you a Christmas Card for the rest of my life!" he blurted out as he gave me a hug.

Then it started raining. There was no sign of the AStar. It was gone. I had thought that by the time the rotors stopped, an emergency vehicle or at least a pickup truck would have arrived to check on everyone. Nothing came. No one wanted to get back in the machine, so we slid next to or just under the helicopter and began getting soaked like the nearby trees dripping water from every branch and needle. We waited.

Perhaps fifteen minutes later, a white, Cadillac sedan pulled up. The son got out, his face clouded with disgust. He slammed the driver's door hard and marched around the front of the car. Putting his hands on his hips, he stared down at us like we were three bums huddled around a campfire. He didn't give anyone a hand as we struggled to our feet and walked up the slick grass to the road. Watching from the picture window, he had seen us spin down from a very high hover and land. It made him mad! He was convinced I had been "cowboying it" with his machine. A real show-off, he thought.

It took him a while to calm down. When the 500D hadn't lifted off again to return to the ramp in front of the hangar, he finally figured out that maybe something had gone wrong. He had then begrudgingly taken his parents' car and come down the concrete taxiway onto the narrow, asphalt road where the helicopter sat on the shoulder, its fuselage tipping slightly downhill.

The three of us helped each other into the car. The son didn't as much as open a door or close one. He stomped back to the driver's door, threw it open, and then slammed it shut after falling heavily into the driver's seat. At least he had waited for us to get in. Hey, I thought, it wasn't me nor a mechanic working for me who failed to secure the nut to such a vital bolt. You're really lucky it didn't come off between here and Alaska!

Two days later, he called me up at home. His mother had made him.

With little enthusiasm and barely any shame, he forced out his words, "Thanks for getting my ship down in one piece. Sorry about the mix up. My mother said I should call you.

"Yeah," I replied, "no sweat." He hung up. Would have been nice to get a job offer, but no dice. "Spoiled brat," I muttered to myself.

Fortunately, I never lost the weight of the tail rotor gear box and the blades during my experiences with tail rotor loss. When the gear box leaves, it is like someone jumping off the opposite end of a teeter

totter when you are in midair. The weight loss so far back on the machine causes the pilot to run out of aft cyclic (stick) control, so he is unable to bring the nose of the aircraft level. This is especially the case with many of the Bell models, like the Huey, that have such long tail booms. Usually, the aircraft will rotate two or three times, the nose will tuck, and then the helicopter will be immediately uncontrollable.

There are rare exceptions. If for some reason the aircraft is loaded heavily towards the back, it may enable the pilot to “streamline” the helicopter by reaching an airspeed where the aerodynamic forces on the airframe will keep it from turning. If that condition can be achieved, then the pilot can slide the helicopter onto a hard surface like landing an airplane and through proper technique bring it to a stop without further mishap.

My closest call to losing a tail rotor gear box and subsequently crashing began to develop one night outside a bar in Alaska. I had just been offered a job from a very drunk chief pilot sitting in a slouch on the wooden planks of the sidewalk while leaning against the storefront of the bar. He looked up at me, his blurry eyes failing to focus clearly. “We’ll fly you out to the island tomorrow,” he mumbled.

My friend Clint worked for the company I was hoping to get a job with. He and I had searched for an hour for the chief pilot. It was getting darker, but in those latitudes at that time of the year, total darkness only came for a few hours in the middle of the night. The front windows and open door of the ruckus bar allowed the dirt road and wooden sidewalk in front of it to be painted periodically with splashes of noise and pulsing light as we stood looking down at the sodden human form at our feet.

His outfit had sent me a roundtrip airline ticket from Pennsylvania to Alaska to interview for this job. This was the interview, blurry eyes and all. In other words, they needed a body, one who could fly—they would take my word for it, no resume required. The chief pilot, slurring his words, explained once more that the plan was to meet in the lobby of the hotel in the morning. “Be ready to go,” he whispered before he went silent altogether. According to Clint, who had the scuttlebutt on this specific job, I would be flying a surplus Huey. The pilot I was replacing would be coming out on the same aircraft I flew in on.

Later, alone in my tiny hotel room, I counted the fortune cookies I had picked up in the course of the day. All of them were partially opened, but I couldn’t see the messages. However, they were in there. What did they say? Would fate be served hot or cold? I tossed and turned under the stiff sheets and prickly, woolen blanket that made up the bedding in this wild west hotel where I stayed the night.

How and when these fortune cookies would pop open was a puzzle I didn’t have the powers to unwind them, but in reality, they confronted me in this order:

1. When I had arrived in the afternoon, I had seen Clint for the first time in a year or two. He was at the controls of a Bell 214B with a group of mechanics, working to clear a problem with the rotor system of the helicopter. He invited me to go for a test flight while they worked on the mechanical issue. With the exception of Clint himself, the comments, proposals for a solution, and the logic of the three or four mechanics on board made me feel like I was in a clown car.

2. They obviously lacked the training, experience, and tools to resolve the issue they were discussing at length.

3. Standing quietly among the same group after we landed from the test flight, I heard the story of how previously non-serviceable parts had been returned from the main office in California with no overhaul performed, just the tag changed from red to green and returned for service. As a result, there had been a fatal crash.

4. The “blotto” condition of the chief pilot was not unusual for someone working out of a remote location in Alaska; however, it was hardly reassuring given the previous two points.

All through the night, I tossed and turned, struggling to minimize these indicators as unimportant. I really needed steady work, and helicopter logging paid well. I was never very good at saying no, and they had paid for a thousand dollar airline ticket. Finally, I fell asleep.

Early the next morning, I met the red-eyed, chief pilot and the other pilots and mechanics traveling out to the remote company camp. Various duffel bags and piles of articles cluttered the small lobby. I walked up to the chief pilot, waited for him to finish his sip of steaming coffee, and told him directly that I wouldn't be taking the job. His cup of coffee froze in midair as he stared me full in the face. He sputtered a few words, his face turned red, and he slammed his cup onto the counter. He looked again at my face, saw the resolve there, grabbed at his bags, and stomped out of the lobby.

Silently, the rest of the group milled around, picking up their gear and leaving right behind him. They all bundled into a large van waiting outside the doorway. I was alone in the lobby except for a scattered number of locals leftover from the night before, loafing in the various stained and overstuffed chairs at the edges of the room.

I felt guilty, but not guilty enough to say yes to the job. I caught a taxi later in the morning that took me to a ferry that transported the passengers across to the island airport to catch our flight. As the ferry left the dock, so did my feelings of guilt. For me, I had done the right thing.

A month or two later, I heard from my friend Clint. The pilot I was to replace that morning in Alaska had taken up the Huey I was to be assigned and lost the tail rotor gearbox while picking up a load of logs. He crashed into the trees. He didn't deserve to die instead of me. Unpredictable fate had dictated a message—it came on a small slip of white paper and it read; “One will die, and one will live.” The message was easily interchangeable as to who, but this time, it was not for me. I felt bad.