



# NAVAL HELICOPTERS FUTURE TRENDS

April 18 - 19, 2016

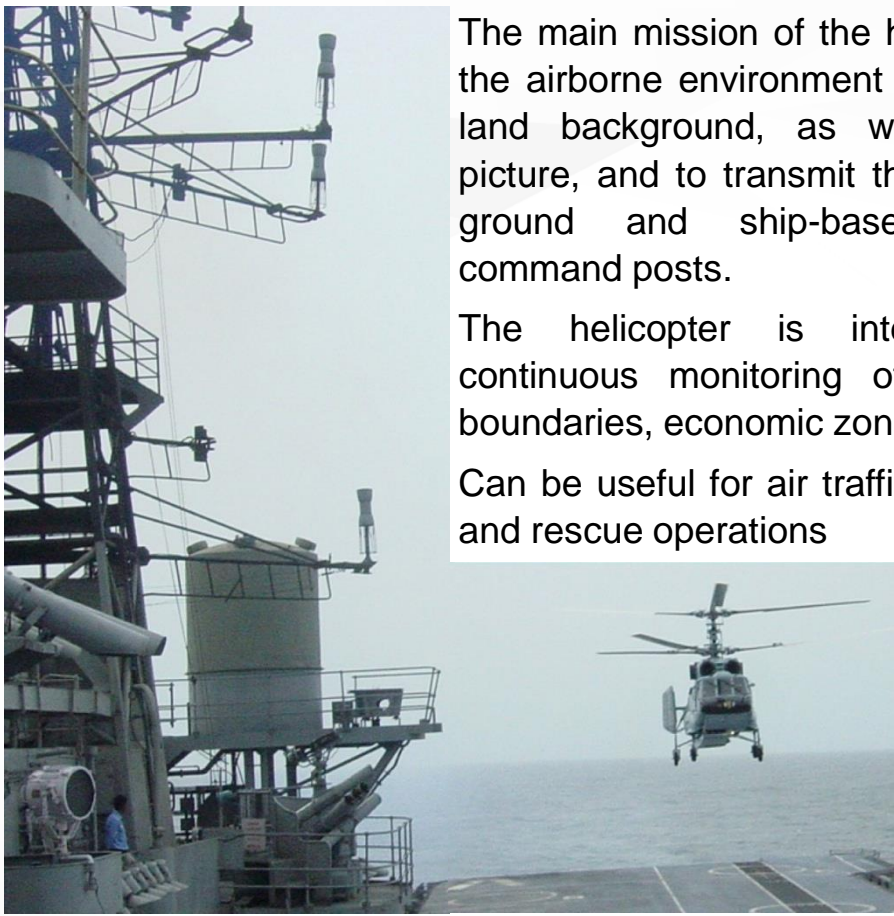
FICCI Federation House, Tansen Marg, New Delhi

# ROLE OF THE NAVAL HELICOPTER

The main mission of the helicopter is to cover the airborne environment against the sea and land background, as well as the surface picture, and to transmit the target data to the ground and ship-based reception and command posts.

The helicopter is intended to provide continuous monitoring of air and maritime boundaries, economic zones and water areas

Can be useful for air traffic control and search and rescue operations



**One naval helicopter coverage per one flight hour:**

surface targets	250,000 km <sup>2</sup> per hour
air targets	170,000 km <sup>2</sup> per hour

# ADVANTAGES OF THE COAXIAL SCHEME

## Compactness

Smaller space aerial maneuvers  
Lower noise, vibration, ergonomics

## Safety

Higher safety in the air and on the ground

## Exceptional maneuverability

Higher margin of available power, maneuverability  
Higher resistance to wind

AT = 25%



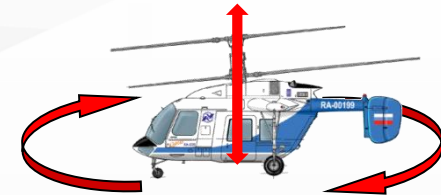
Less the level of noise and vibration

AT = 25%

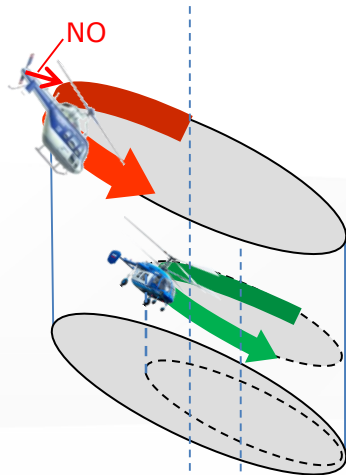


No power loss ( $\Delta H=0!$ )

AT = 25%



No limits maneuverability



Increased accessibility to objects mountainous terrain and dense urban areas. Reduced acoustic visibility



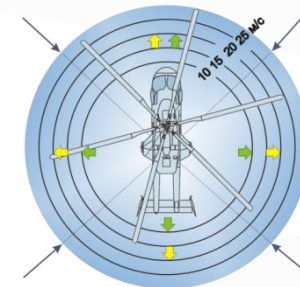
30%



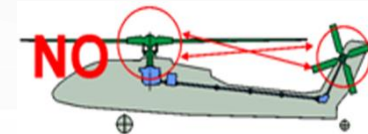
No dangers and threats



Altitude increases, safety and reliability including conditions of high mountains



More stable and strength direction of the wind



Absence of cross-linking

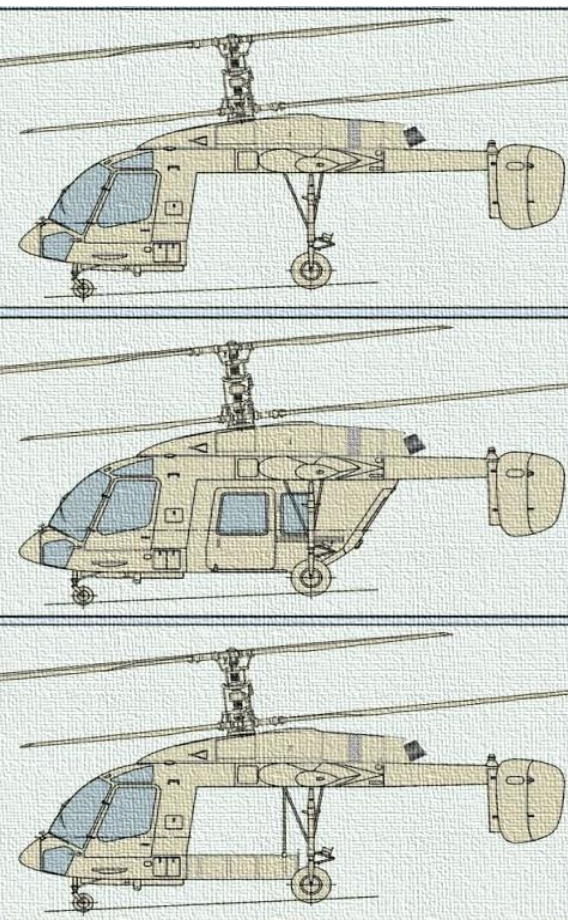


Simpler piloting in the constrained conditions of the mountains and cities.

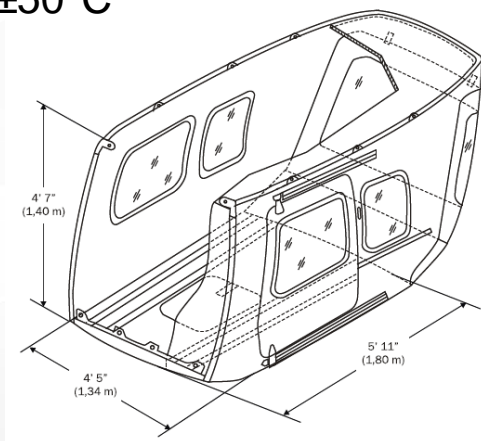
# KA-226T UNIQUE DESIGN

Ka-226T modular design ensures fast transformation into different variants:

- **PATROL/NAVY MISSIONS**
- **EMERGENCY RESCUE**
- **TRANSPORT**
- **MEDEVAC**
- **PASSENGER**



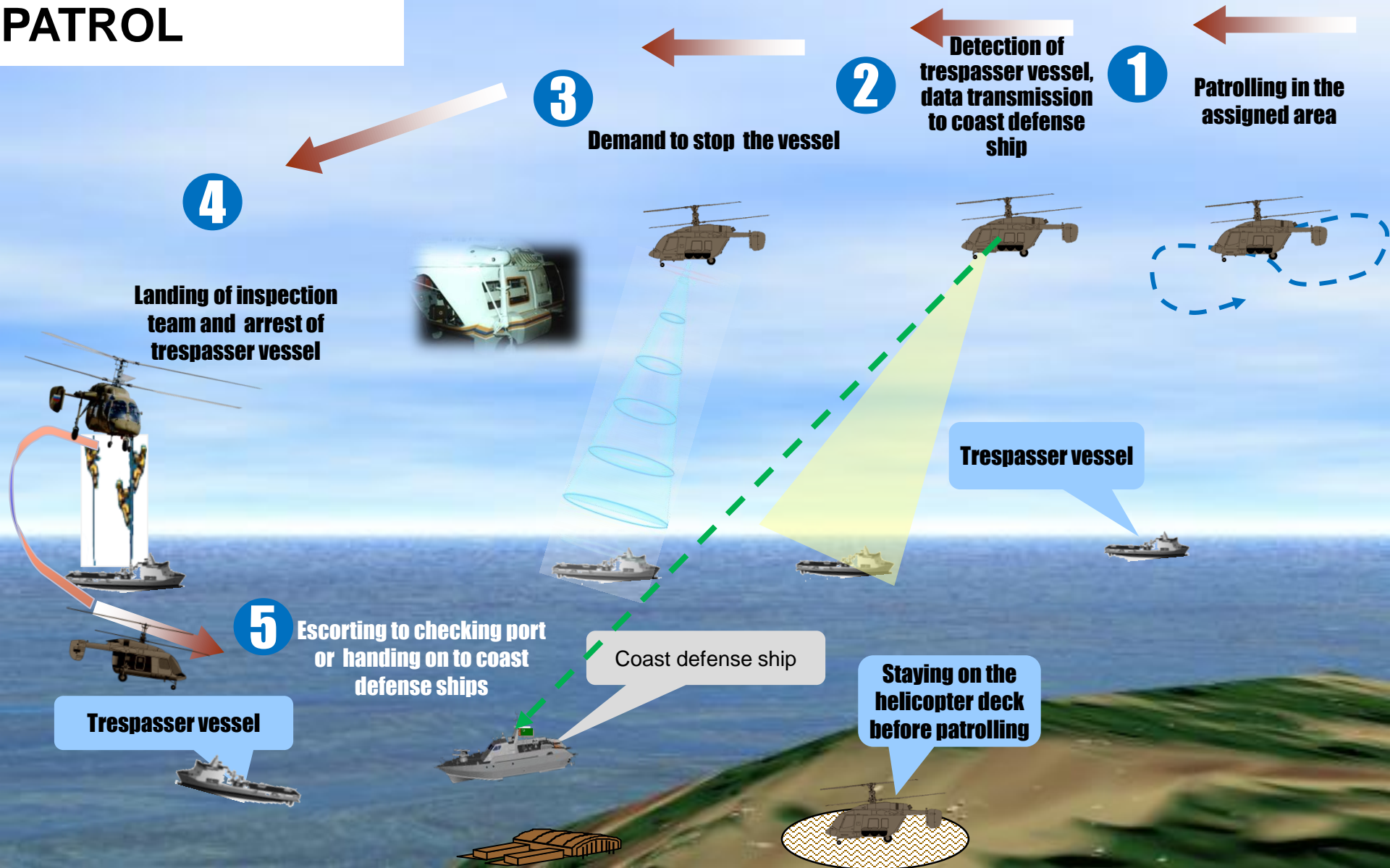
Engines	2 x Arrius 2G1
Max. Take-Off Weight	3 600 kg
Cruise Speed	185 km/h
HIGE Ceiling	4 300 m
Operational Ceiling	5 700 m
Temperature range	±50°C



- ✓ substantial extension of the scope of application
- ✓ reduction of costs related to implementation of different activities
- ✓ saving of time required for transformation of helicopter from one variant into another
- ✓ wide range of special equipment

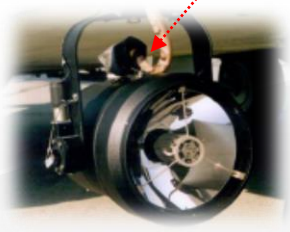
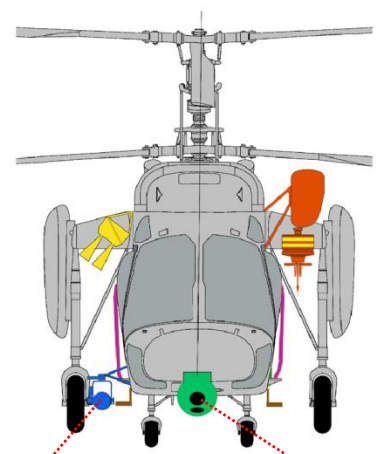
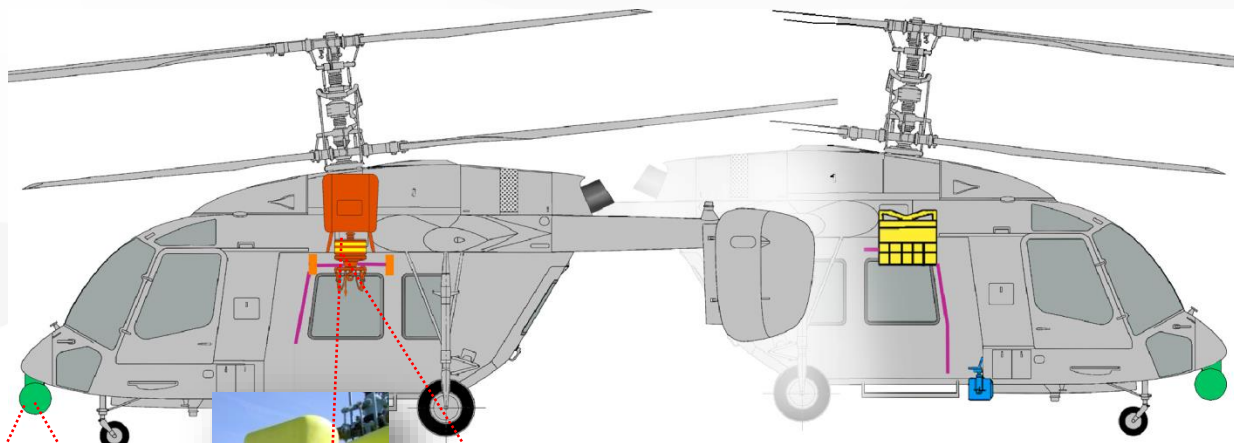
# MAIN MISSION: PATROL

## PATROL



# PATROL

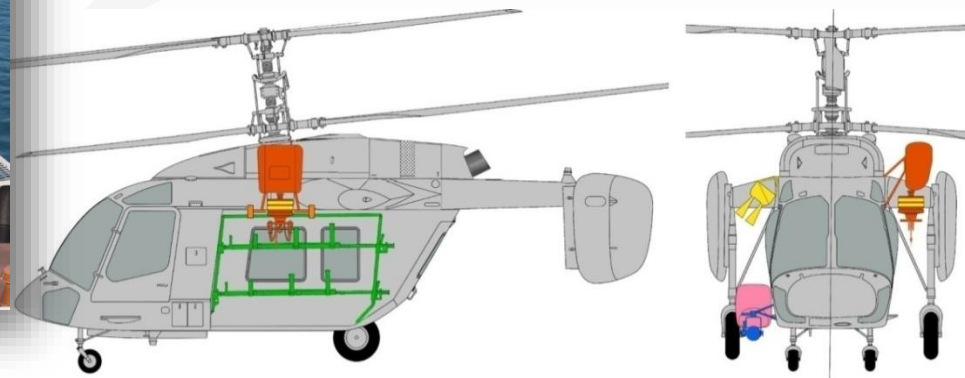
-  - Gyro stabilized optical systems
-  - searchlight
-  - Loudspeaker



# PATROL









- Mountain rescue
- Ground search and rescue
- Urban search and rescue
- Extended air patrol over specified areas
- Evacuation of distress above the sea



- ✓ Object reconnaissance and transmission of data and coordinates for decision making (up to 100 km)
- ✓ Patrolling of inaccessible zones

- Optoelectronic system
- Equipment of reconnaissance data transmitting to command point
- Ground mobile control center
- Night vision goggles
- Video recording system
- Searchlight, hoist, loudspeaker

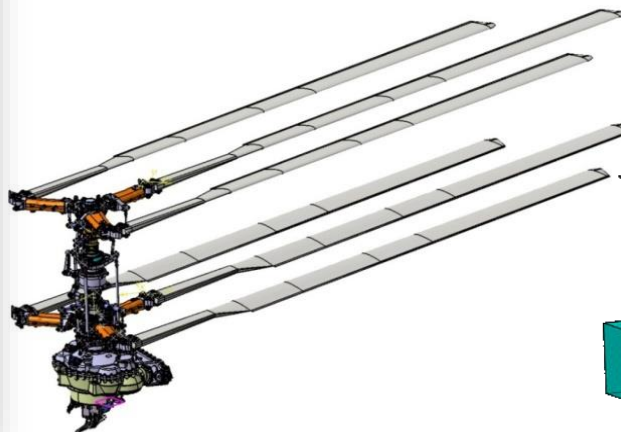


-  - Gyro stabilized optical systems
-  - External container with a tool kit
-  - Stretchers – 2 pcs.
-  - Electrical powered hoist
-  - Searchlight
-  - Loudspeaker

# FEATURES

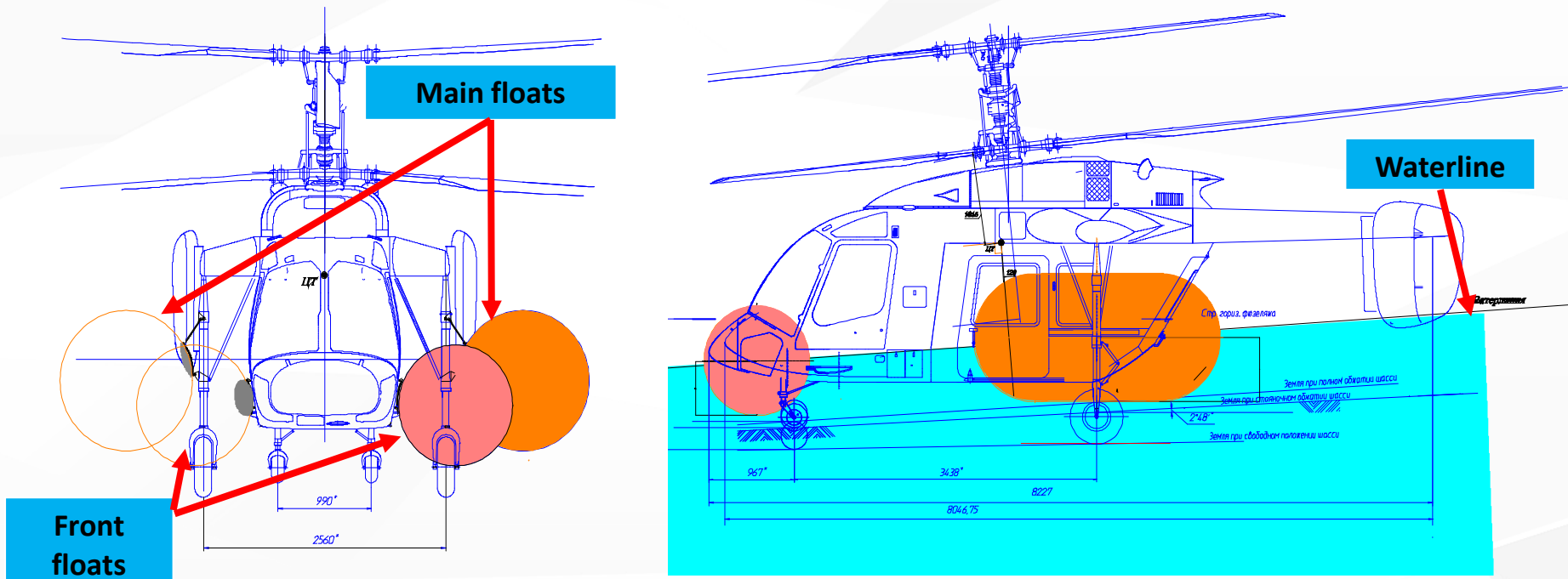


- simplicity of control
- good cockpit visibility
- shock absorbing seats
- capability to continue flight in case of hydraulic system failure
- wheel landing gear with increased nose-over angles
- continued flight in case of one engine failure
- crash-resistant fuel tanks
- anti-icing system
- emergency floating system
- folding blades





# EMERGENCY FLOTATION SYSTEM



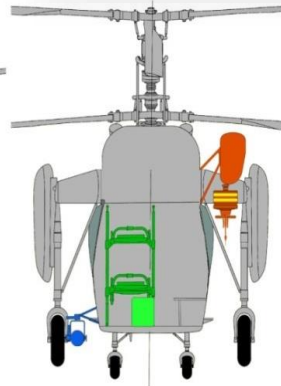
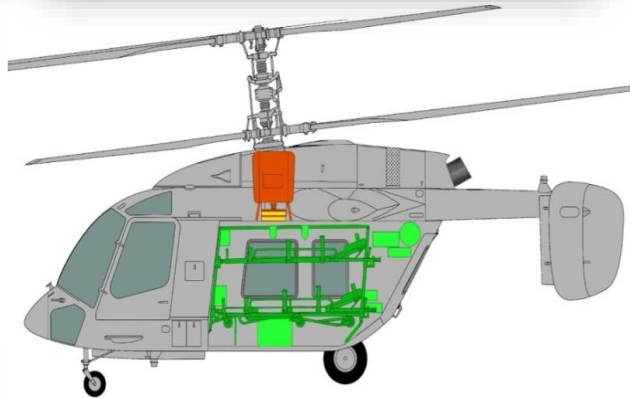
To provide safety when flying over sea surface the Ka-226T helicopter is equipped with emergency floating gears





# EMS

## Evacuation



## Reanimation



-  - Medical equipment
-  - Stretchers – 2 pcs.
-  - Hoist
-  - “Stellar flare” searchlight

- Detachable stretcher (1 pcs.)
- Stand for medical equipment
- Flap seats for medical personnel
- Hoist
- Moisture proof flooring
- Easy cleanable cabin interior
- Fast mounting/dismounting of medical module (10-15 min)

# PERFORMING MISSIONS



- day and night
- in normal and adverse weather conditions
- above land and water surface
- in winds of different force and direction
- from base airfields, ground sites and operating bases
- storage out of hangar

Compactness and high maneuverability enable operation of the Ka-226T from small-size sites and low-tonnage ships

temperature	<b>min -50°C</b> <b>max +50°C</b>
maximum wind speed for take-off and landing	head and side wind – 18 m/s tail wind – 5 m/s

# HELICOPTER TRIALS IN EXTREME WEATHER CONDITIONS



- over 150 flights within the scope of trials program
- storage out of hangar
- temperature  $\pm 50$  °C
- relative humidity 100%

- take-off and landing on unprepared sites
- snow (soil) density 0.2 kg/cm<sup>2</sup>
- slope 10°

# HELICOPTER HIGH MOUNTAIN TRIALS



- take-off and landing on sites 15x15 m
- rate of climb – 17 m/sec
- turn rate – up to 75 deg/sec
- temperature -35 °C (c. of Leh, India)

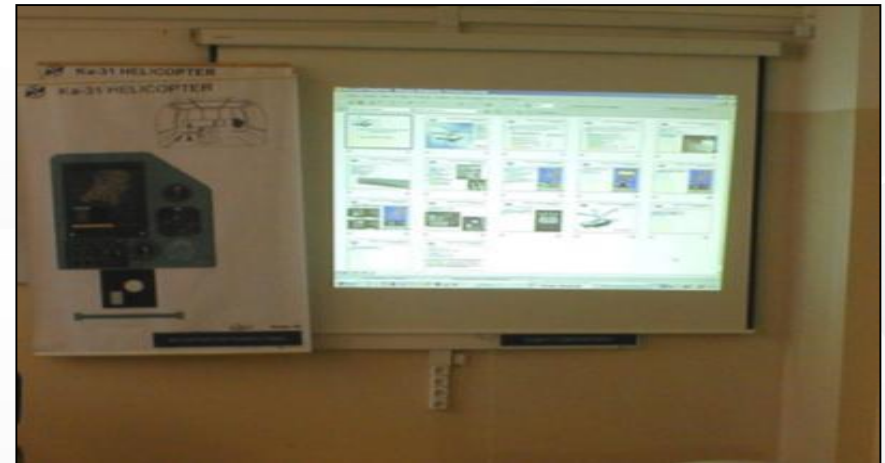
- wind speed:
- headwind 18 m/s
  - crosswind 9 m/s
  - tailwind 5 m/s

# PILOTS TRAINING SUPPORT



Training center for Ka-226T pilots

- Computer based training
- Procedure trainer
- Flight/Navigation Simulator



# MAIN COMPONENTS OF AFTER-SALES SUPPORT SYSTEM



Spare parts and aggregates are supplied by OEMs, verified for authenticity under the supervision of technical quality control departments of the manufacturer



Modern GSE and test equipment are produced on the new element basis, ensure computer-aided monitoring and reduction of time needed to perform checks

Training of personal and using the modern simulators



Helicopter modernization activities will be performed accompanied by and under supervision of helicopter and component designers

# BEST BUY



- ✓ High level of safety
- ✓ Exceptional hovering precision
- ✓ Excellent maneuverability and controllability
- ✓ Static ceiling best in its class
- ✓ Easy operation and maintenance
- ✓ Compactness





Thank you for your attention!