

ALEXANDER SCHLEICHER SEGELFLUGZEUGBAU
POPPEHAUSEN/RHÖN

Flight and Maintenance Handbook
for sailplane type
Ka 6 E
Translation of the German Handbook,
Issue: May 1965

This handbook is to be kept aboard the aircraft.

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Ka 6 E
Translation of the German Handbook,
Issue: May 1965

This handbook is to be kept aboard the aircraft.

This handbook pertains to the sailplane type Ka 6,
Version E.

Registration No.:

Manufacturer's No.:

Manufacturer:

Owner:

- Ka 6 E Flight and Maintenance Handbook

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Amendments

No.	Item	Page	Date	Signature

Approval of translation has been done by best knowledge and judgment - In any case the original text in German language is authoritative.



- 2. 9. 65

SÉCURITÉ Ka 6 E

POIDS DU PILOTE : de 60 à 110 Kg

Avec parachute (= 7 kg)

Si pas de parachute : prévoir un coussin de dos de 10 cm d'épaisseur (pour le centrage) et tenir compte du poids manquant de 7 kg.

Si utilisation d'un coussin de plomb : **L'ATTACHER AUX POINTS DE FIXATION DU HARNAIS VENTRAL.**

Poids maximum au décollage : 300 Kgs

VNE : à ne jamais dépasser en air calme : 200 Km/h

Vitesse maximum en air turbulent : 140 Km/h

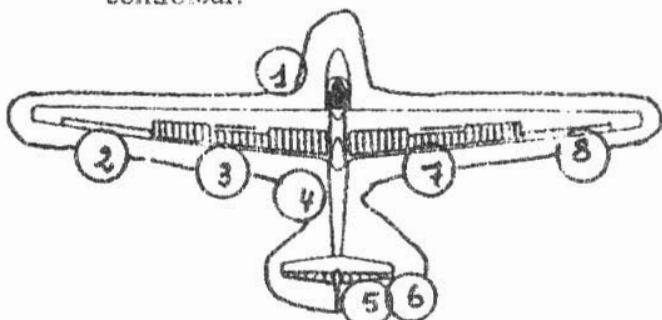
**Décrochage en ligne droite : 62 Km/h (à titre indicatif)
à vérifier par chaque pilote**

Vol de nuage et acrobaties interdites.

Ka 6

Visite prévol

En tournant autour du planeur pour l'inspection, contrôler toutes les surfaces externes pour rechercher des accrocs, égratignures, boursouflures. En cas de doute, consultez un contrôleur.



- 1) a) Ouvrez la verrière et enlevez le carénage entre les 2 ailes *****(sans forcer !!)**. Vérifiez le raccordement des commandes et les épingle de verrouillage. Vérifiez les axes d'ailes et leur verrouillage.
b) Contrôlez visuellement l'action de toutes les commandes.
c) Enlevez les corps étrangers.
d) Vérifiez la pression du pneu principal (2.5 kg).
e) Vérifiez la fixation et le fonctionnement de la batterie
f) Contrôler radio et vario auditif
g) Vérifiez l'état et le fonctionnement du crochet de largage
- 2) Vérifiez que les ailerons sont libres dans toute leur course.

- 3) a) Vérifiez les aéro freins (fermeture à fond et bon fonctionnement).
b) Vérifiez que le bord de fuite (ailes et ailerons) n'est pas endommagé. Vérifiez le jeu dans les attaches d'ailerons en secouant légèrement leur bord de fuite.
- 4) a) Vérifiez si les trous de prise statique dans le corps du fuselage sont ouverts.
b) Installez la "duse" et vérifiez sa fixation. (scotch !)
- 5) a) vérifiez l'épingle de fixation de la gouverne de profondeur.
- 6) Vérifiez profondeur et direction : débattement libre et complet. ~~Contrôlez les bords de fuite~~ (coups, dommages)
Contrôlez le jeu des attaches en secouant légèrement les bords de fuite.
- 7) Comme 3
- 8) Comme 2

En cas d'atterrissage dur ou d'accélération excessive, vérifiez la fréquence de vibration des ailes (environ 145/ minute).

*** si le carénage est scotché, n'ouvrir que s'il n'y a pas eu d'inspection récente.

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1. Operating Limitations

<u>Airspeed limits:</u>	<u>km/h</u>	<u>mph</u>	<u>kts</u>
max. airspeed	200	125	108
<i>max. airspeed</i> in gusty weather	140	87	75
airplane-tow	140	87	75
Auto-winch-tow	100	62	54

Weights:

Empty weight:	appr. 190 kg	419 lbs
Maximum weight:	300 kg	660 lbs
max. weight of non-supporting structure	190 kg	419 lbs

Cloudflying is permissible (see page 7)

Category

2 BVS (German)

Airworthiness Requirements)

Max. permitted positive load factor	4,0
Max. permitted negative load factor	-2,0
Factor of safety	2,0

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C.G. Range in Flight:

Leveling means: template 100 : 9 on top
 of fuselage horizontal

Datum: wing leading edge at rib 3

C.G. range: 180 to 383 mm, 7,1 to
 15,0 in. behind datum.

Weak Links in the Tow Cable:

Winch-launch	max.	635 kp	1400 lbs
	min.	525 kp	1160 lbs
Airplane-tow	max.	450 kp	990 lbs
	min.	300 kp	660 lbs

2. Operating Instructions:Winch-launching:

Maximum permissible winch-launch airspeed is
100 km/h, 62 mph, 54 kts.

Any slight tendency for the nose to pitch up can
be controlled through appropriate stick operation.
For optimum climb keep the stick in normal posi-
tion. Attention: In winch-launching the speed
will increase when you pull back the stick.

Airplane-tow

Max. permissible airplane-towing speed: 140 km/h,
87 mph, 75 kts. Use only textile ropes for air-
plane-tow. For release, pull the coupling knob
all the way!

Before every take-off check canopy and airbrakes
for being locked.

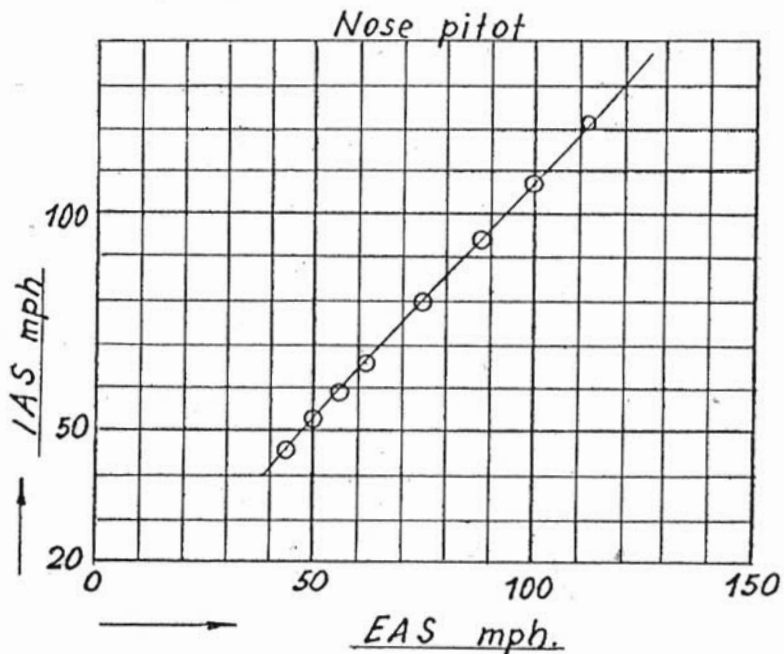
Flight

All airspeed data mentioned in this handbook are related to EAS.

Pay attention to the difference between EAS and the airspeed indicated on your airspeed indicator due to the position of the pitot tube. See fig. 1.

The IAS reading may drop to zero when the glider is slipping or skidding due to the oblique position of the fuselage to the airstream.

Fig. 1.



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Stalling airspeed at a

flying-weight of 620 lbs	38,5	mph
Airspeed at min. sink condition	42	mph
Airspeed at max. L/D condition	50	mph

Landing

Approach at 50 - 55 mph.

The gliding angle can be controlled in a wide range by the airbrakes. For a smooth touch-down extend the airbrakes only half the way. Use the wheel brake by pulling fully back the airbrake control. While braking pull back the stick to prevent nose dipping.

Stalling and Spinning Behaviour

In stalled flight and stick full back the aircraft can still be controlled by the rudder. Applying much rudder will cause spinning. Recovery is initiated by taking back all controls in normal position. The C.g.-position has a considerable influence on the spinning characteristics.

C.g. in forward position, the glider will perform a spiral dive shortly after initiating a spin and very rapidly build up high speed and g-loads. In this case the airbrakes should be extended before recovery. Adverse spinning characteristics at rearward positions of the certificated c.g. range have not been observed so far.

At high speed flight the airspeed limitations have to be observed carefully. When an airspeed of 87 mph is surpassed the airbrakes should be extended slowly.

Notice: At higher speeds the airbrakes tend to be sucked out when unlocked!

The stick should always be kept in hand at higher speeds (all flying tail!).

Rain drops, hoar-frost and ice will worsen the wing-surface, so quite adverse flying characteristics may result. Therefore be cautious under these conditions,

increase airspeed during the approach!

Emergency Jettison of Canopy:

Open lock.

Push the canopy upwards.

Cloud-flying

There is no objection to cloud-flying as to strength qualities of the sailplane. Nevertheless some principal rules should be observed:

1. During cloud-flying high airspeed should be avoided. It is recommended to extend the airbrakes at airspeeds surpassing 65 to 75 mph.
2. Minimum equipment for cloud flying:
Airspeed indicator with pitot tube protected against icing
Sensitive altimeter
Variometer
Compass
Turn and bank indicator
Chronometer
Installation of an artificial horizon and an accelerometer is advisable.
3. The ATC rules are to be observed.

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3. Minimum Equipment

Airspeed indicator with range of 30 - 150 mph,
27 - 135 kts.

Altimeter

Four-piece pilot's safety belt

Back cushion, if no parachute is used.
(Min. thickness: 4 in.).

Flight Limitations Placard with leading data.

Flight and Maintenance Handbook.

4. Adjusting Data

Adjusting angles and control surface deflections are to be gathered from the outline drawing. Pay attention to the tolerances if repair is necessary.

The position of the ailerons is influenced by the elevator control on account of a special kinematic of the control system. The ailerons have a normal setting if the stick is in a normal or pushed position. The stick being in a pulled position, the ailerons are somewhat lifted.

The controls have the following stops:

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Rudder: The rudder is non-adjustable stopped at the lower rudder hinge fitting.

Ailerons: Non-adjustable stops at frame 4.

Elevator:

To the rear: Non-adjustable stop at the seat.

To the front: Adjustable stop at the control shaft.

Airbrakes:

Extended condition: The wheel brake works as a stop; adjusted by the turn-buckle.

Retracted condition: The shift lever is stopped by a plywood block at frame 10.

The lever movement to the front may not exceed the top center point about 0.4 in. measured from the ball bearing of the forked vertical push rod.

5. Weight and C.G. Range

After repairs, after installing new equipment, after painting, or any other change which might affect the weight of the airplane, it must be determined that the empty weight c.g. remains within the permissible limits.

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If necessary, balance weights are to be installed. In each of these instances an examiner of the governmental aviation authority is to be called in.

Empty weight	420	440	465	485	lbs
c.g. position	min. 20,8	20,2	19,5	19,0	in.
	max. 25,1	24,6	24,1	23,7	in.

behind datum

Template 100 : 9 on fuselage horizontal

Datum: wing leading edge, rib 3.

If the empty weight c.g. position is within these limits, then it is guaranteed that the c.g. position in flight will be within allowable limits. if the load in the cockpit is as specified in paragraph 6 below.

The c.g. position in flight has considerable influence on flight characteristics. For this reason, observance of the certified c.g. range is very important.

A displacement of the c.g. too far back may cause dangerous effects: Stalling and especially spinning behaviour (flat spinning) may worsen.

The sensitivity of the elevator increases.

A location of c.g. too much forward will worsen the performance. Furthermore flying at max. lift may become impossible (flare out when landing!).

The following range of flying-weight c.g. positions is tested:

forwardmost position: 7.1 in behind datum
rear-most position: 15.0 in " "

6. Trimming Plan

Loading in the pilot's seat (pilot + parachute):

Maximum 242 lbs

Minimum 132 lbs

Less loading than 132 lbs. has to be completed, by ballast on the seat (lead or sand cushion).

Notice: If no parachute is applied, use a back cushion which has a thickness of about 4 in. when compressed.

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7. Approved Versions

Ka 6	approval:	30. Oct. 1956
Ka 6/0	"	30. Oct. 1956
Ka 6 B	"	27. Sept. 1957
Ka 6 BR	"	27. Sept. 1957
Ka 6 BR-Pe	"	20. May 1960
Ka 6 C	"	24. Febr. 1959
Ka 6 CR	"	24. Febr. 1959
Ka 6 CR-Pe	"	20. May 1960
Ka 6 E	"	29. July 1965

1. Rigging

1. Clean and grease bolts and holes.
2. First insert left wing from the side and put in nose bolt. Do not tilt the fuselage!
3. Insert right wing as mentioned above.
4. Take care to bring the lower main spar fittings in line. Insert the lower main bolt (long handle).
5. Adjust the wings so that the upper main bolt can be inserted.
6. Safety the main bolts with safety pin.
7. Conect aileron and airbrake drive elements and safety with pin.
8. Put on the left elevator, then the right one, and insert the fixing pin from above. Safety fixing pin with split pin or safety needle.
9. Attach fairing.
10. Check the controls.

2. Checklist

Make the pre-flight check after assembly, or daily before the first flight.

Check all rigging connections for proper safetying.
Check all control system parts for proper coupling and safetying.

Check the operation of all control surfaces, air - brakes and tow-release.

Check for foreign objects.

It is advisable, to check frequently the whole glider thoroughly. Quite a lot of unsafetied bolts and damage have been found at such occasions.

Check every corner with a flashlight!

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3. Derigging

Go through items 1 - 10 in reverse order, Crease fittings again (rust danger!).

4. Transport on the Ground

It is not intended to describe herein the construction of an appropriate trailer. The Manufacturing Company Schleicher will supply suitable drawings of approved trailers, if wanted.

Jack up the wings on supports; one support at the spar root, another should be placed adequately. (about 8 feet from wing tip). It is important that the supports have a large bearing area.

Jack up the fuselage using the wheel and the wing attachment fittings as jack points.

Tie the push rods for ailerons and airbrakes inside of the fuselage with a rubber strap.

Pay attention to prevent water from penetrating into the interior of the wing and fuselage.

5. Maintenance

Moisture is the most serious enemy of a wooden glider. Be careful to prevent water from remaining in corners. If water penetration is suspected, keep the wings and the fuselage in a dry room and turn them over daily.

The sailplane is endangered especially on open trailers. In any case take care for covering the front part so that no splash water may wet the wing root.

Considerable moisture in the interior of the glider also can be caused by condensing water.

Strong solar radiation will affect the finish by time. Therefore the sailplane should not be exposed to the sun more than necessary. The use of good waxes and polishing materials will increase the durability of the finish and improve the surface, and consequently the flight performance. The advantages of the laminarprofile can only be achieved by a smooth surface.

Sealing the gaps and slots by means of adhesive tapes will also be of use for improving the performance. But do not seal the cockpit if parachute bail-out shall be possible.

Clean the plexiglass canopy only by means of appropriate cleansers. If not available use pure water. Only soft cloth should be used. Never run over the plexiglass with a rough dry cloth.

Lubrication of Bearings

So far as possible the ball bearings are sealed and therefore need no lubrication for a long period. The bearings at the wing root only, which cannot be sufficiently protected on behalf of rigging facilities, are to be cleaned with gasoline when dirty and lubricated again.

The control surface bearings are to be dismantled and greased at the annual overhauls.

Tire pressure 35 psi.

The tow coupling is especially exposed to dirt and needs a frequent cleaning and oiling.

The tail skid shoe has to be soled from time to time by welding on a new steel plate. But it should be removed for this work to prevent annealing of the spring.

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Seal the pressure heads on the fuselage with adhesive tape for transport or long parking periods. If the plane will not be in use for a longer period dismount the instruments and store them in a dry room.

When reinstalling the instruments, take care of correct connections.

The safety belts are to be checked currently for fractures, damp-stain and corrosion.

6. Overhauls

The tow-coupling has to be dismounted after every 2000 launches or after every two years to get it overhauled by the manufacturer.

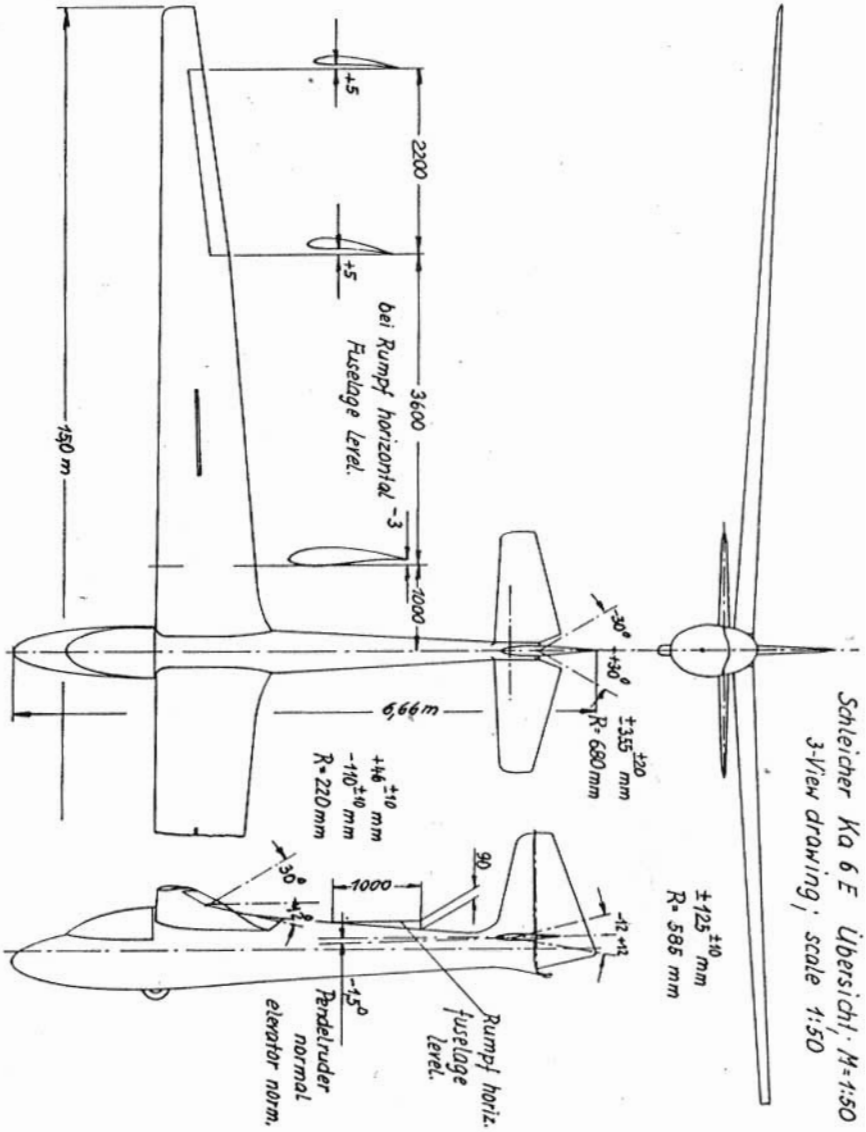
The rudder control cables are to be replaced as soon as abrasion at the pulleys will be observed to avoid rupture.

7. Repair

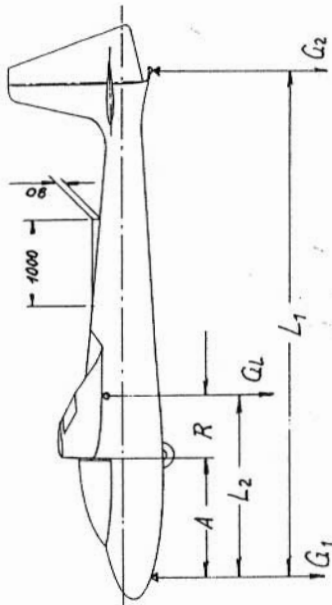
All major repairs should be made by the manufacturer. In cases of doubt please ask the manufacturer.

8. Appendix

3-sides view
Balancing sheet.



Schleicher H16 E Wägebblatt, Balancing sheet



G_L = Leergewicht; empty weight.
 G_1 = Gewicht am vorderen Auflagepunkt
 weight at the front support.
 G_2 = Sporngewicht; weight at tail skid.
 R = Schwerpunktrücklage;
 center of gravity position.

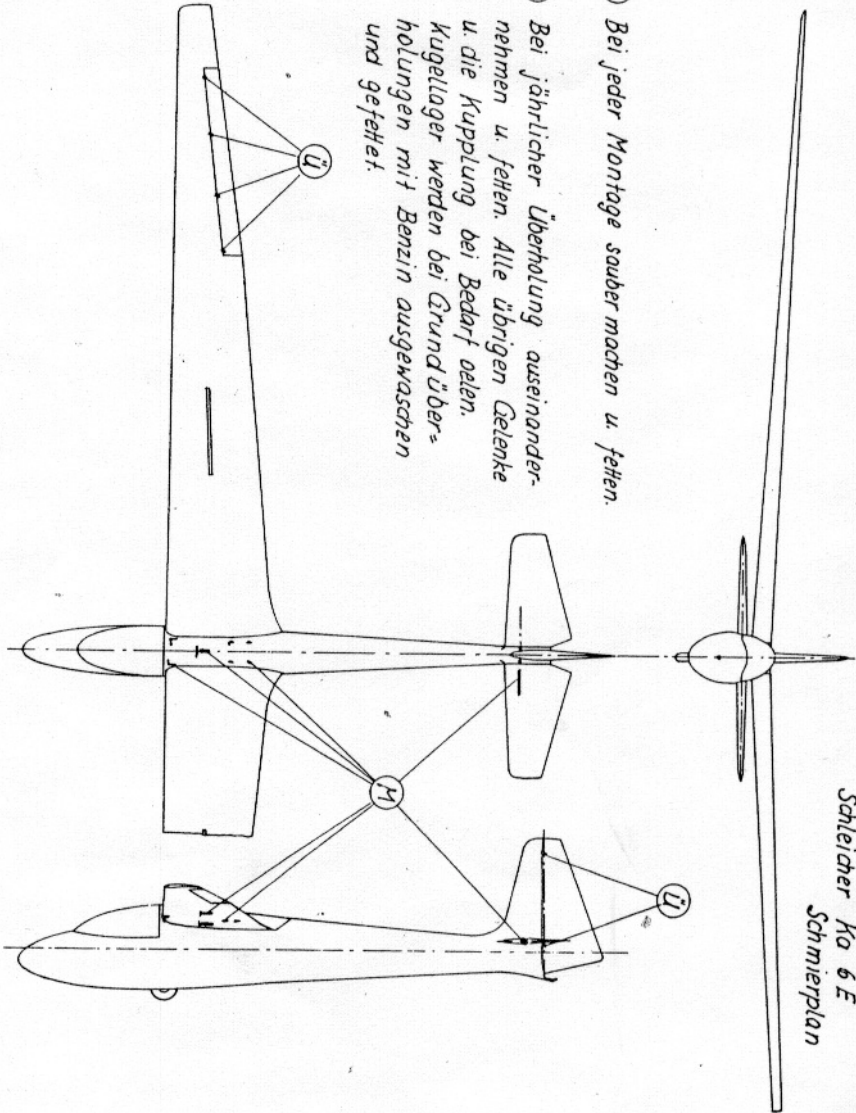
$$R = L_2 - A = \frac{G_2 \cdot L_1}{G_L} - A$$

$$G_1 + G_2 = G_L$$

Grenzen der Leergewichtsschwerpunktlagen:
 Empty weight - C. of. Gr. - position limits:

G_L = Leergewicht; empty weight	180	190	200	210	220	kg	
R { Vorderste Schwerpunktlage; most forward position	min.	550	530	513	497	482	mm
Hinterste " " most rearward	max.	652	638	625	613	603	mm

Schleicher Ka 6 E
Schmierplan



Ⓜ Bei jeder Montage sauber machen u. fetten.

Ⓤ Bei jährlicher Überholung auseinandernehmen u. fetten. Alle übrigen Gelenke u. die Kupplung bei Bedarf oelen. Kugellager werden bei Grundüberholungen mit Benzin ausgewaschen und gefettet.