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THIS MONTH: **The**
Howard DGA

FIRST OF THE 3-MILES-A-MINUTE PERSONAL TRANSPORTS



SPECIAL FEATURE:

Cabin Classics

First In A New Series Of Flight Reports
On The Great Planes Of Yesterday. Coming Up:
We Fly The Fairchild 24, Beech Staggerwing,
Stinson Gullwing, Waco Cabin Bipe, Spartan
Executive, Cessna 195 And More. Don't Miss 'Em!

Text and Photos By Don Dwiggins

WINTER RAINS slashed across the little airstrip at Santa Paula, California, driven by gusty winds that turned surrounding citrus groves into rolling green seas and shrouded nearby mountain peaks in boiling nimbostratus. It looked like a hell of a day for flying, but Haig Sakajian wiped away my disappointment with a wide grin.

"Neither rain nor sleet . . ." he began, as we skirted puddles of water that reflected the creamy-white tail of his Howard DGA-11 so that its N number, 57E, read backwards.

The sky was breaking up and Haig wasn't going to let a little thing like scudding clouds keep us ground-bound. We climbed aboard and soon the roaring voice of his big 450-hp R985 Pratt & Whitney Wasp Junior echoed off the mountains as we climbed southwest down the Santa Clara Valley toward the coastline.

"Go ahead and fly her," Haig said, holding up his hands as we topped out above the broken layer of creampuff clouds and swung north toward Santa Barbara. He'd trimmed the Howard out so that we were indicating 160 mph statute on 1875 rpm and 24.5 inches at 4,000 feet. Not bad.

I placed my feet on the stirrup rudders and fondled the wheel, which jutted straight back from its rugged pylon to the right of the instrument panel. The top 120 degrees of the wheel was open, opposite from the original Howard installation, which the late Benny Howard had provided to give more leg room.

I thought about Benny then, as we sailed along the coastline, feeling the responsiveness of this aircraft that had pioneered the field of executive transports back in the mid-1930's. She felt solid, maybe a bit heavy on the rudder, but with a positive control that goes back to her origin as strictly a racing plane.

In a moment I'll tell you more about the strange history of the Howard line, but for now let's enjoy this familiarization flight. There's a





ball of Cu up ahead: let's do a steep turn around it... roll in, hard back pressure, a touch of off-bank and around we go, feeling solid g's glue us to our seats. I let the nose get a little too low and the airspeed builds fast, she's that clean. I correct for that, then try a steep turn the other way and it's no sweat.

"Watch this," Haig is saying.

From cruise mode he pulls up aiming for blue sky, and we climb, climb, climb until the airspeed meter unwinds and buffeting sets in about 60 indicated. Back to level flight, engine idling, I try an approach to landing stall, again find no viciousness, no sudden break without warning.

That convinced me that the Howard has been a much maligned airplane. It was famed during the war training program days three decades ago as the Ensign Eliminator, because of its bouncy ways on landing.

"The Navy couldn't fly 'em," pilots used to say, "so they turned 'em over to the civilians."

Blind as a bat on landing, because the pilot sits so far behind the big nose, the Howard still earned a reputation as one of the roughest personal transports ever built.

"After flying one into a mountain,"

the saying went, "the dead pilot is removed and another pilot is put in and off it goes again."

I was remembering those wisecracks when we returned to Santa Paula, letting down easily at 130 indicated, descending at 1,200 fpm, throttled back to 12 inches. I climbed into the roomy back seat to shoot a couple of pictures while Haig cranked down two turns of flap and set up a final approach at 80 IAS, and suddenly I got the urge to dive back and grab the wheel — from the rear, the sight of that big nose sticking skyward is something to behold!

A couple of S-turns on final helps to let the pilot see what's ahead, but I have yet to meet an old, bold Howard pilot who will settle for anything other than that perspective, once they get used to it. Properly done, the DGA three-point landing is as simple as in any other taildragger, though some prefer to wheel it on for a better look ahead.

Using full flaps, a much steeper glide approach is achieved with the same safe and sane 80 mph IAS and better visibility ahead, but guys like Haig Sakajian (a former flight instructor and Air Transport Command ferry pilot with more than 7,000 hours in

Haig Sakajian demonstrates how lower part of door is hinged to fold back so it clears rear strut. Instrument panel layout is distinctly different.



the left seat) have their own little habits and you don't argue with members of the Howard Club.

That institution, formed a couple of years back, now includes some 40 owners of DGA's, most of them the DGA-15 military model which has a wider fuselage, longer gear struts and other detail variations like the engine cowl that are quickly apparent to serious DGA owners.

While there are purists within the Howard Club who snort at anything other than the original model DGA-8, only about three of those are reportedly flying today. Joe Hecker, a San Diego pilot who is president of the club, explains that "basically the DGA-8, 9 and 11 models are very similar, with different combinations of engines, wheel pants and such."

Hecker's DGA is a model 15, the last civilian one built prior to World War II, and while other club members have owned several (Randon Reid of Hayward, California, has owned a dozen), Hecker sticks with his one proud bird, which he stole for only \$2,500 back when prices were right.

"I just changed the oil and flew her back to Wisconsin," he says proudly. Since then he's run the Wasp Junior engine for 25 years with only one major, last year.

Howard lovers are folks who really

get a kick out of flying, and often play dirty tricks on each other just for the hell of it. At Watsonville, California, last summer, Hecker was horrified one morning to find a big, black oil slick under his engine, messing up the concrete. He was well into an impromptu 100-hour inspection to find what was wrong when he saw another club member, Bob Reichardt, calmly snapping pictures of him.

At another fly-in at San Diego two months later, Reichardt got the same shock when he found under the engine of his DGA-15 an oil slick that would have made an ecologist scream.

Reichardt, a Continental Air Lines captain, is now selling his DGA-15 to concentrate on one of the most unusual antique projects ever undertaken — a faithful reconstruction of the one and only Howard DGA-6, otherwise known as *Mister Mulligan*.

To go back in history a bit, let's recall that great year of air racing, 1935, remembered by many as the "Benny Howard National Air Races" because planes designed and built by this master craftsman copped all three main events — the Thompson, Greve, and Bendix Trophy races.

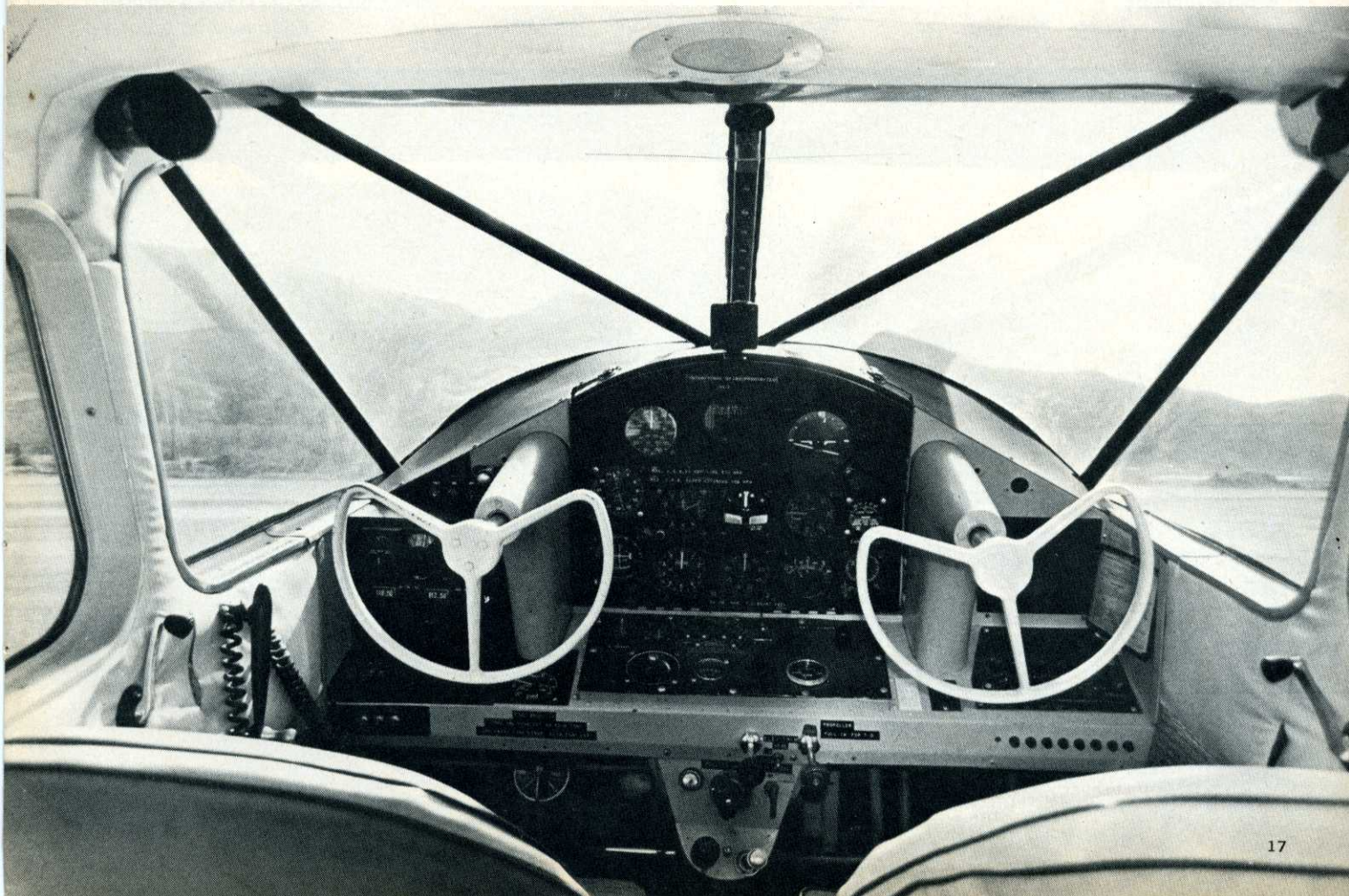
Benjamin Odell Howard (the name which appeared on his pilot license) got into aviation back in 1922 when he landed a job in the Curtiss

warehouse in Houston, assembling war surplus trainers. He paid \$10 down on a Curtiss Standard and after a couple of hours practice took up his first passenger, hoping to make enough money to pay off what he owed.

Well, as it turned out, Benny spun in. The passenger was killed and Benny was left with a permanent limp. He did some barnstorming, but designing was to be his bag, and soon he had completed his first homebuilt, a ship that flew 100 mph behind a 90-hp OX-5. He wanted a fancy designation with a bunch of letters, like the military uses, so called it the DGA-1 — the first of Benny Howard's "Damn Good Airplanes."

The DGA-2 was a special job he built up for a rum runner and sold for \$600, and then came the DGA-3, an unbelievable racer into which he poured \$2,500 — his life savings. Powered with a 90-hp Wright Gypsy, this ship, which he named *Pete*, flashed across the sky at close to 200 mph. In it, Benny won five firsts and two thirds at the 1930 National Air Races, flying barefooted in a hairbreadth style that won him the nickname "Benny the Pylon Polisher."

Next came the DGA-4 and DGA-5, twin racers named *Mike* and *Ike*, with which Howard proceeded to clean up a small fortune at subsequent air race



events. At that time Benny was flying the line for United, and his boss, W.A. Patterson, frowned on having a crazy pylon polisher in the cockpit of transports, so Benny was grounded as a race pilot.

In his spare time he and Gordon Israel, another noted airplane designer, created *Mister Mulligan*. "What we wanted was an efficient four-place ship," he recalled. To finance the project they added some extra horsepower, stepped up the wing loading and entered her in the 1935 Bendix race, with Patterson's permission.

Everybody laughed when Benny and Gordon drove up to the starting line at Burbank in the funny high-wing, four-place cabin job; obviously they were a couple of weekend flyers just going to the races for the fun of it.

The favorite that year was Colonel Roscoe Turner's hot Wedell-Williams racer, all painted gold, but *Mister Mulligan* turned out to be a real dark horse. It had a radical wing loading of 39.1 pounds per square foot of wing area, and while the sliderule formula said that an airplane's landing speed varies as the square root of its wing loading, it somehow sat down at 64 mph, one mile under the Bureau of Air Commerce limit of 65 mph, set to avoid high wing loads that could cause structural failure.

Amazingly, *Mister Mulligan* had

secretly been clocked at 287 mph at sea level under a full 830 horsepower, but the wisecracks at Burbank laughed and guessed she'd maybe do 180 mph wide open.

It looked like the race was all Roscoe Turner's, especially when Benny and Gordon drove into the home stretch in a long, shallow dive toward Cleveland and the airspeed seemed to lag — it showed 250 mph, no more. Benny frowned; he knew the ship could do at least 292 mph at 11,000 feet.

"Gordon," he said, "something's wrong!"

Israel looked quickly around the cockpit and groaned; they'd left the flaps down since takeoff from their Kansas City fuel stop!

As it turned out, the finish of that year's Bendix was the closest in the history of the classic. Turner flashed across the finish line to average 238.522 mph, but *Mister Mulligan* nosed him out by a 23-second squeak, to average 238.704 mph!

The next year *Mister Mulligan* was back in the Bendix, this time as a favorite. With Benny was his 23-year-old bride, Maxine, flying her first race. Benny lovingly called her "Mike," and in fact had named the DGA-4 after her.

"He also named *Mister Mulligan*

after me," she recalls today, "though I never knew why."

Westbound out of Kansas City, Benny and Mike were elated as they swung across New Mexico, well ahead of Roscoe Turner's transcontinental flight record of 11 hours 30 minutes.

Suddenly Mike grabbed Benny's arm, her face white, as the ship began a wild shaking. With an explosive noise, a propeller blade had come off; the unbalanced crankshaft quickly froze. The full torque slammed Benny's head against the side of the cockpit, knocking him out.

Mike fought the controls until Benny came to, and guided the stricken ship down to an emergency landing. They hit three point, bounced across a gully and crashed. Hours later the Howards lay in a hospital at Crown Point, inside the Navajo Indian Reservation. A call was put in to Dr. Harry V. Spaulding, a New York physician who had ordered the first commercial version of *Mister Mulligan*, the model DGA-8.

"That foot has to come off, Benny," Dr. Spaulding said on arrival at Crown Point.

By Christmas Benny was back with United as a research test pilot, and the next year, with a war coming on, he was hired to flight-test a brand new transport built by the Douglas Aircraft

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Sakajian describes his Howard as a DGA-8 modified to -11 standards. At left, Col. Roscoe Turner congratulates Benny Howard, center, after Mister Mulligan won the 1935 Bendix race.

HOWARD DGA-8 Specifications and Performance

Wing Span, ft.	38'
Length, ft.	25' 8"
Height, ft.	9' 5"
Gross Weight, lbs.	3,800
Empty Weight, lbs.	2,300
Engine	Wright Whirlwind
Horsepower	320
Wing Load, lbs/sq. ft.	20.48
Power Load, lbs/hp	11.87
Cruise Speed (optimum altitude)	190
Range, miles	950
Rate of Climb, fpm	1,800
Service Ceiling, ft.	20,000
Stall Speed, landing	48

CABIN CLASSICS

Company — the DC-4. Benny ferried the first C-54 version of the DC-4 to Australia, and the first one to cross the Atlantic to England, but *Mister Mulligan* went to war too — as the DGA-15.

First commercial Howards were the DGA-8, powered with a 320-hp Wright Whirlwind, and the DGA-9 with a 285-hp Jacobs. The DGA-10, a twin-engine design, was never built. Benny's next ship, the five-place DGA-11, carried a 450-hp P&W Wasp Junior, and after he sold his interest in the company, several military versions appeared with engines of various power ratings.

In introducing the DGA-8 and DGA-9, Howard explained that he had "endeavored to introduce to the private owner and business executive airline performance and reliability through design, structure, and equipment."

"In view of the fact that racing planes are the only experimental planes that are self-supporting," he said further, "our primary experiments were conducted with this type of equipment... High speed equipment must be structurally sound."

The fuselages were of welded chrome molybdenum steel tubing with fabric covering. The wings were two solid spruce spars with truss style spruce ribs, externally braced, and entirely covered with plywood with fabric over that.

Manually controlled and aerodynamically balanced flaps were provided with a safety release to raise them automatically in case of an overshoot and go-around; they lowered again as the throttle was closed and speed decreased for the next landing attempt.

To provide a lower c.g., Benny installed the gas tank below the cabin floor, fuel being supplied to the engine through an engine driven fuel pump and auxiliary manual wobble pump. Ease of maintenance also was a factor in the DGA-8 design, with access to all accessories made simple by removal of the NACA cowling. A roomy cabin with plenty of leg room and sound-proofing were features well ahead of their time, and a baggage compartment behind the cabin kept the cabin free of litter.

DGA-8 performance was something special for its day — cruise 190 mph, rate of climb 1,800 fpm, service ceiling 20,000 feet, range 950 miles, landing speed 48 mph.

Whenever anybody asked Benny the secret of his success with speedy planes, he'd answer laconically: "I use go-grease."

Bob Reichardt has long pondered about the nature of go-grease, and

before Benny's untimely death last year, had many talks with him about his project to restore a *Mister Mulligan* virtually from scratch.

"Neither Benny nor Gordon Israel were too sure exactly what wing section they used, oddly enough," says Reichardt.

Israel told PLANE & PILOT recently that he thought the curve was either the NACA 2312 or NACA 2412 — "a conventional foil used on many airplanes then, with a good L/D."

Reichardt finally got so bugged he drove over to New Mexico, got himself an Indian guide and went looking for the *Mister Mulligan* crash site of 34 years earlier.

"I found the same Indian, Joe Shorty, living there who saw Benny crash," he recalls. "He led us to the site."

They couldn't find a thing until Reichardt remembered a newspaper report that said the wreckage lay 147 feet west of a hogan. They dug around and found the foundation of a hogan, paced off 147 feet to the west and



there, over a rise, they found it — a bonepile of torn metal.

Once piece was poignant — the penknife Benny had used to cut himself and Mike free of the wreckage. Another was a vital clue — a wing rib.

Back home with a truckload of junk, Reichardt puzzled over the wing rib with Benny. It didn't seem right. All the articles ever written on *Mister Mulligan* said the curve was an M-12, but it definitely was not that. In an old magazine, he found a drawing of an NACA 2412, which Benny and Gordon thought might be it, but again the rib didn't fit.

"Then a light went on in my head," says Reichardt. "I took the rib, turned it upside down, and it matched perfectly!"

While Reichardt goes ahead with his reconstruction, other Howard Club members today are meeting regularly to discuss ways and means of carrying on in Benny's tradition, with new ideas about go-grease.

Haig Sakajian, at Benny's suggestion, last year got busy on some

proposed mods, like enclosing the tailwheel well, hunting for a DGA-8 engine cowl to replace the DGA-15 cowl he is using over the P&W 450, sawing off the external access ladder, etc.

The DGA-8 and subsequent models, incidentally, did not use the NACA 2412 airfoil, but a NACA 2R212 with a reflex trailing edge, which Israel says Benny finally came to favor. Because of this he suggested to Sakajian that he re-rig the ailerons to "droop upward" to follow this curvature.

Other DGA owners are having their own fun problems. Dr. Norm Brooks of San Diego, who owns a DGA-15, was startled on his first flight to find that when he turned the crank on his low-frequency radio coffee grinder, the tail trim changed — somebody had the wires crossed! Dr. Brooks last year flew his DGA-15 to the Virgin Islands. On the way back, he bounced a landing at West Palm Beach and elected to go around again, earning a chewing-out from the tower controller who screamed that he had *not* given him permission to take off.

"You ever own a Howard?" Dr. Brooks replied soothingly.

Despite the Howard's reputation as being a kind of hot airplane to land, many owners swear that once you learn her tricks she's most forgiving, and she certainly is one of the highest performance craft of her category.

Don Dickinson, a California pilot, flies frequently into small airports in the High Sierra country, and claims there is no sweat landing at or taking off from fields above 9,000 feet elevation if you fly right.

"Pilot and three passengers and gear is a good load," he says. "My Old White Bear has hauled many fine trout and deer, and a lot of fine people, and never lost one."

Dickinson uses a power approach with full flap at 80 mph IAS and squats down three-point, easy on the brakes. "On takeoff, 29 inches is all you can get, and I use one-quarter flap. You'll bounce a couple of times over the rough ground before coming airborne, then keep the nose down and hang on until you hit 100 mph — and stay away from the lee side of the ridges!"

While performance figures vary on the different DGA models, Haig Sakajian's is typical for a DGA-11 conversion with a Wasp Junior, giving a good cruise at 160 mph. The DGA-15 with the same engine (and a fatter body) cruises at anywhere from 154 mph to 195 mph, but the way Benny told it to Haig, it's a 200-mph airplane if you want to add just a bit more of his special formula — go-grease! □