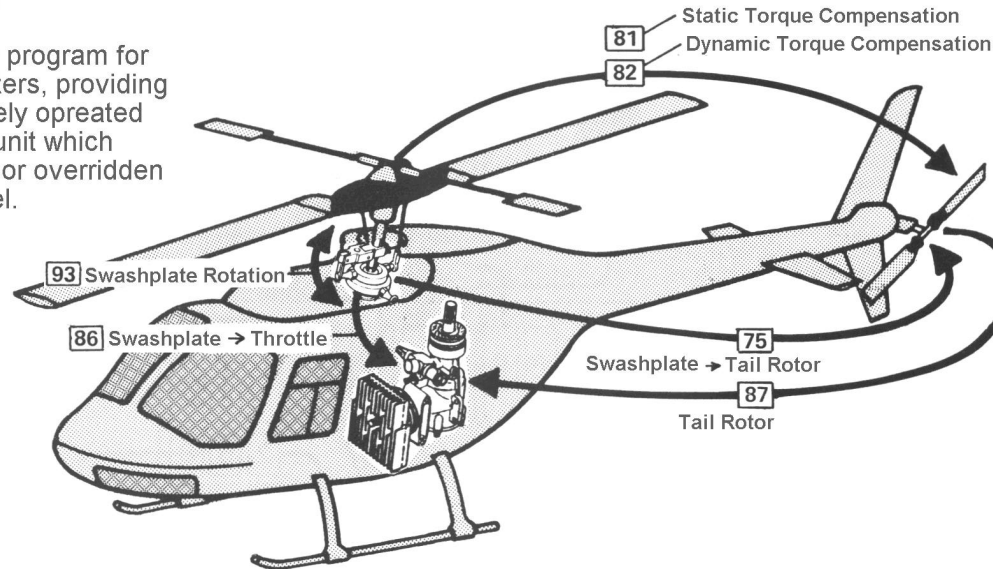


# Heli-Programme

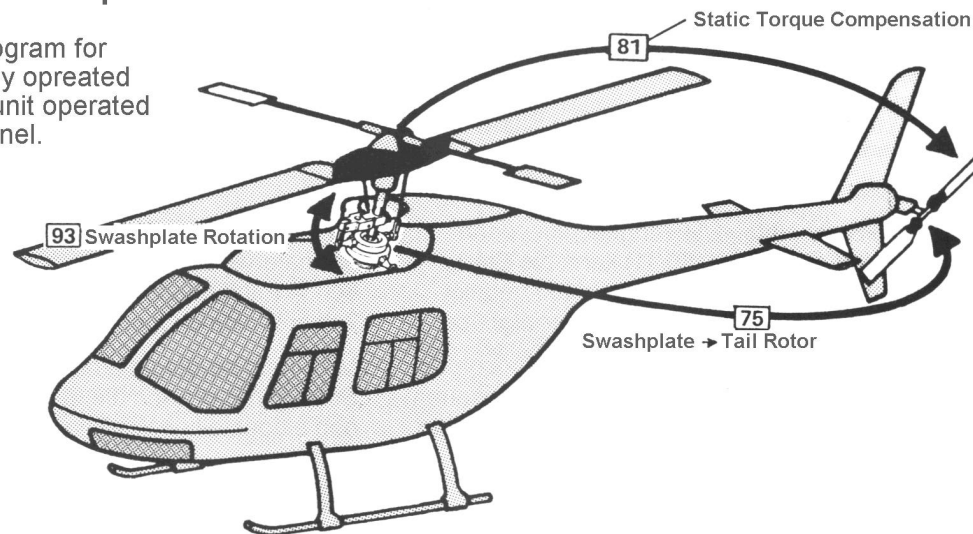
## Type 8: Helicopter

Univerasal helicopter program for practically all helicopters, providing they are not exclusively opeated with a speed control unit which can not be turned off or overridden by the throttle channel.



## Type 9: Helicopter with Speed Control

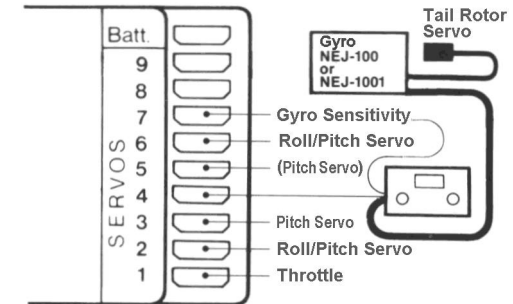
Special helicopter program for helicopters exclusively opeated with a speed control unit operated by an additional channel.



## Allocation of Receiver Outputs

The servos must be connected to the receiver outputs as follows:

- Servo 1 = Throttle
- Servo 2 = Roll 1
- Servo 3 = Pitch 1
- Servo 4 = Tail Rotor
- Servo 5 = Pitch 2 control with a 4 servo swashplate or not connected.
- Servo 6 = Pitch 2 or Roll 2 for 2, 3 or 4 servo swashplate.
- Servo 7 = Gyro Sensitivity (Gain)
- Servo 8 = Not connected
- Servo 9 = Not connected

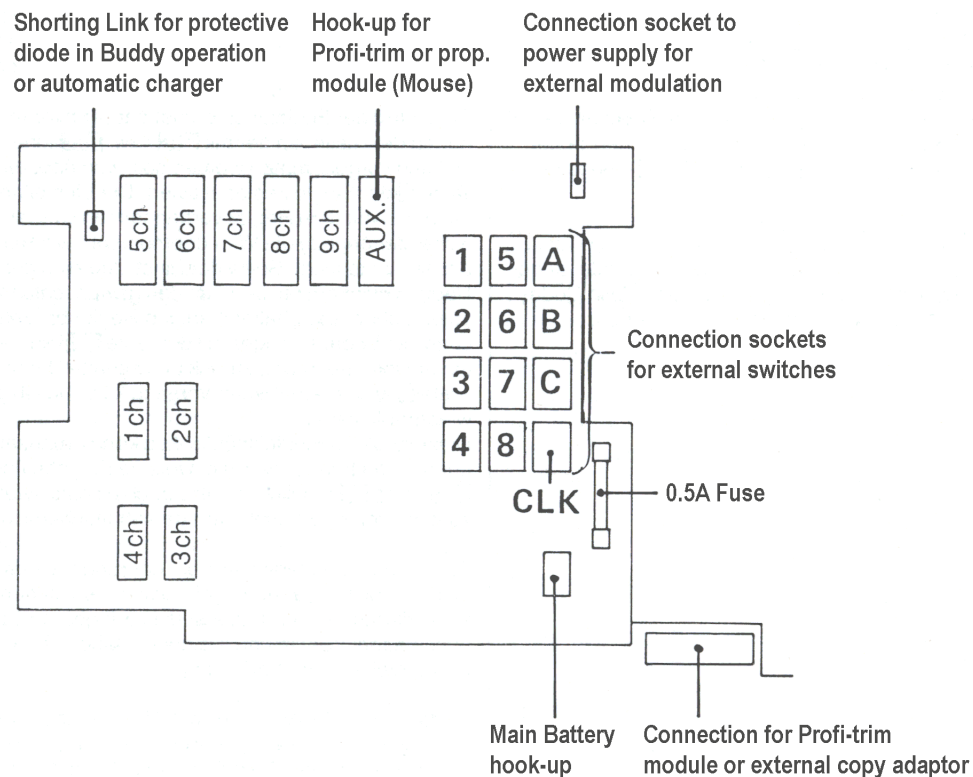


The connection of the speed control (where fitted) has to be made in accordance with the manufacturers instructions.

## Remedy for Incorrect Direction of Servo Rotation

Unplug the two servos from the receiver. Swap over and plug back in to the receiver. Reverse the servos in the Transmitter.

## Hook-up of External Operating Elements at the Transmitter Board



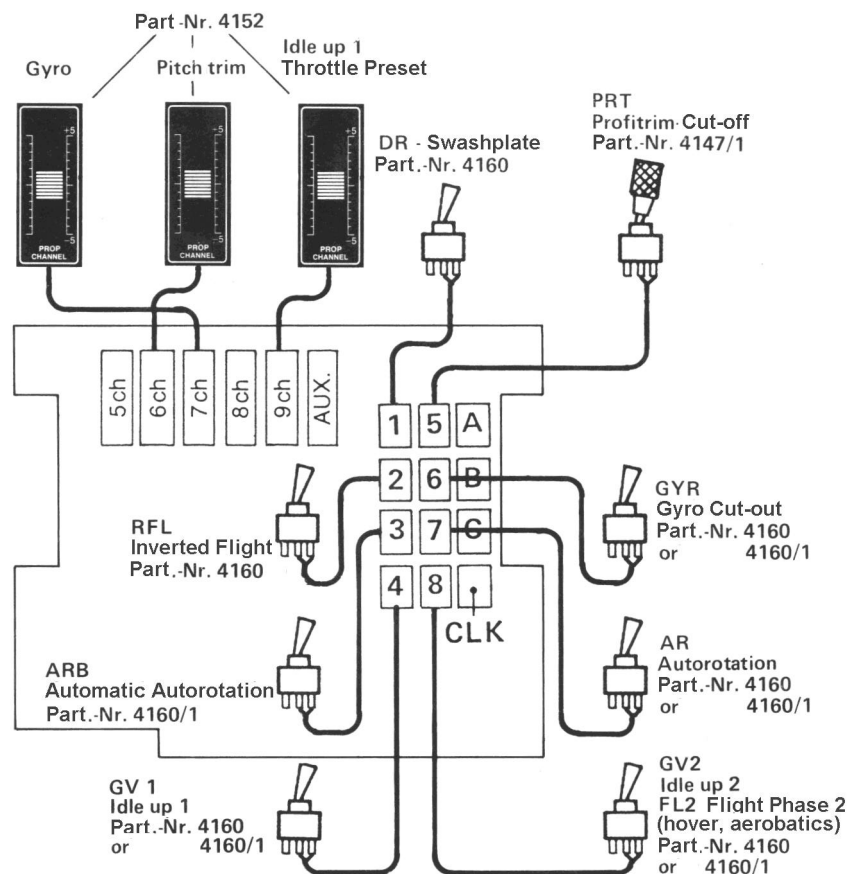
The external plug stations 1...8 are allocated to the desired functions using codes 23, 33 and 34.

*A three position switch (such as a differential switch, order no 4160/22) is connected, for example to switch OFF, throttle preset 1 and throttle preset 2, the two plugs must be plugged into horizontally adjacent stations only (e.g. 4 and 8), never one above the other (e.g. 3 and 4).*

Using an momentary switch (e.g. 4160/11) connected to the CLK connection is used to start/stop the countdown timer. Resetting the stopwatch is performed by pressing the **CLEAR** key.

The operating elements wired to connections 5ch...9ch can be allocated differently, if so desired using code 37.

## Recommended Hook-up of External Operating Elements for Helicopter Programs



The two slider type controls in the central console are normal used as follows:

Channel 6 = Collective Pitch Trim  
Channel 7 = Gyro Sensitivity (Gain)

With a slider control connected to "9ch", throttle preset 1 can be infinitely variable.

With a slider or rotary control connected to "AUX", analogue adjustment of values can be made.

# Code List for HELICOPTER (Type 8)

The code numbers for the options have been chosen to suit in-house technical deliberation, whilst the following descriptions are in the sequential order in which they'll normally be called when performing the setting-up process of a new model rather than numerically.

When a model is being programmed for the first time, be sure to follow this logical sequence. If you fail to follow it, you may forget something or unintentionally upset other adjustments made previously.

The second table list the options for subsequent changes in the operation of the model in function related groups.

## Programming a New Model

No.	Display	Meaning	Page
56	MODEL SELECT	Select Model	60
95	MODULATION	PPM/PCM Select	60
57	MODE SELECT	Stick Mode Selection	60
58	MODEL TYPE	Model Type Selection	61
21	GAS STICK DR	Direction of Throttle/Pitch Control	61
32	MODEL NAME	Input Model Name	61
29	THROTTLE TRIM	Allocation of Idle Trim	62
23	SWITCH FUNCT.	External Switch Allocation	62/63
34	SWITCH DR/EXP	Dual Rate/Exponential Switch Set-up	63
68	SWASH TYPE	Swashplate Type Selection	64
69	SWASH ADJUST	Swashplate Mixer Adjustment	65

No.	Display	Meaning	Page
11	REVERSE SW	Direction of Rotation of Servos	65
37	INP-PORT ASS	Allocation of External Controls	65
67	ATS SELECT	Automatic Torque System Select	66
24	AUTO ROTATION	Autorotation Changeover Set-up	66
25	INV. FLIGHT	Set-up for Inverted Flight	66
26	HIGH PITCH	Maximum Pitch Set-up	67
27	LOW PITCH	Minimum Pitch Set-up	67
28	HOV. PITCH	Hover Pitch Set-up	67
93	SWASH ROTATE	Enter Swashplate Rotation	68
81	STATIC ATS	Static Torque Compensation	68
82	DYNAMIC ATS	Dynamic Torque Compensation	68
83	AUTOR. Rud-of	Positions Tail Rotor in Autorotation	69
84	HOV. THROTTLE	Set-up for Hover Throttle	69
85	IDLE UP	Set-up Throttle Positions	70/71
86	SWSH → THRO MIX	Swashplate to Throttle Mix	72
87	RUDD → THRO MIX	Tail Rotor to Throttle Mix	72
89	GYRO CONTROL	Set-up Gyro	72/73
91	AN. TRIM SW	Set-up for PROFITRIM	75/75
75	SWSH → RUDD MIX	Swashplate to Tail Rotor Mix	75
12	THROW ADJUST	Servo Throw Adjustments	75
16	TRACE RATE	Adjust Effect of Operating Stick	76
19	THROW LIMIT	Servo Throw Reduction	76
15	SUB TRIM	Servo Neutral Point Adjust	76
13	DUAL RATE	Switchable Servo Throw Reduction	77
14	EXPONENTIAL	Exponential Servo Movement	77
35	RED. TRIM	Allows Reduction of Trim Range	78
79	SERVO SLOW-D	Servo Slow Set-up	78
92	SMOOTH SWITCH	Servo Transit Time Set-up	78
63	CH1-SWITCH	Channel 1 Dependant Auto Switch	78
51	MIXx CHANNEL	Channel Allocation for Mixers	80/81
33	SWITCH MIX	Allocation of Mix Switches	80/81
61	MIXx COM GAIN	Mixer No x Common Gain Adjust	80/81
71	MIXx SEP GAIN	Mixer No x Separate Gain Adjust	80/81
59	TRIM OFFSET	Storage of Trim Offset Values	82
94	COPY MODEL	Model Copy Facility	82/83
74	SERVO POSIT.	Display of a Servo Position	83
76	SERVO TEST	Allows Testing of Servos	83
73	SWITCH POSIT.	Display of Switch Positions	84
77	FAIL SAFE MEM	Set-up of Failsafe Mode	84
78	FAIL SAFE BAT	Failsafe on Low RX Battery	85
97	ALARM TIMER	Stop Watch Timer	85
98	INTEG. TIME	TX operating Timer	86
88	KEYBOARD LOCK	Lock the Keyboard	86
99	ALL CLOSE	Lock the Transmitter	86/87

## Operation

No.	Display	Meaning	Page
56	MODEL SELECT	Select Model	60
59	TRIM OFFSET	Storage of Trim Offset Values	82
13	DUAL RATE	Switchable Servo Throw Reduction	77
14	EXPONENTIAL	Exponential Servo Movement	77
91	AN. TRIM SW	Set-up for PROFITRIM	75/75

## Throttle

84	HOV. THROTTLE	Set-up for Hover Throttle	69
85	IDLE UP	Set-up Throttle Positions	70/71
86	SWSH → THRO MIX	Swashplate to Throttle Mix	72
87	RUDD → THRO MIX	Tail Rotor to Throttle Mix	72
24	AUTO ROTATION	Autorotation Changeover Set-up	66

## Collective Pitch

26	HIGH PITCH	Maximum Pitch Set-up	67
27	LOW PITCH	Minimum Pitch Set-up	67
28	HOV. PITCH	Hover Pitch Set-up	67
25	INV. FLIGHT	Set-up for Inverted Flight	66

## Tail Rotor

81	STATIC ATS	Static Torque Compensation	68
82	DYNAMIC ATS	Dynamic Torque Compensation	68
83	AUTOR. Rud-of	Positions Tail Rotor in Autorotation	69
75	SWSH → RUDD MIX	Swashplate to Tail Rotor Mix	75

## Swashplate

69	SWASH ADJUST	Swashplate Mixer Adjustment	65
93	SWASH ROTATE	Enter Swashplate Rotation	68

## Mixer

61	MIXx COM GAIN	Mixer No x Common Gain Adjust	80/81
71	MIXx SEP GAIN	Mixer No x Separate Gain Adjust	80/81
89	GYRO CONTROL	Set-up Gyro	72/73

## Timer

97	ALARM TIMER	Stop Watch Timer	85
98	INTEG. TIME	TX operating Timer	86

## Safety

77	FAIL SAFE MEM	Set-up of Failsafe Mode	84
88	KEYBOARD LOCK	Lock the Keyboard	86
99	ALL CLOSE	Lock the Transmitter	86/87

# Code 56 Model Selection

Selection and Deletion of Models

s	e	l	e	c	t	M	O	D	E	L				
K	E	Y	1	-	7	O	R	+	/	-				

The MC-18 transmitter permits the storing the data of seven models and 30 models<sup>3</sup>, including all trim data. To this end, actual trim data have to be stored into the trim memory via code 59, so the trim sliders of control functions ailerons, elevator and rudder can be moved to the centre position. In this manner finding trim data required for a newly selected model (after a change of model) will be very much simplified, as all you've got to remember is that all trim levers will occupy the centre position.

After calling code 56, model selection is performed either directly by entering the model number under which the desired model has been stored, or by skimming through the index of stored models to and fro via keys **INC** and **DEC**. In either case the name of the currently selected model will appear in the lower line of the display. You still have the possibility to correct your selection by entering another model or by skimming the index once again.

The selected model will be activated by **ENTER**. If the **CLEAR** key is pressed instead of **ENTER**, complete deletion of the selected model data can be initiated. This process is performed by the **ENTER** key, and aborted by any other key.

In case the model selected has been programmed for another kind of modulation than the preceding one, the display message "POWER OFF" indicates that you've got to turn the transmitter off and then on again so that the switch from PCM to PPM (or vice versa) can be made.

# Code 95 Modulation

Selection of PPM or PCM Modulation

m	c	-	1	8	E	M	O	D	E	L			1	
M	O	D	U	L	A	T	I	O	N	P	P	M		

The MC-18 transmitter permits operation on PPM (Pulse Position Modulation) or PCM (Pulse Code Modulation).

Switch over is provided by code 95, using the **INC** and **DEC** keys.

After a change of the modulation mode, the display text will indicate that the transmitter has to be turned off momentarily, so that it can swap over to the changed modulation.

# Code 57 Control Allocation

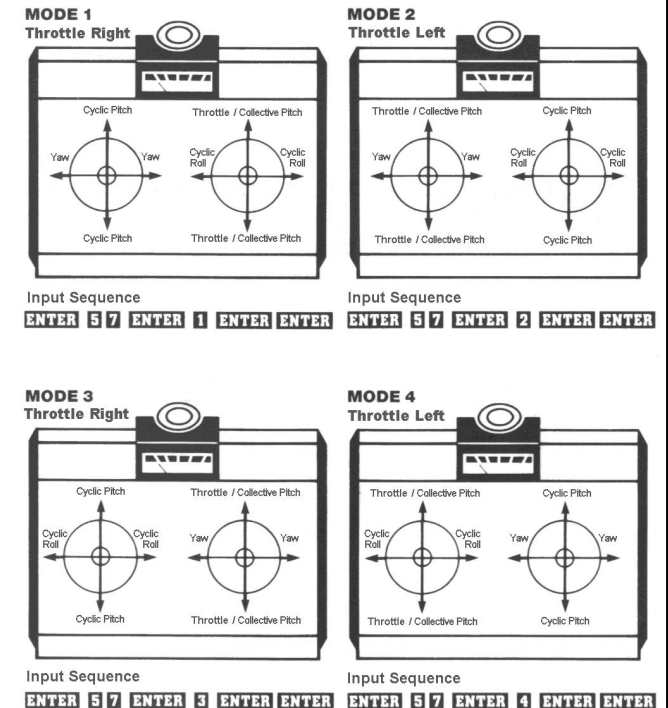
Allocation of Control Functions 1 – 4

m	c	-	1	8	E	M	O	D	E	L			1	
M	O	D	E	2										

Fundamentally there are four different modes for allocating the control functions Roll, Pitch, Tail Rotor and Throttle/Collective Pitch to the two control sticks. Which of them is used depends on the individual preferences of the modeller.

For steering a model helicopter, it is preferable to have Roll and Pitch on one stick, with Tail Rotor and Throttle/Collective Pitch on the other (modes 2 or 3).

The selection of the desired mode of operation is performed by selection of code 57 via keys **1...4**.



<sup>3</sup> Transmitters are configured for 30 models, starting with series '89