

An Ivy League WARBIRD ...



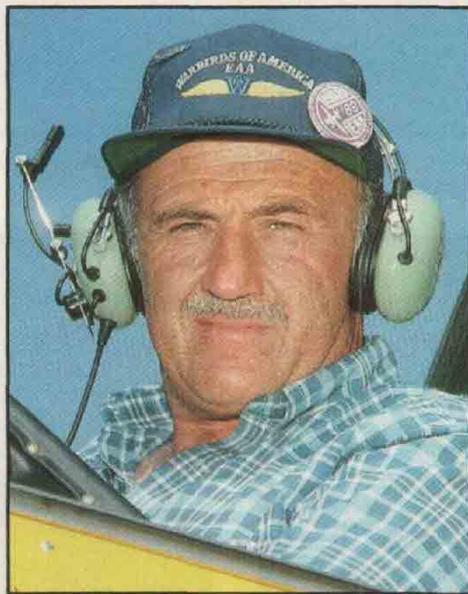
Bill Melamed's Grand Champion Harvard MKIV

by **MARK PHELPS**

Bill Melamed came to Oshkosh in 1988 with a championship-caliber T-6 (Best T-6, EAA Oshkosh '88). That was nice, he was told, but, "the Harvard was the best of the T-6s and the Mk IV was the best of the Harvards." The 54-year-old Californian returned to Chino in search of his Harvard. Incredibly, one year later, he returned to Oshkosh with a fully restored 1952 Harvard Mk IV that was not only the best of the Fly-In, but arguably the best Harvard ever.

With last year's celebration of the 50th anniversary of North American's advanced trainer, a lot has been written recently about AT-6s in general. For those who are not Ivy League students, the Harvard was the British version of North American's AT-6 series. At the beginning of the war, Harvards were built in the U. S. and flown to the Canadian border where they were hand-pushed across to Canada to avoid neutrality violations. British RAF pilots were training in Canada to avoid the disruptions of the Luftwaffe. Later, Harvards were license-built by Noorduyn Aviation Ltd. in Canada. The progression of T-6 models was mirrored in its British coun-

terparts. The Harvard II was basically the same as the first AT-6, the Harvard IIA the AT-6C (Harvard IIBs were Cana-



Bill Melamed, Harvardian.

dian-built), and the Harvard III was the same as the AT-6D. It gets complicated. Some Canadian-built Harvards were even shipped back to the United States

as export model AT-16s.

Changes along the way for both T-6s and Harvards (not to mention U. S. Navy SNJs) included different dash numbers on the Pratt & Whitney R-1340 engines, removable fuel tanks, bomb racks, a 24-volt electrical system, strengthening of outer wings and redesigned cockpits and canopies. Somewhere along the line, the T-6 rear fuselage and tail section was even converted to plywood, saving 220 pounds and some strategic aluminum. That idea was never put into production.

In all, more than 20,000 of the North American trainers were built between 1938 and 1954 and served with no fewer than 33 air forces throughout the world.

It was after World War II that a new generation of trainers began to take over from the T-6s then in service. One of the successors was North American's own T-28, a fitting follow-on to its older brother. Still, many countries found that the T-6 remained a viable choice as a trainer for years to come. With the advent of the Korean conflict, the United States pulled several T-6s out of mothballs to refurbish them with the new designation, T6-G - the final



This is how the throttle quadrant looked at the beginning of the restoration.



Tim Savage Photos

This is how it looked when ready for re-assembly.

update on the airplane. In Canada, Harvard Mk IVs were the counterpart to the T-6G, although the Mk IVs were scratch-built while the G Models were all rebuilds. Harvard IVs were built by Canadian Car and Foundry Ltd. The former railcar company had taken over license from Noorduynd after the war, having built Hawker Hurricanes during the 1940s.

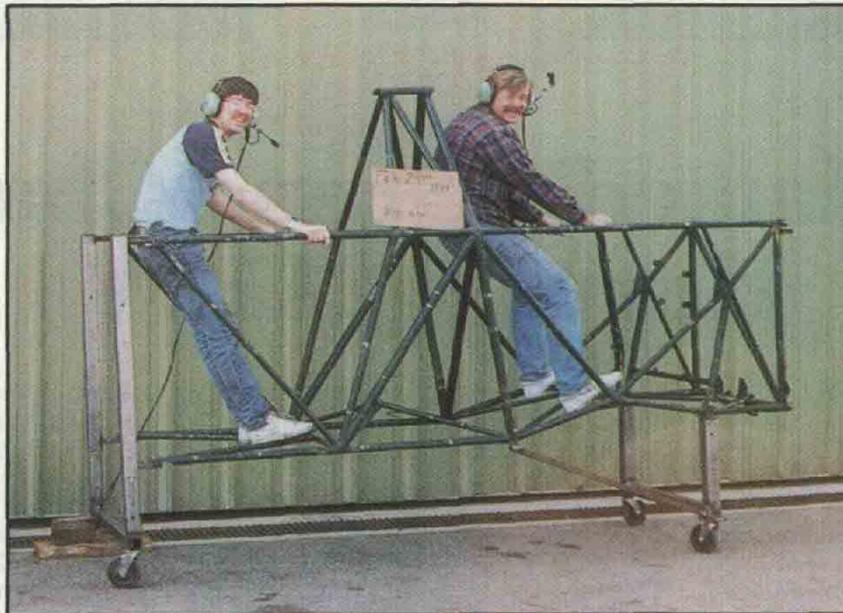
If all that's too much to follow, the upshot is simply that the Harvard Mk IV was the most advanced of the T-6s - with all the updates and improvements that went along with 14 years of evolution. Also, the Harvards scratch-built in the 1950s were not constructed under the stress of the World War II

years when "fast" construction meant almost as much as "quality" construc-

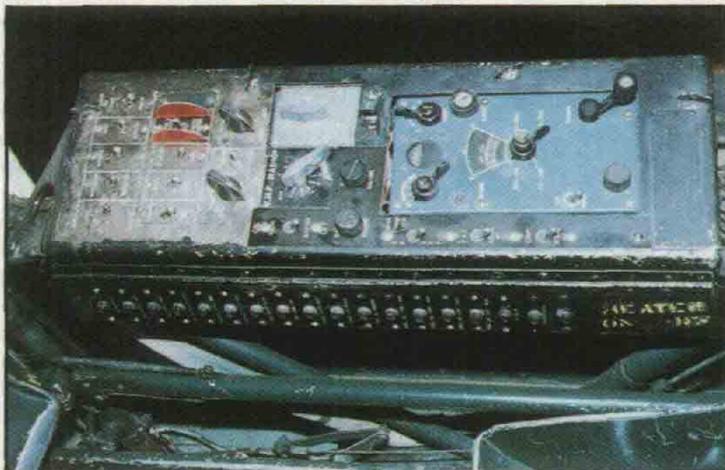
tion. Warbird enthusiasts who are looking for raw material to convert to "Super

T-6s" with larger engines often seek out Harvard Mk IVs on the theory that they are sturdier than earlier models.

Other advances incorporated in the Harvard Mk IVs were beefed up tail structures, 24-volt electronics, late-model radios including VHF and ADF, steerable tailwheels as standard equipment and improved hydraulics. Harvards did not have gear doors, however, in deference to the prevailing icy and snowy conditions north of the border. For that reason, though, they did have cockpit heaters, attached to the external exhaust stack that extends aft of the right



Tim Savage and Bill Muszala with the Harvard fuselage at ground zero — February 29, 1989.



The pilot's electronic console, before . . .



And after.



The Harvard's original, radium-rich instruments made a Geiger counter go wild.



The new "no nuke" instruments, courtesy of Bill Johnson.

Pete Schroeder

wing leading edge and ducted into the cockpit. All the improvements made the Mk IVs heavier airplanes as well.

Any pilot with T-6 time will tell you that the airplane makes a lasting impression. In 1956, Neils Sorenson, an ex-Naval aviator from Minnesota was teaching 21-year-old Bill Melamed to fly in an Aeronca Champ. He managed also to convince Bill that a T-6 was what an airplane really looked like. It wasn't tough to do. Bill said that even when he was a schoolboy, all his sketches looked like T-6s. The atmosphere at Crystal Field in Robinsdale, Minnesota was ideal for nurturing a true love of aviation. It was equipped with Quonset huts and Army Surplus canvas lounge chairs - the better to sit and evaluate the landings of one's peers. Neils was interested in old airplanes even then and Bill remembers that he owned a Standard JN-1. Neils still has the Standard and is currently work-

ing on a replica of a British SE-5 fighter.

After he learned to fly, Bill bought his first airplane, a Champ, for \$700. He has owned at least one airplane at a

light twins. He is a commercially certificated pilot with helicopter, seaplane, glider and instrument ratings and still flies a Cessna Conquest turboprop twin when he's not flying one of his award winning T-6s.

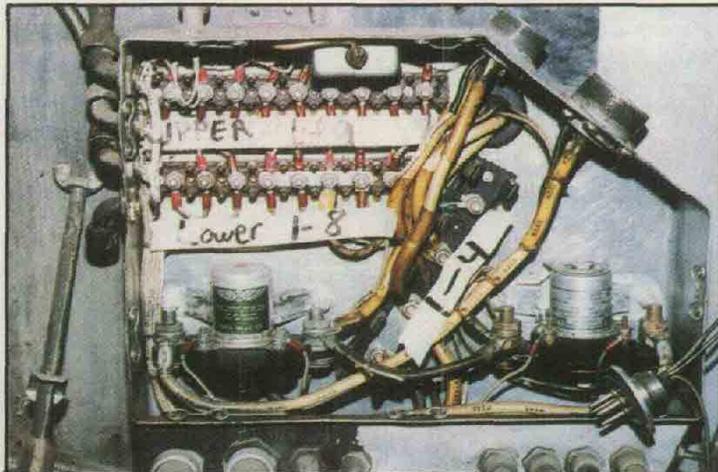
Bill never lost the pure love of flying, even after years of following VOR needles in the ATC haystack. At EAA Oshkosh '81 he met Stuart Schwartz of Pontiac, Michigan. Stuart was part owner of the Reserve Grand Champion Warbird, a P-40 painted in pre-war USAAF colors. "He's the one who got me started," he says. Bill began to rekindle his interest in older airplanes. The ultimate result was that he sold his business of 26 years in 1988 and "retired" to enjoy his airplanes at Santa Monica.

When Bill won the Best T-6 award at EAA Oshkosh '88, Bob Banman, a Canadian living in Santa Paula, California approached him to pick his brains on where he might find a Canadian-built

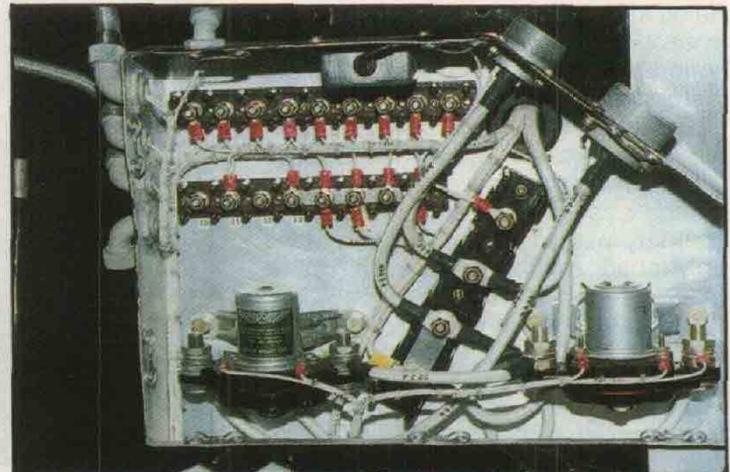
time since then also using airplanes in the course of his business dealings. Bill moved to California in 1963 and has accumulated more than 6,000 flying hours criss-crossing the country in a series of



Grab bag?



The firewall-mounted junction box, before . . .



And after. Almost all the original parts remained.

Tim Savage Photos



Yes, the orange day-glo is original RCAF.

Harvard. Bill referred him to Pacific Fighters in Chino, the shop that had done the work on his airplane. Bob returned to California, contacted John and Bill Muszala at Pacific Fighters. Coincidentally, and lucky for Bob, a full page ad appeared that month in Trade-A-Plane that set some fast moving wheels in motion.

Phil Banks is a real estate developer living in Eldon, Missouri. In 1965, he went to the Royal Canadian Air Force and bought two Harvard Mk IVs. He spent a considerable amount of time and money to determine which were the best two of the airplanes available. He flew them to Chino and parked them in the Aerosport hangar where they remained for 24 years, until he placed them on the market and Bob Banman, through Pacific Fighters, got into the act. Phil was reportedly very concerned that the airplanes be retained in stock configuration. His greatest fear was that they would be cut down as race planes. Being a Canadian citizen, Bob was able to assure Phil that his intentions were honorable (honourable?) and he bought the airplane.

The ad mentioned only the one airplane, a real cream puff with less than 1,200 hours total time. It had been used primarily as inter-squadron transport (a hack) by instructors and was in remarkably good shape. Imagine Bill Melamed's surprise when the Muszalas called him back and said there was another Harvard available! Folks around Chino had known about the two mystery Harvards for years but no one had been able to talk Phil into selling them. He would come down on a regular basis to clean them and pull the props through. He started the engines

about three times a year for the 24 years they sat. No one knows what made him decide that now was the time to sell, but Bill wasted no time. Recalling the advice concerning Harvard IVs being "the best of the best," he bought Phil's second machine lickity split.

While not quite the diamond in the rough that the first airplane was, Bill's new treasure was nevertheless quite a find. With just over 6,500 hours service time, the airplane was almost 100% complete (the instrument hood, rear stick and flare cartridges were missing) and was totally original. Serial Number 20247 was rolled out of the CC&F factory on March 25, 1952 and placed in service at RCAF Penhold in Alberta. It

spent virtually all its service life there and was struck from service in 1964. On February 10, 1966, Phil Banks, dba Bell Aircraft Sales, Inc. bought the airplane for a reported \$1,500 from the Crown Assets Disposal Corporation.

Bill had tasted a measure of victory with his first T-6 and decided that this time he wanted to go all the way for EAA Oshkosh '89. He wanted this airplane to be good enough to win the Best Warbird trophy.

An experienced airplane rebuilder will tell you that the only way to do it properly is to take everything apart down as far as you can, clean and inspect all the little pieces, repaint, plate, polish or replace whatever needs it and then re-assemble with new seals, lines, conduit or whatever. With a T-6, that means literally thousands of parts and pieces that get the treatment. "We threw a lot of time and money at the project," said Bill. He estimates 4,000 manhours of work. No prices were discussed but multiplying hours times shop rates plus parts and materials . . . it adds up fast. Bill is quick to point out, however, that cost-effectiveness was a low priority. The final product was what was uppermost in his mind.

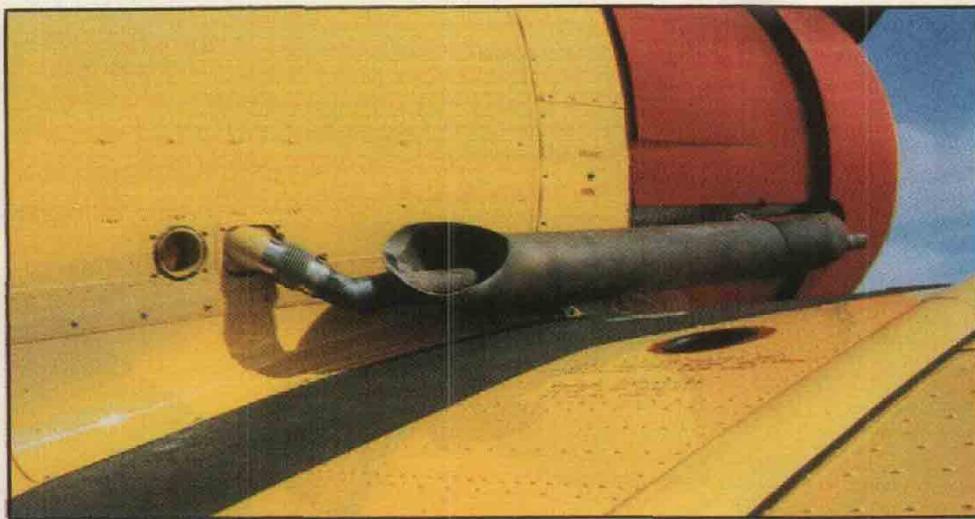
According to project manager, Bill Muszala, Melamed is a man, "who wants it done right the first time." With the ambitious schedule set for the Harvard, there was no time to do things twice. Work began around the first of 1989 and the target was EAA Oshkosh in July, seven months hence. Pacific Fighters had three to ten people working full-time on the project at all times. Besides that, Tim Savage, who had met Bill Melamed in Oshkosh when Savage was a Warbird Judge in 1988, quit col-

DeKevin Thornton



Pete Schroeder

The Harvard was displayed at Oshkosh with its fuselage panels removed, the better to eyeball its innards.



Tim Savage

The cockpit-heater arrangement on the Harvard's right side.

lege in Indiana and came to work full-time in Chino. He also contributed by documenting the project on film from disassembly to completion. It was vital to have pictures of the "before" in order to make the "after" as accurate as possible. Tim also contributed several of the photos that appear in this article.

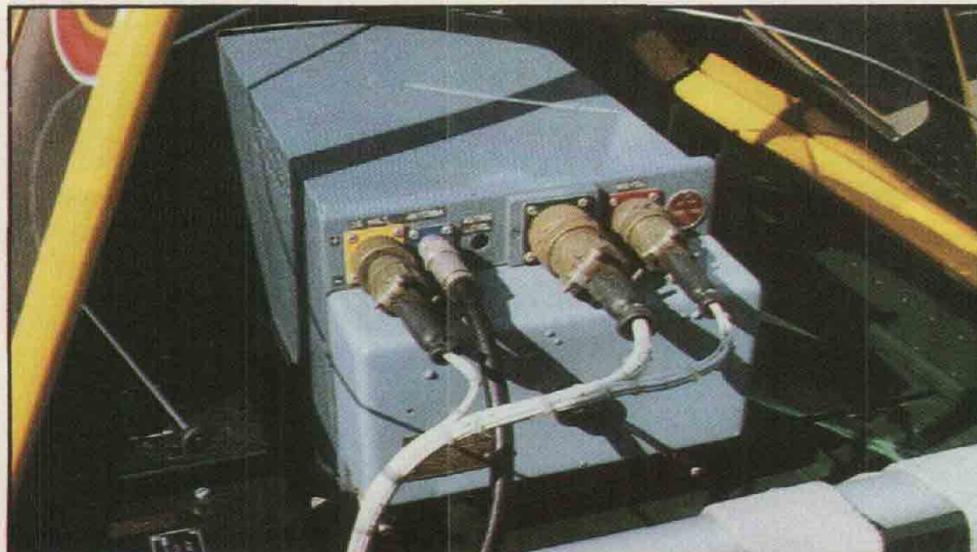
Most of the parts still flying on the airplane were there when it flew with the RCAF at Penhold. The only parts that needed to be replaced were some fairings. Even the fabric on the control surfaces punched satisfactorily and was retained. The leading edges of both wings had a few dents which were left intact in the spirit of authenticity. One of the wing tanks that came out of the airplane had been replaced and the "new" one was painted green while the other was silver. That's the way they went back in, after stripping and fresh coats of color.

The crew from Pacific Fighters included Chuck Cabe who revamped all the spaghetti wiring and re-installed the original military radio package. All the

radio gear worked when the airplane was rolled into the shop and the restoration involved replacing conduit tubing, vacuum tubes and cleaning and painting the racks and boxes. The VHF radio came with 12 crystals, all tuned to the military frequencies associated with the Penhold area. Bill insisted that a new crystal be cut to 118.5 MHz, the Oshkosh tower frequency. Even with the modern radios on board, Bill wanted to make his initial call into Oshkosh on the original military radio. The frequency remains among the 12 as a tribute to EAA and the Oshkosh Fly-in and Convention.

Tony Corbo of Cal Aero gets credit for the dirty job of stripping the Harvard and Bill Byles painted the exterior. Of particular interest is the tail decal of the training standard. The original airplanes had decals, not handpainted crests, so Bill had the pattern handpainted and converted to a decal which he then stuck on the airplane, again for the Nth degree of authenticity.

Inside the cockpits, three different



Tim Savage

The original military VHF radio — it works.

shades of green paint made up the color scheme. Each shade was carefully matched and each part and piece was coded so that it could be restored to its rightful color. Bill Muszala divides the credit for that work among Scott Underwood, Mike Spawn and Eddie Martinez. Bill Bailey and Grover Davis performed most of the metalwork and Paul Marak, Jim Martinelli and Earl King spun wrenches on the mechanical parts. Aero Engines of California did the rebuild on the Pratt & Whitney R-1340.

The restoration of the instruments was another story. The original faces were painted with a radium-based paint to glow in the dark. Radium is a no-no these days for environmental reasons so Bill Johnson Instrument Company refaced all the instruments, front and rear with a more EPA-palatable reflective paint.

Speaking of reflective paint, one question that Bill gets on a regular basis concerns the day-glo orange on the tail, nose and wings. Yes, it is authentic. You can be sure that if it weren't, Bill would not have allowed it back in the color scheme.

Bill's first trip to EAA Oshkosh was in 1988 and he was hooked. Having a chance to meet Tom Poberezny and experience the aviation extravaganza that is associated with EAA left a lasting impression. Winning Best T-6 is what convinced him that winning Best Warbird was the goal toward which he wanted to strive. Having achieved that goal with his Harvard, Bill says that the airplane is hereby retired from further competition. He said, "I'm not interested in having any other judges run their hands over everything and call it 'best of type' or anything. Oshkosh is the ultimate and the airplane will retire a winner."

As a result of his experience with EAA and the EAA Air Adventure Museum, Bill has contributed the funds for the nose art exhibit that will soon appear in the Eagle Hangar. As for the Harvard, Bill says that he plans to enjoy it "as an airplane." He keeps it at the Santa Monica airport for anyone who may want to get to see the world's most pristine Harvard up close.

What's next? Bill didn't want to say, but he let slip that he has been in close touch with Kathy and "Stoney" Stonich of the North American Trainer Association, whom he credits with giving him the incentive to go ahead with the Harvard back at the beginning of the project. At the mention of EAA Warbird Director and T-28 aficionado, John Harrison, Bill involuntarily gushed forth with plans to look around at T-28s. "Uh oh," he said, "now the cat's out of the bag."

Someone better tell John and Bill Muszala to reserve a corner of the hangar at Pacific Fighters for a large project on the way.