

REGULATIONS

on conduct of International Contest

«Aviadarts – 2019»

I. General Provisions

1. General management of the preparation and conduct of the international air crews' flight skills contest "Aviadarts-2019" (hereinafter referred to as the Contest) is carried out by the General Command of the Aerospace Forces.

The Contest is to be conducted from 03/08/2019 to 17/08/2019.

2. The teams of the following composition are invited to take part in the Contest:

flight personnel - in the ratio of crew/aircraft;

flight management group - up to 25 persons (if team participates in all nominations);

referee panel - up to 10 persons;

coaching team - up to 2 persons (for each branch of aviation);

engineering and technical staff - up to 25 persons for each type of aircraft;

maintenance staff - up to 5 persons for each type of aircraft;

3 aircrafts and crews of operational-tactical aviation (hereinafter - OTA) (fighter aircrafts - type Su-27, Su-30SM, Su-35C, MiG-29, attack aircrafts - type Su-25, Yak-130 (two main (pair), one backup and other participating States' aircrafts of the same type);

2 aircrafts and crews of OTA (bomber aircrafts - type Su-24M, Su-34 (one main, one backup and other participating States' aircrafts of the same type);

3 aircrafts and army aviation crews on combat helicopters (type Ka-52, Mi-24, Mi-28N, Mi-35 (two main (pair), one backup and other participating States' aircrafts of the same type);

3 aircrafts and army aviation crews on combat carrier helicopters (type Mi-8 (two main (pair), one backup and other participating States' aircrafts of the same type);

2 aircrafts and long-range aviation crews (type Tu-22M3 (one main, one backup and other participating States' aircrafts of the same type);

2 aircrafts and military transport aviation crews (type Il-76 (one main, one backup and other participating States' aircrafts of the same type);

Each country participating in the contest (hereinafter - the team) shall provide the organizing party with the number of personnel (officers, NCOs and soldiers), types of aircraft participating in the contest and airborne weapon systems (hereinafter – AWS) (parachute platforms) before April 10, 2019, as well as a complete nominal roll of the contest participants before May 20, 2019.

If the state is armed with several types of combat fixed (rotary) wing aircrafts, it is allowed to participate in the Contest on two types in each aviation branch.

3. Contest is held among the flight crews of the following aviation branches:

Fighter Aviation (hereinafter - FA);

Attack Aviation (hereinafter - AA);

Bomber Aviation (hereinafter - BA);
 Army Aviation (hereinafter - ArA) on combat helicopters;
 Army Aviation on combat carrier helicopters
 Military Transport Aviation (hereinafter - MTA);
 Long-Range Aviation (hereinafter - LRA).

The Contest participants are air staff from pilot (crew commander) up to and including the flight (detachment) commander, with qualification rank not lower than third class, second in command of the aircraft (copilot), pilot-navigator (pilot-operator), navigator of the aircraft (navigator-operator) with the age not elder than 35 years for the year of the Contest.

4. The Contest is carried out in three stages:

Stage 1 – "Physical training". The main and backup crews take part in the Stage.

Stage 2 – "Flight en route, conducting visual aerial reconnaissance, piloting technique." The crews of LRA and MTA do not participate in this Stage of the Contest.

Stage 3 – "Combat employment against ground targets". The crews of military transport aviation conduct cargo airdrop.

5. During the Games, the Russian side carries out general management of the Contest. Each participating country is responsible for the flights' safety of its team.

II. Terms of the Contest

6. Each team performs on its own aircraft. In case of failure of an aircraft, it is allowed to replace the main one with a backup.

7. The Contest team members shall possess a report by the medical (military-flight) examination board on airworthiness, complying with the legislation of the Contest member state. The Contest team members shall not have a break of more than 12 months after annual leave.

8. The air staff is allowed to participate in the Contest, if they have no breaks in those types (elements of the kinds) of flight training, the competitions for which are provided for by the Terms of the Contest.

Replacement of participants for backup crews is allowed only in case of emergency (illness, injury, etc.); reverse replacement is not allowed. In the case of a replacement, the results of the physical training of the backup participant are accounted, and the results of the flight stages of the crew (pair) scored by the time of the replacement are reduced by 20 percent.

9. The program of the Contest provides for two combat employment flights. Types and quantity of ammunition (platforms) per each aircraft for one combat employment flight are as follows:

FA - 4 unguided air-to-surface missile (hereinafter - UASM) (caliber not exceeding 130 mm), 10 rounds to the aircraft gun;

AA - 4 UASM (caliber not exceeding 130 mm), 10 rounds to the aircraft gun;

BA - one aerial bomb of 250 kg caliber, 4 UASM (caliber not exceeding 130 mm);

LRA - two aerial bombs of 250 kg caliber;

Army aviation on combat helicopters - 4 UASM (caliber not exceeding 130 mm), 10 rounds to the aircraft gun;

Army aviation on combat carrier helicopters - 4 UASM (caliber not exceeding 130 mm), 10 rounds to the aircraft gun;

MTA - parachute cargo, platform with a multi-canopied parachute system to airdrop cargo weighing 3-5 tons.

The employment of guided AWS and parachute systems, as well as the employment of AWS not provided for by the Terms of the Contest, is prohibited.

III. The Program of the Contest

10. Before the commencement of the Contest, aircrafts are relocated to the Contest's airfields, teams are accomplishing arrival, registration (photographing of participants, verifying their identity documents) and accommodation, submit applications to participate in the Contest, indicating the main and backup crews.

Conducting a special flight safety lesson with air staff and members of the flight management team (hereinafter referred to as FMT) for analyzing aviation events related to the performance of similar flights.

Study by team crews, FMT members and maintenance personnel instructions on ensuring safety of live fire flights in the air firing range.

Study upcoming flights area, Instructions for conduct of flights in the area of the airfield, Instructions for conduct of flights in the air firing range, air and ground conditions, charts of alternate airfields, sites, ranges, flight missions.

Drafting flight charts.

Preparation and execution of flights according to the training plan.

11. Day 1 - opening ceremony of the Contest, information on terms and conditions of its conduct.

General assignment of missions to the participants of the Contest.

Draw among crews (pairs) of teams (identifying programs of aerial reconnaissance of ground targets, fire target (aim)).

12. Day 2 – conduct of the first stage of the Contest “Physical training”.

Mission of Stage 1

13. **The mission of Stage 1 "Physical training"** in total consists of four elements and shall be accomplished in the following sequence:

Exercise 1 – *Complex exercise with a basket ball.*

Execution technique:

It is conducted on the basketball court. The starting position is standing with the ball in hands on the free throw line facing the basketball shield. At the signal, one should pass the ball with both hands to the shield, catch it within the bounded zone (trapeze) and start the dribbling in the direction of the racks (chips), the first of which is at the intersection of the middle line and the central circle (8 m from the top of the trapeze). Starting from the right side, circle five racks (chips), located at a distance of 2 m

from each other, and make a throw at the rim in any manner. The countdown starts on a signal for the exercise and ends when the ball hits the rim.

Penalties:

1. for double dribbling - "- 5 points";
2. palming - "- 5 points";
3. traveling - "- 5 points";
4. chip is knocked down - "- 5 points";
5. not hitting the rim - "- 10 points".

Exercise 2 – *pull-ups.*

Execution technique:

Hang position grip on top, bending arms, pull up (chin above the bar of the crossbar), unbending hands, drop into the hang position. The hang position is fixed.

Slight bending and breeding of the legs, a slight deviation of the body from a fixed position in the hang position are allowed.

It is forbidden to make jerk or stroke moves.

Exercise 3 – *freestyle swimming for 50 meters.*

Execution technique:

The start is carried out from the starting block. At the command "TAKE PLACES" - get on the starting block, "ON START" - put your feet on the width of 15-20 cm, grab the front edge of the block with your fingers, bend your legs in the knees, torso forward, hands back, "MARCH" make a swing of hands and push oneself with feet away from the blocks up forward, while in the air - straighten the body, stretch out your hands forward.

While swimming in freestyle, any method is used. Turn is to be performed with the obligatory touch of the wall by any part of the body.

Exercise 4 – *turns on stationary gymnastic wheel.*

Execution technique:

The exercise implicates 10 turns to the left and 10 turns to the right (2 x 10). The exercise begins and ends at the moment of passing the vertical position with head upward. Score is based on total time spent on 20 turns, without stopping the stopwatch after performing the first 10 turns. It is allowed to start the exercise rotating in any direction.

Exercise is executed on standard apparatus; stationary gymnastic wheel shall be securely fastened.

Exercise is executed in the following order. Upon readiness of the participant, the head referee grants permission to perform the turns with the "Start exercise" command, after which the participant makes 10 full turns in one and then 10 full turns in other direction. Time gap when changing the direction of rotation should not exceed 10 seconds.

The exercise ends when the participant completes twentieth turn passing the vertical position with his head up.

During the exercise, the referee loudly counts turns. If in one of the series less than 10 turns were made, the exercise is not accounted for.

The exercise execution time is determined by the stopwatch at the time when the head of the participant passes upper vertical position.

The time of every 10 turns is determined separately with an accuracy of up to 0.1 second and summarized.

Maximum score for each exercise - 30 points, maximum score for the first stage - 120 points.

Total score of the group (crew) is defined by the average score as per the number of crew (group) members exercising physical training.

Stage 1 "Physical training" assessment procedures

Score	Complex exercise with a basket ball (s)	Pull-ups	Freestyle swimming for 50 meters (s)	Turns on stationary gymnastic wheel	Score	Complex exercise with a basket ball (s)	Pull-ups	Freestyle swimming for 50 meters (s)	Turns on stationary gymnastic wheel
30	11.0"	20	36.0"	30,0"	15	14.0"	10	45.0"	31,5"
29	11.2"	19	36.6"	30,1"	14	14.4"		45.6"	31,6"
28	11.4"	18	37.2"	30,2"	13	14.8"	9	46.2"	31,7"
27	11.6"	17	37.8"	30,3"	12	15.5"		46.8"	31,8"
26	11.8"	16	38.4"	30,4"	11	16.5"	8	47.4"	31,9"
25	12.0"	15	39.0"	30,5"	10	17.5"		48.0"	32,0"
24	12.2"		39.6"	30,6"	9	18.5"	7	48.6"	32,1"
23	12.4"	14	40.2"	30,7"	8	19.5"		49.2"	32,2"
22	12.6"		40.8"	30,8"	7	20.5"	6	49.8"	32,3"
21	12.8"	13	41.4"	30,9"	6	21.5"		50.4"	32,4"
20	13.0"		42.0"	31,0"	5	23.0"	5	51.0"	32,5"
19	13.2"	12	42.6"	31,1"	4	24.0"		51.6"	32,6"
18	13.4"		43.2"	31,2"	3	25.0"	4	52.2"	32,7"
17	13.6"	11	43.8"	31,3"	2	26.0"		52.8"	32,8"
16	13.8"		44.4"	31,4"	1	27.0"	3	53.4"	32,9"

14. Day 3 - preliminary preparation for the flights of the second stage of the Contest "Flight en route, conducting visual aerial reconnaissance, piloting technique."

15. Day 4 - flights of the second stage of the Contest "Flight en route, conducting visual aerial reconnaissance, piloting technique." Preliminary summing up.

Flight Missions of Stage 2

"Flight en route, conducting visual aerial reconnaissance, piloting technique."

16. When executing flight missions of the second stage of the Contest in pairs, breaking the pair into single fixed- or rotary-wing aircrafts (distance more than 500 m), except in special occasions, is prohibited.

When executing flight missions on the piloting technique, horizontal maneuvers shall be performed separately, vertical maneuvers may be combined (with no recovery).

The performance parameters of the aerial maneuvers are reflected in the flight mission plans for each type of aircraft, which are drafted by each team and submitted for approval to the Head Referee prior to the Contest.

17. For crews of Su-27, Su-30SM, Su-35S, MiG-29 type aircraft and its modifications - "Pair formation flight en route for visual aerial reconnaissance and in the area for complex aerobatics at low altitudes"

Number of flights - 1.

Flight time - 40 minutes.

The purpose of the exercise. Assess the skills of flight crews (groups) in air navigation, search for ground objects and complex aerobatics, performed in pair.

Weather condition. Simple meteorological conditions (hereinafter - SMC) with the visibility of the natural horizon.

Aerobatics time - 4 minutes 30 seconds

The flight formation of the pair - "aircraft bearing".

The altitude of the upper point of vertical straight maneuver - not less than 2000 m, vertical inclined maneuver - not less than 1500 m, recovery from the descending maneuver at an altitude not less than 500 m.

Flight mission:

take off one by one (in pair). After take-off, perform a flight along specified route inbound into the reconnaissance area;

search for ground objects by various tactical reconnaissance techniques;

inbound to the aerobatics area at a specified time;

in the area at altitudes range of 500–3000 m perform the following:

limit thrust turning under the maximum mode of engine operation at an altitude of 500 m.;

limit thrust turning under afterburning mode of engine operation at an altitude 500 m.;

zoom at degree 45°;

semi-split;

descend to an altitude of 500m;

skewed loop;

Nesterov's loop

combat turn in skewed loop manner;

a dive with a pitch angle of 45° with the recovery at the altitude not less than 300 m.

After accomplishment of the mission, the pair is dissolved and landing is executed one by one from circle with the determination of the accuracy of landing within the limits of a precision landing runway (hereinafter - PLR).

18. For crews of Su-25, Yak-130 type aircraft and its modifications - "Pair formation flight en route for visual aerial reconnaissance and in the area for standard aerobatics at low altitudes"

Number of flights - 1.

Flight time - 40 minutes.

The purpose of the exercise. Assess the skills of flight crews (groups) in air navigation, search for ground objects and standard aerobatics, performed in pair.

Weather condition. SMC with the visibility of the natural horizon.

Aerobatics time - 5 minutes

The flight formation of the pair - "aircraft bearing".

The altitude of the upper point of vertical maneuver - not less than 1500 m, recovery from the descending maneuver at an altitude not less than 500 m.

Flight mission:

take off one by one (in pair). After take-off, perform a flight along specified route inbound into the reconnaissance area;

search for ground objects by various tactical reconnaissance techniques;

inbound to the aerobatics area at a specified time;

in the area at altitudes range of 200–2500 m perform the following:

rolling circle 60° at the altitude 500 m.

rolling circle 45° at the altitude 300 m.

acceleration to 700 km/h with a descent to the altitude 200 m;

zoom at degree 30° ;

a dive with a pitch angle of 30° with the recovery to level flight at the altitude 300 m.

combat turn with a pitch angle of 30° with the input action at the altitude 200 m;

a dive with a pitch angle of up to 30° with the recovery to level flight at the altitude 300 m.

After accomplishment of the mission, the pair is dissolved and landing is executed one by one from circle with the determination of the accuracy of landing within the limits of an PLR.

19. For crews of Su-24, Su-34 type aircraft - "Flight en route for visual aerial reconnaissance and in the area for complex aerobatics at low altitudes"

Number of flights - 1.

Flight time - 40 minutes.

The purpose of the exercise. Assess the skills of flight crews (groups) in air navigation, search for ground objects and complex aerobatics.

Weather condition. SMC with the visibility of the natural horizon.

Aerobatics time - 4 minutes 30 seconds for Su-24, 3 minutes 30 seconds for Su-34.

The altitude of the upper point of vertical maneuver for Su-24 - not less than 2500 m, the altitude of the upper point of vertical straight maneuver for Su-34 - not less than 2000 m, vertical inclined maneuver - not less than 1500 m.

Flight mission:

After take-off, perform a flight along specified route inbound into the reconnaissance area;

search for ground objects by various tactical reconnaissance techniques;

inbound to the aerobatics area at a specified time;

in the area at altitudes range of 300–3000 m perform the following:

limit thrust turning under the maximum mode of engine operation at an altitude of 600 m.;

zoom at degree 45° with the input action at the altitude 300 m.

a dive with a pitch angle of 30° (semi-split for Su-34) with the recovery at the altitude not less than 600 m;

For Su-34 - Nesterov's loop with the input action at the altitude 600 m;

combat turn with a pitch angle of 30° with the input action at the altitude 300 m;

a dive with a pitch angle of up to 30° (up to 20° for Su-24) with the recovery at the altitude not less than 300 m.

After accomplishment of the mission, landing is executed from circle with the determination of the accuracy of landing within the limits of an PLR.

20. For crews of Ka-52, Mi-24, Mi-28, Mi-35, Mi-8 type helicopter and its modifications - "Pair formation flight en route for visual aerial reconnaissance and in the area for standard aerobatics at low altitudes"

Number of flights - 1.

Flight time - 1 hour 15 minutes.

The purpose of the exercise. Assess the skills of flight crews (groups) in air navigation, search for ground objects and standard aerobatics, performed in pair.

Weather condition. SMC with the visibility of the natural horizon.

Aerobatics time - 5 minutes

The flight formation of the pair - "helicopter bearing".

The altitude of the upper point of vertical maneuver - not less than 400 m.

Recovery from the descending maneuver at an altitude not less than 500 m.

Flight mission:

take off one by one (in pair). After take-off, perform a flight along specified route inbound into the reconnaissance area;

search for ground objects by various tactical reconnaissance techniques;

inbound to the aerobatics area at a specified time;

in the area at altitudes range of 200–400 m perform the following:

level flight at a speed of 150 km/h in the left bearing;

left ascending spiral. Speed - 150 km/h, the vertical velocity - 4–5 m/s, input altitude - 200 m, output altitude - 400 m, roll - 15°;

right descending spiral. Speed - 150 km/h, the vertical velocity - 3–4 m/s, input altitude - 400 m, output altitude - 200 m, roll - 15°;

turn left with the re-formation in the opposite bearing when turning on to the supporting aircraft. Speed - 200 km/h, roll - 25°.

After accomplishment of the mission, perform approach and landing.

Stage 2 assessment procedures

"Flight en route, conducting visual aerial reconnaissance, piloting technique."

21. The following skills are assessed by the results of the flights of Stage 2 "Flight en route, conducting visual aerial reconnaissance, piloting technique."

air navigation;

visual aerial reconnaissance;

piloting technique.

22. **Air navigation** is assessed by the accuracy and time of passing the reference points (hereinafter - RP).

Assessment criteria of accuracy of passing the reference point

Deviation in passing the reference points, m		
8 points	4 points	0 points
Dimensions of RP (± 15)	± 100	more than 100

Assessment criteria of accuracy of passing the reference point

Time deviation in passing the reference points, seconds						
12 points	10 points	8 points	6 points	4 points	2 points	0 points
± 3	± 5	± 10	± 15	± 20	± 30	более 30

23. **Visual aerial reconnaissance** is assessed by the number of detected ground objects in the search area and by the accuracy of determining the location of the detected objects. The objects are represented by signs of 9x9 m in size in red, black and white colors, in the shape of “+”, “V”, “T”, formed by panels of 2x9 meters in size. Objects of the search shall be contrasting with respect to the underlying surface and located outside the populated areas.

The search for objects is carried out by crew members in a manner of visual observation with no use of instrumental methods of reconnaissance.

The report of the visual aerial reconnaissance results is drafted at the intelligence reports reception point and provided to the referee panel within 30 minutes after landing. The time for submission of the report to the referee panel is calculated from the moment of taxiing and stopping of the aircraft in the parking area.

The execution time of the visual aerial reconnaissance is set by the Head Referee of the Contest. The flight in the reconnaissance zone is carried out in the altitude range of 200 - 1000 m. When the time of reconnaissance exceeds more than 30 seconds from estimated, the aircraft descends to an altitude of less than 200 m or leaves the established corridor of the reconnaissance zone, visual aerial reconnaissance shall not be assessed.

Assessment of visual aerial reconnaissance

Number of detected objects					
60 points	48 points	36 points	24 points	12 points	0 points
5	4	3	2	1	0

Accuracy of determining the coordinates of detected objects (provided in geodetic coordinates WGS84 or CK42)

Deviation at detection of each object, m			
12 points	9 points	6 points	3 points
up to 100	up to 200	up to 300	up to 400

When determining the accuracy of the location of an object with an error of more than 400 m, the object is considered undetected and is not subject to evaluation.

24. **Flight technique** is evaluated by the following elements:
 maintaining the parameters of maneuvering (by a lead);
 maintaining the parameters of a flight formation (by a wingman);
 task performance time;
 landing accuracy within the limits of precision landing runway (PLR).

The overall assessment of the flight technique is a sum of points, allotted for testing parameters. The maximum possible number of accrued points is the same for each branch of aviation. If the sum of points for flight technique is negative, then “zero” points are allotted for flight technique.

25. **Maintaining the parameters of maneuvering** is evaluated basing on the materials of a data recorder (DR). The overall assessment for execution of a flight assignment for maneuvering is a sum of points for each maneuver.

The main source of parametric data is an onboard general-purpose recording device. Permission to use onboard special-purpose recording device (OSPRD) is granted by the referee panel.

In case of discrepancy between parametric data and aircraft video recorder (AVR) on elevation at the top point of a vertical maneuver the priority is given to AVR. In case of discrepancy between parametric data and AVR on elevation at the lower point when monitoring safety conditions, the priority is given to AVR (if AVR is available onboard of the aircraft (AC)).

In case of discrepancy between barometric and geometric (by radio altimeter) altitudes the priority is given to geometric altitude (at low altitude with level flight of the AC with a pitch angle of $0\pm 10^\circ$ and a bank angle of $0\pm 5^\circ$).

In course of piloting, horizontal maneuvers shall be performed separately (each turn ends at the point where the aircraft recovers from the tilt $0\pm 10^\circ$), vertical maneuvers are allowed to be combined (with no recovery from the tilt).

Parameters of maneuvering are defined in check points and in the segments. The check points are the points of input action and terminal lead, top points of Nesterov’s loop and skewed loop, point with maximum pitching angle in combat turn and semi split. Trajectory segments are the steady segments of sharp turns, combat turns, semi splits, spirals, straight-line segments of dives and zooms.

The altitudes of flight technique mission are defined by the Head of the Contest and shall be higher than secure altitude for flight mission.

Assessment of the testing parameters is conducted by the two- and four-points rating system in accordance with the deviation of actual value of flight parameters, recorded in flight by an on-board DR, from values assigned by flight mission.

The overall assessment of the flight technique is a sum of points, allotted for testing parameters.

Criteria of the flight technique assessment and testing parameters are provided in the tables.

Assessment criteria and testing parameters for FA

№	Maneuver	Testing parameters	Assessment criteria points			
1	Limit thrust turning under the maximum mode of engine operation	Deviation of input action altitude from predetermined value	+50 3	+100 1	+150 -1	>150 -2
		Deviation of input action speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Max. deviation of flight altitude from input action altitude	+50 3	+100 1	+150 -1	>150 -2
		Max. deviation of flight speed from input action speed	± 20 3	± 40 1	± 60 -1	$> \pm 60$ -2
		Deviation by the U-turn angle	± 10 3	± 20 1	± 30 -1	$> \pm 30$ -2
2	Limit thrust turning under afterburning mode of engine operation	Deviation of input action altitude from predetermined value	+50 3	+100 1	+150 -1	>150 -2
		Deviation of input action speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Max. deviation of flight altitude from input action altitude	+50 3	+100 1	+150 -1	>150 -2
		Max. deviation of flight speed from input action speed	± 20 3	± 40 1	± 60 -1	$> \pm 60$ -2
		Deviation by the U-turn angle	± 10 3	± 20 1	± 30 -1	$> \pm 30$ -2
3	Zoom	Deviation of input action altitude from predetermined value	+50 3	+100 1	+150 -1	>150 -2
		Deviation of input action speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Deviation of terminal lead altitude from predetermined value			$\geq H_{\text{н3}}$ 0	$< H_{\text{н3}}$ -2
		Deviation of terminal lead speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Max. deviation of pitch angle from predetermined value			$\leq \pm 5$ 0	$> \pm 5$ -2
4	Semi-split	Deviation of input action altitude from predetermined value			$\geq H_{\text{н3}}$ 0	$< H_{\text{н3}}$ -2
		Deviation of input action speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Deviation of terminal lead altitude from predetermined value	+50 3	+100 1	+150 -1	>150 -2
		Deviation of terminal lead speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Deviation by the U-turn angle	± 10 3	± 20 1	± 30 -1	$> \pm 30$ -2

№	Maneuver	Testing parameters	Assessment criteria points			
5	Skewed loop	Deviation of input action altitude from predetermined value	+50 3	+100 1	+150 -1	>150 -2
		Deviation of input action speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Deviation of terminal lead altitude from predetermined value	+50 3	+100 1	+150 -1	>150 -2
		Deviation of terminal lead speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Deviation by altitude in top point			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -2
		Deviation of flight speed in top point from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Heading deviation by at terminal lead	± 10 3	± 20 1	± 30 -1	$> \pm 30$ -2
6	Nesterov's loop	Deviation of input action altitude from predetermined value	+50 3	+100 1	+150 -1	>150 -2
		Deviation of input action speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Deviation of terminal lead altitude from predetermined value	+50 3	+100 1	+150 -1	>150 -2
		Deviation of terminal lead speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Deviation by altitude in top point			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -2
		Deviation of flight speed in top point from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Heading deviation by at terminal lead	± 10 3	± 20 1	± 30 -1	$> \pm 30$ -2
7	Combat turn	Deviation of input action altitude from predetermined value	+50 3	+100 1	+150 -1	>150 -2
		Deviation of input action speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
		Deviation of terminal lead altitude from predetermined value			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -2
		Deviation of terminal lead speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2
8	Dive	Deviation of input action altitude from predetermined value			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -2
		Deviation of input action speed from predetermined value	± 30 3	± 50 1	± 70 -1	$> \pm 70$ -2

Assessment criteria and testing parameters for BA

№ п/п	Maneuver	Testing parameters	Assessment criteria points			
1	Limit thrust turning under the maximum mode of engine operation	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of flight altitude from input action altitude	+50 4	+100 1	+150 -1	>150 -3
		Max. deviation of flight speed from input action speed	± 20 4	± 40 1	± 60 -1	$> \pm 60$ -3
		Deviation by the U-turn angle	± 10 4	± 20 1	± 30 -1	$> \pm 30$ -3
2	Zoom	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation of terminal lead altitude from predetermined value			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -3
		Deviation of terminal lead speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of pitch angle from predetermined value			$\leq \pm 5$ 0	$> \pm 5$ -3
3	Dive	Deviation of input action altitude from predetermined value			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation of terminal lead altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of terminal lead speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of pitch attitude from predetermined value			$\leq \pm 5$ 0	$> \pm 5$ -3
4	Combat turn	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation of terminal lead altitude from predetermined value			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -3
		Deviation of terminal lead speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of pitch attitude from predetermined value			$\leq \pm 10$ 0	$> \pm 10$ -3
5	Dive	Deviation of input action altitude from predetermined value			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3

Assessment criteria and testing parameters for BA (Su-34)

№ п/п	Maneuver	Testing parameters	Assessment criteria points			
1	Limit thrust turning under the maximum mode of engine operation	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of flight altitude from input action altitude	+50 4	+100 1	+150 -1	>150 -3
		Max. deviation of flight speed from input action speed	± 20 4	± 40 1	± 60 -1	$> \pm 60$ -3
		Deviation by the U-turn angle	± 10 4	± 20 1	± 30 -1	$> \pm 30$ -3
2	Zoom	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation of terminal lead altitude from predetermined value			$\geq H_{\text{ПЗ}}$ 0	$< H_{\text{ПЗ}}$ -3
		Deviation of terminal lead speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of pitch angle from predetermined value			$\leq \pm 5$ 0	$> \pm 5$ -3
3	Semi-split	Deviation of input action altitude from predetermined value			$\geq H_{\text{ПЗ}}$ 0	$< H_{\text{ПЗ}}$ -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation of terminal lead altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of terminal lead speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation by the U-turn angle	± 10 4	± 20 1	± 30 -1	$> \pm 30$ -3
4	Nesterov's loop	Not assessed				
5	Combat turn	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation of terminal lead altitude from predetermined value			$\geq H_{\text{ПЗ}}$ 0	$< H_{\text{ПЗ}}$ -3
		Deviation of terminal lead speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of pitch attitude from predetermined value			$\leq \pm 10$ 0	$> \pm 10$ -3
6	Dive	Deviation of input action altitude from predetermined value			$\geq H_{\text{ПЗ}}$ 0	$< H_{\text{ПЗ}}$ -3

Assessment criteria and testing parameters for AA

№ п/п	Maneuver	Testing parameters	Assessment criteria points			
1	Sharp turn	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of flight altitude from input action altitude	+50 4	+100 1	+150 -1	>150 -3
		Max. deviation of flight speed from input action speed	± 10 4	± 20 1	± 30 -1	$> \pm 30$ -3
		Deviation by the U-turn angle	± 5 4	± 10 1	± 15 -1	$> \pm 15$ -3
		Max. deviation of bank angle from predetermined value			$\leq \pm 10$ 0	$> \pm 10$ -3
2	Sharp turn	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of flight altitude from input action altitude	+50 4	+100 1	+150 -1	>150 -3
		Max. deviation of flight speed from input action speed	± 10 4	± 20 1	± 30 -1	$> \pm 30$ -3
		Deviation by the U-turn angle	± 5 4	± 10 1	± 15 -1	$> \pm 15$ -3
		Max. deviation of bank angle from predetermined value			$\leq \pm 10$ 0	$> \pm 10$ -3
3	Zoom	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation of terminal lead altitude from predetermined value			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -3
		Deviation of terminal lead speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of pitch angle from predetermined value			$\leq \pm 5$ 0	$> \pm 5$ -3
4	Dive	Deviation of input action altitude from predetermined value			$\geq H_{\text{пз}}$ 0	$< H_{\text{пз}}$ -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation of terminal lead altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of terminal lead speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of pitch attitude from predetermined value			$\leq \pm 5$ 0	$> \pm 5$ -3

№ п/п	Maneuver	Testing parameters	Assessment criteria points			
5	Combat turn	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Deviation of terminal lead altitude from predetermined value			$\geq H_{\text{пр3}}$ 0	$< H_{\text{пр3}}$ -3
		Deviation of terminal lead speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3
		Max. deviation of pitch attitude from predetermined value			$\leq \pm 10$ 0	$> \pm 10$ -3
6	Dive	Deviation of input action altitude from predetermined value			$\geq H_{\text{пр3}}$ 0	$< H_{\text{пр3}}$ -3
		Deviation of input action speed from predetermined value	± 30 4	± 50 1	± 70 -1	$> \pm 70$ -3

Assessment criteria and testing parameters for Army Aviation

№ п/п	Maneuver	Testing parameters	Assessment criteria points			
1	Level flight	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 10 4	± 15 1	± 20 -1	$> \pm 20$ -3
		Max. deviation of flight altitude from input action altitude	+20 4	+30 1	+50 -1	>50 -3
		Max. deviation of flight speed from input action speed	± 10 4	± 15 1	± 20 -1	$> \pm 20$ -3
2	Ascending spiral	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 10 4	± 15 1	± 20 -1	$> \pm 20$ -3
		Deviation of terminal lead altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Max. deviation of flight speed from predetermined value	± 10 4	± 15 1	± 20 -1	$> \pm 20$ -3
		Max. deviation of bank angle from predetermined value	± 1 4	± 3 1	± 5 -1	$> \pm 5$ -3
		Max. deviation of vertical velocity from predetermined value	± 1 4	$\pm 1,5$ 1	± 2 -1	$> \pm 2$ -3
3	Descending spiral	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 10 4	± 15 1	± 20 -1	$> \pm 20$ -3
		Deviation of terminal lead altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Max. deviation of flight speed from predetermined value	± 10 4	± 15 1	± 20 -1	$> \pm 20$ -3
		Max. deviation of bank angle from predetermined value	± 1 4	± 3 1	± 5 -1	$> \pm 5$ -3

№ п/п	Maneuver	Testing parameters	Assessment criteria points			
		Max. deviation of vertical velocity from predetermined value	± 1 4	$\pm 1,5$ 1	± 2 -1	$> \pm 2$ -3
4	Sharp turn	Deviation of input action altitude from predetermined value	+50 4	+100 1	+150 -1	>150 -3
		Deviation of input action speed from predetermined value	± 10 4	± 15 1	± 20 -1	$> \pm 20$ -3
		Max. deviation of flight altitude from input action altitude	± 20 4	± 30 1	± 50 -1	$> \pm 50$ -3
		Max. deviation of flight speed from input action speed	± 10 4	± 15 1	± 20 -1	$> \pm 20$ -3
		Max. deviation of bank angle from predetermined value	± 1 4	± 3 1	± 5 -1	$> \pm 5$ -3

Notes:

a) if flight altitude at the top point of a vertical or inclined maneuver (zoom, skewed loop, Nesterov's loop, combat turn) is higher than predetermined limit, the number of points does not change, if it is lower – “zero” points (when altitude is less than predetermined value and other parameters have positive points) and actual points (when altitude is less than predetermined value and other parameters have negative points) are allotted for this maneuver.

b) for combat turns, the maximum pitch angle is assessed;

c) if the altitude of the input / recovery from the maneuver is less than the specified value, then the minimum point is given for maintaining the altitude.

d) for ArA, the time of level flight before start of ascending spiral is 10 seconds.

26. **Flight formation** (“bearing” of fixed and rotary wing aircrafts) should be assessed by maintaining the predetermined distance (maximum 10 points per maneuver). The overall score for maintaining the flight formation by the wingman is made up of points for each maneuver. The scoring is based on observations by the referee panel or video analysis.

For OTA:

When executing standard aerobatics:

2–3 aircraft hulls – **10 points**;

1,5 or 4 hulls – **5 points**;

1 and less or 5 and more hulls – **1 point**.

When executing complex aerobatics:

5–7 aircraft hulls – **10 points**;

4 or 8 hulls – **5 points**;

3 and less or 9 and more hulls – **1 point**.

For ArA:

4–5 helicopter hulls – **10 points**;

3 or 6 hulls – **5 points**;

less than 3 or 7 and more hulls – **1 point**.

Distance of less than 2 helicopter hulls is not allowed.

27. **Task performance time** is to be counted from the beginning of aerobatics (flight through the starting point of aerobatics) till its completion (second flight

through the starting point of aerobatics). Permitted deviation from the starting point of aerobatics at the end of the task is no more than 100 m.

Task performance time is assessed by the time, given for executing aerobatics (maximum is 60 points):

The number of points (hereinafter – N_p) is calculated by the formula:

$$N_p = 60 - (T - T_{\text{given}}), \text{ where}$$

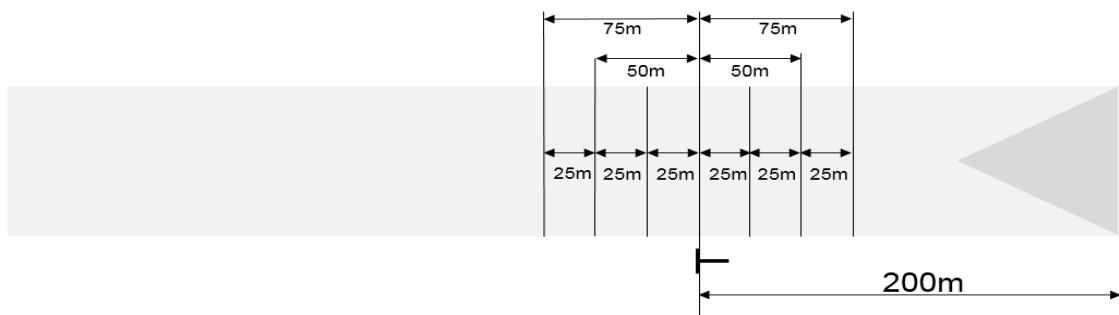
T – actual time of aerobatics execution,

T_{given} – time given for aerobatics execution.

28. Assessment of **landing accuracy within the limits of PLR**) is conducted for JOTA crews (maximum for FA and AA – 30 points, for BA – 60 points). Army Aviation is not assessed.

Accuracy is assessed by the deviation of the landing site from the center of the PLR.

The scoring is based on observations by the referee panel.



Deviation of the landing site from the center of the PLR, m						
0 points	5 (10) points	15 (30) points	30 (60) points	15 (30) points	5 (10) points	0 points
less than -75	-75	-50	±25	+50	+75	more than +75

29. Day 5 – preliminary preparation for the flights of the third stage of the Contest "Combat employment against ground targets".

30. Day 6 and Day 7 – flights as per the program of the third stage of the Contest "Combat employment against ground targets." Defining the place of each pair (crew) in the Contest ranking table.

Flight Missions of Stage 3 **“Combat employment against ground targets”**

31. When attacking ground target, crews are allowed to execute only one attack with each type of weapon. In case of failure of aircraft equipment, it is allowed to perform one more run for the attack. Conditions for repeated sortie for combat employment are determined by the Head of the Contest.

The minimum safe range and altitude for employment of airborne weapon systems (hereinafter - AWS) (cargo airdrop) is set by the Head of the Contest in accordance with the specifications of the equipment and the type of ammunition selected.

32. When assessing combat employment flights (in MTA and LRA, in addition, piloting technique flights), the final score is resulted from the average score for completed flights.

33. For crews of Su-27, Su-30, Su-35, MiG-29 type aircraft and its modifications - “Pair (single aircraft) formation flight to attack ground targets”

Number of flights - 2.

Flight time - 40 minutes.

The purpose of the exercise. Assess the results of combat employment against ground targets.

Weather condition. SMC.

Flight mission:

take off and flight formation;

flight en route;

launch of the unguided air-to-surface missile (UASM) against a predetermined target at a specified time on the fly from a dive after performing the zoom maneuver;

aircraft gun fire from a dive after performing the combat turn maneuver;

flight en route to the landing airfield;

approach and landing.

34. For crews of Su-25, Yak-130 type aircraft and its modifications – “Pair (single aircraft) formation flight to attack ground targets”.

Number of flights - 2.

Flight time - 40 minutes.

The purpose of the exercise. Assess the results of combat employment against ground targets.

Weather condition. SMC.

Flight mission:

take off and flight formation;

flight en route;

launch of the UASM against a predetermined target at a specified time on the fly from a dive after performing the zoom maneuver;

aircraft gun fire from a dive after performing the combat turn maneuver;

flight en route to the landing airfield;

approach and landing.

35. For crews of Su-24, Su-34 type aircraft and its modifications – “Flight to attack ground targets”.

Number of flights - 2.

Flight time - 40 minutes.

The purpose of the exercise. Assess the results of combat employment against ground targets.

Weather condition. SMC.

Flight mission:

take off;

flight en route;

bombing of a predetermined target at a specified time on the fly from level flight at the altitude of 200-600 m (second flight - at the altitude of 1000–1200 m);
 launch of the UASM from a dive after performing combat turn maneuver;
 flight en route to the landing airfield;
 approach and landing.

36. For crews of Tu-22M3 type aircraft and its modifications – “Flight en route with a variable profile for combat employment against ground targets”

Number of flights - 2.

Flight time - 90 minutes.

The purpose of the exercise. Assess the results of combat employment against ground targets, accuracy of landing and vertical G.

Weather condition. SMC.

Flight mission:

take off;

flight en route;

bombing of a predetermined target at a specified time on the fly from level flight at the altitude of 3000-4000 m;

second bombing of a predetermined target at a specified time from level flight at the altitude of 700-1000 m., the re-entry time is 6–8 minutes;

flight en route to the landing airfield;

approach and landing with determination of landing accuracy within PLR and vertical G.

37. For crews of Il-76 type aircraft and its modifications – "Flight en route to drop cargo to an undesignated site."

Number of flights - 2.

Flight time - 90 minutes.

The purpose of the exercise. Assess accuracy of the time of arrival to airdrop point, accuracy of landing cargo on an undesignated site, accuracy of the landing and vertical G.

Weather condition. SMC.

Flight mission:

take off;

flight en route;

arrival to the airdrop point at specified time;

landing a platform on an undesignated site from level flight with autonomous determination of landing conditions;

flight en route to the landing airfield;

approach and landing with determination of landing accuracy within PLR and vertical G.

38. For crews of Mi-8, Ka-52, Mi-24, Mi-28H, Mi-35 type helicopter and its modifications – “Pair (single helicopter) formation flight to attack ground targets”.

Number of flights - 2.

Flight time - 60 minutes.

The purpose of the exercise. Assess the results of combat employment against ground targets.

Weather condition. SMC.

Flight mission:

take off and flight formation;

flight en route;

launch of UASM against a predetermined target at a specified time on the fly from a dive;

helicopter gun fire from a dive after performing the combat turn (zoom turn) maneuver;

flight en route to the landing airfield;

approach and landing.

Stage 3 assessment procedures “Combat employment against ground targets”

39. The following elements are assessed in flights of Stage 3 “Combat employment against ground targets”:

attack (airdrop) at specified time;

accuracy of attack (airdrop);

accuracy of landing within PLR and vertical G (for MTA and LRA).

Attack (airdrop) at specified time

40. For assessment of specified time of attack, the time of the AWS burst in the first run is taken (when a pair is dissolved into single crews - the time of the lead’s AWS burst). LRA is assessed by the average time of the AWS burst in two runs.

Arrival of MTA aircraft to the airdrop starting point (ASP) at specified time is calculated according to the formula:

$$T. = T_{\text{note}} - 5 \text{ sec},$$

where T_{note} is a moment when auxiliary parachute comes out of a cargo hatch.

Number of points (N_p) allotted **for the arrival** of MTA aircrafts **to ASP** is calculated according to the formula:

$$N_p = 60 - (T - T_{\text{spec}}),$$

where T – actual time of arrival to ASP,

T_{spec} – specified time of arrival to ASP.

Number of points allotted **for attack** is calculated according to the formula:

$$N_p = 60 - (T - T_{\text{spec}}),$$

where T – actual time of attack,

T_{spec} – specified time of attack.

If actual attack time differs from the specified attack time for more than 60 seconds then the time of attack is not assessed.

If a crew does not attack on the fly, then the time of attack is not assessed.

Accuracy of attack (airdrop)

41. For **OTA and LRA** crews:

Number of points allotted for **bombing** is calculated according to the formula:

$$N_p = (100 - R_a) \times 2,$$

where R_a is the actual radial deviation of the bomb hit point from center of the target (m); if it exceeds 100 meters, then the number of points is zero.

For LRA, the number of points for bombing is calculated by the average score of the bombings in two runs.

The score for the attack against predetermined target **by launching UASM** from a dive:

100 points – if there are one or more direct hits of the target.

If no direct hits of the target, 25 points are allotted (provided for 4 UASM per each aircraft) for each hit of the score area, marked around the target.

The score for the attack against predetermined target **by aircraft gun fire** from a dive:

100 points – if there are one or more direct hits of the target.

If no direct hits of the target, 10 points are allotted (provided for 10 rounds per each aircraft) for each hit of the score area, marked around the target.

42. For **ArA** crews:

The score for the attack against predetermined target **by launching UASM**:

100 points – if there are one or more direct hits of the target.

If no direct hits of the target, 25 points are allotted (provided for 4 UASM per each helicopter) for each hit of the score area, marked around the target.

The score for the attack against predetermined target **by helicopter gun fire**:

100 points – if there are one or more direct hits of the target.

If no direct hits of the target, 10 points are allotted (provided for 10 rounds per each helicopter) for each hit of the score area, marked around the target.

43. For **MTA** crews:

Assessment of **airdrop accuracy** is based on the precision. The basis of the assessment is the comparison of the actual deviation of cargo from specified landing point, i.e. the center of the landing site and calculated according to the formula:

$$N_p = (400 - R_a) / 2,$$

where N_p – number of points,

R_a – actual deviation of cargo from specified landing point (m).

Arrival to ASP is conducted independently according to the wind conditions, determined in flight by the “forecast” method

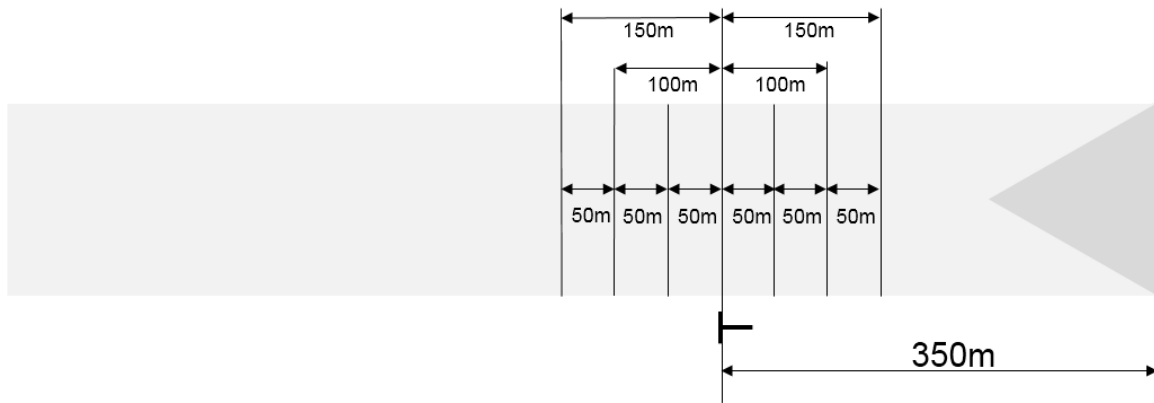
Accuracy of landing within PLR and vertical G

44. For **MTA and LRA** Crews:

The **accuracy of landing** is assessed by the deviation of the landing point from the center of PLR.

The PLR starts in 200 m from the beginning (end) of the runway.

The scoring is based on observations by the referee panel.



Deviation of the landing point from the center of PLR, m						
0 points	10 points	30 points	50 points	30 points	10 points	0 points
less -150	-150	-100	±50	+100	+150	more +150

Assessment of vertical G for MTA					
Points	60	50	40	30	10
G-force	≤1.2	≤1.3	≤1.4	≤1.5	≤1.6
Assessment of vertical G for LRA					
Points	60	40	30	10	
G-force	≤1.4	≤1.5	≤1.6	≤1.7	

Note:

a) assessment is based on the data of onboard- and ground-based data recorders;

b) The vertical G is assessed at the time of landing by the maximum overshoot of the vertical G recording amplitude;

c) if there is no record of the vertical G (n_y) parameters by data recorders, the G-force of the aircraft is not assessed. The assessment of vertical G (n_y) by the methods of calculation is not allowed.

45. After the third stage, in order to completely discharge the AWS, if necessary, additional sorties or its recovery and disposal at the fire range are organized.

46. Day 8 is a reserve day for flight operations.

47. Day 9 – closing ceremony of the Contest, awarding the winners and prize-awardees, departure of teams and relocation of aircrafts to the permanent deployment locations.

48. In case of violation of the flight safety measures, the crew is suspended from participation in the Contest.

IV. The procedures for orientation of referees

49. For an objective assessment of the results of the Contest participants, a referee panel from representatives of the participating States is formed. Refereeing is carried out in accordance with the Regulations on refereeing of the Contest.

Additionally, field referees and the secretariat are appointed to ensure the operation of the referee panel of the Contest.

50. Responsibilities of the referee panel:

creation of objectively equal conditions ensuring the fair competition among the participants, as well as the observance of ethical standards and moral requirements by them;

implementation of the Contest program and the procedures for determining individual (team) results;

unconditional compliance with the safety requirements established by the competition regulations;

ensuring objectivity in determining the winners;

determining the winners of the stages of the Contest and the Contest as a whole based on the obtained results, approved by Head Referee of the Contest after an open majority vote;

review the protests (appeals) on the order and rules of the Contest or the results of its participants.

51. Referee panel of the Contest is headed by Head Referee of the Contest.

Head Referee of the Contest is elected by open majority votes of representatives of the referee panel, normally from the host country; he interacts with the Head Referee of the Games and leads the work of entire referee panel of the Contest.

He is responsible for:

selection of members of the referee panel in accordance with the necessary qualifications that meet the requirements of the Regulations on refereeing of the Contest and the specifics of the elements of the Contest, determining the optimal number of the referee panel members on the elements of the Contest;

objective refereeing and determination of the results of each team during the individual stages and the Contest as a whole;

timely elaboration of records, approval of results and providing it to the Secretariat of the Contest and the Games;

timely review of protests from team representatives about the revealed violations and bringing it out to the general open vote by the referee panel;

ensuring that safety requirements are met during the Contest.

52. Referee is appointed from each of the Contest member countries in the referee panel of the Contest. A person with professional training in the field of the Contest conduct is appointed to the position of referee.

Referees are responsible for the objectivity of refereeing and correct calculation of the results of the Contest and shall:

examine the Regulations on refereeing of the Contest and the Contest Regulations;

monitor correct and objective conduct of the Contest, correct performance of duties by the field referees and the administration, as well as correct calculations of the results of the Contest by them;

officiate in a qualified and impartial manner, eliminating errors that may lead to a distortion of the Contest results, objectively and promptly resolve arising issues;

participate in the meetings of the referee panel of the Contest under the direction of Head Referee of the Contest;

review the results, protests and collectively make decisions on it or bring it to the public vote by the referee panel of the Contest;

sign statements and records of the results of the Contest stages.

V. Referee panel's operation procedures

53. Before the Contest:

develop and submit to the Contest's organizers requirements to equipment and outfit of the workplace of the referee panel members;

conduct classes on the procedures of participants assessment and changes in the rules of the Contest;

check the condition of the Contest facilities, data recorders, special equipment and its readiness for competitions, readiness of field referees and the secretariat;

with the assistance of relevant experts, check the actual condition of weapons, military equipment and ammunition, the availability of reports on its technical condition;

examine the safety requirements for the Contest;

conduct practical classes on familiarizing with the area of flights;

to muster the readiness of the Contest participants and verify, according to participants personal IDs, the correspondence of the Contest participants to the nominal lists submitted by team leaders in applications, their knowledge of these Regulations and equipment;

draw a toss.

54. In course of the Contest:

strictly follow these Regulations;

accept in writing appeals about the revealed violations submitted by team leaders on the day of the stage, timely review it and communicate to the team leaders the decisions taken on each appeal (controversial issue);

review and approve the records of the results of the competition stages and the Contest as a whole;

upon written statement by team leaders, consider issues of admission of team personnel to the competition and its replacement (if necessary) in teams;

deny access of unauthorized persons to the workplace of the referee panel and prevent "pressure" on members of the referee panel from the team leaders (senior officials) in order to take any decision;

report to the Head Referee of the Games on the results of the stage held and the Contest as a whole with the submission of a written report (record) with photo (video) attachment.

55. The sequence and content of the activities of the referee panel are determined by the Contest's plan and instructions provided by the Head Referee of the Contest.

At daily meetings, the referee panel of the Contest reviews, upon the request of the heads of delegations, team leaders, controversial issues regarding the organization and progress of the Contest, as well as keeps track of intermediate results, on the basis of which rates the Contest members and details the referee panel's next day working plan.

The results of the Contest are logged in the final record, signed by referee panel and approved by Head Referee of the Contest.

If case of controversial issues, the final decision is made by vote of the referee panel. The decision of the referee panel of the Contest is not subject to negotiation or appellation.

The final summary meeting of the referee panel is held on the eve of the Contest's closing ceremony with representatives of teams and members of the organizing committee.

VI. The procedures for determining the winners and prize-awardees of the Contest

56. Winners and prize-awardees of the Contest are determined by the decision of referee panel of the Contest by the number of points scored by the crew (pair) during the Contest.

57. The place in the Contest's rating table for each crew (pair) is determined by the number of points they accumulated for each element of the Contest stages and is made up of the sum of points for:

- physical fitness of crews;
- flights on piloting technique;
- flights on navigation training and visual aerial reconnaissance;
- flights on combat employment (on cargo airdrop).

VII. Requirements to training facilities

58. The air-ground range shall contain bomber and gunnery ranges, as well as an area for the landing of cargo.

Bomber range shall be equipped with a target for aerial bombs of caliber up to 250 kg. The target for bombing is a circle with a diameter of 100 m with a cross 50x50 m inside oriented to the combat true track angle (hereinafter - CTTA) of the range. Circle and cross are marked with white tires.

The gunnery range shall be equipped with a target for AWS fire and launch of UASM with caliber up to 130 mm. It is range with a system of separate mock-up models for individual and group AWS fire and UASM launches, marked by rows of

white and orange boards of 3x5 m. The boards are located in the center of the score area in the form of a circle of 30 m diameter, front oriented towards CTTA of the range.

The front distance between the mock-up models is 100 meters, between pairs of models - 100 m. The depth between the rows is 150 m. The target is marked by white tires.

The landing site for cargo shall be located on the territory cleared of trees, foreign and explosive objects, equipped with access roads for heavy vehicles and oriented to CTTA of the range.

Additionally, the range shall be equipped with targets for training, sighting and demonstration flights.

The air-ground range shall be equipped with data recorders capable to video record results of engagement of ground targets (cargo landing).

59. The center of PLR shall be marked with a white T-shaped landing sign, 9x9 m in size. The landing sign is placed 10-15 m to the left and 200 m (350 m for LRA and MTA) from the runway end.

60. The objects of visual aerial reconnaissance are red, black and white signs of 9x9 meters, in the form of "+", "V", "T", laid out on the ground from the panels of 2x9 meters and equipped with recording means. Objects of search shall contrast with underlying surface and located outside the populated areas.

61. The workplaces of the referee panel shall be equipped with required number of radio communications equipment, binoculars, precise time systems, stopwatches, red flags, video and photo equipment.

62. Airmen training classrooms shall be equipped with training materials' demonstration means.