

Speaker: Frank Shelley

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I am Frank L. Shelley, commander of the United States Coast Guard, retired. Coast Guard Academy Class of 1949, and Coast Guard Aviator number 633. Okay, I ... initially graduated from the Coast Guard, graduation with the Coast Guard Academy ... I lucked out and went to a buoy tender in Monterey, California. And it was so good it couldn't possibly last, and it didn't. I had the deck one beautiful morning in June of 1950 when the petty officer of the watch came down and said, "Says here Mr. Shelley that Korea has declared war on us or something, where's Korea?" And so that was the end of paradise. I ended up in Guam, still with the same ship, and I guess I got some cheap overseas duty credit for, credit for ... what should I say? Isolated duty, so I didn't end up with lorraine. And from there I went to flight training, and ... flight training graduated from Pensacola ... basic, and then did flying boats, transition at NAS Corpus Christi. And went to Coast Guard here station in San Francisco, and again it was so good it couldn't last, but ... from there, after exactly two years to the month, there was a crash up in Alaska. And ... and they needed one each, lieutenant junior grade, and that turned out to be me.

So off I went to Annette Island, and I thought that was going to be the end of the world, turned out, I think I extended three times altogether. It was ... it was a very, very pleasurable experience looking back on it. And I got to do an awful lot of flying, so that by the time I had finished, about two and a half years there, I transitioned down to the Coast Guard air stationed at Port Angeles, Washington. And by that time I had accumulated a little over 2000 hours and was the, had a green card instrument, which meant I could sign my own releases, and I was kind of on top of the world. And from there, I ... again, barely two years and I went to, got selected I should say, for the Navy Flight Training, or Navy Test Pilot School at NAS Patuxent River.

And that was one of the top experiences of my aviation career I guess. I thoroughly enjoyed myself, although I don't think I distinguished myself by any means. It was a good experience, unfortunately, as it turned out later on, at the time it was strictly an airplane program, and it was two classes after me that they finally had the very beginning of helicopter training. But at any rate, the graduation from the test pilot school set me up for what was to be I guess the other top experience in my career.

And I ... I went to Elizabeth City out of Pawtuxet River, because there was no ... no billet for Coast Guardsmen there at the time. And while ... while at Elizabeth City ... it came out that Coast Guard was going to take up Sikorsky on an interesting offer for helicopter. And a little background on that now. A lot of what I'm going to say now probably might sound familiar to somebody more ... more avid readers, because I've said almost the same thing in some of the printed material that I gave the historical or the historian.

The Coast Guard had helicopters with the HO4S, and it was in inventory at the time about ten years, and there was a very, very great sense of anxiety in the Coast Guard that this thing was just gonna come apart right now, and kill everybody. And it might seem a little laughable at this stage. At the time, it was quite realistic, because in the early, or late 1950s, early 1960s, the Coast Guard had never had any helicopter in inventory more than about 7 years. The helicopter was still a relatively undeveloped creature. So, the Coast Guard had moved on to the more advanced Sikorsky helicopter, the commercial S-58. Military-wise, it was H-34 in the Army and the Air Force. HUS ... as far as the Coast Guard and the Marine Corps and the Navy were concerned.

And also, there was a similar version of the same airframe ... was called HSS in the Navy. And it was, to put it mildly, if you've ever flown one, you recognize it. It was the Cadillac of piston-engine helicopters. And the Coast Guard ordered initially six of them. And ... it turned into a real dog's breakfast for the Coast Guard, and it was embarrassment when looking back on it, but in a way maybe it was fortunate. We lost 3 of the 6. Two of them in one night. One wrecked almost on top of the other. Fortunately, out of the 3, we only ... there was only 1 life lost, and that was a good thing, but otherwise, we were in bad shape there. And ... actually ... there weren't really problems there, except early on in the development, and they were administrative kind of things. The Coast Guard had gotten very forward-looking there and was attempting to have an automatic hover system, which I think was developed by Ryan Aeronautics, but I'm not sure of that. At any rate, that didn't perform as it was intended.

And when the nasty little circles where the contractor pointed at Sikorsky and Sikorsky pointed at the Coast Guard for not wanting to do it their way, and by that

time, Sikorsky was a dirty word around 1300 East Street Northwest, and ... the realization was, I think ... in aviation section in headquarters, that they weren't going to buy any more HUSes because they couldn't simply justify that anymore. We bought 6 and we lost half of them already. So ... the Coast Guard was in something of a quandary, and at that point, Sikorsky had their own quandary. They had developed a little amphibious helicopter that was ... we used to joke about that Sikorsky never threw any parts away. They always put them on something else. And they had developed it at kinda like a sixty percent version of their very successful twin engine model S-61, which the Navy called ... H-3. And ... well, actually, the Navy called it HSS-2, initially, which was a farce, but we need not go into that. It was a political choice in nomenclature.

Anyway, the Sikorsky version was intended for the commercial market, and it was certified through the FAA. And licensed ... and it incorporated the rotor system from the S-55, or what we call the H04-S. And it was attached to a single gas turbine engine, one of the ones that was powering the S-61. And ... at the time, it was a very, very advanced engine, but proving to be very, very, very reliable, and had much room for growth. And ... the ... the fuselage was aluminum instead of magnesium, which had been a real problem with the H04-S and the HUS. And it was a boat hull, just like it's a big brother of the S-61. And this, they called it S-62. Well, they went out to the civilian market with that, and it was a total dud, and the problem was the engine. And not that the engine was a problem, but it was an expensive engine, and ... it was probably more capable than the civilian operators needed. It had the capacity to produce about 1200 horsepower at the time.

Later versions went even higher. And 800 was about all they really needed for that helicopter. And so the civilian folks could look at that thing, and wonder what they were gonna do. The engines that ... did follow it, were not yet there. I'm thinking now the Allison 250s, and ... the ... the H ... T53 that the Army had in the Hueys. Which was a big, ugly beast, and the Army was buying all of them anyway, so Sikorsky pretty much... The T-58 was the General Electric engine I'm talking about. It was pretty much the only game in town. And that was not something that could be sold very much so. I think they sold about ... twenty-some odd helicopters at that point. Civil-wise. And they had to, I think their break even point was some place around seventy or eighty airframes.

So, they came to the Coast Guard, hat in hand, and said, "Boy, Coast Guard, do we have a deal for you." And the deal was, that they would fund ... a sixty-day test program at the Naval Air Test Center and the Coast Guard had to tell them what kind of a program it would be, and the Coast Guard had to furnish the test pilot and arrange for it to be done at the Naval Air Test Center. But they would pick up the tab all the way. And ... so the Coast Guard said yes, fine, we'll do that. And they needed one genuine, government-certified test pilot, and that happened to be me because I'd just finished school a year or so ahead of time.

And so off we went to Pawtuxet River. And ... Sikorsky made available there, actually, it was the very first one ... kind of a hand-built one. It was N8-80. And it had been their demonstrator around the world, and along with the, that was a very, very fortunate choice, was their test pilot, who had been doing the demo rides. And it was a fellow named Lloyd Blanchard ... called him Opie for some reason I never did find out. But anyway, Opie and I hit it off pretty well, to begin with.

And the problem with the test center at the time was, well, there really more than that, but, one thing is the test center was sort of a, had gone through phases, and at the time, it seemed like there was a very adversarial relationship between contractors and the test center. And the other thing there was, that there were three main divisions at that time, the way it was organized at the center. And there was Service Test, Flight Test, and Weapon System Test. And ... Weapons Systems Test was not involved with this obviously, but Service Test and Flight Test were, and here we had one helicopter, and these two divisions were barely speaking to each other. And so we had a really ... the first job we had to do was work that out.

And when I showed up there, the first thing I realized was, I needed technical help. And so I asked Bob Emerson at Coast Guard Headquarters, who was the running the ball for the operations section at Aviation Operations section at headquarters, to see if he could get me a qualified maintenance officer. And ... he reviewed it with the Aviation Engineering section and said there were no maintenance officers available, but they would do something better or give me something just as good,

they'd send me a chief.

Well, they did something better. That chief was a miracle and he's never gotten enough credit for what happened. His name was Clayton Role. He was an Aviation ... he was a Master Chief Aviation Machinist Mate. And he was a former aviation pilot. He had stopped flying because of family pressure. Oddly enough, the family pressure didn't seem to apply to when he was flying crewman, but if he was a pilot, that was not acceptable. I never questioned that.

Anyway, Role showed up, and he was ... if you had gone to Central Casting for a veteran Chief Petty Officer, he was it. He was ... well over six feet tall. I would bet he was close to six-five ... impeccable uniform, right down to the creases through the shirt. And ... he just did the things that Chief Petty Officers do. I mean, the world as we know it runs on Chief Petty Officers and Master Sergeants, and he was it. And the one thing I did do, since he was qualified as an aviator or aviation pilot, same thing, I did hustle him down to the uniform shop, and came up with the gold wings, insisted that he wear them. And that proved useful for later on when I told him that ... we weren't going to tell the stress center that ... first of all, he never was a helicopter pilot, he was an airplane pilot. But he was a helicopter crewman, and if they asked me, "Was he helicopter crewman?" "Yes, certainly." And if they wanted to look at those wings on his chest and make the next jump, that was okay with me. And that worked very nicely for our night flights and other things that regulations said we had to have two pilots aboard. So, it kinda speeded things up. We didn't have two pilots, but we got things done.

And ... he was ... well, okay, back to the ... back to the problem of the two test center divisions and one helicopter. The job of the flight test was to measure performance and to see that ... and as we put it out in the program, wanted to see that, verify the ... the manufacturer's claims. And that could best be done under calm wind conditions, and so what we thought was, well, okay, first thing in the morning, we will do that test, and then, comes noon, we'll turn this thing over to Service Test, and their job was to see how easy was this thing to maintain? Could it be taken care of by ordinary crew people, did it need special instruments, or tools, or so on? And so, then we give it to test ... and of course, that involved flying, that was not just

wrench-turning. And so we'd give it to ... Service Test at noon.

Well, the first morning, we ... I got there well before eight o'clock. And ... Chief Role was leaning on the helicopter with two coffee cups, and he handed me one of them. And as a lieutenant commander, I hadn't, knew that you never ask a chief petty officer was he got anything. So, we were standing there tapping our foot when the folks, Sikorsky crew showed up before eight o'clock to get things going. And, before eight o'clock along came the guys from Flight Test, all their instrumentation, wanted to be there early, and the Coasties and the Sikorsky guys were standing there tapping their foot waiting for them.

So, everybody kinda ratcheted up, got a little bit earlier every day. Within a week, it was agreed that first thing in the morning was six o'clock because that was earliest that you could have any operation on the test center without permission of the test center commander.

So, we got the Flight Test work done, most of the time we were done by nine o'clock. Six to nine. And we were handing that helicopter over to the Service Test someplace around nine-thirty. Well, they were out there on line stomping, they wanted to get going on that thing. So we had that whole thing was done, the flight part, of all our work, was done by ... by roughly twelve o'clock. Turn that thing over to ... the Sikorsky maintenance people, and everybody dashed in and started writing their flight reports, for which they fed to me. And, so I was the editor of this thing run, for the, what would eventually be the test center report. And, so, this went on pretty good there, and it worked out pretty well. Everybody was ... seeing if they could beat the other guys at getting thing done, and strangely enough, it was a rare spirit of cooperation that went on. And that was good.

And, in the meantime, there was Role again. And he ... he was still doing these things that chiefs do, and when things got ... he was ... we had a, one of the bays, at Service Test was turned over, well, actually, half of the bay of one of these large, double-bay, standard Navy hangars. And also, since that kind of that adversarial thing with the contractors, the Navy was very reluctant to let any of their own equipment go to the contractors. Well, whatever they, whatever Sikorsky needed to

get that thing going, somehow or other it magically appeared.

And ... Role was there, and this yellow thing rolled up doing what it was going to do. And so he was there, he was there in the morning, handing me coffee. He was there afternoons, probing into the middle of that helicopter, swinging a wrench when he couldn't stand it any longer to watching them. And then after hours, we went out and we flew the mission profiles that we expected to do. That was after the rest of the test center had shut down. So sometimes we'd get back after dark. So he was there in the morning, he was there until after dark. And the test center people gradually picked up on this, and you know, if the Coasties could do it, then certainly they were gonna do it. We were there when they showed up in the morning, and we were there when they left at night.

And it was a good program, it went well. We did have a few little problems, which got straightened out. We had ... things that Sikorsky didn't know about. One of them was kinda funny. Well, it wasn't funny at the time, but we thought so later on. And that was, Opie took me aside and he said, "You know, you better check this thing out at the red line with the primary servos off." Which were the controls that positioned the rotor blades. Okay, so, I took it out with Opie, or Opie was with me, and I ran that thing right up to the red line, and reached over and pickled off the primary servo, and the nose fished up violently and rolled to the left, a classic retreating blade stall. And so the whole thing, well, the test center went ape, and down the helicopter, we didn't know what this thing was, and so on and so on.

Well, it took ... we took about two weeks out of that sixty days, which we got an extension for, and ... it turned out that it was the auxiliary servo was not strong enough to hold the blade in position, particularly the retreating blade, and the blades, the angle of attack would vary because of the, not being held steady, and it would go into the stall angle, on the retreating blade, so, Sikorsky said, "We'll fix it." And they did.

And this was the the ... the never throw anything story. The new auxiliary servo was actually the servo that closed the doors on the H-37. Which was that big, twin-engine transport helicopter that the Navy called HRS, and I think the Army

called H-37. So, it was that same, all the pieces came out of the store room, and put the H-52 back in business.

That little side there, on the ... Sikorsky initially was very upset about the amount of overtime they were paying on this thing. Least for a couple of weeks. And, the way it was set up in the test center, this was of course before word processors, and, so we would write us ... we would write out our, our flight crew reports, and, and the smooth copies for the test results document. We'd make our roughs on green paper, and the green paper would go over to the division had a secretarial pool, and that would be turned into smooth copy. And, of course, we were a bunch of very bad typists doing these brief reports, these briefs on green paper. Anyway, the green paper would come back with a smooth copy. And I would throw it into my wastebasket. And I noticed after awhile, I didn't see the green papers, even before the wastebasket got emptied, and of course the ... the Coast Guard, the Sikorsky rep there, least there I guess he was, I don't know what his real title was, but it was Bob Torreck, who eventually become, became a Vice President of Sikorsky, was filching out my, my roughs and sending this up to Stratford, and they gradually realized that some very good things were happening down there, and so there were never any more whimpers about overtime. And we, we sped right along.

And I guess that was pretty much what I had to say about the H-52. As far as the flight part goes, that's, that's, that's another story. So, that was, I guess that was, I guess maybe my biggest contribution of the Coast Guard. There were a couple of other things I did or thought of, but I like that one. I was happy to be able to attend the induction of the H-52 into the Smithsonian ... last April, and I think I'll be reunited with an old friend tomorrow when we go off to Pensacola. The 1355 is there. And 1355 was the, is the oldest surviving H-52, and it was one of the first four, and I, I bought them, as it were, for the Coast Guard, all on one day, signing the delivery invoices. And 1352, 53, and 55 went up to a Coast Guard Air Station at Salem, Mass. And I flew the 55 up there. Now, the 54, in case you're wondering what happened to it, that was, that was bailed back to Sikorsky, and that was the test vehicle for the final electronics configuration, which took several months before it was actually finalized.

