

# FLIGHT MANUAL

## FOR POWERED SAILPLANE

# ASH 26 E

Model Variant : ASH 26 E  
Works Serial No. :  
Date of Issue : JULY 95

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28. Juli 1995  
..... (Original Date of Approval)

This powered sailplane is to be operated only in compliance  
with the operating instructions and limitations contained  
herein.

The translation has been done by best knowledge and judge-  
ment. In any case the original text in German is authoritative.

## SECTION 7

### 7. Description of the Powered Sailplane, its Systems and Equipment.

- 7.1 Introduction
- 7.2 Airframe
- 7.3 Flight Controls, incl. Flaps and Trim.
- 7.4 Airbrake System
- 7.5 Landing Gear System
- 7.6 Cockpit, Canopy, Safety Harness and Instrument Panel
- 7.7 Baggage Compartment
- 7.8 Water Ballast System
- 7.9 Power-plant
- 7.10 Fuel and Oil Tank System
- 7.11 Electrical System
- 7.12 Pitot & Static Pressure System
- 7.13 Miscellaneous Equipment  
(Removable ballast, Oxygen, ELT,  
Steerable Tail Wheel)

## 7.1 Introduction

This Section contains a description of the powered sailplane, its systems and equipment with instructions for use. Details of various ancillary systems and equipment, not included as standard equipment, can furthermore be found in Section 9.

A detailed technical description with overall view drawings can be found in the Maintenance Manual, Section 2.

The principal purpose of this Section is to describe the controls in the cockpit, their layout and labels.

## 7.2 Airframe

The ASH 26 E wing is equipped with trailing edge flaps over the whole of its span. The inboard flap is defined as a '**camber changing flap**'. When landing flap setting is selected, this flap deflects downwards by some 38°. This flap is also actuated by the aileron control, however, it is deflecting less than the aileron.

The outer flap is called '**aileron**' as it is mainly actuated by the aileron control. In addition the aileron is also deflected in accordance with flap settings.

In landing flap setting, the aileron deflects upwards by about 6°. This helps to keep the ASH 26 E fully controllable during the landing run.

The wing is equipped with vortex generators on the lower surface for the purpose of boundary layer control. The air emitted

# ASH 26 E Flight Manual

control. The air emitted through the jet capillaries in the camber-changing flap and in the aileron is fed from the pitot tubes mounted - next to the control surface actuators - on the lower surface of flap and aileron.

## 7.3 Flight Controls, incl. Flaps and Trim

### (1) Aileron and Elevator

Both these controls are operated by means of the control column. The stick is also fitted with the trim release lever for setting the trim, and with the radio transmit button.

### (2) Rudder

The rudder pedal is adjustable to suit the length of the pilot's legs.

Pedal adjustment:  
grey knob right hand  
side of stick



#### To move pedals aft:

relax foot pressure on pedals and pull them back by the knob. Then release knob and apply pressure to pedals to lock in position.

#### To move pedals forward:

pull knob and push pedals forward with your heels. Release knob and push again to lock in position.

# ASH 26 E Flight Manual

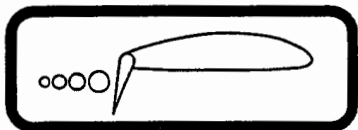
## (3) Flap Controls

Flap settings are selected by means of the black handle at the left cockpit wall. Pivot the handle down to unlock so that it may be moved forwards or backwards.

The flap positions are marked 1, 2, 3, 4, and L above the location notches.



Flap in speed flight  
setting



Flap in landing  
setting

## (4) Trim

To set the trim, simply press the trim release lever at the control stick when flying at the desired air speed.

A trim indicator is fitted at the left cockpit wall next to the seat.

# ASH 26 E Flight Manual

The trim can also be adjusted by sliding the trim indicator knob to a desired position, if it is first unlocked by pressing the stick mounted trim release lever.



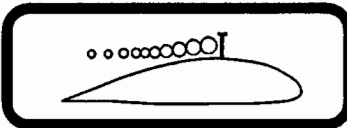
Trim nose heavy



Trim tail heavy

## 7.4 Airbrake System

The airbrakes are operated by a blue handle mounted at the left cockpit wall underneath the flap lever.



Pull the blue handle to extend the airbrake paddles.



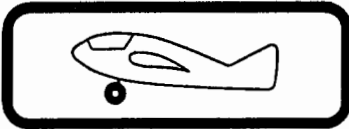
When the airbrake handle is pulled back to its fullest extent, it will also actuate the hydraulic disc brake of the main wheel.

The airbrakes extend on the upper wing surface only.

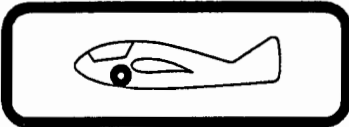
# ASH26EFlightManual

## 7.5 Landing Gear System

The landing gear is extended and retracted, and locked at either position, by means of the black handled lever mounted at the right-hand cockpit wall.



Landing gear extended.  
(lever forward)



Landing gear retracted.  
(lever aft)

### Tire pressures:

The values are given in the Data and Loading Placard. This placard is affixed in the cockpit and a copy of it shown at the end of Section 2 of this manual.

# ASH 26 E Flight Manual

## 7.6 Cockpit, Canopy, Safety Harness and Instrument Panel

### (1) Tow Release Couplings

The two release couplings are released by a yellow handle on the top left cockpit wall.



Pull yellow handle!

Pulling the yellow handle will open both of the tow release couplings.

To allow the launch cable to be attached, pull the yellow handle back and then merely release it to allow the tow release coupling to snap shut and lock.

### (2) Seat and Seating Positions

The seat including backrest and headrest has been designed in accordance with latest research results from TÜV Rheinland (German Technical Test Institute).

The pilot has achieved his best seating position when his upper thigh rests against the slope of the seatpan with his bottom in the curve beneath. The layout of the anchoring points of the lap belt towards the seat pan is such that a submarining below the lap belt will become unlikely when the pilot has gained the above seating position.

The seat is designed to allow even very tall pilots to sit comfortably. With the appropriate choice of parachute (for tall pilots we would recommend the use of thin parachute packs of the new type) any pilot size should reach a comfortable seating position.

## ASH 26 E Flight Manual

Very short pilots will have to adjust their seating position by means of a stiff cushion (high energy absorbing foams are to be preferred) so that all controls are within comfortable reach and that they sit high enough to have a good view to the outside.

Short pilots have reached a sufficiently high seating position when the instrument panel does not obstruct their view to the front. The instrument panel has been designed such that the front canopy frame can be seen if the correct seating position has been taken.

It is very important for all pilot sizes to adjust the backrest appropriately and to lock it safely so that they are prevented from sliding back during initial take-off (winch launch) acceleration.

For the very same reason it must be ensured that additional cushions are sufficiently stiff.



Watch the correct engagement of the handle for the back rest adjustment!

### (3) Canopy

The canopy is locked by means of the two white lever handles fitted to the canopy frame at the right and left.



Push white levers forward to lock the canopy!

To open the canopy, both white locking levers are pivoted to the rear and the canopy is then pushed up.

## ASH 26 E Flight Manual

When the red levers mounted at either side of the canopy frame are operated, the canopy emergency jettison is actuated.



To jettison: pull both red levers and push canopy away upwards by means of these levers!

Operating the red jettison levers will automatically open the white locking levers, leaving the canopy resting loose on the cockpit rim.

Following investigations made by Prof.Röger, Technical University Aachen, it was realized that it is necessary to have a device which - in the case of an emergency jettisoning - will keep the rear end of the canopy still down so long until its front end has lifted enough to be blown off backwards. As we did not want to install unnecessary mechanism for providing such a rear fulcrum point, the ASH 26 E now uses a pin fitted into the canopy frame which engages - in a similar way as a push button - into a spring mounted into the fuselage-side canopy rim. See also Section 3.2.

**NOTE:** If possible, do not leave the aircraft parked or unattended with canopy open, because:

1. The canopy could be slammed shut by a gust of wind which might shatter the perspex.
2. At unfavorable elevations of the sun (from behind) the canopy could act as a lens concentrating the sun's rays, which might ignite cockpit instruments and equipment.

# ASH 26 E Flight Manual

Operating the jettison levers allows the canopy to be removed for easy access when inspecting instruments.

## (4) Safety Harness

The safety harness is anchored in such a way that it cannot jam the control runs underneath the seat pan.

The safety harness (shoulder straps, too) should be worn at all times, and should be fully tightened. Check every time that each individual strap is properly secured in the harness lock. The lock should also be tested from time to time to ensure that it can be satisfactorily released under load.

## (5) Ventilation:

A ventilation flap is located at the front of the canopy frame.



It is operated by means of the small black knob on the instrument panel. Pull to open.

This flap also serves as a demister.

A further air outlet nozzle is fitted at the right cockpit wall to the right of the instrument panel, which is opened and closed by twisting the rim and the direction of which can also be adjusted.

This air outlet should be closed if the demisting function of the front ventilation flap needs to be made more effective.

# ASH 26 E Flight Manual

## (6) Instrument Panel:

For safety reasons, only a GRP panel made in accordance with the factory lamination plan may be used.

Instruments weighing more than 1 daN need further support, in addition to their fixing screws. This can be done by means of aluminum straps fixed to the instrument pod.

Instruments with operating controls must be fitted where they are within reach, when the pilot is strapped in.

Flight monitoring instruments, like ASI and altimeter, must be mounted within the pilots field of view.

## 7.7 Baggage Compartment

Hard objects must not be carried in the baggage compartment in front or on top of the spar without a suitably designed lashing or anchorage!

If, for instance, a barograph or battery is to be carried in this space, a mounting approved by the manufacturer must be used.

The baggage compartment load must not exceed 15 kg = 33 lb. This is placarded.

Baggage compartment load **max. 15 kg**  
(33 lbs.)

# ASH 26 E Flight Manual

## 7.8 Water Ballast System

The water ballast system is not contained in the standard factory equipment and will be installed only if expressly ordered. Retrofitting is possible.

The water ballast valves in the wings are actuated mechanically. The actuating lever is fitted at the right cockpit wall behind the landing gear lever.



Move lever forward: the valves in both wings open at the same time.

In each wing two water ballast bags can be connected to each valve which provides suitable possibilities of better adjusting the ballast system to various tasks.

Normally the outer water bags are sufficient for the powered sailplane ASH 26 E to gain its maximum wing loading. So flexible wing fuel tanks can be installed instead of inner water bags.

If the ASH 26 E is operated with the power-plant removed, the maximum wing loading can only be obtained when fitting the inner water bags.

# ASH 26 E Flight Manual

## 7.9

### Power-Plant

The Propeller of the power-plant unit - when retracted - is accommodated in the engine bay in the fuselage behind the wing.

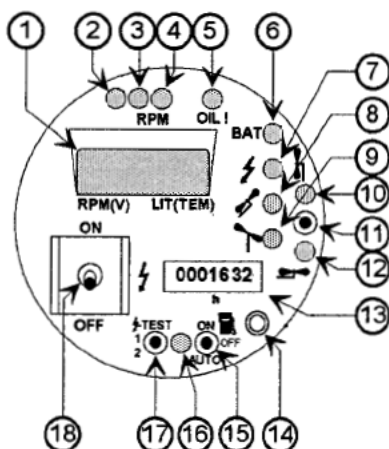
It is extended and retracted by means of an electric jack.

The following control elements are provided for the power-plant :

- the Control Console (beneath the instrument panel in front of the stick,
- the ILEC Control Unit (fitted in the instrument panel),
- the Power-Plant Main Switch (fitted in the instrument panel),
- the Fuel Valve (left to the seat pan)
- and the Rear-View Mirror for Propeller Positioning (on the instrument panel cover).
- and the Fire Warning Light (red blinking light diode in the instrument panel).

# ASH 26 E Flight Manual

**Fig.7.9-1 ILEC-Power-Plant Control Unit Overall View**



- 1 LC Display
- 2 Green Light Diode for green RPM Range
- 3 Yellow Light Diode for yellow RPM Range
- 4 Red Light Diode for Max. RPM
- 5 Yellow Light Diode: Engine Oil Warning
- 6 Red Light Diode: Generator Warning
- 7 Red Light Diode: Ignition Off while attempting to start
- 8 Red Light Diode: Propeller not entirely extended
- 9 Red Light Diode: Propeller not ready for retraction  
(only in function if a propeller sensor has been installed which is an optional extra)
- 10 Green Light Diode: Propeller entirely extended
- 11 Switch for extending/retracting propeller
- 12 Green Light Diode: Propeller entirely retracted
- 13 Engine Elapsed Time Indicator
- 14 Push-button for changing over LC Display
- 15 Selector switch for controlling fuel tank(s)
- 16 Yellow Light Diode: tank valve opened
- 17 Spring-return toggle switch for testing ignition circuits
- 18 Ignition Switch

# ASH 26 E Flight Manual

## Description of ILEC Engine Control Unit

The figures given in brackets refer to the numbering in the preceeding ILEC Overall View.

The basic mode LC Display [1] is indicating at the same time two values, i.e. RPM and Tank Contents (in liters). By pressing the white push-button [14] once, twice or three times the display mode is switched to read the coolant liquid temperature (in °C), the internal cooling air temperature (in °C), or the battery voltage respectively.

The light diodes [2], [3] and [4] indicate the green, yellow and red Revolution Range. When maximum RPM have been reached, the red diode lights up; additionally the RPM-reading in [1] starts blinking.

When the yellow diode [5] lights up, there is only a reserve for about 10 minutes left in the engine oil tank.

**WARNING:** If the engine is continued to be operated beyond these 10 minutes, the engine oil supply will break off.  
The engine will suffer unrepairable damage and will fail in a short time.

The red diode [6] lights up when the voltage of the board circuit has dropped below 12.8 volts. This will be the case when the generator has failed. The ignition and all other power consumers will now discharge the battery. If the engine is stopped and the propeller retracted, this diode goes out.

## ASH 26 E Flight Manual

**WARNING:** Depending on the battery charge you must face the possible failure of the ignition and hence the engine stoppage.

The toggle switch [11] is used to extend or retract the propeller. The upper position "Propeller Extended" is a detent-setting (the green LED [10] lights up). The switch remains engaged in the upper position with running power-plant.

The lower position "Propeller Retracted" has no detent-setting for safety reasons; it must be set and held down until the green diode [12] lights up.

In addition the engine bay doors slam audibly.

**NOTE:** With the Ignition ON [18] the propeller can be extended, but not retracted.

The elapsed-time indicator [13] starts recording the engine running time in hours and 1/100 hours when the number of revolutions are exceeding 2000 RPM.

The spring-return toggle switch [17] serves to test the two ignition circuits. e.g. pressing it to side 1 will interrupt circuit 2 and circuit 1 is then tested.

The revs must not drop by more than 200 RPM.

The switch [18] turns the ignition ON and OFF. When the ignition is ON, the function of the fuel pumps can be checked accoustically.

## ASH 26 E Flight Manual

The diode [7] blinks red, when the STARTER button {5} in the Control Console (see following Figure 7.9-2) is pressed while the ignition is off.

On the other hand, this diode [7] will also be blinking, if it is attempted to retract the propeller with the ignition turned on.

The diode [8] blinks red when the propeller is not yet entirely extended while the ignition is turned on. The STARTER is now blocked.

If a propeller sensor is fitted (offered as an optional extra), the diode [9] blinks red when switch [11] is pressed downwards WHILE the propeller is NOT yet vertical, i.e. not ready for retraction. The propeller cannot be retracted.

Selector switch [15] controls the tank system of the ASH 26 E. The flexible wing fuel tanks mentioned hereafter are not contained in the basic equipment and will be installed only if expressly ordered.

The upper position "ON" opens the magnetic valve for the flexible wing fuel tank(s), at the same time the yellow diode [16] lights up. The magnetic valve remains open, even if the fuselage tank is full. This position is intended to ensure that the wing fuel tanks will actually be entirely emptied. The lower position "AUTO" is switching on the automatic re-filling of the fuselage tank. When the fuel level in the fuselage tank gets lower than a certain number of liters, the magnetic valve is automatically opened, the diode [16] lights up and fuel is fed from the wing fuel tank(s). When the fuselage tank has been topped up, the magnetic

## ASH 26 E Flight Manual

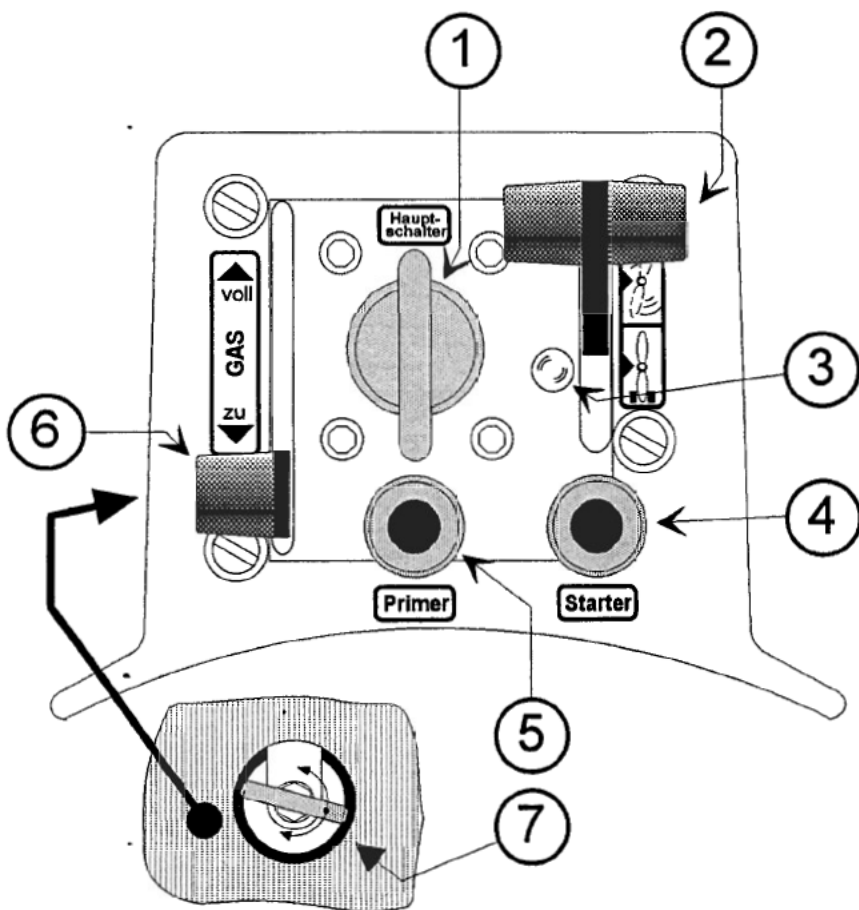
valve is automatically closed and the diode [16] goes out. When using the "AUTO" setting it is almost unlikely that fuel is lost by overflowing through the tank vent. A detailed description of the tank control system follows under Section 7.10.

### ILEC-Control Unit Indicating and Warning Ranges :

| Subject                    | Range                                                                                              | WARNING              |                 |
|----------------------------|----------------------------------------------------------------------------------------------------|----------------------|-----------------|
|                            |                                                                                                    | Blinking             | Honk            |
| RPM                        | See Section 2.5                                                                                    |                      | -               |
| Coolant                    | 40-150 °C                                                                                          | above<br>106 °C      | above<br>106 °C |
| Internal Cooling Air       | 40-150 °C                                                                                          | above<br>128 °C      | above<br>128 °C |
| Fuselage Tank              | 0-16 Liter                                                                                         | < 4 Liter            | < 4 Liter       |
| Wing tank(s)<br>Fuel Valve | Valve opens when less than 4 l in fuselage tank and closes at 12 l. Only with [15] in AUTO setting |                      |                 |
| Engine Hours Counter       | above 2000 RPM                                                                                     |                      | -               |
| Oil Tank [5]               | less than 132 cm <sup>3</sup>                                                                      | yellow LED lights up | -               |
| Generator<br>Warning [6]   | less than 12.8 V battery voltage                                                                   | red LED lights up    | -               |

**Fig. 7.9-2**

**Power-Plant Control Console**



- 1 Main Switch: Avionic and power-plant
- 2 Propeller stop
- 3 Pin for engaging propeller stop
- 4 Starter
- 5 Primer
- 6 Throttle
- 7 Adjusting lever for throttle friction brake

# ASH 26 E Flight Manual

## Description of the power-plant control console:

The figures in braces refer to the numbering in the preceeding control console view.

The Main Switch {1} cuts out the battery from the circuit for power-plant and avionics.

When the propeller stop {2} is moved downwards and engaged behind the pin {3}, a stop block is pivoted into the arc of the propeller. A tab at the stop lever {2} obstructs the access to the STARTER button {4}.

The PRIMER button {5} opens an electromechanic valve and thereby injects fuel into the engine.

This serves as take-off assistance and makes a choke unnecessary.

**CAUTION:** The Primer is only effective when the ignition is ON and the fuel pump operating.

The Throttle {6} is set idle in the bottom position. The upper position is Wide Open Throttle.

# ASH 26 E Flight Manual

## Further power-plant controls in the cockpit:

### **Power-plant main switch:**

This is an additional main switch for the power-plant electrical circuit and is fitted in the instrument panel. The Main Switch for the Power-Plant electric system is also an automatic circuit breaker. Pressing the black push-button switches on the power-plant circuit: the ILEC is illuminated. Next to the black push button of the main switch there is a red lever, which if pressed towards the push button will unlatch it and interrupt the circuit: ILEC must go out. If the electrical circuit of the power-plant is overloaded, the black push button will be automatically unlatched. The circuit breaker is re-set by pressing the black button.

### **Fuel valve:**

The fuel valve is next to the seat pan at the left cockpit wall.



In the forward position the fuel valve is open. Rear position is shut.

**CAUTION:** Prior to attempting to start the engine the position of the fuel valve must be checked and where necessary moved to its foremost position.

### **Fire warning light:**

A temperature sensor is fitted in the engine compartment which triggers the fire warning at a temperature above 140 °C. The fire warning is a red blinking diode in the instrument panel with the

with the following placard:

**FIRE**

If a fire warning is given, proceed as per Section 3 "Emergency Procedures" under para 3.8.

## **Rear view mirror for propeller setting:**

This mirror is fitted at the right on the instrument panel cover within the pilot's view. By means of this mirror the vertical position of the propeller must be checked prior to retracting it.

## **7.10 Fuel and Oil Tank System**

See also Fig.7.10-1 at the end of this Section.

The fuel system consists of a fuselage tank, mounted in the wheel well, with a fuel capacity for about a one-hour's operation.

**As an optional extra the ASH 26 E may also be ordered with one or two fuel tank(s) fitted in the wing(s).**

The fuel drainer is located at the rear end of the left fuselage tank and is easily accessible when the landing gear is down. The fuselage fuel tank vent is fitted at the left-hand side of the fin, above the tail wheel. The wing tank(s) is/are vented through the vent hole in the lower wing surface, near the wing root rib; else - if this option has been ordered - the wing tank vent is returned into the fuselage tank.

The tank of the total loss oil lubrication is fitted in the engine compartment between engine block and exhaust silencer and is accessible when the propeller is extended.

**WARNING:** The rotary engine uses a total loss oil lubrication. If no oil is refilled into the oil tank or if the oil supply gets interrupted, this will inevitably destroy the engine.

|                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Avgas 100 LL    or Car Super<br>min.94 RON/ROZ<br><br>Tankage:<br>Fuselage                        = 16 liters<br>if installed:<br>wing fuel tank, right    = 15 liters<br>wing fuel tank, left     = 15 liters<br>non-usable                 = 0.7 liters<br><b>CAUTION:</b><br>check engine oil tank level! |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Engine Oil:</b> ➡<br><b>Silkolene Comp 2 Pre-mix</b><br>Castrol Aviation A545 or<br>Spectro Oils of America<br>"Golden Spectro"<br><b>Top up with each refuelling!</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Oil usage must be checked. The following values may be given as an indication (consumption is RPM sensitive):

- a)    0.2 liters oil/h with an RPM of 6900.
- b)    or slightly more than 0.015 liters oil per liter fuel.

## (1) Fuel Filling Systems

Filling of the fuel tanks in fuselage and wings must be carried out only either by means of the fuel refilling equipment available as optional extra or by means of a funnel with corresponding connecting hose and filter. The electric refueling equipment mainly comprises the fuel hose connectors, a fuel pump with electrical plug, a fuel filter and a hose which is inserted into a fuel container when filling-up. The electrical plug fits the socket mounted in the instrument panel for this purpose.

## (2) Filling of Fuselage and Wing Fuel Tanks

The optional wing fuel tanks are connected to each other and to the fuselage tank by their filling hose couplings in the baggage compartment in front of the main spar. These couplings are fuel tight, even if they are disconnected one from the other with the tanks full.

To fill up, the adaptor of the tank to be filled is connected with the appropriate adaptor of the filling system **outside** the fuselage - the fuel hoses are long enough - and the electrical plug is inserted into the socket in the instrument panel.

For filling the fuel tank(s) it is recommended to use the electric refueling system (optional extra). When all connections have been coupled up, the filling equipment is switched on by means of the plug switch.

**WARNING:** If the wing tank vent is returned into the fuselage tank (optional modification), then in any case the vent tube must always be connected at the fuselage-to-wing separation joint already during the rigging !

**CAUTION:** Filling of fuel may only be carried out either by means of the optional electric refueling pump system or by means of a funnel. More powerful pumps could burst the wing shell in the course of filling the wing tanks!  
The fuel filter in the filling hose must not be removed.

The fuel hoses from the tanks must be connected with the re-fuelling system only **outside** the fuselage. This will prevent fuel dripping into the fuselage.

When filling the fuselage tank, monitor the fuel level indicator and switch off the electric filling system at the latest when 16 liters are indicated. When filling the fuselage tank via a funnel, the funnel must not be placed higher than the capacity reservoir mounted in the fuselage (see Fig.7.10-1). This will prevent the capacity reservoir from being filled inadvertently.

|                     |                 |               |                 |                 |                                  |
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|---------------------|-----------------|---------------|-----------------|-----------------|----------------------------------|

As the wing tanks are not equipped with a fuel gauge, it is advisable to fill from a container of a capacity approximately matching that of one wing tank, or on which the amount filled can be read off. As in the case of filling water ballast tanks, the respective wings are lowered in turn.

**Fuselage and wing tank(s) must not be refilled simultaneously.**

When fueling has been completed, the filling equipment is disconnected and the wing tanks are re-connected with the fuselage tank. Now verify in any case that the tank selector switch **[15]** at the ILEC control unit is re-set to position "**OFF**". If it remains in position "**ON**", fuel from the wing tank(s) would be fed into the fuselage tank and then overflow through the tank vent.

### **(3)Topping-Up of the Fuselage Tank in Flight**

The engine is fed with fuel exclusively by the fuselage tank. The wing tanks merely serve to top up the fuselage tank. If, therefore, the fuselage tank is to be topped-up with fuel from the wing tanks in flight, the magnetic valve of the wing tanks must be opened at the ILEC control unit (switch **[15]** must be set to "**ON**" or "**AUTO**"; in position "**AUTO**" the yellow pilot light **[16]** is only illuminated if fuel contents in the fuselage tank is less than 4 liters).

**WARNING:** With the switch in position "**ON**" care should be taken to close the wing tanks again in good time in order to prevent the fuselage tank being over-filled, causing fuel to be lost by overflowing through the tank vent. Monitor fuel level indicator!

# ASH 26 E Flight Manual

**CAUTION:** It is recommended to use the switch [15] only in setting "AUTO" because this makes it less likely that the fuselage tank will be overfilled. Anyhow, fuel level indicator must always be monitored !

## (4) Draining Wing Fuel Tanks on the Ground

In order to drain the wing tanks on the ground, both flexible wing fuel tanks must be disconnected from the fuselage tank. Have a suitable container ready, and pull the hose with the appropriate connector off the fuel filling equipment. This hose is inserted into the container, and connected to the wing tank it is intended to drain.

## 7.11 Electrical System

Refer also to Fig.7.11-1 and 7.11-2 at the end of this Section.

### (1) Soaring Flight Board Circuit

The electrical system is supplied by a 12V battery. A main switch {1} is installed in the power-plant control console which is turning on the board system. Each electrical appliance is protected by its own fuse.

There are different possible configurations to supply the electrical board system. Refer also to Fig.7.11-1.

# ASH 26 E Flight Manual

## (2) Power-Plant Current Supply

The power-plant circuit is fused through the Power-Plant Main Switch. Only the engine battery is being charged during powered flight.

It is depending on the charge of the engine battery whether the propeller can be extended or retracted.

## 7.12 Pitot and Static Pressure Systems

Refer also to Fig.7.12-1 at the end of this Section.

The pitot pressure for the ASI system is obtained from the pitot tube in the fuselage nose, static pressure from the static ports at either side of the fuselage tail boom.

For electrically compensated Variometer systems a pressure supply from the Prandtl-Tube mounted in the fin is more suitable. Ensure that this Prandtl probe is fully pushed home in its seating. The inner end of the probe should from time to time be lightly lubricated with Vaseline or a similar lubricant, in order to save the O-ring gaskets from wear.

# ASH 26 E Flight Manual

## 7.13 Miscellaneous Equipment

### (1) Removable Trim Ballast

On customer request, the ASH 26 E can be equipped such that trim ballast can be mounted in front of the pedals.

In this location, for example a 1 kg (2.2 lb) lead trim plate has the effect of a pilot mass of 3 kg (6.6 lb).

Thus, a pilot weighing 6.0 kg (13.2 lb) less than the minimum cockpit load must use 2 kg (4.4 lb) of lead trim ballast.

Prior to take-off check the weight of the trim plates and their secure fixing !

One trim plate equals a pilot mass of 3.0 kg (6.6 lbs)

### (2) Trim Ballast (Battery) mounted in the fin

If trim ballast (e.g. a battery) is fitted in the fin, the minimum cockpit seat load will be more than 70 kg = 154 lbs (incl. parachute).

This increased minimum cockpit load must then be shown in the DATA and LOADING PLACARD affixed in the cockpit.

The possible reduced minimum cockpit load if no trim ballast is fitted, is only entered in the **Mass and Balance Form** on page 6.4 of this manual.

## ASH 26 E Flight Manual

Further details covering the minimum cockpit load are provided in Sections 2.10 and 6 of this manual.

The foam buffer fitted over the trim ballast secures it above. This plastic foam pad must not be forgotten when changing or replacing trim ballast.

You should also ensure that there is adequate plastic foam seating under the trim ballast to protect it from hard knocks!

### (3) Barograph

The box in the rear of the engine compartment is especially prepared to take up the Winter Barograph with a vibration recorder for engine operation. The location was deliberately selected as here the low engine vibration is easily measurable. An electric connection to this barograph type is not needed.

When such a barograph is installed in the rear of the engine compartment, the minimum seat load may be higher than 70 kg or 154 lbs (including the parachute). The necessarily increased minimum load will then be indicated on the DATA AND LOADING PLACARD in the cockpit.

The possible reduced minimum cockpit load without barograph installed is given only in the Mass and Balance Form in Section 6.2.

**WARNING:** The box in the engine compartment must only take up the engine vibration recording barograph made by Messrs. Winter. Other items must not be stored in this box!

## ASH 26 E Flight Manual

Box for barograph must not be used  
as baggage compartment !

This placard is affixed to the clamping fixture of the barograph box.

### (4) Oxygen

The seating for the oxygen bottle is provided as standard. It is the space above the spar. For the partition behind the spar various inserts are available which allow to take up different oxygen bottles. A 3-liter bottle of 100 mm diameter will be found the most suitable to fit in this space.

A suitable bottle fixing bracket is required, and is available as an optional accessory from SCHLEICHER.

When fitting the oxygen bottle, ensure that it is properly installed and securely anchored.

**NOTE:** Fitting of oxygen equipment causes only a minimal change in the empty mass C.G. position !

### (5) Emergency Location Transmitter

The location least vulnerable to damage in case of accident is the area between the two drag spar pins at either side of the fuselage.

Therefore, the emergency location transmitter (ELT) should be fitted to the fuselage wall in the baggage compartment area, in an appropriate mounting.

An installation drawing cannot be provided by SCHLEICHER as too many different ELT's are on the market.

Since the whole of the air frame except for the fin and a small area above the baggage space contains CRP layers, and carbon fiber laminations screen the transmission radiation, the ELT aerial must be fitted in the baggage compartment at the top and must extend into the canopy area.

The instructions for the installation given by the ELT manufacturer must be regarded. The installation of an ELT must be approved by a licensed aviation inspector.

## **(6) Steerable Tailwheel**

As an optional extra the ASH 26 E can be equipped alternatively with a steerable tail wheel instead of the conventional tail wheel and with removable wing tip wheels. This makes it possible to roll with the aircraft on the ground without the aid of a second person- eg: to the take-off point.

Prior to the assembly of the steerable tail wheel first the standard tail wheel including its box must be dismantled (loosen nut A/F 17, remove washer and axle bolt).

Now the connecting unit for the safety springs must be screwed onto the rudder in perfect alignment, with the retaining eyes pointing to the front. Then the white pressure plate of the steerable tail wheel assy is inserted into the support mounted at the front wall of the tail wheel housing and screwed on (two washers and two lock nuts M6). The bearing bushing of the steerable tail wheel assy must be aligned to fit the bore holes in the tail wheel housing so that the axle bolt can be re-fitted. Replace the washer //

## ASH 26 E Flight Manual

and tighten nut A/F 13. If the above procedure cannot be accomplished with the safety springs hooked in, they may be unhooked at the wheel fork of the steerable tail wheel.

Finally the fairing is attached and taped on.

The parts of the steerable tail wheel mod have the same mass as the standard tail wheel. Therefore, the C.G. remains unchanged.

If the steerable tail wheel is dismantled in order to fly again with the standard tail wheel, the connecting unit for the safety springs at the rudder must also be removed!

If rubber skids are fitted at the wing tips these must be removed (two hexagonal socket head screws A/F 5 respectively) and replaced by the wing tip wheels. Pay attention to the correct mounting (left and right wheels are different).

NOTE: The original screws only must be used otherwise damage to the wing skin cannot be excluded.