

Pilots Operating Handbook FOR ZENITH STOL CH 701



Serial number: 7-6120

Registration: N73EX

Aircraft was built from a kit purchased from and supplied by Zenith Aircraft Company located at the Mexico Memorial Airport in Mexico MO 65265-0650 U.S.A.

Kit was assembled by George Race residing at 3865 Gibbs Rd. in Albion MI 49224

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1. General

Introduction

This pilot's handbook has been prepared to provide pilots and instructors with information, for the safe and efficient operation of this Light Sport Aircraft.

Certification basis

The CH 701 built to the present specifications and equipped with the Jabiru 2200a powerplant will have an empty weight of 580 to 620lbs. The design gross weight being 1100lbs, the fuel weight of 20 gallons being 120lbs, this leaves 350 to 400lbs for the pilot, passenger and baggage.

The airframe is structurally designed to Canadian design standards TP101-41, which corresponds to FAR23 or JAA-VLA for light airplanes, with an ultimate load factor of 6 "G" positive and 3 "G" negative at 1100lbs gross weight with flaps up, and 3 "G" positive, 1 "G" negative with flaps down. (Also meets or exceeds NASAD, LAMA, as well as LPAS standards.

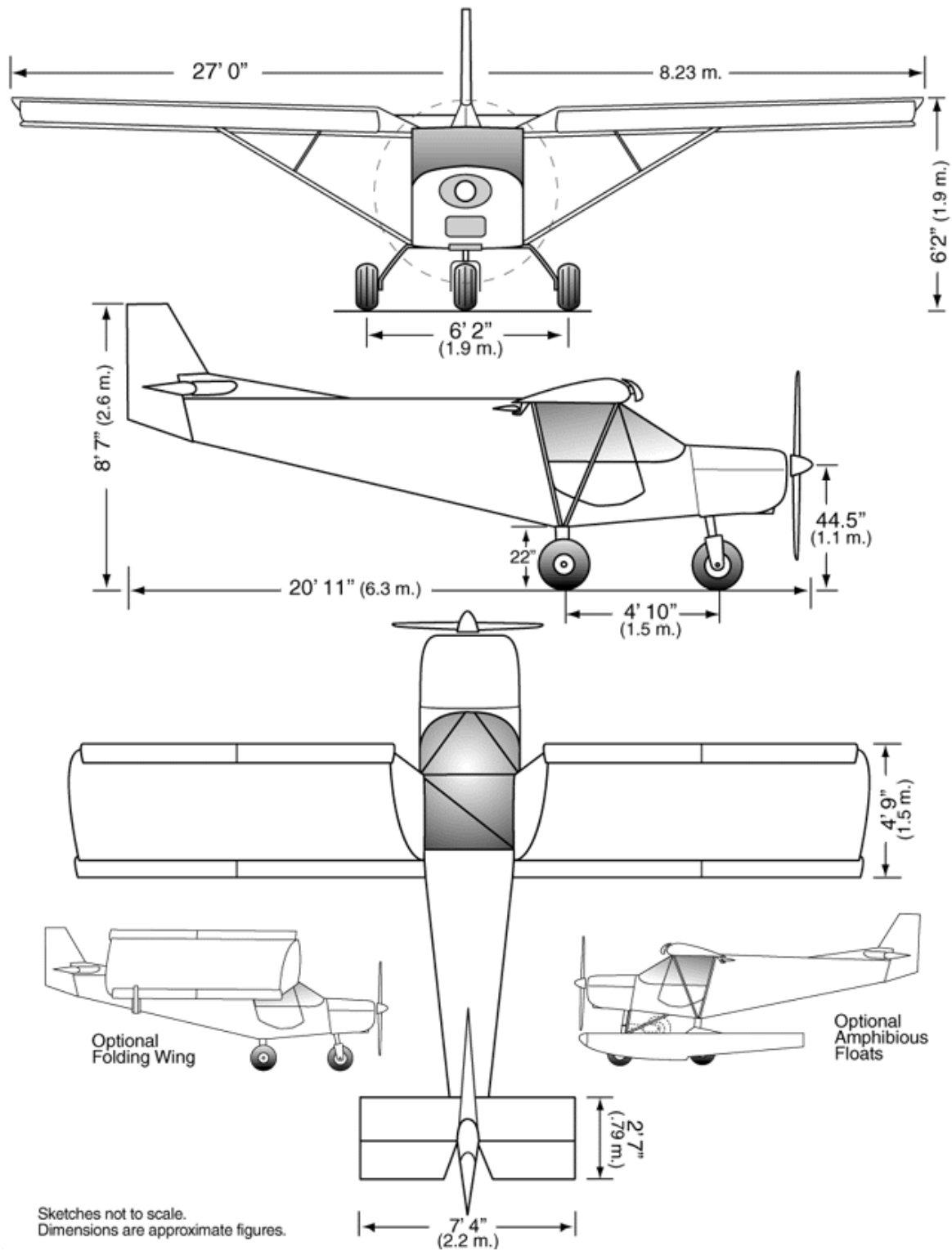
Descriptive data

CH 701 is a side-by-side two place, strut-braced high wing monoplane with all-metal structure. CH 701 is a reliable two seat aircraft designed with pilot and passenger comfort in mind for short-field capability, excellent performance and good visibility. The STOL CH 701 is truly the aircraft which combines the advantages of a conventional aircraft with those of an advanced Ultralight.

Powerplant is Jabiru 2200a, 4-cylinder, 4-stroke, w/ opposed cylinders

Wing span.....	27'
Length.....	20'11"
Height.....	7'8"
MAC.....	4'9"
Wing area.....	122 ft ²
Wing loading.....	8.2 lb/ft ²
Engine	Jabiru 2200a 85 HP
Propeller	Two Blade Wood
Diameter.....	62"

Three-view drawing:



2. Limitations

This section includes operating limitations, instrument markings and basic placards necessary for safe operation of the airplane, its engine, standard system and standard equipment.

Airspeed

Airspeed limitations and their operational significance are shown below:

	Speed	IAS (mph)	Remarks
VNE	Never exceed speed	108	Do not exceed this speed in any operation
VNO	Maximum structural cruising speed	90	Do not exceed this speed except in smooth and then only with caution
VA	Maneuvering speed	71	Do not make full or abrupt control movement above this speed, because under certain condition the aircraft may be overstressed by full control movement
VFE	Maximum Flap extended speed	63	Do not exceed this speed with flaps extended.

Airspeed indicator markings:

Airspeed indicator markings and their color-code significance are shown below:

Marking	IAS value or range (mph)	Significance
White arc	30 – 63	Positive Flap Operating Range
Green arc	40 – 75	Normal Operating Range
Yellow arc	75 - 90	Maneuvers must be conducted with caution and only in smooth air
Red line	108	Maximum speed for all operation

Propeller manufacturer:.....Sensenich
Propeller model.....W62HJ36
Propeller Blade angle - see propeller manual.....36 deg

Powerplant instrument markings and their color code are shown below:

Instrument	Green Arc Normal operating	Yellow Arc Caution range	Red line Maximum limit
Tachometer	1,500 – 3,000	3,000 – 3,300	3,300
Oil Temperature deg.F	176 - 212	200 - 244	244
Cyl. head temp. deg.F	285 - 355	350 - 380	392
Fuel pressure (psi)			3.0
Oil pressure (psi)	32 - 45	50 - 70	75

Basic Empty weight (TYPICAL).....	608 lbs.
Maximum take-off weight.....	1100 lbs.
Maximum landing weight.....	1100 lbs.
Maximum cockpit weight.....	418 lbs.
Minimum cockpit weight.....	121 lbs.
Maximum weight in Baggage compartment	40 lbs.

Center of gravity:

Standard center of gravity position for empty aircraft is 21.6 % MAC (12 inches from reference datum - leading edge of slats)

Allowable Range: 20 - 35 % (11 to 20 inches)

See section 6 Weight & Balance for details

Approved maneuvers:

No aerobatics maneuvers including intentional spinning are approved

Maneuvering load factors:

Limit load factor: positive 4 negative 2

Ultimate load factors are the limit-load factors multiplied by the safety factor of 1.5

Flight crew:

Minimum number of crew members is 1 and total number of occupants is 2

Kinds of operations:

The airplane may be operated in day VFR non-icing conditions.

Fuel:

Total capacity:.....20 gallons

Unusable fuel:.....2 gallons

Usable fuel:.....18 gallons

Approved fuel grades:.....100LL Aircraft Fuel Only

Limitation placards:

The following limitation placards are sometimes placed inside the cockpit:

Never-exceed speed VNE.....	108 mph
Maneuvering speed VA.....	71 mph
Maximum speed for flaps extended VFE.....	63 mph

Maximum Engine RPM, take-off.....	3,300
Continuous.....	3,300
Maximum Cylinder Head Temperature:.....	392 deg.F
Maximum Oil temperature.....	244 deg.F

Maximum Baggage 40 lbs

No loose items.

This airplane is classified as a small light airplane approved for day VFR only, in non-icing condition. All aerobatics maneuvers including intentional spinning are prohibited.

3. Emergency procedures

This section provides checklist and detailed procedures for coping with emergencies that may occur. Emergencies caused by airplanes or engine malfunction are extremely rare if proper preflight inspections and maintenance are practiced. However, should an emergency arise, the basic guidelines described in this section should be considered and applied to correct the problem.

Emergency landing:

1. Set airspeed for best rate of descent, 52 mph, flaps up
2. Shut off fuel
3. Shut off engine
4. Tighten seat belts and harness

Avoid tight turns. In some cases, the flaps may be extended before touchdown. Land as usual, straight ahead power-off approach. Do not try to do any turns.

Accidental spins:

To recover from a spin:

1. Pull throttle to idle position
2. Push rudder opposite the spin's rotation
3. Bring the pitch control slightly forward.

Fires:

On the ground, before engine is started.

1. Go on pushing starter
2. Shut off fuel
3. Open throttle full as soon as engine starts to blow the fire out

On the ground, engine running.

1. Cabin heat off
2. Shut off fuel
3. Throttle open to blow fire out

In the air.

1. Cabin heat off
2. Fuel off
3. Ignition off
4. Electronics off
5. Perform an emergency landing

Do not attempt to restart engine after in-flight fire !!!!!

Fire in cockpit

1. Electronics off
2. Cabin heat off
3. Use fire extinguisher

To restart engine in flight (after fuel starvation):

Pull choke before starting and push choke in as soon as engine starts.

Note: Make sure that the aircraft is equipped with a functioning fire extinguisher which is easily accessible to the pilot. The aircraft is equipped with an Emergency Locator Transmitter (ELT) and First Aid Kit.

4. Normal procedures

Section 4 provides checklist and detailed procedures for normal operation.

Obtain adequate professional flight training on the STOL CH 701 and the required pilot license before attempting operation of the aircraft.

Pre-flight inspection: (“walk around” before each flight):

1. Ignition switch off, fuel open, controls free.
2. Drain gascolator and all drain valves to ensure that no water is in the fuel lines check cowl fasteners for looseness, check spinner and prop. You may want to remove the cowl to check the exhaust and general engine condition for safety. Check fuel quantity as well as coolant level and water pump.
3. Make a visual check of the front wing attachment points, pitot static, upper forward strut attachment (remove tie down), condition of slats and wing tip. 4. Flaperon, check general condition, hinges, rear strut attachment, flaperon control and rear wing attachment points
5. Landing gear condition, attachments, tires
6. Stabilizer attachments, elevator and rudder hinges, cables and attachments, controls stops (remove rear tie down).

Continue walk around in reverse order.

Before starting engine:

Operate controls and make a rapid visual check for proper operation. Make sure windshield is clean for maximum visibility. Check brakes, fasten and check safety belt.

Starting engine:

(Refer also to the engine Manual for detailed information)

1. Fuel valve ON
2. Choke - pull (only for cold engine)
3. Throttle - idle
4. Master switch -ON
5. Ignition switch set to BOTH
6. Visually check and yell “CLEAR PROP”, before starting engine
7. Press starter button to start the engine.

When engine starts, set RPM to 1500. Check oil pressure - it must raise during 10 sec. after engine starts. Do not increase RPM before oil pressure of at least 20 lbs is reached.

8. Release choke gradually when engine starts.
9. Avionics Master ON

Warm-up and ground test:

(Refer also to the engine Manual for detailed information)

Warm-up the engine until the oil temperature is 120°F. Set RPM to 2,200 and proceed with ignition check Drop must not be greater than 300. The difference between each circuit must be less than 115. After check of take-off setting, let the engine cool.

On cold days, wait for the temperature gauge to register before taxing, allowing the engine to warm up.

Note: For winter operation, the Oil Cooler size may have to be reduced to keep engine within operating range. Wrap wide tape around the exposed surfaces of the cooler as required.

Taxing:

With the tricycle configuration taxiing is facilitated by use of a steerable nose wheel. Avoid steering the aircraft with the brakes. When winds exceed 15 to 20 mph, taxi very slowly to prevent inadvertent lift-off.

Before take-off:

1. Set altimeter
2. Set trim
3. Check avionics and other switches - ON
4. Flaps UP
5. Check freedom and deflection of controls
6. Check that doors are securely latched
7. Fasten seat belts, not uncomfortably tight (can **you** reach fuel shut off valve?)
8. Check that choke is full in

Take off:

1. Set throttle gradually to full
2. Check RPM and gauges
3. Release brakes
4. Pull stick slightly back

Note: For short field take-off: same as above but use the middle flaps setting and climb at the best angle of climb

Note: As you become more familiar with your STOL you can try various flaps settings and speeds. This may improve short field take-off performances depending on piloting techniques and skills.

Climb:

Best rate of climb (V_y): approx. 46 mph with flaps up. This will provide the greatest altitude gain in shortest time.

Best angle of climb (V_x): approx. 35 mph, flaps in middle setting. This will provide the greatest altitude gain in the shortest distance.

Make sure that maximum values for temperatures and pressures are not exceeded.

Cruise:

75 % cruise is achieved at between 2,400 and 2,500 rpm

Lower RPM means slower cruise speed, quieter flying, better fuel economy and increased endurance. Above figured are for standard adjusted propellers.

Descent:

Use some power to prevent engine from cooling too much (approx. 2,000 RPM when descending at 45 to 55 mph)

Best rate of descent is 40 mph, flaps up

Approach:

Throttle full back, 40 mph and flaps down will result in a steep approach for landing in tight spots. Use power to stretch the approach or no flaps - extent them only in short final.

Landing:

When over the runway, move the stick slowly back to prevent touch down until the main wheels make smooth contact. The nose will drop as soon as the stick pressure is released.

Cross wind landings and wind limitations:

Approach with one wing low, or use crabbing technique, or combination of both. Straighten the aircraft out just before touchdown. When winds are over 28 mph, simply takeoff and or land into the wind as practically no ground run is required.

Missed landings:

Apply full power. Pull flaps up when speed is above 45 mph. Continue with circuit pattern.

Shut down (engine):

After normal flight and taxing, engine is usually cold enough to turn off. When making a long taxi with increased power, let the engine cold before shutdown.

1. All Secondary Switches -OFF
2. Ignition switch OFF
3. Master switch -OFF
4. Fuel valve OFF

Remove ignition key when aircraft is unattended

Note: The hour meter counts “engine time” when above 1000 RPM

Tie down:

When the aircraft is not in use, tie it down at each forward tie down loop and at the rear fuselage tie down ring. Tie down the stick forward (use a bungee around a stick secured at the pedals). Make sure the doors are properly latched and locked. A cabin cover will minimize dust, or damage to the windshield and windows and keep curious onlookers out.

Note: This aircraft is equipped with a “parking brake” make sure it is set when parked.

5. Performance

Section 5 provides data for airspeed calibration, stall speeds and take-off, landing and other data. The data in the charts has been computed from actual flight tests with the airplane and engine in good condition and using average piloting techniques.

The flight and operational characteristics of the STOL CH 701 are normal in all respects. There are no “unconventional” characteristics or operations that need to be mastered. All the controls respond in a usual way within the entire range of operations of the airplane.

Speeds provided are indicated airspeed (IAS), unless specified otherwise.

True airspeed = IAS +/- 3 MPH in normal operations

Performances are given in standard atmosphere. Aircraft and, powerplant in new condition with standard equipment.

Stall speed (at gross weight 1100 lbs):

Flaps Up 35 mph

Flaps Down 30 mph

- the above speeds are with engine at idle, the aircraft simply “mushes in” at stall. The airplane has a relatively high sink rate with flaps fully lowered.
- With power, the indicated stall speed is below any accurate indication as nose attitude is very high. Stall occurs around a walking, speed preceded by substantial buffet. The nose drops fast.

CAUTION: Maximum flaps extended speed VF = 65 mph

Take-off distances:

In feet, off hard surface, flaps up 100

Ground roll Sea level (ISA) 169

3 000 ft density altitude 200

000 ft density altitude Take-off distance over 50 ft obstacle 285 ft

- take off distances from grass fields are longer and depend on the actual surface.

Landing distances:

Landing distance over 50 ft. obstacle is 283 ft (ground roll 180 ft)

Climb performance chart:

Rate of climb (FPM, full throttle):

Sea level (ISA) 850 fpm at IAS 50 mph

3000 ft density alt. 720 fpm at IAS 45 mph

6000 ft density alt. 415 fpm at IAS 40 mph

9000 ft density alt. 200 fpm at IAS 35 mph

Service ceiling

With standard original carburetor jet setting: 14 000 feet density altitude at gross weight.
Best rate of climb and best angle of climb - see section 4

Fuel consumption:

Jabiru 2200a

Take-off power 4 Gallons per hour

75 % 3.5 Gallons per hour

Range and endurance:

Engine settings cruise speed max.

Continuous 90 mph

75% 80 mph

Range (NM) 250 - 300

Above values are valid for aircraft in good condition and are without reserve. Ensure that you are not exceeding MTOW limit of 1,100 lbs while loading your aircraft. Before attempting cross-country flights, proper knowledge of the fuel consumption and capacity is required.

Best angle of glide - (gross weight) 45 mph, with flaps up

6. Weight and balance

A wide center of gravity range makes loading your Zenair STOL CH 701 easy. Use the following information and actual weights to calculate and check that Forward and Aft CG fall within the necessary range.

These figures must be within the limits for all flying configurations.

Limits for CG position: 11 to 20 inches

Aircraft center of gravity determination

Measuring the aircraft

- inflate the tires
- Level the upper fuselage longeron with a spirit level
- Measure the length LF and LR: plumb line on the slat leading edge at rib #1 and through the wheel axels.
- weighing the aircraft: Place the empty, but entirely equipped aircraft on 3 scales and level as above.
- Fill weighing report - follow the example on the next page.

On the CH701, the Datum is a vertical plumb line reference from the slat leading edge at rib #1 down to the floor. Horizontal reference is the level cabin frame.

***The MAC of the CH701 wing is 57 inches
Correct CG Range is 20 to 35 percent of MAC***

The forward CG limit is 11 inches from the Datum. The aft CG limit is 20 inches from the Datum.

The right and left wheel distance (arm) from Datum is 26.5 inches

***The nose wheel distance (arm) from Datum is -26.5 inches
(Minus sign is used when the moment is ahead of Datum line)***

The average fuel distance (arm) from Datum is 21 inches

The average Pilot and Passenger distance (arm) from Datum is 20 inches

Moment = Length of Arm X Weight

Computed CG = Total Moment divided by Total Weight

Sample Weight & Balance Report

"ALL WEIGHTS IN LBS, DISTANCES IN INCHES"

FIGURING EMPTY WEIGHT CG

MAIN WHEELS DATA

RIGHT MAIN WHEEL WEIGHT = 205 LBS

LEFT MAIN WHEEL WEIGHT = 217 LBS

MAIN WHEEL DISTANCE FROM DATUM = 26.5 IN.

CALCULATED MAIN WHEEL MOMENT = 11183 INCH/LBS

NOSE WHEEL DATA

TAIL/NOSE WHEEL WEIGHT = 160 LBS

TAIL/NOSE WHEEL DISTANCE FROM DATUM= -26.5 IN.

CALCULATED TAIL/NOSE MOMENT = -4240 INCH/LBS

TOTAL WEIGHT = 582 LBS

EMPTY WEIGHT CENTER OF GRAVITY 11.93 IN

MOMENT 6943.26 INCH/LBS

FIGURING FINAL CG

ENTER THE FOLLOWING AS NEEDED

SUBJECT MOMENT	WEIGHT	ARM	
AIRCRAFT EMPTY WEIGHT	582	11.93	6943.26
INCH/LBS			
PILOT WEIGHT	180	20	3600 INCH/LBS
PASSENGER WEIGHT	X	X	0 INCH/LBS
FUEL WEIGHT (6 LBS/GAL)	120	21	2520 INCH/LBS
BAGGAGE WEIGHT	X	X	0 INCH/LBS
EXTRA WEIGHT #1	X	X	0 INCH/LBS
EXTRA WEIGHT #2	X	X	0 INCH/LBS
EXTRA WEIGHT #3	X	X	0 INCH/LBS

TOTAL WEIGHT = 882 LBS
TOTAL MOMENT = 13063.26 INCH/LBS

AIRCRAFT CENTER OF GRAVITY = 14.81 INCHES FROM DATUM

7. Aircraft and systems description

This section provides description and operation of the airplane and its system.

Construction:

All-metal construction, stressed skin, single curvature metal skins riveted to stiffeners.

Airframe:

Construction is of 6061-T6 aluminum sheet metal riveted to aluminum angles with Avex rivets. This high strength aluminum alloy construction provides long life and low maintenance costs thanks to its durability and corrosion resistance characteristics.

Wings:

The wing has a high lift airfoil with full-span fixed leading edge slats (bolted to the wing's leading edge) "Junker" type (separate airfoil) full-span trailing edge flaperons (combination flaps & ailerons) and Hoerner wing tips to maximize the STOL CH 701's effective wingspan.

Flight Controls:

The STOL CH 701 is equipped with dual control sticks between the pilot and passenger's legs. The classic rudder pedals are connected to a large-diameter steerable nose wheel for easy of ground handling, are equipped with toe-brake hydraulic pedals on the pilot side for effective ground steering. The vertical tail is all moving to provide maximum crosswind capabilities. The trim-control on the elevator is electrically operated from the switch on the instrument panel. The Flap control operates the full span flaperons, and its operating switch is immediately above the throttle control. Maximum permissible flaps extended speed is 65 mph.

Instrument panel:

Instrument panel is situated in front of pilot and includes instruments for control of the flight and engine. The airplane is fitted at least with those instruments:

Control of flight an airspeed indicator

- an altimeter
- a magnetic direction indicator
- a slip indicator (ball)
- control of engine* rpm indicator
- a fuel quantity indicator for each tank
- a Grand Rapids Systems EIS for engine parameters
- a - dipstick - located in the engine compartment

Additional instruments may be installed.

Engine controls:

Single throttle of the push/pull type with adjustable friction clamp. Springs are added to the throttle push rods to ensure that the engine will go to full power if the linkages fail. If the friction clamp is loose, this tends to result in self-application of power unless the pilot keeps constant aft pressure on the throttle. The friction clamp, located at the base of the throttle control, may be tightened or loosened.

Choke: The choke is located directly above the pilot's throttle, at top of panel (push/pull) control.

Carb heat is provided by an electric 2 stage carburetor heater with switches on the right panel.

Master switch connects the electrical system to the 12 Volt battery and charger/coil, controlled by the regulator and a 15 amp reset breaker for safety. See Engine manual for electrical system details.

Note: Engine will run with master off and/or breaker out, (the lighting and ignition coils are two separate circuits) but no electric equipment will operate

Ignition key (or switch) must be ON to operate the engine. For safety remove key when engine is not running.

Starter button (or key) is also located near the ignition key location

Note: All switches and or engine controls are "**up**" or "push forward" for operation, except the choke which is "pull" for "on".

Optional equipment, switches and/or fuses are subject to change or installed as requested. See Equipment list.

The battery is mounted on the forward firewall for Jabiru 2200a powerplant installation.

Powerplant:

Standard powerplant is Jabiru 2200a, 4-cylinder, 4-stroke, w/opposed cylinders. Refer to engine manual for detailed description of the engine.

Fuel system:

The fuel tank(s) are welded aluminum. The standard fuel system consists of two fuel tanks, one installed in each wing near the wing root.

Tanks capacity: 10 gal each for a total of 20 gallons

The fuel tank filler caps have vent holes. There are three drain valves. One on the bottom of the gascolator, located beneath the passenger seat. The other two are just outboard of the cabin at the bottom of the wings. Both wing tanks have a finger screen filter. The main fuel shut-off valve is located at the floor at the right passenger door.

Note: Fuel shut-off valve is open when valve handle is in line with the fuel lines. Both wing tanks have electric fuel gauges located on the passenger side of the instrument panel

Careful fuel management requires a visual check of the fuel quantity using a graduated dip stick. The fuel pump is mechanically operated on the Jabiru 2200a powerplant. See engine manual for details. An electric fuel pump and/or fuel pressure gauge is optional. Jabiru engines are equipped with a single Bing Carburetor. The carburetor has a sediment bowl with an additional fuel strainer (fine mesh filter). See engine manual.

Caution: Consult the engine manual for the types of fuel and oil to use. Use only types approved by the engine manufacturer. The engine is mounted within the sleek cowlings and provides easy access via quick fasteners for pre-flight inspection. The Oil Cooler is mounted at the front of the cowling, beneath the prop hub, in the direct airflow to maximize cooling in hot operating environments.

Propeller:

Non adjustable 2 blade wood prop.

To prevent vibration, it very important that the blade is properly secured in the hub.

Landing Gear:

The main gear consist of a solid mono leaf heat-treated aluminum alloy spring suspension which eliminates all moving parts and is virtually maintenance free. The nose gear uses a heavy duty bungee shock absorber to provide rough field capabilities. Heavy Duty Wheel Forks are also incorporated. They consist of a double over the standard wheel forks to add additional lateral stiffness.

Cabin doors:

Access to the comfortable cabin is via large hinged bubble doors on each side to provide easy individual entrance. They are secured by a full width hinge at the top of the door and have a locking mechanism/door handle. For flight, doors may be removed by simply removing the top hinge pin if desired. Doors, if installed must be closed for flight.

Seats:

Side-by-side seating. Seat cushions are removable for cleaning and drying. Seatbelts are secured to the airframe by a 4-point system.

Note: Prior to each flight, ensure that the seat belts are firmly secured to the airframe and that the belts are not damaged. Adjust the buckle so that it is centered on the body. Ventilation is provided by the standard adjustable door vent in each bubble door. Exhaust type cabin heater is an option where fresh air is heated by an exhaust shroud and ducted to the pilot's feet (pull "choke type" control for heat).

Caution: Incidents involving exhaust gases entering the heating or ventilation system may result in fatal accidents due to carbon monoxide poisoning of the aircraft occupants.

Pitot and static pressure system terms:

The Pitot (dynamic) pressure is provided by the pitot tube mounted under the left wing.

(Note: blowing into the tube will damage the airspeed indicator). The static pressure is provided by a pair of static ports located on either side of the fuselage just forward of the bubble doors.

The Baggage Compartment

Space is provided behind the seat. It may accommodate up to 40 lbs of evenly distributed and properly secured cargo. When loading baggage, make sure that weight and balance is correct - always refer to section 6 - Weight & balance

Optional equipment

Utility Options such as skis, floats, amphibious floats, etc. are available from Zenair for a variety of uses.

Caution: The installation of skis floats, amphibious floats, or other equipment will change the performance and characteristics of the STOL CH 701. The pilot must obtain proper instruction (or endorsements) prior to flying the aircraft with such equipment and assure that such equipment is properly installed to the aircraft.

Note: According to regulation, the airplane must have a fireproof identification plate fixed to the airframe and have the proper registration markings. Make sure that all required documents are carried on board the aircraft.

8. Aircraft handling, servicing and maintenance

This section contains factory-recommended procedures for proper ground handling and servicing of the airplane. It also identifies certain inspection and maintenance requirement

which must be followed if the airplane is to retain that new-plane performance and dependability. It is wise to follow a planned schedule of lubrication and preventive

maintenance based on climatic and flying conditions encountered.

Always handle the aircraft with care. Do not push on any control surface (this includes the stabilizer). To push the tail down, lift the prop hub or push down on the rear fuselage. To move the aircraft, do not push or pull at the centre of the struts, as bent struts are inappropriate for safe flying. Pushing or pulling is acceptable on the gear and at the bottom and top of the struts (close to their attachment points). In all circumstances, follow all safety precautions pertaining to aircraft, especially around the propeller area.

As the STOL CH 701 is an all metal aircraft built from high strength aviation grade aluminum alloys which have good corrosion resistant characteristics, little care to the airframe is required, especially when stored outside. Polyurethane paint will keep its high gloss for many years when sponged with water. A cup of dishwasher liquid in a pail of water will help remove unwanted dirt. Always rinse thoroughly with fresh water after washing.

Maintenance program

The following maintenance program outlines the minimal maintenance which must be followed to keep the aircraft in good flying condition. The suggested time interval of 25

hour does not in any sense eliminate the need for routine maintenance before and after each flight. Maintenance is part of the pilot's responsibility: the pilot should be assured that the aircraft is airworthy at all times. The recommended 25 and 100 hour maintenance checks are designed to cover areas frequently neglected in the quicker preflight inspection and serve only as a useful indication of the required maintenance. Record all maintenance and repairs in the Aircraft Log Book. Aircraft servicing and maintenance should be performed by a qualified individual. For spare or replacement airframe parts, use genuine Zenair parts to guarantee long life and durability. Use only genuine engine manufacturer parts on the engine. Contact your Zenair dealer or manufacturer for all your service, maintenance and parts requirements.

For Zenair factory technical support or to order parts:

Zenith Aircraft Company
Mexico Memorial Airport
PO Box 650
Mexico, MO 65265-0650

Phone: (573) 581-9000
Email: info@Zenair.com

Every 25 hours

Check the general condition of the STOL CH 701 and in particular the following:

General: Verify that no cables are chafed, check for proper anchorage and attachment of all items (fuel, coolant, and oil lines, electrics etc). Verify that all fasteners and pins have the required safety.

Controls: Check for rust on steel parts (clean and repaint as required). Lubricate all moving parts (hinges, control attachments, bearings, etc). Verify that all controls operate smoothly and that they are firmly attached.

Landing gear: inspect nose gear, stops, bungee, control and inspect the main spring, wheel forks and axles.

Wheels: for correct tire pressure see picture. Check the tire wear, rims, and braking system and lines.

Cabin interior: Clean with household cleaners according to the materials. Soap or detergent and water is not recommended for cleaning the upholstery since they could remove some of fire retardant with which the seats may have been treated.
3/4

Windshield and windows: The windshield is a single piece of polycarbonate plastic, highly resistant to impact. Clean with "Windex" as the polycarbonate will craze with most chemicals. Do not use gasoline, alcohol, oil, lacquer, benzene, paint thinner, etc..... The optional protective windshield cover will protect it from dust, sand and curious onlookers.

Battery: Check fluid level, especially in hot water. Maintain the level at the top level mark by adding distilled water as required (read instructions located on battery). Do not overfill as spillage may corrode the airframe.

Propeller: Wood propellers are inexpensive and dampen vibrations efficiently, but maintenance is required to keep the propeller in proper condition. The prop may need

periodic re-varnishing. Check the tips and leading edges for damage. Look for nicks and

cracks. Inspect spinner, bolts (tight and secured). Wiping the propeller with an oily cloth

will result in cleaning off grass and bug, stains. Do not operate airplane in rain since the

wood propeller will get damaged.

Engine compartment: Thoroughly check and inspect the engine compartment, including the exhaust system, fuel system, oil system and coolant system. Remove and clean the carburetor bowls. Clean (replace if required) the carburetor air filter. The engine and compartment should be kept free of any accumulation of oil, grass and dirt to prevent a fire hazard. See Engine manual for more information.

Engine: Refer to engine manual - follow the recommended procedure by engine manufacturer.

Engine cowling: Check for looseness, CamLock fasteners, front pins and any damage or cracks. Make sure it is properly secured.

Fuel: Remove, clean, and re-install gascolator. Inspect for any leaks and loose fittings in

the lines and tank(s), and assure the smooth operation of shut-off valves. Clean (or replace) any installed filters.

Every 100 hour or six months (whichever comes first)

Clean the aircraft: exterior and interior and remove the rear fuselage bottom access door. Make a thorough inspection of the whole aircraft, inspecting for any damage, wear or corrosion.

Front of aircraft: Check and inspect the following: Engine (see engine manual), controls and hoses, engine mount, propeller, battery, exhaust, radiator, firewall, nose gear and wheel. Check that all bolts and nuts are tight and safety tied.

Fuel system: Check for leaks, check condition and safety of lines and valve operation.

Clean, re-install (or replace) and secure all filters, gascolator and tank finger screen.

Fuselage: Check skins and internal structure for loose rivets, bolts, corrosion and buckling due to miss-handling or over-stressing. Check that the drain holes in the bottom of the fuselage are not plugged up.

Controls: Inspect for looseness, wear, fair-leads and terminals.

Wing & Struts: Check skins, replace loose rivets, and check for corrosion and buckles (from mishandling), inspect leading edges and trailing edges. Check bolts and safety (struts, jury struts, wing root attachments, slats and flaperons). Check control surface stops and flaperon interconnection.

Tail: Inspect skins and rivets and look for and correct corrosion etc. Check attachment of tail sections to fuselage, cable ends, trim tab, etc. Check control surface stops.

Landing gear: Refer to 25 hour check list

After the thorough inspection of the aircraft, and after having done the required maintenance and/or repairs, re-install the rear fuselage access door and run the engine for smooth operation. Check all control hinges and moving parts for wear. Replace when clearance exceeds maximum wear of 0.6 mm.

Oil the following (standard "motor" oil):

- all bearings
- all flaperon hinge points
- all flaperon control rods *
- roll control torque tube
- elevator and trim (trim + control)
- all rudder hinge points
- all elevator bell cranks *
- flaperon mixer *
- all pitch control rod ends *
- all control stick bearings (in cabin)
- pedals (3 bearings, cable ends, brake pedals)
- flaperon and trim controls
- all cable ends (also *)
- all throttle bearings

- choke control (if applicable)all door hinges and latch
* inside fuselage - access through fuselage door.

Grease (with ball bearing grease): the nose gear strut (top and bottom bearing) and nose wheel axle, and grease all cable fairleads.

Main gear spring attachment.. Check that the rubber pads are undamaged and properly secured in place (check top and bottom, right and left sides).

After having made a hard landing: Check the wheel forks (especially if landing was in cross wind), they may be bent sideways. Check the main gear spring, forks, wheels, nose gear strut attachments top and bottom.

Note: If an unusual fact is discovered at any time, during pre-flight or at scheduled inspections, contact a Zenair dealer or the manufacturer for the proper maintenance procedure. DO NOT attempt to maintain or repair the aircraft without proper qualifications. ALWAYS refer to the STOL CH 701 Plans and Manuals, end Engine manual(s) before effecting repairs or replacing parts. ALWAYS use approved replacement parts.

Rivet replacement: Drill out loose or corroded blind rivets and replace using Avex rivets. If required, replace with a rivet the next size up. And/or add another rivet at approximately 12 mm center distance.

Caution: do not damage internal structure when drilling.

Cracked sheet metal: If a small crack appears, stop the crack by drilling a small (3.2 mm) hole at the end of crack. If crack grown again add a patch of the same thickness material and rivet all around with AVEX A4 rivets at a maximum pitch of 40 mm. Do not damage internal structure when drilling.

Buckled trailing edges (due to mishandling): They are usually net detrimental to the strength of the aircraft, as long as the buckle does not exceed 15 mm over 1 m. They may slightly off-set the correct trimming in flight. Check for cracks which may develop.

ADDITIONAL NOTES: