

APPROVED

Ми-17В-5.0000.00 РО ЛУ

ММ-17В-5 HELICOPTER

MAINTENANCE SCHEDULE

Ми-176-5.0000.00 РО

AVIONICS

Ми-17В-5
MAINTENANCE SCHEDULE

PREPARATION FOR FLIGHTS

Sign «+» stands for operations to be performed; asterisk stands for operations omitted for alarm flight.

TMI item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
Preliminary Operations						
1.	Prepare tools and test equipment	+	+*	-	-	+
2.	Ask permission of flight technician to carry out maintenance	+	+	+	+	+
3.	Open access doors required to get the access to equipment	+	-	-	+	+
4.	Take off protective casings and canvas cover from antennas of radio electronic equipment.	+	+	-	-	+
5.	Take off the fabric canvas and protective casing of Л166В1АЭ unit radiator. Note: Before flight without the use of Л166В1АЭ unit take off only fabric canvas and protective casing (to be performed by flight engineer)	+	+	-	-	+
6.	Prepare the spools for operation, mount them on voice recorder.	+	-	-	-	+
7.	Accept the remarks from crew members and, if required prepare tools and test equipment for eliminating troubles	-	-	+	+	-
8.	Connect external power source to helicopter mains	+	+*	-	-	+
Inspection						
Inspect and check:						
On fuselage, tail boom and pylon:						
9.	External condition and fastening of antennas and their components (stands, brackets, radomes, through-insulators, locking wires of turnbuckles of communication radio set antenna, shock-absorbers), cleanliness of drain holes, condition of windows of Л166В1АЭ units. clean antennas and fairings from dust and dirt Notes: 1. Inspection of Antenna АШВ-75 - Card 23.20.00 c. 2. Inspection of Antenna of Radio Station "Ядро-1А" - Card 023.10.00 b. Route: Fuselage nose section port side, fuselage nose section starboard side, fuselage lower and upper parts, tail boom and pylon.	+	+	+	+	+
10.	Wipe the window of Л166В1АЭ unit	-	-	-	+	-
In flight compartment, cargo cabin and radio compartment:						
11.	External condition, fastening and shock-absorbing of units, pointer and light indicators, control panels, selector panels and additional interphone points	+	-	-	+	+
12.	Condition and beading of cables, antenna wiring inside fuselage, reliable connection of antenna leads to through-insulators and units, condition of bonding links	-	-	-	-	+
13.	Tightening of union nuts, cable connectors and their locking, reliable wiring of high-frequency connectors to equipment units	-	-	-	-	+
14.	Condition of cords of selector panels and their plug-and-socket connectors	+	-	-	-	+
15.	Condition of buttons, knobs and switches. Smooth travel of volume controls and scale illumination knobs Intactness and efficient operation of switches and selector switches of controls and push-buttons (with equipment energized)	+	-	-	-	+
16.	Reliable engagement of headset to four contact connector (to be checked by crew members before flight)	-	+	+	-	-
17.	Make sure that switches of radio and electronic equipment are in OFF positions, while controls in initial positions	+	-	-	+	+
18.	Availability and wire quantity on driven cassette П-503Б (operations are performed with use of Y3 in auto-reverse mode in continuous flights of more than 4 hours)	+	+	+	-	-
Check serviceability and main parameters:						
Radio station P-863						
19*. (023.20.00 a)	Communication with ground station or that of another helicopter on working channel, smooth volume control and operation of noise suppressor. Setting of switch NARROW-BROAD (NB-BB)	+	+	-	-	+
Radio station Ядро-1А (Ядро-1А1)						
20*. (023.10.00 c)	Serviceability test of RS by built-in test system and test communication with ground airfield station.	+	+*	-	-	+
Radio station P-828						
21*. (023.20.00 i)	Communication with ground station or that of another helicopter on one channel, the use of which is intended in forthcoming flights. After the readjustment establish the communication across all preset channels.	+	+	-	-	+

Mn-17B-5
MAINTENANCE SCHEDULE

TMI item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
22*	Taking bearings of signals across ADF channel (in case the use of ADF channel is intended in forthcoming flights)	-	+	-	-	+
23"	Radio station with the help of M24-12 unit			-	-	+
Interphone system СПУ-7						
24. (023.40.00 a)	Communication between working stations of crew members	+	+	-	-	+
25. (023.40.00 i)	Listening to call signals of homing radio station at additional interphone point of flight engineer	-	-	-	-	+
Voice recorder П-503Б						
26. (023.70.00 ц) Technical documentation of П-503Б	General serviceability of voice recorder in reduced scope in "continuous operation" mode	+	+	-	-	-
27. (023.70.00 ч) Technical documentation of П-503Б	General serviceability of voice recorder in full scope and recording-playback channel output voltage	-		-	-	+
Radio station P-855A1						
28. Service Manual of P-855A1 (023.11.09)	External condition	+	-	-	+	+
29. Service Manual of P-855A1 (023.11.09)	Radio station battery life and its serviceability by establishing two-way communication with the radio station of the same type	-	-	-	+	+
30. Service Manual of P-855A1 (023.11.09)	Water-tightness of the transceiver	-	-	-	+	+
31. Service Manual of P-855A1 (023.11.09)	Receiver power in "Beacon" mode	-	-	-	+	+
32. Service Manual of P-855A1 (023.11.09)	Receiver frequency	-	-	-	+	+
33. Service Manual of P-855A1 (023.11.09)	Response and output voltage of the receiver		-	-	+	+
Direction finder APK-15M						
34. (110.10.00 a) t/c No. 4 in Technical documentation of APK-15M	Receiver tuning accuracy, listening of call sings of working radio station, relative bearing indication, intactness of control circuits.	+	+	-	-	+
35. (Task card №5 Technical documentation of APK-15M)	Operation of built-in circuit for homing stations selection	+	+	-	-	+
Direction finder APK-УД						
36. (110.11.00 a)	Intactness of radio finder interlocking circuit when communicating and command stations operate	+	-	-	-	+
37. (110.11.00 b)	Serviceability of direction finder using built-in-test system	+	+	-	-	+

Ми-17В-5
MAINTENANCE SCHEDULE

TMI item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
	Doppler system ДИСС-15Э					
38. (110.30.00 a)	Computing and indication errors for velocity vector components (unit 6)	+	+	-	-	+
39. (110.30.00 a)	Computing and indication errors for ground speed and drift angle (unit 7)	+	+	-	-	+
40. (110.30.00 a)	Computing and indication errors for distance flown and cross-track error (unit 8)	+	-	-	-	+
41. (110.30.00 a)	Calibration of equipment for MOPE (SEA) mode	+	-	-	-	+
42*. (110.30.00 a)	Serviceability of equipment in РАБОТА (OPERATION) mode Note. Replace the fan from the spare parts kit for each equipment set after 400+100 flight hours	+	+	-	-	+
	8A813Ц (8A813К) Radar					
43. (110.70.00 d)	Radar serviceability in КОНТРОЛЬ (TEST) mode	+	+	-	-	+
	Radio altimeter А-037					
44. (110.40.00 a) (110.42.00 б) (110.42.00 в) (110.42.00 а)	Serviceability test of the radio altimeter with built-in test system.	+	+	-	-	+
	Л166В1АЭ unit					
45.	Serviceability of Л166В1АЭ unit	+	+	-	-	+
	Final operations					
46.	Eliminate troubles detected during inspections and serviceability checks.	+	+	-	-	+
47.	Wash the head slots of voice recorder П-503Б	+	-	-	+	+
48.	Isolate the faults by the remarks of the crew		-	+	+	-
49.	Disconnect power from the equipment, set the switches and selector switches to initial position, turn off test equipment and external power source	+	+	+	+	+
50.	Take on the protective casing and the canvas on the Л166В1АЭ unit			-	+	+
51.	Close access doors and check their fastening	+	-	-	-	+
52.	Check the availability of tools and test equipment	+	+	-	-	+
53.	Make the entries in the required documentation	+	+	+	+	+

Ми-17В-5
MAINTENANCE SCHEDULE

SCHEDULED MAINTENANCE

Before carrying out the maintenance:

- check the remaining service life hours for each unit by entries in the logbook:
- check fulfilment of respective directions and instructions and improvements according to bulletins,
- carry out inspection for defects in the scope of preliminary preparation.

MS.item	Description of operations	Schedule, h				Remarks
		50	100	200	400	
Inspect and check:						
1. (023.10.00 b) (023.20.00 c,g) (110.10.00 d) (110.70.00 a) (023.10.00 a) (023.20.00 b) (023.20.00 e) (110.11.00 j) (110.11.00 c)	Inspect and check: - fastening, tensioning and condition of antennas and their components - external condition, fastening and shock-absorbing, tightening and locking of union nuts of plug-and-socket connectors, condition and fastening of cables (in places accessible for inspection), condition of bonding links of cables and units	+	+	+	+	
2.	Check condition of safety fuses and compliance of their ratings to circuit diagram requirements	-	+	+	+	
3.	Check removable tubes using radiolamp tester	-	-	+	+	
Radio station P-863.						
4. (023.20.00 c)	Check condition and fastening of AWB-75 antenna	+	+	+	+	
5. (023.20.00 a)	Check serviceability of radio station, set communication with airfield radio station or that of other helicopter on working channel	+	+	+	+	
6. (023.20.00 d)	Remove radio station and control panel from helicopter. Check condition of connectors, units	-	-	+	+	
7. Service Manual of P-863 (023.20.00 r)	Check supply voltage in modes ПРИЕМ (Reception) and ПЕРЕДАЧА (Transmission)	-	-	+	+	
8. (023.20.00 e)	Check condition of pins and jacks of connectors, feeders. Inspect shock-mount frame and absorbers	-	-	+	+	
9. Service Manual of P-863 (023.20.00 ж)	Check receiver response	-	-	+	+	
10. Service Manual of P-863 (023.20.00 и)	Check transmitter power	-	-	+	+	
11. Service Manual of P-863 (023.20.00 к)	Check modulation depth and self-listening voltage	-	-	+	+	
12. Service Manual of P-863 (023.20.00 n)	Check frequency stability	-	-	+	+	
13. (023.20.00 ф)	Reinstall radio station in the helicopter. Join reliably mating cables to connectors Ш1...W3.	-	-	+	+	
Radio station Ядро-1А (Ядро-1А1)						
14. (023.10.00 b), Technical documentation of Ядро-1А (023.10.00 a)	Check the condition of antenna, antenna lead	-	-	-	+	
15. (023.10.00 c)	Check the serviceability of radio station by built-in test and test communication with airfield station	+	+	+	+	

Mn-17B-5
MAINTENANCE SCHEDULE

M.S. item	Description of operations	Schedule, h				Remarks
		50	100	200	400	
16. Technical documentation of Ядро-1А (023.10.00 а)	Remove radio station units from helicopter	-	-	-	-	after 900h
17. Technical documentation of Ядро-1А (023.10.00 б)	Check the condition of electric connectors	-	-	-	+	after 400h
18. Technical documentation of Ядро-1А (023.10.00 в)	Clean the units of radio station	-	-	-	-	after 900h
19. (023.10.00 г) Technical documentation of Ядро-1А	Check the condition of wiring	-	-	-	-	after 900h
20. Technical documentation of Ядро-1А (023.10.00 д)	Inspect the units 6-4 and 6-5	-	-	-	-	after 900h
21. Technical documentation of Ядро-1А (023.10.00 е)	Varnish damaged points of units wiring	-	-	-	-	after 900h
22. Technical documentation of Ядро-1А (023.10.00 з)	Check the current in load equivalent, signal shape, frequency selection accuracy, tuning time, modulation depth, aural self-presentation voltage.	-	-	-	-	after 900h
23. Technical documentation of Ядро-1А (023.10.00 и)	Check the receiver response, noise suppressor, automatic gain control, internal noise of receiver	-	-	-	-	after 900h
24. Technical documentation of Ядро-1А (023.10.00 й)	Check and correct the frequency of reference oscillator ГО-4Б	-	-	-	-	after 900h
25. Technical documentation of Ядро-1А (023.10.00 к)	Reinstall the radio station units in helicopter					after 900h
Radio station P-828						
26. Technical documentation of P-828 (023.20.00 а)	Remove frame, transceiver, antenna coupler control unit, phase transmitter, antenna coupler, interface unit with ADF, colour filter and control panel with M from the helicopter	-	-	+	+	
27. Technical documentation of P-828 (023.20.00 б)	Check wiring and components	-	-	+	+	
28. Technical documentation of P-828 (023.20.00 в)	Lubricate the M24-8 unit mechanism	-	-	+	+	

Ми-17В-5
MAINTENANCE SCHEDULE

M.S. item	Description of operations	Schedule, h				Remarks
		50	100	200	400	
29. Technical documentation of P-828 (023.20.00 б, д, р)	Check on the test bench: – storage unit	-	-	+	+	
Technical documentation of P-828 (023.20.00 х)	– receiver response	-	-	+	+	
Technical documentation of P-828 (023.20.00 з)	– receiver output voltage	-	-	+	+	
Technical documentation of P-828 (023.20.00 и)	– noise suppression	-	-	+	+	
Technical documentation of P-828 (023.20.00 н)	– transmitter output power	-	-	+	+	
Technical documentation of P-828 (023.20.00 м)	– transmitter frequency deviation from nominal value	-	-	+	+	
Technical documentation of P-828 (023.20.00 н)	– transmitter frequency deviation	-	-	+	+	
Technical documentation of P-828 (023.20.00 о)	– supply voltage of throat mikes	-	-	+	+	
Technical documentation of P-828 (023.20.00 п)	– self-presentation voltage	-	-	+	+	
Technical documentation of P-828 (023.20.00 р)	– parameters of ADF channels	-	-	+	+	
Technical documentation of P-828 (023.20.00 к)	Check cables and units for condition, and the shock mount for serviceability on board. Reinstall the units in the helicopter.	+	+	+	+	
30. Technical documentation of P-828 (023.20.00 д)	Check on board: – radio station mode with help of M24-12 unit;	+	-	-	-	
Technical documentation of P-828 (023.20.00 б, в)	– taking bearing of signal across ADF channel	=	+	+	+	
31. (023.20.00 и)	Establish communication with a ground station or another helicopter station on the same frequency	+	+	+	+	
Interphone system СПУ-7						
32. (023.40.00 б)	Remove amplifier from helicopter	-	-	+	+	
33. (023.40.00 с)	Check wiring and parts, condition of pins and jacks of amplifier connectors and its cable	-	-	+	+	
34. (023.40.00 д)	Check output voltage of amplifier and gain control operation	-	-	+	+	
35. (023.40.00 е)	Check supply voltage of throat mikes	-	-	+	+	
36. (023.40.00 ф)	Reinstall amplifier in helicopter	-	-	+	+	

Ми-17В-5
MAINTENANCE SCHEDULE

M.S. item	Description of operations	Schedule, h				Remarks
		50	100	200	400	
37. (023.40.00 h)	Check interphone system junction box and components mounted in the latter, condition of push-buttons INT-RADIO, microphone cords and their connectors	-	-	+	+	
38. (023.40.00 a)	Establish communication between working stations, check for general call	+	+	+	+	
Headset						
40. (023.50.00 a)	Check condition of mike (throat mikes, voice voltage value developed by mike (throat mikes)	-	-	-	-	In calendar terms after (30 ⁺⁶ ₋₃) days
41. (023.50.00 b)	Check resistance of windings of telephones to d. c. and absence of chatter of diaphragms					In calendar terms after (30 ⁺⁶ ₋₃) days
42. (023.50.00 c)	Check condition of wiring, leads, cleanliness of contact surfaces, disengagement force of connectors	-	-	-	-	In calendar terms after (30 ⁺⁶ ₋₃) days
Voice-recorder П-503Б						
43. Technical documentation of П-503Б (023.70.00 а, б)	Remove the recording unit from helicopter	-	-	-	-	after 4, 6, 12 years
44. Technical documentation of П-503Б (023.70.00 и)	Check the wiring, parts and attachment of heads	-	-	-	-	after 4, 6, 12 years
45. Technical documentation of П-503Б (023.70.00 э)	Clean the commutator plates of electric motor	-	-	-	-	after 12 years
46. Technical documentation of П-503Б (023.70.00 щ, ы)	Clean by alcohol the rings of end switches, wire carriage guiding, axes, head slots.	+	+	+	+	after 4, 6, years
47. Technical documentation of П-503Б (023.70.00 ш)	Lubricate the carriage guiding axes of wire	-	-	-	-	after 4, 6, 12 years
48. Technical documentation of П-503Б (023.70.00 з)	Check for: – braking moment – output voltage of recording playback channel.	-	-	-	-	after 4, 6, 12 years
49. Technical documentation of П-503Б (023.70.00 и)	Check the operation of magnetic wire transport (breakage) detector and end switches	-	-	-	-	after 4, 6, 12 years
50. Technical documentation of П-503Б (023.70.00 о)	Check for automatic switching ON/OFF of MMU	-	-	-	-	after 4, 6, 12 years
51. Technical documentation of П-503Б (023.70.00 к)	Check and adjust the tension of wire recording medium	-	-	-	-	after 4, 6, 12 years

Ми-17В-5
MAINTENANCE SCHEDULE

M.S. item	Description of operations	Schedule, h				Remarks
		50	100	200	400	
52. Technical documentation of П-503Б (023.70.00м, н)	Check the condition and lay of magnetic wire and replace recording medium if required	-	+	-	-	after 4, 6, 12 years
53. Technical documentation of П-5036 (023.70.00й)	Check and adjust the motor controller	-	+	-	-	after 4, 6, 12 years
54. Technical documentation of П-5036 (023.70.00ж)	Check and adjust the clearance between brake discs and brake levers	-	-	-	-	after 6, 12 years
55. Technical documentation of П-5036 (023.70.00б)	Remove control panel located on left side panel of pilot's overhead panel	-	-	-	-	after 12 years
56. Technical documentation of П-503Б (023.70.00и)	Check the wiring and parts, the condition of cable connectors and units	-	-	-	-	after 4, 6, 12 years
57. Technical documentation of П-503Б (023.70.00в, р)	Install the recording unit in helicopter	-	-	-	-	after 4, 6, 12 years
58. Technical documentation of П-503Б (023.70.00в, р)	Install the control panel in helicopter	-	-	-	-	after 12 years
59. Technical documentation of П-503Б (023.70.00в, р)	Check the coupling nuts for tightening and bolts for attachment	-	-	-	-	after 4, 6, 12 years
60. Technical documentation of П-503Б (023.70.00ч)	Test in helicopter the voice recorder for serviceability in full scope and the output voltage of recording-playback channel on П-5036 voice recorder	-	+	+	+	
61. Technical documentation of П-5036 (023.70.00н)	Check the operation of wire medium transport (breakage) detector and end switches	-	-	-	-	after 4, 6, 12 years
62. Technical documentation of П-503Б (23.70.00о)	Check for automatic switching on of MMU	-	-	-	-	after 4, 6, 12 years
Radio station P-855A1						
63. Technical documentation of P-855A1 (023.11.09)	External inspection of the radio station	-	+	+	+	
64. Technical documentation of P-855A1 (023.11.09)	Check the transceiver of P-855A1 radio station for water-tightness	-	+	+	+	

Ми-17В-5
MAINTENANCE SCHEDULE

M.S item	Description of operations	Schedule, h				Remarks			
		50	100	200	400				
65. Technical documentation of P-855A1 (023.11.09)	Check transmitter power in "Beacon" mode	-		+		+		+	
66. Technical documentation of P-855A1 (023.11.09)	Check modulation factor of the transmitter	-		+		+		+	
67. Technical documentation of P-855A1 (023.11.09)	Check the transmitter frequency	-		+		+		+	
68. Technical documentation of P-855A1 (023.11.09)	Check response and output voltage of the receiver	-		+		+		+	
69. Technical documentation of P-855A1 (023.11.09)	Check the central frequency of receiver tuning	-		+		+		+	
70. Technical documentation of P-855A1 (023.11.09)	Check the radio station by establishing two-way communication with the radio station of the same type	-		+		+		+	
Direction finder APK-15M									
71. (110.10.00 d) Technical documentation of APK-15M Task card No. 1	Check the condition and security of attachment of AH antenna radioparent radome of APK-15M direction finder	-		+		+		+	
72. (110.10.00 a) Technical documentation of APK-15M Task card №3, Task card №5	Test in helicopter: – receiver response – maximum response of direction finder in homing – returning time of direction finder	+		+		+		+	
73. (110.10.00 b) Task card No3	Remove direction finder units from helicopter: – control panel; – receiver; – loop antenna cable equivalent; – antenna matching unit; – loop antenna	-		-		+		+	
74. (110.10.00 a) Technical documentation of APK-15M Task card №5 Task card No6	Test the receiver response; – frequency selection accuracy, maximum response in homing; – bearing error, automatic rotation speed	-		-		+		+	
75. (110.10.00 c)	Reinstall removed units in helicopter	-		-		+		+	
76. Technical documentation of APK-15M Task card No8	Check the bonding of units	-		-		+		+	

Mn-17B-5
MAINTENANCE SCHEDULE

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		50	100	200	400	
77.	Test in helicopter:					
Technical documentation of APK-15M (110.10.00 e) Task card №5	- receiver response and maximum response of direction finder in homing;	-	-	+	+	
Technical documentation of APK-15M Task card №9	- receiver turning, listening of call sings of radio stations and indication of relative bearings;	-	-	+	+	
Technical documentation of APK-15M Task card №9	- intactness of control circuits;	+	+	+	+	
Task card №10	- operation of built-in circuit of homing station selection	+	+	+	+	
	Direction Finder АРК-УД					
78. (110.11.00 c)	Remove direction finder units from helicopter: - control panel; - receiver and direction finder; - attachment frame; - built-in check oscillator; - junction box; - antenna unit; - antenna amplifier	-	-	+	+	
79. (110.11.00 d)	Check wiring and fastening of parts in direction finder units	-	-	+	+	
80. (110.11.00 e)	In antenna unit: - clean and flush slip rings and current collector brushes - check fastening of brushes and air gap between brushes and current collector body - lubricate motor reduction gear, parts of radio deviation compensator and antenna axle bearing	-	-	+	+	
81. (110.11.00 f)	Check maximum response in homing in NB, BB and P modes	-	-	+	+	If there are any remarks of failures
82. (110.11.00 g)	Check searching channel response across telephone output and light indication threshold in NB, BB, P duties	-	-	+	+	
83. (110.11.00 h)	Check condition of plug-and-socket connectors	-	-	+	+	
84. (110.11.00 i)	Reinstall removed units in helicopter	-	-	+	+	
85. (110.11.00 b)	Check serviceability of direction finder using built-in check system	-	+	+	+	
	Doppler meter ДИСС-15Э					
86. (110.30.00 t)	Check the condition of connectors, cables, units and shock-mounts..	-	+	+	+	
87. (110.30.00 b)	Remove from helicopter - HF, LH units, units 5, 6, 7, 8, test panel Check wiring and parts of units	-	+	+	+	
88. (110.30.00 c)	Check on the test bench: - voltage of secondary power supply sources	-	-	+	+	
(110.30.00 d)	- voltage and current of oscillator tube; - currents flowing through crystal mixers; - value of «check» power of oscillator tube; - difference of modules of auxiliary power sources - $27 V_{st.ref}$ and $+27 V_{st. fol}$.	-	-	+	+	
(110.30.00 r)	- bias voltage across modulation diodes	-	-	+	+	
(110.30.00 e)	- noise voltages and signal voltage levels across LFA outputs	-	-	+	+	
(110.30.00 f)	- frequency of the generator tube	-	-	+	+	
(110.30.00 h)	- response of receiving channels	-	-	+	+	
(110.30.00 i)	- zero values of speed components	-	-	+	+	

Ми-17В-5
MAINTENANCE SCHEDULE

M.S. item	Description of operations	Schedule, h				Remarks
		50	100	200	400	
(110.30.00 о)	– equipment coupling through angles	-	-	+	+	
(110.30.00 j)	– errors in computing and indicating speed vector components	-	-	+	+	
(110.30.00 k, l)	– error in computing and indicating drift angle and ground speed	-	-	+	+	
(110.30.00 m)	– error in computing and indicating the distance and cross-track error	-	-	+	+	
(110.30.00 n)	– equipment calibration in SEA mode	-	-	+	+	
(110.30.00 p)	– equipment operation in MEMORY mode	-	-	+	+	
(110.30.00 q)	– accuracy of characteristics from test panel	-	-	+	+	
89. (110.30.00 s)	Reinstall the units in helicopter	-	-	+	+	
90. (110.30.00 d)	Check in helicopter: – voltage of auxiliary power sources – voltage and current of oscillator tube; – currents flowing through crystal mixers; – value of «check» power of oscillator tube	+	+	+	+	
(110.30.00 a)	– errors in computing and indicating speed vector components; – error in computing and indicating drift angle and ground speed; – equipment calibration in SEA mode	+	+	+	+	
91. (110.30.00 a)	Test the equipment for serviceability with use of test panel	+	+	+	+	
Radio altimeter A-037						
92. (110.42.00 б) (110.42.00 в) (110.42.00 а)	Check the radio altimeter for serviceability with built-in test system.	+	+	+	+	
93. (110.42.00 и) (110.42.00 л)	Remove radio altimeter from helicopter: – transceiver – altitude indicator Note: Remove antenna only in case of its failure	-	-	-	+	
94. (110.42.00 п, р, с)	Check the parameters of altimeter on the test bench: – calibration;	-	-	-	+	
(110.42.00 т)	– calibration in “Test” mode;					
(110.42.00 ф)	– indication (transmission) of alert altitude;					
(110.42.00 y)	– response;					
(110.42.00 ш)	– altitude indicator scale lighting					
Л166В1АЭ unit						
96. (119.20.00 d)	Test Л166В1АЭ unit for serviceability	+	+	+	+	
97. (119.20.00 б)	Check in helicopter: – external condition and reliable fastening of the radiator;	+	+	+	+	
(119.20.00 с)	– condition of the radiator and its window;	+	+	+	+	
(119.20.00 ф)	– condition of paint coating;	+	+	+	+	
(119.20.00 е)	– modulation frequency;	+	+	+	+	
98. (119.20.00 h)	Remove the unit from the helicopter	-	-	+	+	
99. Scheduled Maintenance of Л166В1АЭ	Check: – modulation frequency;	-	-	+	+	
	– window condition;	-	-	+	+	
	– condition of paint coating;	-	-	+	+	
	– wiring and parts;	-	-	+	+	
	Carry out maintenance of the engine.	-	-	+	+	
	Lubricate gears	-	-	+	+	
	Clean the radiator and mirrors.	+	+	+	+	

Mn-17B-5
MAINTENANCE SCHEDULE

M.S. item	Description of operations	Schedule, h				Remarks
		50	100	200	400	
	Replace the heater					After 50 operating hours, with failures
100. (119.20.00 i)	Install the unit in the helicopter	-	-	+	+	
Radar 8A813Ц (8A813K)						
101. (110.70.00 b) (110.72.00 e) (110.72.00 c)	Remove radar units from helicopter and check wiring and parts	-	-	-	-	During repair or unit failures
102. (110.70.00 c)	Install the radar units in helicopter	-	-	-	-	
103.	Test the radar for serviceability in КОНТРОЛЬ (TEST) mode	+	+	+	+	

MAINTENANCE IN STORAGE

If the helicopter does not fly for some reason, but has not been rejected from flights, periodic maintenance should be carried out in storage.

Every (15^{+2}_{-1}) days

1. Carry out operations in the scope of pre-flight preparation of radio and electronic equipment.

Every (30^{+6}_{-3}) days

2. Carry out operations in the scope of preliminary preparation.

Every 3 months $^{+18}_{-9}$ days

3. Carry out operations in the scope of preliminary preparation.
4. Dry up silica gel, contained in the moisture trap located in the transceiver of altimeter A-037

Every 6 months $^{+36}_{-18}$ days

5. Carry out operations in the scope of preliminary preparation.
6. Dry up silica gel of moisture trap in transceiver of altimeter A-037.

Note: Before checking serviceability of radio equipment every 30 days, 3 months and 6 months warm up the equipment energized for 2 h.

CAUTION: WHEN HELICOPTER, EQUIPPED WITH A-037 RADIO ALTIMETER, IS IN STORAGE UNDER INTENSE HUMIDITY CONDITIONS OR TROPIC CLIMATE AND IF HELICOPTER DOES NOT FLY FOR ONE MONTH, EVERY DAY AT A DAY TIME VENTILATE THE HELICOPTER COMPARTMENTS (NOT LESS THAN 1 HOUR), IN WHICH THE RADIO ALTIMETER UNITS ARE INSTALLED;
- WARM UP THE RADIO ALTIMETER ENERGIZED FOR 1-2 HOURS NOT LESS THAN ONCE A WEEK.

LIST OF GROUND CHECK MEANS FOR MAINTENANCE OF AVIONICS

Description	Designation	Kind of preparation						Out-fitting to article	Remarks
		preliminary	preflight	subsequent flight	post-flight	site/daily inspection	check/repair		
1. Load equivalent for test of Ядро-1А1 radio station	RM.47.471.000	-	-	-	-	-	+	1:10	
2. Indicating unit for P-863 radio station test	Unit No. 28	-	-	-	-	-	+	1:10	
3. Matching unit 50175 Ohm for checking of radio station P-863 on test bench	Unit No. 29	-	-	-	-	-	+	1:10	
4. Ground tape recorder for voice recorder П-503Б test	П-503Н	-	-	-	-	-	+	1:10	
5. Test equipment set for А-037 test	КПА-034	-	-	-	-	-	+	1:10	
6. Meter for АРК-15М direction finder test	Е-016 (ИРК-2)	-	-	-	-	-	+	1:10	
7. Test bench for АРК-15М direction finder test	Bench АРК-15М	-	-	-	-	-	+	1:10	
8. Mechanical matching unit for АРК-15М direction finder test	БМП.6С2г 399.021	-	-	-	-	-	+	1:10	
9. Bench (or power board ME2.702.021) for АРК-УД direction finder test	Bench АРК-УД	-	-	-	-	-	+	1:10	
10. Indication and control unit for P-828 radio station test	M24-12	-	-	-	-	-	+	1:10	
11. Antenna equivalent for P-828 radio station test	M24-113	-	-	-	-	-	+	1:10	If P-828 R/S is installed
12. Set of instruments for P-828 radio station test	ШЫП-535 ШЫП-477М	-	-	-	-	-	+	1:10	
13. Service-repair console for ДИСС-15Э item test	ПКД-15М	-	-	-	-	-	+	1:10	
14. Switching-on console for ДИСС-15Э item test	ПВД-15М	-	-	-	-	-	+	1:10	

LIST OF GENERAL-PURPOSE GROUND CHECK MEANS FOR MAINTENANCE OF RADIO AND ELECTRONIC EQUIPMENT

Description	Designation	Kind of preparation						Out-fitting to article	Remarks
		preliminary	pre-flight	subsequent flight	post-flight	scheduled inspection	scheduled maintenance		
1. Automatic digital non-linear distortion meter for P-828 R/S test	C6-8	-	-	-	-	-	+	1:10	
2. A. c. voltmeter for testing radio communication, radio navigation and instrumentation equipment	B3-56	-	-	-	-	-	+	1:10	
3. Microvoltmeter selective type, for test of «Ядро-1А» radio station	B6-10	-	-	-	-	-	+	1:10	
4. Multi-purpose digital voltmeter for checking radio communication and navigation equipment	B7-16A	-	-	-	-	-	+	1:10	
5. AF signal oscillator (20Hz – 200KHz) for checking radio communication equipment	Г3-106	-	-	-	-	-	+	1:10	
6. HF signal oscillator (400-1200 MHz) for CO-70 test	Г4-76А, Г4-158	-	-	-	-	-	+	1:10	
7. HF signal oscillator (0.01-50 MHz) for checking communication radio station and MW direction finder	Г4-102А	-	-	-	-	-	+	1:10	
8. HF signal oscillator (12.5-400 MHz) for VHF and MF check of radio stations	Г4-151	-	-	-	-	-	+	1:10	
9. LF noise oscillator for checking «Ядро-1А» radio station	Г2-37							1:10	
10. Wattmeter for P-863 test	M3-28А	-	-	-	-	-	+	1:10	
11. Multi-purpose oscilloscope (0-35 MHz band) for testing radio communication and radio navigation equipment	C1-65А, C1-114	-	-	-	-	-	+	1:10	
12. Meter of amplitude modulation factor for test «Ядро-1А» radio station	C2-23							1:10	
13. Meter of amplitude modulation factor and frequency deviation for test of P-863 and P-828	СК3-43	-	-	-	-	-	+	1:10	
14. Electronic frequency meter for test of ДИСС-15 and А-037 (150—1200 MHz)	Ч3-46	-	-	-	-	-	+	1:10	
15. Electronic frequency meter for checking medium-wave direction finders, SW radio stations, А-037 (0.1-100 MHz)	Ч3-57 or Ч3-54	-	-	-	-	-	+	1:10	
16. Electronic frequency meter with unit ЯЗЧ-87 for «Ядро-1А» radio station test	Ч3-54	-	-	-	-	-	+	1:10	
17. Microohmmeter for checking transient resistances	Ф415	-	-	-	-	-	+	1:10	
18. Megohmmeter for 500V	M4100/3	-	-	-	-	-	+	1:10	
19. Microammeter in set with selector mechanism of П23 type for «Ядро-1А» radio station test	T210	-	-	-	-	-	+	1:10	
20. Combination meter	Ц4352, Ц4252-М1	-	-	-	-	-	+	1:10	
21. Stopwatch	СОСnp-26-2	-	-	-	-	-	+	1:10	
22. Autotransformer	ЛАТР-2	-	-	-	-	-	+	1:10	
23. Attenuator for VHF parameter test	Д3-33А Д5-34А	-	-	-	-	-	+	1:10	
24. Radar measuring unit for VHF parameter test	РИП-3	-	-	-	-	-	+	1:10	
25. Pulse generator for wave shape check	Г5-63 (Г5-15)	-	-	-	-	-	+	1:10	
26. Potentiometer for ДИСС-15 test	КСП-4	-	-	-	-	-	+	1:10	
27. Wattmeter for ДИСС-15 test	M3-10А	-	-	-	-	-	+	1:10	

LIST OF EFFECTIVE PAGES

Section, subsection, item	Page	Date	Section, subsection, item	Page	Date
Title	-	July 912001			
Record of revisions	1	July 912001			
	2	July 912001			
List of effective pages	1/2	July 912001			
Contents	1/2	July 912001			
Introduction	1/2	July 912001			
General	1	July 912001			
	2	July 912001			
	3/4	July 912001			
Safety precautions	1	July 912001			
	2	July 912001			
Preparation for flights	1	July 912001			
	2	July 912001			
	3/4	July 912001			
Scheduled Maintenance	1	July 912001			
	2	July 912001			
	1	July 912001			
	2	July 912001			
	3	July 912001			
	4	July 912001			
	5	July 912001			
	6	July 912001			
	7	July 912001			
	8	July 912001			
	9/10	July 912001			
Maintenance in storage	1/2	July 912001			
Supplement 1	1/2	July 912001			
List of ground check means for maintenance of avionics					
Supplement 2	1/2	July 912001			
List of general-purpose ground check means for maintenance of radio and electronic equipment					

CONTENTS

Description	Page
General	
Safety Precautions	
Preparation for Flights	
Scheduled Maintenance	
Maintenance in Storage	
Supplements	

INTRODUCTION

The maintenance schedule (MS) of the helicopter defines the scope and scheduled maintenance check intervals and all kinds of pre-flight preparations in helicopter.

Scheduled maintenance is compiled for the helicopter as a whole and comprises four groups:

- helicopter frame, helicopter systems, power unit;
- helicopter equipment;
- avionics;
- pyrotechnic devices. Aerial-delivery system.

GENERAL

1. In carrying out any kind of pre-flight preparations, scheduled maintenance and other works refer to present maintenance schedule, maintenance practices and pre-flight procedures, service manuals for the helicopter and mounted equipment, as well as to bulletins in force.

2. The scheduled maintenance assigned for helicopter, power unit, aerial – delivery, avionics and helicopter equipment should be performed simultaneously in generally accepted time limits, determined by the helicopter flying time, i. e. every 50^{+10}_{-5} , 100^{+20}_{-10} , 200^{+40}_{-20} , 400^{+60}_{-30} h. In helicopter storage scheduled maintenance is performed in calendar time every 7^{+3} , 15^{+2}_{-1} , 30^{+6}_{-3} days, 3 months $^{+18}_{-9}$ days and 6 months $^{+36}_{-18}$ days, as stated in section «Maintenance in Storage»).

3. Preliminary preparation is performed on days, assigned for preliminary preparation and is valid for 6 flying shifts (days, nights) during 7 days.

On days of preliminary preparation, in addition to works described in section «Preparation for Flights») of M.S., maintenance is also performed on ground servicing equipment and test means, shelters and parking lots.

4. In intervals between scheduled maintenance checks, after every (25 ± 5) flight hours, but at least every 60^{+5} calendar days, periodic inspection of the helicopter should be effected in the scope, covered by section ((Preparation for Flights)).

Periodic inspection of the helicopter is performed on the day of subsequent pre-flight preparation, this procedure includes serviceability checks of all systems and equipment with the help of test instruments and lubrication of units and assemblies in accordance with the lubrication charts.

5. In the course of pre-flight preparations of all kinds including servicing (replenishment) of working fluids and checking of their levels, the flight technician should make sure that these procedures are performed correctly, he must personally close and lock reliably the covers (plugs) of the filler necks.

6. In preparing the aerial - delivery equipment for flights, carry out only those works listed in columns ((Preliminary preparation)), ((Post-flight procedure)), which correspond to the operational items version, prescribed by the schedule of take-off or of forthcoming flight, and only those works from columns «Pre-flight procedure») and «Preparation for subsequent flight)), which correspond to the scheduled flight plan.

7. When rearranging the helicopter from one loading variant to another, the works prescribed for the new loading variant should be carried out.

8. Serviceability checks of energized holders ЭКСП-46, external stores and R-meter may be effected with power supply from the airborne power source.

Serviceability checks of energized avionics and helicopter equipment, KO-50 kerosene heater and electric winch should be effected with power supply from the ground power source, except for the cases when interference level measurements are taken with engines running.

In preparing the helicopter in the case of alarm and in exceptional cases of preparation in pre-flight preparation, the serviceability checks may be carried out by the helicopter crew with power, supplied from the airborne sources with the engines running.

9. In checking serviceability of avionics (both aboard the helicopter or outside), employ radio camouflage means in compliance with the relevant manuals, regulations and instructions in force.

10. When the engines, main gear box or other units and items of equipment have been replaced, carry out the scheduled maintenance in time limits, determined by the helicopter total flying time. On newly mounted engines or units, the nearest subsequent scheduled maintenance may be conducted ahead of scheduled time.

All works on replacement of units and items of equipment should be recorded in the relevant logbooks and certificates.

11. With the purpose of ensuring trouble-free operation of the helicopter under various climatic conditions (excessive humidity, dustiness etc), and also if separate units are subject to intensive operation or if engines are replaced, it is allowed to perform out-of-schedule maintenance on all or individual helicopters (systems, units) in compliance with this M.S. The scope of works prescribed in this maintenance schedule should not be curtailed.

12. When the helicopter is parked, the air intakes (dust-protection devices) and exhaust branches should be blanked off with covers, while during long-term parking (storage) the power For transport version

unit should be covered with canvas. The main rotor of the parked helicopter should be always braked.

13. Place the chocks under the wheels, blanks, clamps for the swash plate, parking brakes and main rotor brake, moor the main rotor blades irrespective of the weather.

14. Inspect the helicopter, following a strict sequence according to prescribed circuits. Lubricate (fill with oil) the engines, transmission units, controls, main and tail rotor hubs, swash plate, etc in terms, prescribed in the supplements. Lubrication carried out every 10^{+3} or every (25 ± 5) flight hours should be performed on days of preliminary preparation and during periodic inspections of the helicopter.

15. If the helicopter is operated under field conditions, avoid, if possible, starting up the engines on sandy or dusty areas. The area for starting up the engines and performing the engine test should be selected so as to protect the intakes from dust and foreign matters, arising by air, blown up by adjacent helicopters.

16. Prior to performing the inspections and scheduled maintenance, clean external surfaces of the helicopter and its units, equipment and armament from dirt, dust, frost, snow, ice and stale grease. To prevent damage of the paint-and-varnish coating, never attempt to pull off frozen canvas covers from the helicopter skin, main and tail rotor blades. First defreeze them with warm air from an external heater at a temperature not exceeding 60°C .

17. When replacing the engines, main gear box or other units, also in case of disconnection of the pipelines of the fuel, oil and hydraulic systems, prior to starting up the engines, initially pump through the systems to remove air blocks.

18. In case of unsuccessful start of the engine, crank it before restart.

19. When the disassembled engines and units are to be reinstalled the same helicopter, do not disturb the adjustment of eye bolts and fastening rods.

20. The engine fuel system should be filled with fuel for the whole time the engine is on the helicopter. Once the fuel system has been emptied, internal preservation not later than 24 h after the fuel has been drained is required.

21. Close at once all holes and cavities of units and pipelines opened in the course of removal with special blanks, and the plug-and-socket connectors - with p.v.c. film. Wooden blanks, paper, oakum, rags etc. are not allowed to use. When disconnecting plug-and-socket connectors of electric mains inspect the jacks and pins.

22. To protect the glazing from direct sun rays, dust and dirt, cover the cabin with clean canvas covers in parking.

23. Never flush with kerosene (gasoline) the enclosed-type ball bearings and bush-roll chain of the control system, but wipe with clean and dry cleaning rags and lubricate on the outside, applying a thin layer of lubricant.

24. Carry out the works on the helicopter with sound and marked-out tools and fixtures. Prior to work and on completion of work check the tools against the list, making sure that none have been lost or left inside the helicopter.

25. Carry out the scheduled maintenance and prepare for flight with serviceable test equipment having test certificates. Equipment without certificate or with expired test date should not be used.

26. Do not tear off cotter pins, wire or unbend tabs of locking strips by turning nuts or bolts, since it can damage thread or unscrew the studs. Do not use locking wire or locking strips as second-hand fasteners.

27. Press grease into the joints outfitted with grease cup till stale grease is pressed out. If grease fails to pass through the joint, check the grease cup, clean it, replace if necessary. If trouble is not eliminated, do not use the unit or assembly.

28. Fill the hydraulic system with fresh oil not later than 48 h after used the oil has been drained.

29. When inspecting and checking the accessories, units, structural components and systems of the helicopter, pay special attention to location and elimination of such probable troubles as:
- cracks, dents and other mechanical injuries of parts;
 - damaged and slackened locking, loose fasteners, also loose union nuts of plug-and-socket connectors;
 - leaks and wear of pipelines and units of fuel, oil, hydraulic, pneumatic and other systems;
 - improper fitting of hoses and pipelines of all systems;
 - damaged protective coating and corroded parts;
 - increased play in hinged joints;
 - friction or rubbing of moving parts against other parts and components of the helicopter structure;
 - slackened rivets;
 - untight fitting and loose fastening of covers, access doors, cowlings and fairings;
 - defective attachment of pipelines and wire bunches;
- damaged bonding.

SAFETY PRECAUTIONS

1. The helicopter equipment may be operated by personnel, who have studied the safety engineering rules and are certified for the maintenance.
2. Prior to carrying out the inspections and scheduled maintenance, ensure the safety for the personnel against static electricity discharge, spontaneous switching-on of the electrical equipment, fire and injuries.
For this purpose:
 - place chocks under the helicopter wheels,
 - ground the helicopter;
 - set all automatic circuit breakers and energy consumers to OFF position,
 - apply brakes to the main rotor.
3. When power supply sources are connected to the helicopter, hang out the poster "HELICOPTER ENERGIZED!" The sources may be connected to the airborne mains only by permission of the flight technician, and during the period of scheduled maintenance - by the maintenance superintendent.
4. On completion of scheduled or erection works make sure that all the systems are leak-tight, running the engines in idling, then check the engines in higher power ratings.
5. When the engines are running, nobody should stay in the engines and gear box compartments, as well as within the tail rotor area.
6. When the power unit is inspected after the engines shut down, exercise care to avoid burns caused by touching the hot parts.
7. Never carry out maintenance on suspended engine. Use a special cart from the ground equipment set to carry out works on disassembled engine.
8. Check that portable electric lamps used for inspection of the helicopter are intact, spark-proof, have protective nets.
9. Check that hydraulic hoists and cranes are serviceable. **NEVER** use faulty hoisting devices.
10. Inflate the landing gear tyres using a special reducer with pressure gauge, precluding excessive air pressure liable to destroy the tyre and injure the personnel.
11. When operating the avionics and helicopter equipment follow safety precautions to preclude short-circuiting, shocks of high-voltage current and spontaneous switching-on of the equipment.
12. During maintenance on the helicopter, DO NOT:
 - touch the helicopter after taxiing it to the parking area, when no grounding is connected;
 - lean the step-ladders and other airfield equipment, which are not lined with soft material, to the helicopter skin;
 - keep free ends of wiring non-insulated;
 - leave open electric switch panel of function boxes and terminal panels energized;
 - carry out wiring, demounting works in electric circuits when the helicopter is energized;
 - open dischargers of ignition unit CK-22-2K;
 - apply on the valves of oxygen bottles any grease;
 - carry out any works on the oxygen equipment with oily hands and tools with traces of oil and fat.
13. Prior to starting and test on the engines check for availability of fire-extinguishing means and chocks for the wheels, also, for proper arrangement of airfield ground equipment at the parking area and absence of foreign objects around the helicopter. Engine start and test may be performed by the pilot only in the presence of the crew. The crew, performing the engine test should not leave the cabin when the engines are running.
14. Prior to starting up, opening and closing the cargo compartment, cranking the main rotor blades, give warning commands and make sure there are no people and foreign objects in the vicinity of blades and rotating parts. The orders should be given to the crew and personnel near and inside the helicopter. The works may be done only after reports are accepted.
15. DO NOT repair (disassemble) systems under pressure.
16. When operating with oil 6-3B observe the following safety rules:
 - avoid getting of oil on painted surfaces of units and mechanisms, rubber parts, wiring etc. If oil gets on these parts, wipe it off immediately, making use of cloth soaked in gasoline or kerosene;

Ми-17В-5
MAINTENANCE SCHEDULE

- on completion of maintenance wash your hands with water and soap, especially before meal;
- do not mix oil 6-3B with mineral oils;
- DO NOT use the cans with contained mineral oils before.

17. When carrying out the maintenance on aerial - delivery equipment, strictly follow safety rules, excluding unintentional shots, firing of pyrotechnical means, release of cargoes.

18. When operating with the pyrotechnical means, DO NOT:

- expose squibs to mechanical actions (shocking, dropping, puncturing);
- use faulty or uncertified instruments for squibs test;
- disassemble the squibs;
- allow stray persons to be at the working station;
- smoke and use fire, place heating appliances and highly inflammable substances near the test area.

19. Before starting work on units and systems containing pyrotechnical devices and in the course of the helicopter service, unload them. Hand over the devices for storage in the accepted procedure.

20. In all cases when helicopter is on the ground the safety cap with red warning flag should be fitted on ДСЛ-40Т detector vibrator. Remove the protective casing before the flight, inspection and functional check of the detector and install the casing after flight, inspection and functional check of the detector.

21. When replacing the CK-22-2K ignition unit due to breakdown or expiration of life time of the CK-22-2K ignition unit discharger with a radio-active radiation source, send them to the manufacturer or to a specialized organization with compiling the respective statement. The CK-22-2K ignition unit discharger with a radioactive radiation source is not subject to destruction and burial-at the unit.

Вертолет Ми-175-5
Регламент технического обслуживания
(MAINTENANCE SCHEDULE)
РАДИОЭЛЕКТРОННОЕ ОБОРУДОВАНИЕ
(AVIONICS)
(На английском языке)

