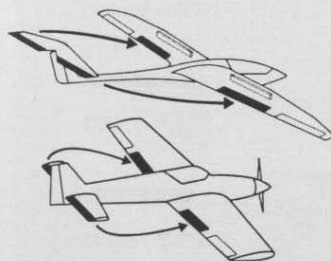
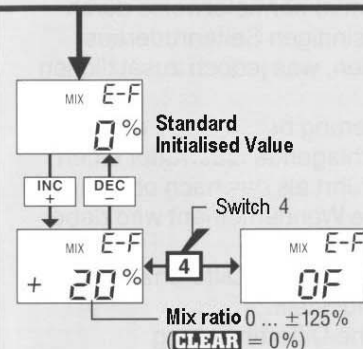


11 MIX E-F (Elevator → Flap)

V-Tail

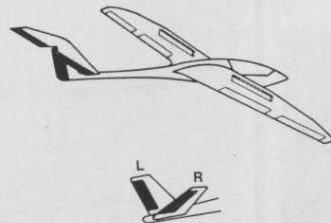
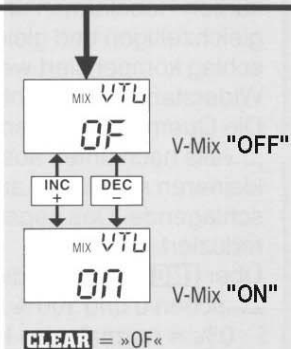
This program couples channels 3 and 4 to provide rudder and elevator control. The mix ratio is adjustable using the Dual-Rates for channels 3 and 4.



15 MIX VTL

Spoiler → Elevator

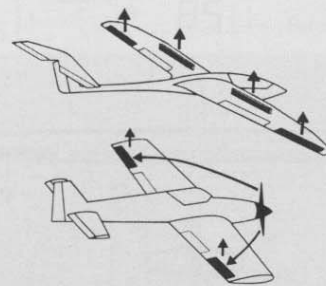
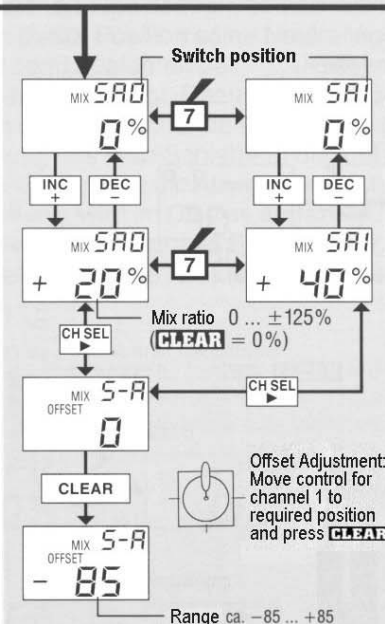
When the throttle / spoiler control stick is moved, this code allow the automatic movement of the elevator to compensate for any pitch trim change. The adjustment range is 0 ... ±125%. The mixer can be switched on and off by an external switch connected to socket 7 on the transmitter board.



17 MIX SA0 (Spoiler → Aileron)

Spoiler → Aileron (Flaperon)

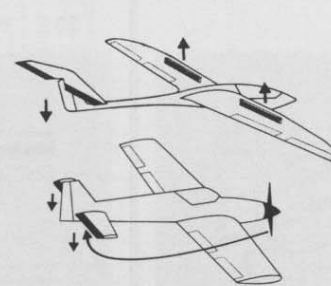
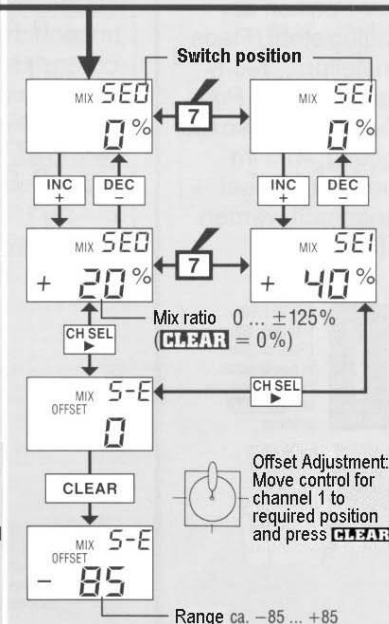
With movement of the throttle / spoiler stick both aileron servos can be moved in the same direction (= flaperon operation) between 0 and ±125%. Using a switch attached to socket 7, the mixer can be switched between the settings "SA0" and "SA1".



18 MIX SE0 (Spoiler → Elevator)

Spoiler → Elevator

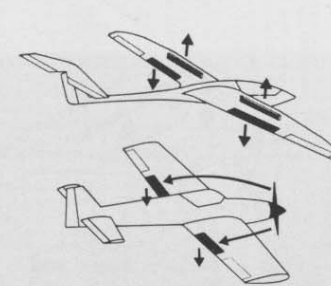
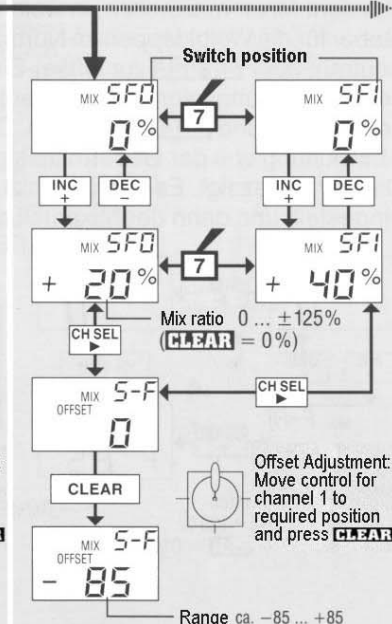
With movement of the throttle / spoiler stick the elevator can be adjusted to assist in landing between 0 and ±125%. Using a switch attached to socket 7, the mixer can be switched between the settings "SE0" and "SE1".



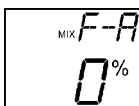
19 MIX SF0 (Spoiler → Flap)

Spoiler → Flap

With movement of the throttle / spoiler stick the flap can be adjusted to assist in landing between 0 and ±125%. Using a switch attached to socket 7, the mixer can be switched between the settings "SF0" and "SF1".



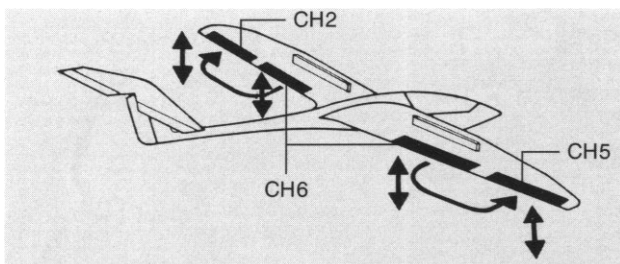
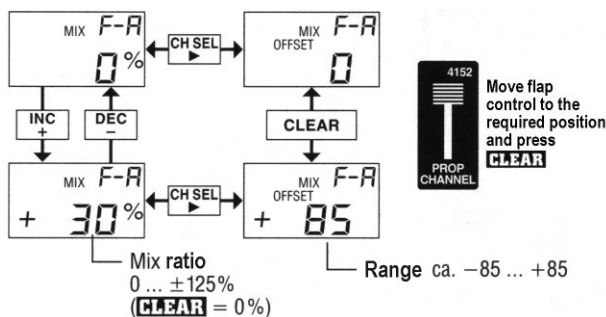
13



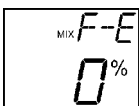
FLAP ➔ FLAPERON MIXER

Flap ➔ Flaperon Mixer
(access via Set-Up Menu)

The mixer "F-A" allows an adjustable portion of the flap control system to be fed to the aileron channels (2 and 5) so that the ailerons move with flap deflection in a manner like the flaps, but normally with smaller movement. The advantage is that a more even lift distribution over the span can be achieved. The mix proportion is entered using the **INC** and **DEC** buttons, between 0 and $\pm 125\%$. In order to tell the mixer, in which position of the control for the flaps relates to the normal flight position, **CH SEL** is pressed to call up the offset value. The value is set by moving the control to the required position and pressing the **CLEAR** button. The offset, the deviation from the control central position, is indicated in the display. You can also first set the offset and then adjust the mix proportion.



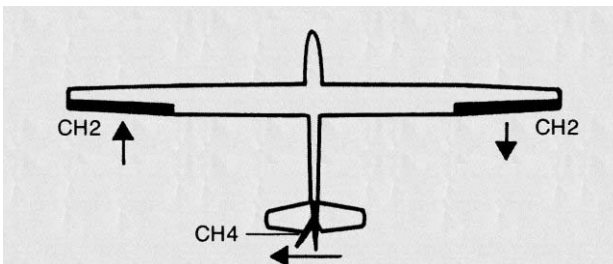
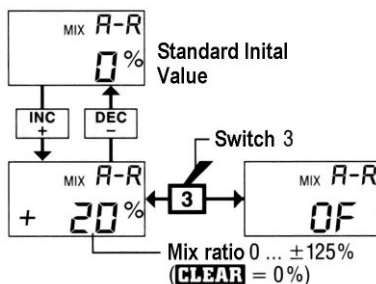
9



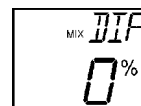
COMBI-MIX

Aileron ➔ Rudder Mixer
(access via Set-Up Menu)

In the case of operating the ailerons, the rudder is deflected by a programmable mix proportion. The rudder can, however, be steered separately at any time with priority. After call of the code "A-R", the mix proportion is adjusted using the **INC/DEC** buttons and is stopped to automatically at the maximum value of $\pm 125\%$. The combi mixer can also be disabled by an external switch attached to socket 3 on the transmitter board.



14



DIFFERENTIAL MIXER

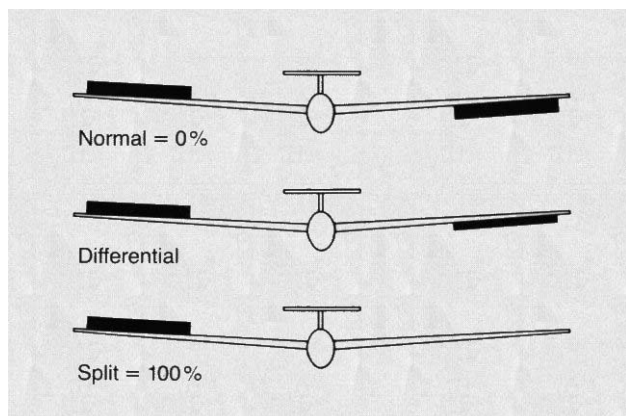
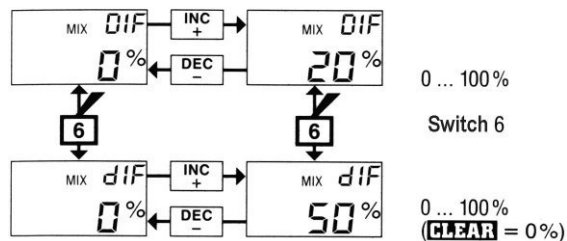
Aileron Differential Mixer
(access via Set-Up Menu)

The aileron differential is used to adjust for an unwanted yaw effect, which is called "negative yaw": The aileron deflecting downward creates a larger drag resistance than that developed by the upward deflecting aileron. This results in a torque around the vertical axis against the intended turn direction. This effect arises naturally and is more obvious with gliders with high aspect ratio wings, than with normal power planes, due to the increased moment arm that the aileron drag has.

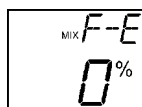
The aileron differential causes the downward aileron to deflect by a smaller distance than the upward moving aileron. The drag forces can be balanced and therefore the negative turning moment removed. Using the **INC/DEC** buttons, the aileron differential is adjusted between the limits 0 and 100%:

0% = Normal, thus no differential.
100% = No downward aileron deflection, Split position mentioned above.

An external switch attached to connection 6, allows selection between two differential values. These are displayed as "DIF" and "dif" depending on the position of the switch. Each can have a different value to suit differing flight modes.



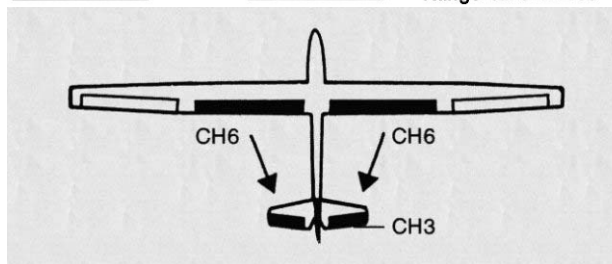
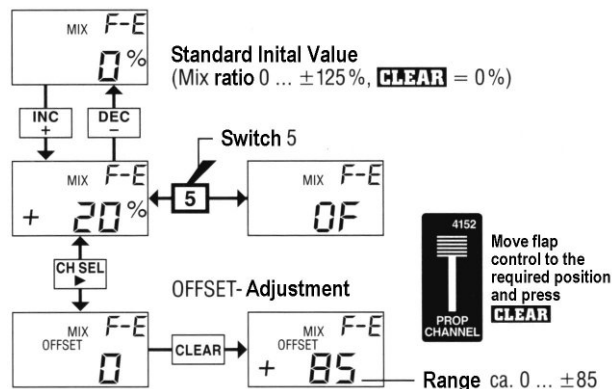
10



FLAP → ELEVATOR MIXER

Flap → Elevator Mixer
(access via Set-Up Menu)

During slow flight when extending flaps, automatic proportionally correction of elevator is made, thus the pitch attitude of the model becomes independent of the position of the flaps. The mix portion is entered in the code "F-E", the **INC** and **DEC** buttons, between 0 and $\pm 125\%$. Next the mixer neutral point must be specified. The mixer must be informed which position of the input (normally sliding control 6) for the flaps, corresponds to normal flight (flaps neutral). Thus the elevator takes this position to be its neutral, and only when the flaps are moved from this position does the mixer affect the elevator. pressing the **CH SEL** button to call up the offset screen. Move the control to the required neutral position (e.g. the end position of the flap control) and press the **CLEAR** button. The offset, the deviation from the control centre position, is indicated in the display. A switch connected to socket 5 of the transmitter board can be used to switch off this function.



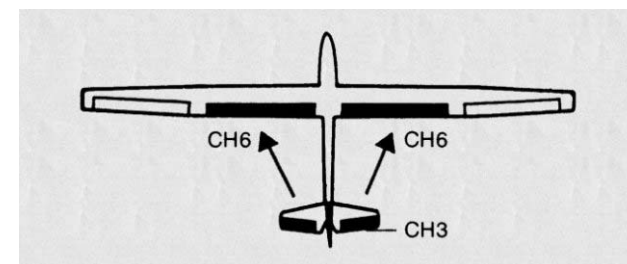
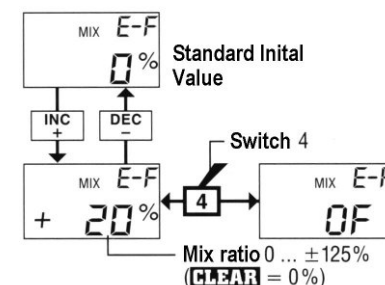
11



ELEVATOR → FLAP MIXER

Elevator → Flap Mixer
(access via Set-Up Menu)

To assist the elevator with close turning flight and aerobatics, the flaps can be linked to the elevator and are driven out proportionally to the increase the wing lift. The value in the code "E-F" can be varied using, the **INC** and **DEC** buttons between 0 and $\pm 125\%$. The mixer can be also switched off with an external switch connected to socket 4.



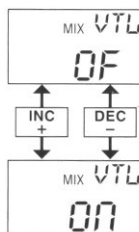
13



FLAP ➔ FLAPERON MIXER

Flap ➔ Flaperon Mixer
(access via Set-Up Menu)

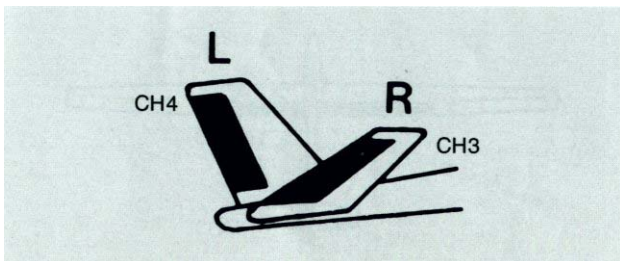
For models with a V-tail the functions of elevator and rudder must be mixed so with one another so that during elevator movement both surfaces are moved up or down in the same direction, and during rudder control the surfaces move in opposite directions, i.e. one surface upward and the other downward. The "VTL" Program contains the appropriate mixer, to control surfaces connected to separate servos. The function is activated using the **INC/DEC** buttons. Servos connected to outputs 3 and 4 of the receiver are automatically coupled with one another. The mix relationship is changed using the dual-rate setting, see page 20, where Ch4 changes the rudder effect and Ch3 the elevator effect.



V-Tail "OFF"

CLEAR = »OF«

V-Tail "ON"



Butterfly Function as a Landing Aid Codes 17 ... 19

The Butterfly function serves to increase the gliding angle as a landing aid; it can be used alone or additionally with existing airbrakes or spoilers. The flight programme "Fb" contains finished mixers. Code 17 drives both ailerons downward with movement of the throttle/spoiler control stick so they act as flaperons. Code 19 drives them in the opposite direction so that they form Butterfly (or Crow) brakes. Code 18 allows the elevator to be trimmed with application of brakes to retain the same pitch trim. Each of these three mixers can be adjusted individually; and of course they can also be used individually.

So, for example, the spoiler ➔ elevator mixer, code 18, can be used in combination with normal airbrakes in order to maintain pitch trim when the airbrakes are deployed. The other two mixers would have the mix proportion set to 0%, so that they remain ineffective.

With ailerons that are full span, the mixers 17 (spoiler ➔ ailerons) and 18 (spoiler ➔ elevator) can be used together, to raise the flaperons at a large angle of deflection and also to re-trim the elevator accordingly.

However, particularly with the ailerons, the total travel must be considered with operation as aileron and flaperons. The settings in the dual rate function must be adapted, if necessary, in order not to let the servos reach their mechanical limits.

All three mixers can be changed between two programmable settings using a switch attached to socket 7 on the transmitter board. If the mix proportion is set to 0% in one switch setting it makes the respective mixer effectively inactive.

17



SPOILER ➔ FLAPERON MIXER

Spoiler ➔ Aileron Mixer
(access via Set-Up Menu)

With movement of the throttle/spoiler control stick (control function 1) both aileron servos can be adjusted for landing using the **INC/DEC** buttons from 0 to $\pm 125\%$ (0% = mixer inactive). A switch connected to socket 7 of the transmitter board, allows this function to be changed between two options "SA0" and "SA1" (spoiler ➔ ailerons). The mixer must have the position, of control function 1, set that corresponds to normal flight, i.e. with the spoilers retracted, and the ailerons in their neutral position. The neutral point of this mixer is set after calling the subroutine "SA OFFSET" by pressing the **CH SEL** button: The spoiler control is moved into the appropriate neutral position, normally the bottom position of the control stick, and the **CLEAR** button is pressed. The display will indicate the offset, being the deviation from the control central position. The offset is identical for both switching positions and only needs to be set once.

Note:

When Butterfly landing mode is wanted, codes 17 & 19 are used with both ailerons (flaperons) deflected upward and the flaps extended downward.



SPOILER ➔ ELEVATOR MIXER

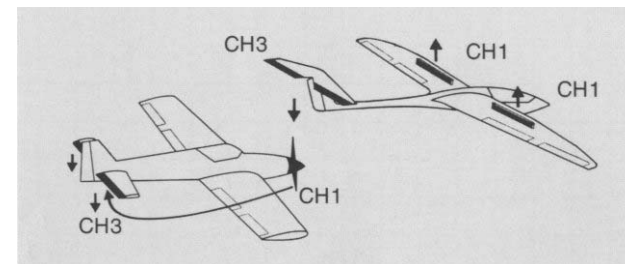
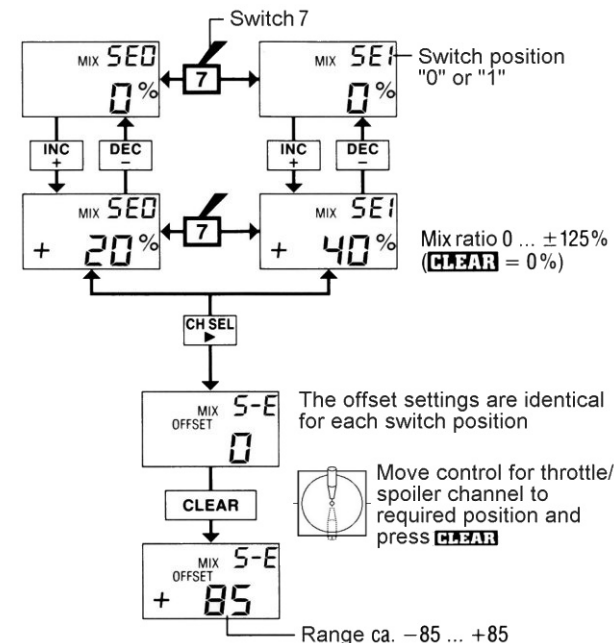
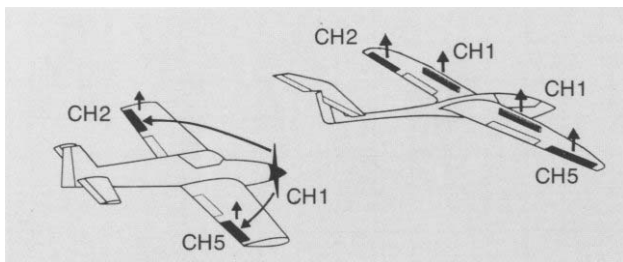
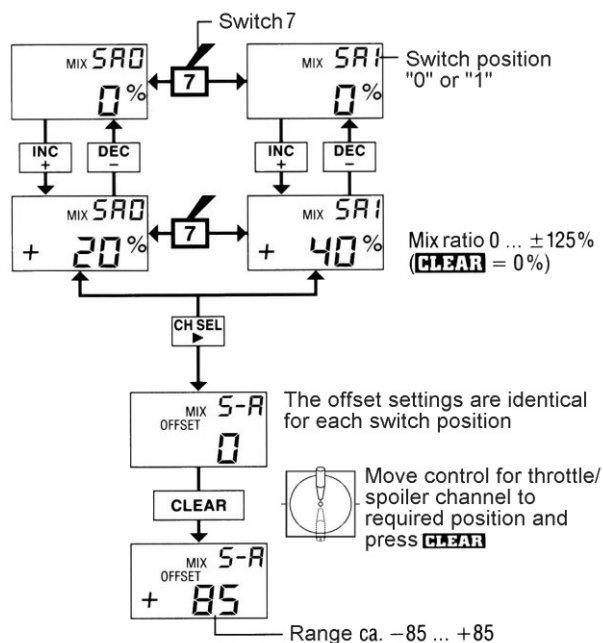
Spoiler ➔ Elevator Mixer
(access via Set-Up Menu)

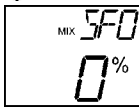
Due to the changing lift when extending the spoilers, the elevator must be adjusted by an appropriate amount to compensate.

The elevator compensation can be adjusted between 0 and $\pm 125\%$ of the spoiler stick travel for use during the landing approach (0% = mixers inactively).

A switch connected to socket 7 of the transmitter board, allows this function to be changed between two options "SE0" and "SE1" (spoiler ➔ elevator).

The mixer must have the position, of control function 1, set that corresponds to normal flight, i.e. with the spoilers retracted, and the ailerons in their neutral position. The neutral point of this mixer is set after calling the subroutine "SE OFFSET" by pressing the **CH SEL** button: The spoiler control is moved into the appropriate neutral position, normally the bottom position of the control stick, and the **CLEAR** button is pressed. The display will indicate the offset, being the deviation from the control central position. The offset is identical for both switching positions and only needs to be set once.





SPOILER ➔ FLAP MIXER

Spoiler ➔ Flap Mixer
(access via Set-Up Menu)

With movement of the throttle/spoiler control stick (control function 1) both aileron servos can be adjusted for landing using the **INC/DEC** buttons from 0 to $\pm 125\%$ (0% = mixer inactive).

A switch connected to socket 7 of the transmitter board, allows this function to be changed between two options "SF0" and "SF1" (spoiler ➔ flaps).

The mixer must have the position, of control function 1, set that corresponds to normal flight, i.e. with the spoilers retracted, and the ailerons in their neutral position. The neutral point of this mixer is set after calling the subroutine "SF OFFSET" by pressing the **CH SEL** button: The spoiler control is moved into the appropriate neutral position, normally the bottom position of the control stick, and the **CLEAR** button is pressed. The display will indicate the offset, being the deviation from the control central position. The offset is identical for both switching positions and only needs to be set once.

Note:

When Butterfly landing mode is wanted, codes 17 & 19 are used with both ailerons (flaperons) deflected upward and the flaps extended downward.

When only using 1 flap servo, connect it to socket 6 on the receiver.

