THE COASTAL FLYER

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NEXT CHAPTER MEETING: Those who govern us have promised to allow us to schedule and hold a meeting. But we'll wait to be sure it's not a trick so they can catch us in the act.

WE'LL BEGIN this month with some modeling achievements of SAM 26 members - just a couple of snippets from the lives of the average modeler. One reason for doing this is because for the first time in recent history, we have a couple of reader newsletter contributions after a nudge from the editor.

Karl Widner, who lives in Carpenteria, CA. built one of the five models that went into the Jimmy Allen exhibit in the AMA Museum. This was a few years ago, but he saved the letter he received from Museum Curator Hurst Bowers. The original is on AMA letterhead.

Dear Karl,

The Jimmy Allen Exhibit which we have been working on for so long is at last a reality and your model of the "Blue Flash" has made it complete. The exhibit is on a 60 square foot vertical backdrop and includes the five Jimmy Allen designs, each depicted by a model such as your "Blue Flash". It is most impressive and will be appreciated by visiting modelers for years to come.

Jimmy Allen was a young airplane pilot featured in weekly radio shows of the 1930's, and contests sponsored by the Skelly Oil Company. They featured a different flying model design each year from 1932 to 1937, which typified the enthusiasm for aeromodeling which existed in the "Post Lindbergh" era which we now refer to as the "Golden Age of Aviation". We hope that this epic will soon be the subject of an article in MODEL AVIATION, so be on the lookout for it.

On behalf of the membership and staff of the AMA, I wish to thank you for your efforts in making this exhibit possible. We hope that you will be able to visit the museum soon and enjoy the part that you and others have done to perpetuate aeromodeling.

(Original signed) Yours Truly, Hurst G Bowers, Museum Curator.

Here's is an example of the Blue Flash Racer. These Jimmy Allen designs were the first models built by many young modelers in the 1930's. You may recall that's the same name as Billy Jo Culpepper's ship in last month's story.

Karl Widner's rendition and decoration was quite similar, but the only photo he had was too low in resolution for good reproduction.

WANNA FLY MODELS FOR A LIVING? Dick Fischer did – for a while, anyway. All you have to do is be in the right place at the right time. Your editor attended a recent swap meet at the local "back and forth" flying field. There I met a former member of our once thriving Santa Maria Soaring Society. He happened to mention that he'd once belonged to the model flying club at Edwards AFB. So I happened to mention that Dick Fischer happened to have flown there at about that time, and did he know Dick? He was able to recall Dick as the fellow who flew models for NASA at Edwards Air Force Base..

Since flying for a job had impressed Bill so much (I'll call him Bill because that's his first name), I thought it might be worth mentioning since it's an item that usually wouldn't appear in a mini-biographical sketch. Dick had mentioned this to me before during our discussions about our pre-retirement jobs, so I asked him to write it up. Here's Dicks story:

"I got involved with the construction of a large unmanned lifting body model sometime in late 1967. The aerodynamic shape had come out of wind tunnel studies at NASA Langley Research Center, in Virginia. My original assignment was the structure and systems design, and then overseeing the in-house fabrication work. The test article was designed from the start to be unmanned, with a ground based cockpit and all the critical information telemetered down to the ground cockpit where a regular test pilot would fly it while looking at his instrument panel. That was a pretty far out idea at the time.

Somewhere in the process it became clear that there was no feasible way for our ground based test pilot to do a landing. We had radar tracking for most of the flight, but that wasn't accurate enough to actually flare and touch down. And forward looking television just wasn't advanced enough for the test pilot to judge his landing. So the decision was made to transfer control for landing to a regular R/C pilot. The target drones out of Port Mugu CA were flown in much the same way, with a ground based pilot doing takeoff and landing and then transferring control over to a chase plane once airborne. In our case, the test vehicle was carried aloft with a helicopter and then air launched. So the landing was the only difficult part.

Being the only R/C flyer of any experience and already working on the project, I got elected to do the landing. The flights were planned to begin toward the end of 1969, so that spring we bought a Lanier ready-to-fly and all the associated equipment for me to practice. At first I'd fly on Muroc dry lakebed about once a week, but as the first flight neared I started practicing a lot more. I typically went out on the lakebed about three afternoons a week and wouldn't stop flying until my gallon of fuel was used up. At some point I realized that my flying skills were about as good as they were ever going to be, but I needed to get to where I was absolutely numb as far as nerves were concerned. So the gusty winds of the afternoons were part of the stimulus. I got to where I was so bored that I was doing tight circles around myself with the low wingtip about 3 feet off the ground. When my hands didn't shake from the low circles, I started doing the same thing inverted.

In the end, we only got to do one flight. By then the construction phase had slipped to the point that the helicopter we had borrowed from the Apollo program needed to be returned to Houston. So all that preparation culminated in seven seconds of flight time for me.
The photo below gives an idea of the size of the thing. Thirty-two feet long and 1000 pound weight. The extra wing on the ground was an alternate concept which we would have tested in place of the rigid wing if the project had gone on long enough. By the way, that's Dan Garrabrandt standing next to the machine. - - Dick."

Dryden Flight Research Center E-20464 Photographed 28JUL1969
Hyper III with single-piece, pivot wing installed. Princeton sailwing on ground.
Daniel C. Garrabrant, one of the fabricators of the Hyper III, stands alongside. (NASA photo)

Editor's Note: Dan Garrabrandt is also a modeler who probably flew with us at Taft a time or two. I asked Dick a couple more questions, which he answered below.

This (right photo) is the only other picture that I found that's of any quality at all. Yes, the wing is really that small. The fuselage was designed to be a lifting body. If the concept had ever gone to fruition, the body alone would have been a re-entry vehicle, with the wing deployed out of the top of the body after reentry. The reason for the concept is that reentry bodies have their best hypersonic glide ratio if they are long and slender, but once subsonic the long slender shape glides very poorly. So in order to land safely, some sort of a wing or parachute has to be added for the final approach and landing. The design in the pictures represented the landing configuration only.

The reason the wing was so small is that it would have needed to fit inside the fuselage for reentry. Dick.

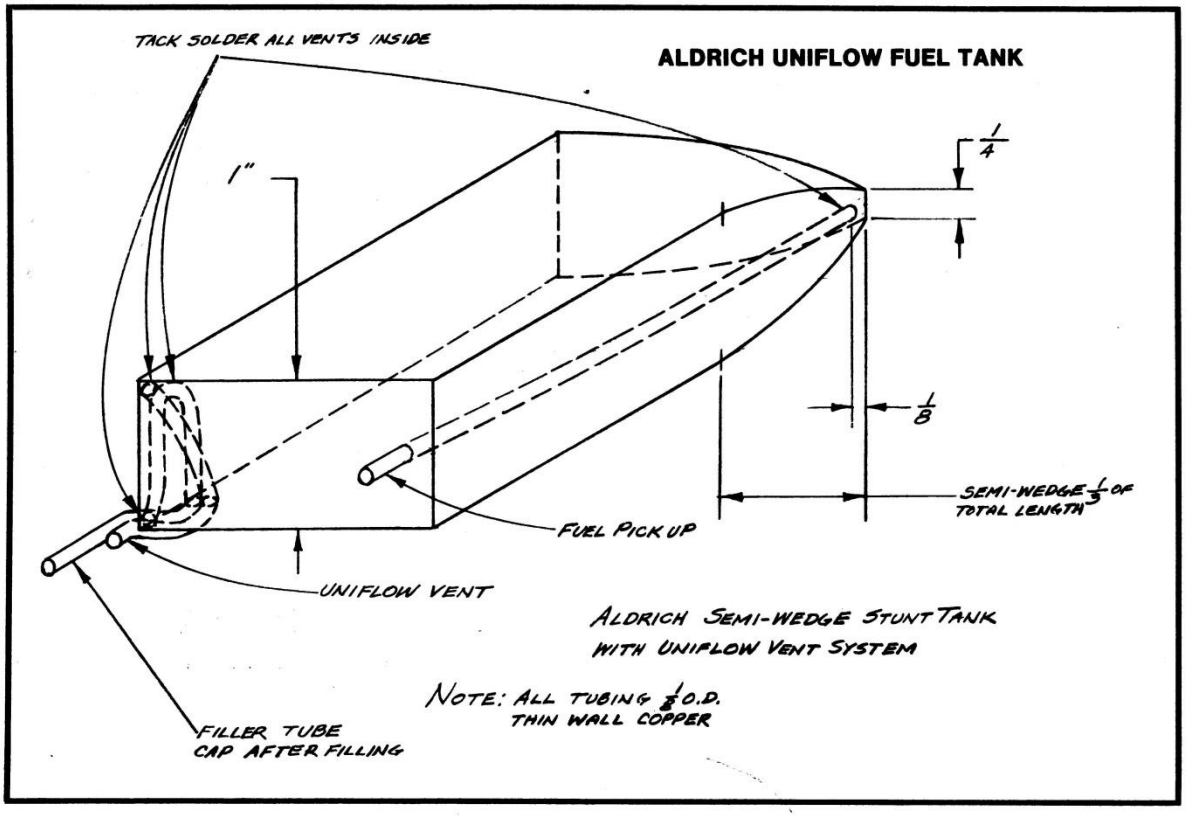
UPSIDE DOWN UNIFLOW? I never met George Aldrich in person, but we exchanged some interesting correspondence from time to time. George wrote a column for Model Airplane News called "For Engine Lovers", starting in 1979. I recently came across an old clipping from the June 1980 edition in which he described details of needle valves and various fuel tank shapes along with pressure and venting systems.

George said he'd naturally favored the tank he'd shown and described on his original Nobler control line plan, but after seeing his first Uniflow tank in use by Bob Palmer, he started using Uniflow tanks himself. The sketch below was part of the article. I had a heck of a time figuring how it worked at first, but I finally decided there was a gross error in the drawing.

The sketch is upside down! All the tubing, vents etc. are labelled correctly and printed upright, but the whole tank would need to be rotated 180° around its long axis to be correct. The big question I had is "how did that happen"? George no doubt spent lots of laps flying inverted, and the sketch would be properly oriented for inverted flight, but that's an unlikely explanation.

I'm sure George knew how the tank worked, so I suspect there was some sort of mix-up, possibly when he submitted a rough sketch and a different draftsman did the final drawing. Some folks had (and still have) trouble understanding how the tank works, and that presentation certainly could not have helped. I don't have access to the next few issues of the magazine, but I suspect there would have been a correction in about the August or September 1980 edition of the column. If anybody can find that, I'd sure appreciate a copy, or at least a brief note about it.

Incidentally, the tank would work just fine if built from this drawing. You'd just need to flip it right side up when installing.



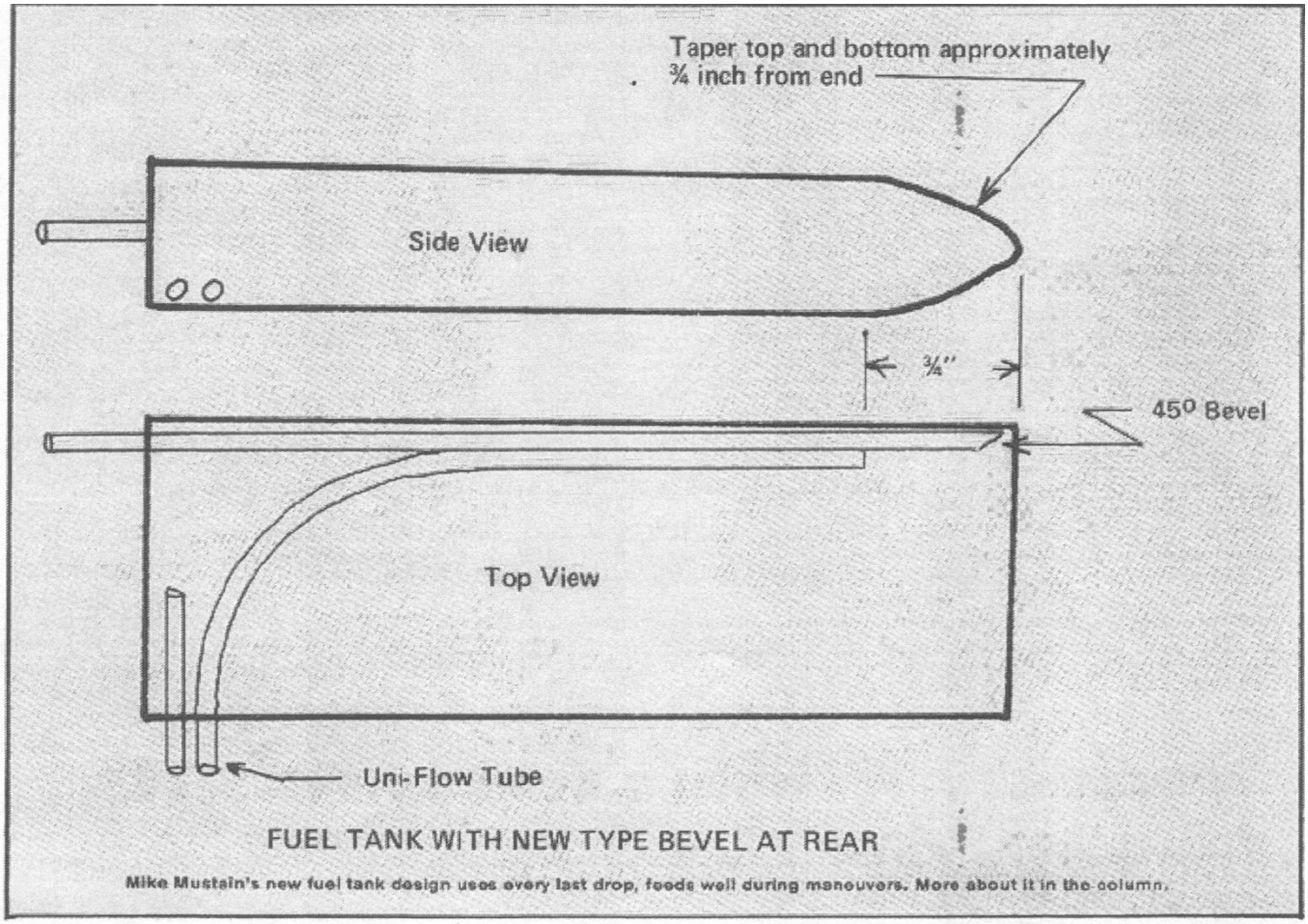
FROM MODEL AVIATION, FEBRUARY 1981. They got it almost right in in the drawing in Wynn Paul's Control Line Aerobatics Column.

This narrows it down closer to what George Aldrich was shooting for. The sketch depicts the tank delivery line and the inside of the Uniflow line OK, but the pair of tubes exiting from the left side are not quite right. They'd be leaking much of the time as shown.

Those two tubes should have 90° bends up past the tank top to stop spillage and overflow. And the short tubes' inside end needs to end up near the top of the tank since it acts as the overflow and "full" indicator. And its outside end should be labelled "seal after filling".

Alternately the pair of tubes could enter the tank from the top in their same general front left position. The outer end of the Uniflow tube should face into the wind with a bevel or a right angle bend.

The overflow tube would need to be just a short stub stopping just inside the tank top. With little but solder supporting it, a washer or wire wrap should also be soldered in for extra strength where it enters the tank.



FUEL TANK WITH NEW TYPE BEVEL AT REAR

Mike Mustain's new fuel tank design uses every last drop, feeds well during maneuvers. More about it in the column.

DIESEL FUEL IN PERIL? Dale Tower reports that he recently tried to buy some Diesel fuel from Aerodyne (Allen Heinrich) and was unsuccessful in his quest. It seems our government is so vitally interested in our health and safety that they have classified ether as an explosive and taken it off most of the open market. Allen himself has run out of ether and has so far not been able to find a supplier. What will be next?

I can't imagine them cutting out ether in the John Deere starting fluids, so that could be an emergency source. We've described a couple of ways to extract ether from those cans before, and may run an update again if there's not some reasonable solution.

Still, the government is right - ether is explosive, but then so is gasoline. Gasoline is openly dispensed by gallons at a time – and without even recording who bought it! Gasoline is often used in Molotov cocktails, as we saw in Seattle and Portland. Oops, we better keep quiet about gasoline as our governors are already working on fixing that problem for us.

LIFTING TAILS (or more properly stabilizers) was given a lot of print last month from several contributors to the discussion. Relative incidence was highly involved, so we'll add one more item here to make sure everyone is fresh on how to properly measure incidence. Along with wings, this would also apply to lifting stabilizers where the airfoil isn't symmetrical.
Bill Schmidt wrote this:

Hey Bob, your point about measuring the angle of the incidence of a wing is correctly taken at the center radius of the L.E. thru to the center radius of the T.E. is correct and has been rarely explained overall. Through the years I have shaken my head at the many poorly portrayed instructions by experts and on model plans. The center of the L.E. radius where the oncoming air HAS to decide whether to go over the top or under the bottom of the wing is called the "STAGNATION POINT".

On a full scale airplane, just as on a model, this separation point moves down and under the L.E. as the angle of attack increases until the section stalls out. This phenomena is what makes the stall warning vane carefully placed on the leading edge work a micro switch and sound a horn in the cockpit that you are approaching a stall and tends to go off on a correct full stall landing scaring the socks off of your passenger that you took for his 1st airplane ride! Phooey! I removed it from my airplane. The unit was patented by the Safe Flight Instrument Co. of White Plains NY and they must have sold quite a few through the yrs. Best, Bill

AT THE GRAVESITE: Just as the service finished there was a series of brilliant lightning strikes nearby, followed by a tremendous burst of rumbling thunder shaking the very ground. The little old man walked over to the minister and calmly said "Well she's there and it's his problem now".

MODEL KNIFE BLADE SHARPENING. By Joe Wagner. Letter from Dennis Karoleski in New Hampshire: "My diamond sharpening stone came with a small bottle of oil to prevent loading the surface. We sell diamond hones and stones in the retail store I work in, and always have a sample on the counter for customers to try out on their knives. It is always used with water as a lubricant." Answer: ...Dennis, lubricating sharpening stones is generally good practice. It keeps the stone surface from getting clogged with metal particles, which can happen readily

when sharpening stainless steel pocket knife blades. Those are common today. But I was speaking exclusively about sharpening X-Acto knife blades. Those are high-carbon steel, and have never shown any tendency to "load" my diamond stone when used dry. The ground-off metal just lies like a coat of dust on the surface, and can be blown away with an air hose or washed off with water. I use my diamond stone dry for sharpening X-Acto blades because it's much more convenient that way. Before the diamond stone I used a regular oilstone for the purpose. It worked great, but was messy and slow. I had to clean off the dark oily swarf from both the stone and the blade. Not with the diamond stone!

Others have requested information on X-Acto blade-sharpening technique, so here it is: The easiest way I can think of to describe how to sharpen a knife blade of any kind on any sort of whetstone -- oil, water, or my new favorite, the dry "diamond stone" -- is to apply the knife to the stone as if you were trying to peel off a very thin shaving from its top surface. You don't need any more pressure than it takes to hold the blade in contact. Excessive pressure is counterproductive! Take a stroke or two on one side of the cutting edge; then reverse the action and do another couple of "slicing passes" with the other side of the blade. If you move the edge straight across the stone, as if you wanted to peel off a continuous layer as wide as the blade edge is long, doing that will abrade the blade edge fast; but will produce a microscopic "saw tooth edge". This isn't always bad -- I like that effect for cross-grain carving. For a smoother cutting edge (one that will slice cleanly through model covering materials) move the blade edge at an angle across the stone rather than straight across. Use light pressure too. But any kind of abrasive sharpening of a cutting edge will leave a burr. Imagine putting a cutting edge on an aluminum yardstick, with 40-grit abrasive paper. The ragged edges of the abrasive particles not only plow metal particles away (which is what you want) -- they also deform the thin edges they leave behind. Scale this picture down to #11 X-Acto knife blade size, and you can see the benefits of eliminating burrs from the edge. "Burnishing surfaces", such as an old-fashioned razor strop, can be used to polish off microscopic burrs and bring the actual cutting edge as close to one molecule thickness as possible. Peck Polymers sells a neat small sharpening tool called, appropriately, a Sharpy. It has a fine abrasive surface on one side; the other is impregnated with jeweler's rouge for burnishing cutting edges . Quick Tech hobby is the new company website at http://www.quicktechhobby.com. The Sharpy works well; but somehow I can seldom find mine on my always-cluttered workbench top when I need it. (It always turns up later, though, when I DON'T need it.) Instead I burnish my freshly-diamond-sharpened X-Acto blade edges on whatever's handy. The flat cast-iron top of my table saw works fine for that; so does the grey cardboard backing of a scratch pad. It really doesn't take much force or pressure to remove (or flatten) microscopic burrs on modeling knife edges. After all, they're only a few microns thick. How can you tell when you've sharpened your knife enough? Easy: when it cuts whatever you want it to cut, the way you want to cut it. I've come across various suggested tests for knife-edge keenness, such as whether you can SEE the actual edge. (If so, it's still dull.) Another test is to try gently skidding the blade edge sideways when it's set vertically on your thumbnail. (If it skids, it's still dull.) But to my way of thinking, the ONLY valid test is that of USE. If your blade will slice cleanly through Esaki tissue without tearing, or do whatever other modeling task you want to accomplish, it's SHARP. (If it won't, it's not.) Joe Wagner

Radio incompatibility: I hate to throw anything away, so I still have a collection of old, mostly useless radios. But being a trader/collector anyway, one of the old radios sometimes works out nicely with an old ship which I've been given, won, or picked up in a sellout by someone. There's nothing wrong with 72MHz radios and they're still legal, other than many clubs ban them due to the inconvenience of frequency control.

I believe the computer "racket" has greatly advanced the art of milking consumers through planned obsolescence of things that should last a life time. Constantly replacing models of, chargers, phones etc., has trained many other industries. Is there any sensible reason that Brother laser printers should list more than a thousand different printer models, each requiring different toner cartridges, with the required 4 different cartridge colors and each of those offered in at least two capacities? The retailer, not the manufacturer gets stuck with the unsold goods.

When 2.4 radios moved in, I picked Futaba's FASST system. After a few startup problems, Futaba seemed to be one of the most reliable. But after just a short time, Futaba got antsy and brought out a new 2.4 system labelled FHSS, which is incompatible with the "old" FASST system. So if one wanted to grab the very latest transmitter, they'd have to replace each of the entire collection of receivers in every airplane. Fortunately my existing 7C tranny works fine, and receivers are still available, and now priced a little lower than when introduced.

But recently, along came another new Futaba radio system labelled "FASSTest". So if I need another receiver, would this new one be willing to play with my FASST tranny? Curious, I called a Tower Hobbies technical advisor, who didn't know, but who referred me to the rather busy chart on the next page. From what I can make out, my 7C(2.4) transmitter might work with 3 of the 5 available FASSTest receivers. It depends on how you interpret the "1" referenced in the top left corner of the chart.

The hobby is not served well by the constant switching of major systems, without at least keeping buyers apprised of what's compatible with what. And unfortunately most retailers, both on line and brick and mortar, are too busy just selling stuff to be of much help. The attached chart could be of some help, assuming you can interpret it and have model numbers on hand. I assume such charts are probably available for other radio brands.

Incidentally, at the bottom of the charts transmitter listings, there are a few modules listed, alerting me that the chart is still missing some items which operate in the modern era of 2.4 GHz.

Some of us have these old, but quite versatile FP-T7UAP transmitters, which with (in my case) have a TM-7 module snapped into the back, converting it to 2.4. Its main advantage is that it still uses analog slide trims which some prefer over the digitals. Its only minus is it's a little heavier that what we've become used to with the modern lighter transmitters. The extendable antenna isn't used with 2.4 and can be removed.

X - Compatible
1 - FASST mode
2 - S-FHSS receiver is compatible with FHSS and S-FHSS
3 - R334SBS/-E receiver is compatible with T-FHSS and T-FHSS SR

Receivers – Air

Transmitters		FHSS	S-FHSS					T-FHSS						T-FHSS Mono	FASST/*FASST 7 Ch.											FASSTest				
		R2004GF	R2006GS	R2008SB	R2106GF	R2001SB	R2000SBM	R3001SB	R3004SB	R3006SB	R3106GF	R3008SB	R3206SBM	R3106GF	R6004FF	R6008HS	R6014HS	R6106HF	R616FFM	*R617FS	R6202SBW	R6203SB	R6208SB	R6303SB	R6303SBE	R7003SB	R7006SB	R7008SB	R7014SB	R7108SB
Air	4YF	X																												
	6EX														X			X	X	X	X	X		X	X		1		1	1
	6J	X	X	X	X	X	X																							
	6K		X	X	X	X	X	X	X	X	X	X	X	X																
	6L							X	X	X	X	X	X	X																
	7C (2.4)														X			X	X	X	X	X		X	X		1		1	1
	8FG/S														X	X	X	X	X	X	X	X	X	X	X		1		1	1
	8J	X	X	X	X	X	X																							
	10J		X	X	X	X	X	X	X	X	X	X	X	X																
	12K		X	X	X	X	X	X	X	X	X	X	X	X																
	14SG		X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	16SZ		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	18MZ		X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	18MZ WC		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	18SZ/(70th)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	32MZ		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	TM8 Module														X	X	X	X	X	X	X	X	X	X	X					
	TM10 Module														X	X	X	X	X	X	X	X	X	X	X					
	TM14 Module														X	X	X	X	X	X	X	X	X	X	X					
	TMFH Module		X	X	X	X	X																							
Surface	3PRKA																													
	3GR																													
	3PL																													
	3PM/X																													
	3PV																													
	4GRS																													
	4PK/S/R																													
	4PL																													
	4PLS																													
	4PM																													
	4PV																													
	4PX/(R*)																													
	7PX/(LE*)																													
	C1 Module																													

Receivers – Surface

Transmitters		FHSS		S-FHSS			T-FHSS			T-FHSS SR		FASST C2		FASST C1	
		R603GF	R2004GF	R203GF	R204GF-E	R2104GF	R304SB	R304SB-E	R324SBS	R334SBS	R334SBS-E	R614FS	R614FF-E	R603FS	R603FF
Air	4YF														
	6EX														
	6J														
	6K														
	6L														
	7C (2.4)														
	8FG/S														
	8J														
	10J														
	12K														
	14SG														
	16SZ														
	18MZ														
	18MZ WC														
	18SZ/(70th)														
	32MZ														
	TM8 Module														
	TM10 Module														
	TM14 Module														
	TMFH Module														
Surface	3PRKA	X	X	2	2	2									
	3GR													X	X
	3PL	X	X	2	2	2									
	3PM/X													X	X
	3PV	X	X	X	X	X	X	X	X	3	3				
	4GRS	X	X	X	X	X	X	X	X	3	3				
	4PK/S/R											X	X	X	X
	4PL	X	X	X	X	X									
	4PLS	X	X	X	X	X	X	X	X	3	3				
	4PM			X	X	X	X	X	X	X	X				
	4PV			X	X	X	X	X	X	3	3				
	4PX/(R*)			X	X	X	X	X	X	3	3	X	X		
	7PX/(LE*)			X	X	X	X	X	X	X	X	X	X		
	C1 Module													X	X

Vale Irving St. George: Irving lived it the small city of Selah, which is east of the Cascade Mountains in central Washington, so I'm not sure if any of us ever met him in person. I forget how we connected, but I've had a few phone and mail contacts with him. He was an older gentleman (like many of us), and was no longer flying. But, also like many of us, the interest was still there, so he joined SAM 26 a few years back just to keep in touch with the hobby. I received a very nice letter from his wife, complementing us on coming up with some regular reading material which he enjoyed during his last days.

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