FLIGHT-WATCH

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Photo Courtesy of Colin Furlong

"WHAT IS IT LIKE TO FLY THE KATE?"

§ 1

IMPRESSIONS OF THE KATE WHEN VIEWING IT FROM THE GROUND

The first thing that catches my eye every time I contemplate flying the Kate is the sheer size of the machine. In terms of single-engine aircraft, it is a fairly large airplane. This North American Texan, construction number 88-15757, built in 1943 for the United States Navy as an SNJ-4 aircraft carried Navy serial number 027675. Our Kate was damaged in a landing accident at Brown Field in San Diego, California, around 1963. On July 27, 1965, this damaged aircraft was purchased by 20th Century Fox Film Corporation. By lengthening the nose about one foot, extending twenty-four-inch rounded wingtips, lengthening the tail of the aircraft about two feet behind the cockpit, and grafting a Vultee BT-13 tail assembly onto the aircraft, our aircraft came to resemble a Nakajima B5N2 "Kate" bomber. On her vertical stabilizer and rudder, she carries the call sign "BII-310." The "B" stands for the Second Carrier Division. There were two Japanese aircraft carriers in that division, the Soryu and the Hiryu. The symbol "II" in the call sign indicates that the aircraft is to represent a Kate operating from the second carrier in the Second Carrier Division, which would have been the Hiryu.

The Kate has green camouflage on the upper side and gray camouflage on the lower side. Japanese insignia appear on either side of the fuselage, and on the upper services and lower services of the wings. Unlike the Texan, the Kate has three seats. The first seat is for the command pilot. The second seat is for the bombardier navigator. The third seat is for the rear gunner radio operator. Our particular Kate, because of its construction and configuration, is only allowed to operate with two crewmembers at a time. The weight and balance considerations in operating the Kate do not allow us to have all three seats occupied during flight. The next time you get a chance to watch *Tora! Tora! Tora!*, see if any of the Kates have all three seats occupied by crewmembers. You may see a pilot and a rear gunner in flight. You will not see any of the Kates in the motion picture having all three seats occupied by crewmembers during flight.

By 1968, our particular aircraft had been converted into a Kate replica. The aircraft was then given in experimental aircraft license following a series of test flights to acquire information about the flight qualities of the airplane.

The Kate has a basic empty weight of 4,422 pounds. It has a maximum weight of 5,700 pounds, which is 400 pounds more than a standard AT6 or SNJ Texan aircraft. When we purchased the Kate, we tried to figure out what the operating limitations of the aircraft were with reference to airspeeds. This requires that the pilot review the aircraft's airframe logbook and

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note the airframe logbook entry made in 1968. After ten hours of flying time, the following speeds were determined to be applicable to this aircraft:

1) never exceed speed] 175 knots;

2) flap extended speed 110 knots;

3) landing gear extended speed 130 knots;

4) stall speed in a clean configuration with the engine power up]: 63 knots;

5) [stall speed with the gear and flaps down and the power on 58 knots; and

6) stall speed with the power on and the gear and flaps down: 55 knots.

One thing I neglected to mention as you first view the Kate, is the torpedo attached to the belly of the aircraft. The torpedo is made of fiberglass and is about 14 feet long. It has two attachment bolts that hold the torpedo to the bomb rack or torpedo rack located on the belly of the airplane. The torpedo only weighs about 150 pounds. However, the torpedo is not aligned with the longitudinal axis of the airplane. If you stand beside the Kate and look at the airplane, you will note that the torpedo nose is pointed downward in relation to the nose of the airplane. This is necessary because if the torpedo were aligned with the longitudinal axis of the fuselage, the torpedo fins and propellers would drag on the ground or runway. As it is, the torpedo fins and propeller blades only have a few inches of clearance from the taxiway or runway, something the pilot must be mindful of as he taxis the Kate, especially on uneven surfaces or situations where one of the main landing gears may go into a depression or small valley in the pavement, tarmac, or grass.

Those readers with a keen interest on the weight and balance limitations of the Kate may consult Appendix One to this text, which includes sample weight and balance calculations and similar material.

§ 2

MOVING AROUND THE KATE AND CONDUCTING A PRE-FLIGHT INSPECTION OF THE AIRCRAFT

Because the Kate has a torpedo under her belly, clearance is achieved by over-inflating the main landing gear oleo struts. For people who wish to climb aboard the Kate, this means extra effort is involved in climbing aboard the wing. For example, a stock North American Texan may have the trailing edge of the wing about two feet above the ground. This presents no challenge as one climbs aboard a Texan. However, the Kate, with her over-inflated main landing gear struts and her lengthened tail assembly, stands with the trailing edge of her wing about 3 or 3½ feet above the ground. One either has to be somewhat athletic and spring upward onto the wing, or place one's knee on the wing root, and grab the footholds, pulling oneself aboard the aircraft. After climbing up on the wing root of the Kate, you will want to move forward to the pilot's seat, check the flight controls, instruments, fuel selector, magneto switch, flap and landing gear selector positions, and then secure a combination screwdriver and fuel check tube to conduct the preflight inspection.

As mentioned earlier, the nose of the Kate is extended about one foot, with the result that the engine is displaced farther forward from the leading edge of the wing. One has to stand very close to the wing root of the airplane on firm metal in the wing assembly, while stretching forward and unfastening a triangular-shaped door with a dzu fastener using the screwdriver portion of the fuel checking device. This reveals the oil tank, which holds slightly more than ten gallons of oil. The oil filler cap has a dipstick inside showing the level of the oil in gallons. Typically, one would not want to operate the Kate with less than eight gallons of oil in the oil tank. This becomes particularly important during the summer,

when one needs all the oil aboard possible to diffuse engine heat in high ambient temperatures. If the Kate requires oil, your best bet is to get a ladder and climb up adjacent to the aircraft and service the air tank from that position.

After determining that the Kate has the proper amount of oil, the oil filler cap is secured, and the triangular flap is also secured. One then moves back along the left side of the fuselage about half-way between the front pilot seat and the navigator seat, where another triangular flap appears. Using a screwdriver, the flap is opened and the hydraulic fluid is checked. The dipstick in the hydraulic fluid reservoir screws in and screws out. The dipstick has gradations with the word appearing vertically, "SAFE." After determining that the hydraulic fluid is of a satisfactory level, the dipstick is re-secured, as is the triangular flap on the side of the fuselage.

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After ensuring that the aircraft has adequate hydraulic fluid, the landing gear selector is placed in the down position, and the hand pump bar is pulled upward on the left side of the pilot's seat, and the flaps are pumped down. The Kate's trailing edge "split" flaps extend downward to 45 degrees. While you are on the left wing root of the Kate, you can check the left fuel tank to make sure it is full. Also, you can look at the left landing gear indicator to verify that the landing gear locking pin is in place. The locking pin in silver and the top of the oleo strut of the landing gear is red.

Jumping off the left wing root of the Kate, one makes his way along the flap assembly and makes sure it is securely connected. Also, one looks for leaking hydraulic fluid at the hydraulic actuator in the flap assembly, which is at the center line of the fuselage. Additionally, tubes that look like drive shafts on automobiles extend along the trailing edge of the wing. The tubing has universal joints that allow it to bend as the wing has dihedral. The flaps, attach points, tubing, and universal joints are checked for integrity and function.

The Kate pilot then moves out to the next aileron and checks to make sure it is attached to the aircraft and moves freely. Walking around to the forward portion of the Kate's wing, the left main landing gear and oleo strut are checked for inflation. The pilot then walks below the left wing on the left side of the torpedo and drains fuel from the left main tank to ensure it is free from water and debris. Moving for-

ward, the pilot may then pull the Kate's propeller through at least four revolutions to verify that there is no hydraulic lock in any of the cylinders. This is a precaution taken with radial engines, which sometimes have engine oil seep into the bottom cylinders, thereby creating an undesired "compression" stroke in the engine. If the engine were started in this condition, there could be damage to the connecting rod or other components in the engine.

After pulling the engine through, the pilot moves to the right fuel sump, drains that fuel sump, and verifies that the right oleo strut and tire are properly inflated. At this point in the walk-around, the pilot may climb upward on the right main tire and remove the fuel cap from the right wing to verify that the right tank is full. Also, this is a good time to look at the silver locking pin on the right main landing gear in reference to the red top of the oleo strut to verify that the gear is locked.

Moving along the right side of the Kate's wing, one will note a machine gun which protrudes forward. Moving toward the right wingtip of the Kate, the pitot tube is inspected to make sure that it is free from debris and is not clogged. The right wingtip and aileron are checked, and the pilot then walks down the right wing's trailing edge, inspecting the flap assembly, hinges, and associated hardware.

As one walks towards the tail of the Kate, one appreciates that this is not a Texan. The fuselage is longer, and the empennage is rounded in shape, not square like a Texan. The Kate has a tiny donut tail wheel that is solid rubber. It does not have a great deal of shock absorbing ability. We will talk more about his later. The elevator and rudder are checked for attachment and freedom of movement, and the pilot makes his way back up to the left wing root of the Kate.

At this point, it is worth mentioning that a person may occupy the third seat where the machine gun faces aft. Normally, the greenhouse of the canopy in the third seat position is enclosed. However, by removing four screws, the greenhouse can be removed and the machine gun placed into its operating position. If one were to sit in the position of the machine gunner, there is a seat, a seatbelt and shoulder harness, and a couple of rails upon which the intrepid machine gunner may place his or her feet. There is no floorboard. If one sits in the position of the machine gunner, one can look at the interior framework of the tail of the airplane, along with the control cables which run to the empennage. The pilot wants to be sure that there are no shoulder harnesses or seatbelts dangling about in the position of the machine gun, since this could interfere with the control cables.

The same is true of the seat occupied by the bombardier/navigator in the event the Kate will be flown solo. A small red pin in the greenhouse that sits above the bombardier/navigator's position may be pushed upward and the canopy pushed forward. If a person is going to occupy the second seat, he or she may don his parachute, shoulder harness, and seat belt. Jacks for a headset are mounted adjacent to the left shoulder of the person occupying the bombardier/navigator's seat. The person in that seat may close the canopy by grabbing a handle on the left side of the canopy, pulling it down, and pulling the canopy aft.

The Kate has a separate set of flight controls in the bombardier/navigator position. If the person occupying this seat is not a pilot and has no desire to fly, the control stick may be removed from the control pedestal and secured in the left side of the fuselage.

§ 3.

GETTING THE KATE READY FOR FLIGHT

After you determine that the Kate is safe for flight, you put your right foot on a brace that extends on the left side of the fuselage of the aircraft, and put your left foot in the pilot's seat on top of the parachute. You then climb down and take your seat in the air-

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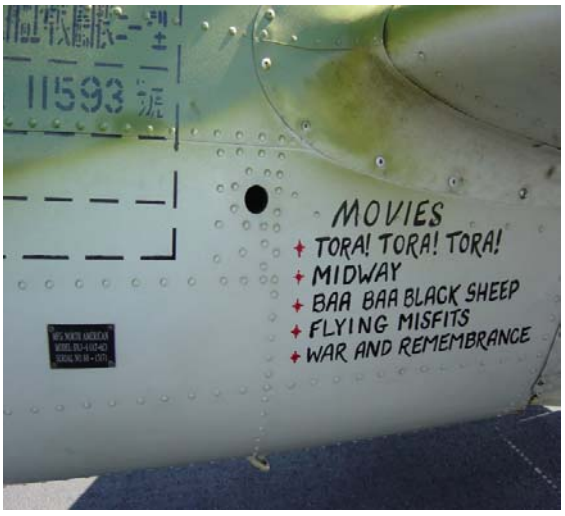

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craft, donning your parachute, your shoulder harnesses, and your seatbelt. The parachute has three attachment points. One is on the breastbone of your chest, and the other two are on either side of your thighs. Once your parachute is attached, you reach behind you and get your shoulder harnesses, placing one on either side of your head and then feed the male portion of the seatbelt buckle through the loops of the shoulder straps and then snap the male portion of the buckle into the female buckle. You are now secured to the aircraft at four points: your right thigh, your left thigh, your right shoulder, and your left shoulder.

The next thing you want to do is to make sure you can reach the rudder peddles and that you have full rudder peddle travel. If a tall person flew the airplane before you, the rudder pedals may be extended. You simply tap tabs on the interior portion of the rudder pedals, and they spring back towards you. The rudder pedals are adjustable at various increments in this system using these tabs.

You make a note of the Hobbs Meter time in the ship's dash-one form and plug in your headset. The jacks are on a panel by your right shoulder. You can glance at fuel gauges on either side of your seat to ensure that the fuel gauge reading corresponds with what you visually observed in the fuel tanks of the aircraft. You may, if you desire, put the flap handle in the up position and manually pump the flaps up at this time. Alternately, you can leave the flaps down and wait until the engine starts to retract the flaps.

The elevator and rudder trim wheels are to the left of your left thigh. The interior wheel is the elevator wheel. The notch on the wheel should be in the eleven o'clock position. The wheel farthest away from your thigh is the rudder trim wheel. It should be at the two o'clock position.

Before you start the engine, you start running a checklist. You verify:

1) that the aft seat and gun are secure;

2) that shoulder harnesses and seat belts are on;

3) that the mixture is full rich;

4) that the propeller governor is full aft (low rpm);

5) that the throttle is moved forward one-half of an inch;

6) that the carburetor heat is cold; and

7) that the oil cooler shutter is open.

It is now time to prime the engine. A hand-driven fuel pump ("wobble" pump) is located between the elevator and rudder trim wheels by your left thigh. Pushing the pump fore and aft raises the fuel pressure to about five pounds. After you raise the fuel pressure, you take your right hand and put it on an engine primer, which is at the bottom of the instrument panel directly in front of you and perhaps at about the height of your knees. You rotate the engine primer to the left, which frees the primer and lets you pull it aft. This loads the primer with fuel. You push the primer forward. If the fuel pressure drops, you again pump the wobble pump to recharge the system. You do this repeatedly until nine shots of primer have been injected into the engine if the engine is cold and this is the first start of the day.

You then lock the primer by pushing it full forward and rotating it to the right (clockwise). You pull back slightly on the primer to make sure it is locked. You do not want the engine primer in the unlocked position with the engine running, since this may give the engine an excessively rich mixture.

The master switch above your left leg is placed in the up position. The red guard above the starter switch is raised. You now push upward on the starter switch, and the propeller begins to turn. You wait for two complete revolutions of the propeller blades, and then turn the red magneto switch in the left quadrant of the instrument panel from the "off" position to the "both" position. The engine should begin to fire. If the engine firing is not initially smooth, you can keep engaging the starter until the engine finally catches. It is not a good idea to pump the throttle, since this may produce an engine stack fire. As the engine comes to life, you release the starter switch, turn the generator switch on, turn the strobe lights on, and the radio mater switch on. You glance downward to your right, almost directly in front of you, and you look for the oil pressure to rise. The oil pressure must begin to rise within thirty seconds, or the starting sequence must be aborted. As the oil pressure climbs above 50 psi, you advance the propeller governor forward. You can do this smoothly, since you do not want to "dump" the oil pressure by rapidly pushing the propeller governor forward. The propeller governor varies the angle of incidence of the propeller blades based upon oil pressure in the propeller governor in relation to engine counterweights. The engine is started with the propeller governor in the full low-pitch position to maximize the oil available to the engine during the starting sequence. You adjust your throttle to get about 700 rpm or perhaps a bit more. If the flaps are not up, place the flap lever by your left thigh forward and in the "up" position, and then push downward on the power-push lever which is between the flap lever and the landing gear lever. This will pressurize the hydraulic system for about one minute and raise the flaps. The flap indicator (co-located with the landing gear indicators) by your left knee or the top of your left shin will gradually show that the flaps are coming up. It will also confirm that the landing gear is down.

As the engine is beginning to smooth out, you can check the local observed weather on the radio and then announce your intentions over the radio. The Kate is a heavy airplane and requires a fair amount of power to move forward. You cannot see directly in front of you, so you have to make gentle S-turns left and right to see where you are going.

Once you get to the run-up area, you verify the position of the elevator and rudder trim. You determine that your shoulder harnesses are locked. When you started the engine, the shoulder harnesses were in the unlocked position that gave you the forward movement to engage the fuel primer. Now that you are contemplating flight, you want your torso locked to the airframe in the event of an off-airport landing. The flight controls are verified for freedom of movement and movement in the proper direction. The throttle is advanced to 2000 rpm, and you check the left and right magneto. The Pratt & Whitney Wasp (R-1340) engine will normally show a drop of between 50 to 75 rpm on a single magneto. Normally, the maximum drop in rpm on a single magneto should not exceed 100 rpm, and the difference in the drop between the two magnetos should not exceed 40 rpm. With the power up, the voltmeter should show that the generator is producing electricity, and the throttle can be retarded. The transponder should be in the "on" position with altitude selected, and your canopy should be kept open for takeoff. While a typical Texan has a rollover structure, the modified canopy on the Kate does not have such a structure. In the event the airplane should end up on its back, you want to be able to get out as quickly as possible.

Once the runway is clear or after you have been given permission by ATC, you taxi the Kate out on the runway. As you do so, the runway in front of you disappears. All you have to guide you during takeoff is your peripheral vision on either side of the nose. You smoothly advance the power to 36 inches

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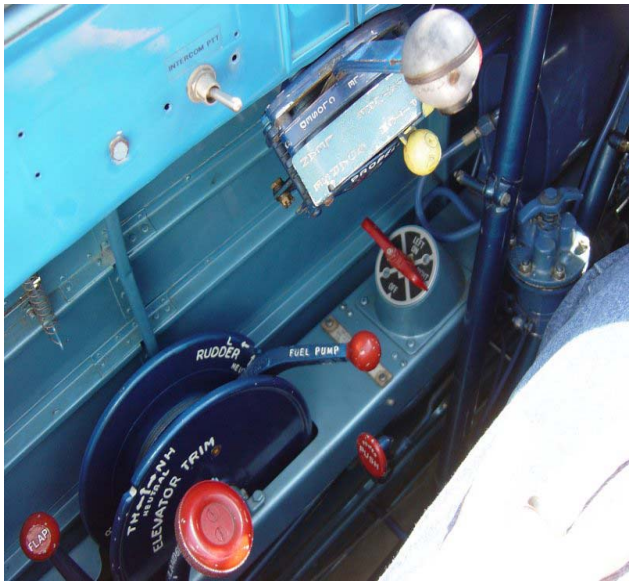

Photo Courtesy of www.JapaneseBomber.com

of manifold pressure, and the tachometer comes up to about 2250 rpm. Unlike the Texan, the Kate's acceleration is not instantaneous. You can feel the extra weight of the Kate as the airplane accelerates. As the flight controls come alive, you may slightly raise the tail to acquire some vision of the runway in front of you. Of course, one does not want to make abrupt control deflections in this airplane because of torque. When you brought the power up to 36 inches on the runway, you also advanced your right foot to compensate for the torque. Abruptly popping the stick forward may cause the aircraft to veer to the left. When taking off in the Kate, you generally are trying to achieve smooth applications of control pressures.

As the aircraft accelerates to about 80 knots, you shoot for pitch attitude that will give you a climb of about 90 knots. The landing gear selector by your left shin is pulled in the "up" position, and the power push by your left hip is pushed down. This raises the landing gear. As you climb out at 90 knots, you retard the throttle to about 30 inches of manifold pressure, and the propeller governor to about 2000 rpm. As you continue your climb, you may accelerate to about 100 knots to give you better visibility over the nose. On a hot day, the rate of climb in the Kate will be less than electrifying. Also, as the aircraft climbs out, you may feel the need to release right rudder pressure by pushing the rudder trim forward to compensate for the high torque at a low airspeed.

As you reach your target altitude, you can bring the manifold pressure back to 25 inches, and the rpm back to 1850 rpm.

When we first bought the Kate, the torpedo was not installed. When flying her to the formation clinic, she indicated about 137 knots at 4500 feet with 25 inches of manifold pressure and 1850 rpm. After we installed the torpedo, we saw that the airspeed fell to about 125 knots. There is a penalty for dragging that torpedo around below the belly of the Kate.

There is one more thing worth mentioning about the torpedo. The torpedo produces and pendulum effect. When you make a left turn, you have a feeling that the torpedo below the aircraft wants to continue going in the same direction. The Kate is more responsive and less sluggish with the torpedo removed than with it suspended below the belly of the airplane.

When you fly the Kate, the controls are not as harmonized as those in a conventional Texan. Saying the Kate flies like a truck may be a bit of an overstatement. Eventually, one becomes accustomed to her quirks. She is restricted against aerobatic maneuvers, since she is built from components from two kinds of airplanes with a number of modifications made to her structure. By no stretch of the imagination have I flown the Kate at the edge of the envelope. She is a reasonably responsive airplane, but certainly not a fighter plane.

Typically, on cross-country flight, you will run about 25 inches of manifold pressure and 1850 rpm. You can bring the mixture control back roughly equal to the position of the propeller control. Economy cruise is 22.5 inches of manifold pressure and 1650 rpm. However, one has to factor in the high cost of engine overhauls. The money saved on gasoline may not offset the additional time on the engine.

As you bring the Kate down from altitude and approach the traffic pattern, if you keep the rpm back at 1850 rpm, you can bring the manifold pressure back to about 20 inches. One thing you do not want to do is to bring the rpm up to 2000 rpm and reduce the manifold pressure to 17 inches. If you do that the propeller is driving the engine, something you do not want to do in the Wasp R-1340 engine with its supercharger. With the torpedo installed, you are not terribly concerned about rapid increases in airspeed as one pushes the nose over. You fly the pattern in the Kate just like a Texan. You put your wingtip on the runway and correct for drift.

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Midfield downwind, you put the landing gear down below 130 knots. You look out on the wings to verify that the silver landing gear locks are extended in relation to the red mark on the tops of the oleo struts. The pilot does not simply want to know that the landing gear is "down." He wants to be sure that the landing gear is down and "locked." The only way to be sure is to look at the silver locking pins that are visible from the cockpit in the wings. Plexiglas panels allow the pilot to see that the locking pins are in the proper position. With the landing gear down, the airspeed decays, and you can go to 20 degrees of flaps below 110 knots. To deploy the flaps, you push the power push down by your left thigh, and then momentarily move the flap selector from the neutral to down position, and back to neutral. In the neutral position, the flaps remain in the position that appears on the flap selector indicator by your left shin.

When you reach the "key position," which is about 45 degrees from the numbers of the runway, you turn on the base leg and feed in ten degrees more flaps. After an interesting experience in a Texan landing in a crosswind with 45 degrees of flaps, I have resolved that I will never use 45 degrees of flaps in a Texan series aircraft unless the wind is dead calm.

As you turn final, you get your sight picture on the runway aiming for the runway numbers or a couple of hundred feet in front of them. It is very desirable at this stage of the game to get the airplane stabilized (in terms of its glide path and its airspeed) for landing. If the airplane is a bit high, the nose can be brought gently over without the Kate picking up too much airspeed. She has more drag than a conventional Texan with that large torpedo hanging below her belly. As you approach the runway, you would like to have your airspeed back to about 80 knots and perhaps hanging the airplane on the propeller. You should have brought your propeller governor up to 2000 rpm as part of your GUMP (Gas, Undercarriage, Mixture, and Prop) pre-landing check.

As the real estate in front of you becomes more visible, I confess that my "sight picture" in the Kate in terms of just knowing exactly when the main gear is going to touch down is something I still have not fully acquired. In other airplanes, I pretty much know when the mains are going to touch down. With the Kate, I carry just a bit of power as I come

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over the numbers and hold the aircraft in a "wheel landing" pitch attitude. Remember, the tail of this airplane came from a Vultee BT-13 trainer. Also, the tail wheel is a solid rubber donut with very little shock absorbing capability. For these reasons, you do not want to "three-point" the Kate. You carry just a bit of power until the mains touch down and retard the throttle. In a couple of seconds, the tail is down on the ground and the airplane is rolling out down the runway. The canopy is in the open position for landing, just like for takeoff.

As the Kate rolls down the runway, you can make an attempt to smartly apply the brakes in hopes of shortening the Kate's landing roll. To call the Kate's brakes overpowering would be an exaggeration. One must not forget that this airplane weighs 400 pounds more than a stock Texan. Further, the Kate has the old drum brakes of World War Two vintage. These are not as powerful as disc brakes. Because of the limitations of the Kate's braking system, this also suggests that the Kate pilot bring the aircraft over the runway numbers at or perhaps slightly less than 80 knots to minimize the energy to be dissipated during the landing roll. The slower your touchdown speed, the less you will need the brakes.

When you do taxi clear of the runway, you stop momentarily and put your elevator and rudder trim wheels in the takeoff position. You identify the flap lever, shove it forward, and depress the power push. The flaps come up in a matter of seconds. You then push the propeller governor full forward and turn the transponder to standby. Just above the throttle quadrant and above your left thigh is a switch that activates the smoke system. If you want to blow some smoke while the Kate rolls forward, you just push the toggle switch up and smoke oil in injected into the exhaust manifold of the Kate. White plumes of smoke envelope the right side of your aircraft.

When moving the Kate about at airshows, it is important to make repetitive S-turns and to acquire contact with any marshal guiding you to your position as early as possible. Like all taildraggers, the Kate will turn in a fairly small space once her tail wheel becomes unlocked. If a tight turn is going to be required, you can carry a bit of speed and simultaneously depress the rudder pedal and brake to enable the aircraft to make a sharp turn. The alternative is to come into the turning position with no speed and then really have to bring in the power, blowing all kinds of debris around in the process (something generally discouraged in close confines, such as a congested ramp at an airshow).

§ 4.

ENGINE SHUTDOWN

After you have maneuvered the Kate to her appropriate position, you turn the radio master switch off and advance the throttle to 1200 rpm. Now, you take the propeller lever and pull it back to the low rpm high pitch position. As the engine rpm deteriorates, you smartly move the magneto switch to the right mag and the left mag position to check the magnetos one last time before engine shutdown. You then return the magneto switch to the "both" position and continue to monitor the decay in rpm.

This process is pumping oil out of the propeller governor and into the engine. You will need this engine oil the next time the engine starts. If you do not follow this procedure during the shutdown of the engine but leave the propeller governor full forward, then the next time the engine is started, oil from the en-

gine will be pumped forward into the propeller governor. The engine will be deprived of oil at a critical time during the engine start process. After about 30 to 45 seconds with the propeller governor in the full aft (low rpm) position, you can then pull the mixture back to the idle cutoff position. The engine will smartly come to a stop. The master switch generator switch and strobe switch are all placed in the down (off) position. The magneto switch is turned full left to the off position, and the fuel selector valve is turned to the off position.

If the aircraft is going to be sitting outside at an airshow, this would be a good time to lock the flight controls. The flight control lock is a red handle at the bottom of the control stick between your legs. You bring the control stick aft and pull the red lever up to a point where the mechanism "locks" the flight controls. The controls that are locked are the ailerons and elevator. Also, if you are at an airshow, be mindful of the fact that people who know nothing about airplanes will be roaming about. The pitot tube on the right wingtip has a point that is about 18 inches of the leading edge of the wing. Although I have never heard it, I have heard stories about kids pulling up on pitot tubes as though they were jungle gyms. It is a good idea to take the red pitot tube cover and place it over the pitot tube after the airplane is shut down. Also, you will want to make certain that the wheels are chocked so the airplane will not roll or move about.

§ 5.

MY OVERALL IMPRESSIONS OF THE KATE

The Kate is a hulking, single-engine airplane. It has a lot of mass and makes a lot of noise. Flying the Kate gives one an appreciation for people who flew torpedo bombers. Aircraft which are called upon to carry torpedoes and multiple crew members are going to be no match for single-engine fighter planes.

The Kate taxiing about an airfield with her black nose, green and gray camouflage and Japanese insignia makes a very powerful statement. She is the closest thing we have today to the Nakajima B5N2 bombers used by Japan to attack Pearl Harbor on the "Date of Infamy." The Kate is a flying memorial to that tragic day in American history. Her presence at airshows reminds people that America must never be caught off guard again. The Kate fulfills her role as the villain in airshows as she reminds us of the date on which America lost her innocence.

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