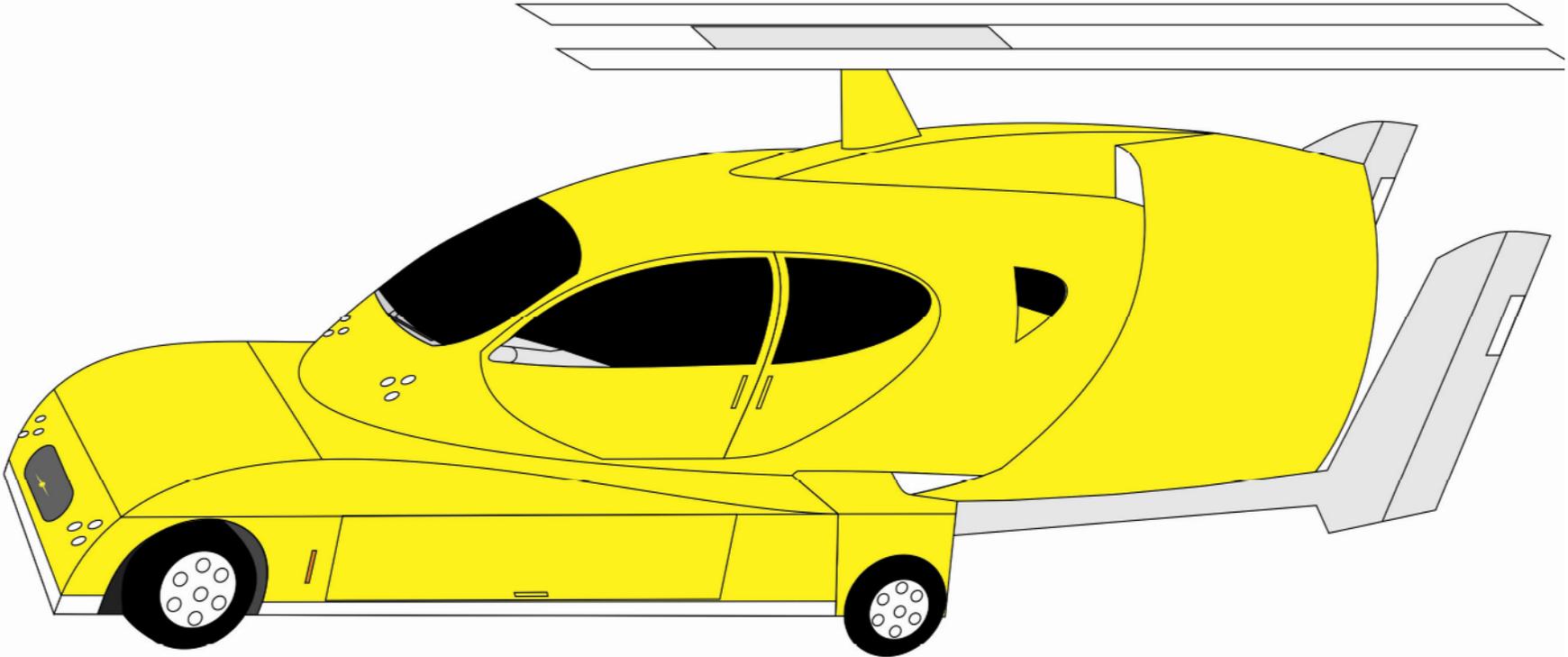
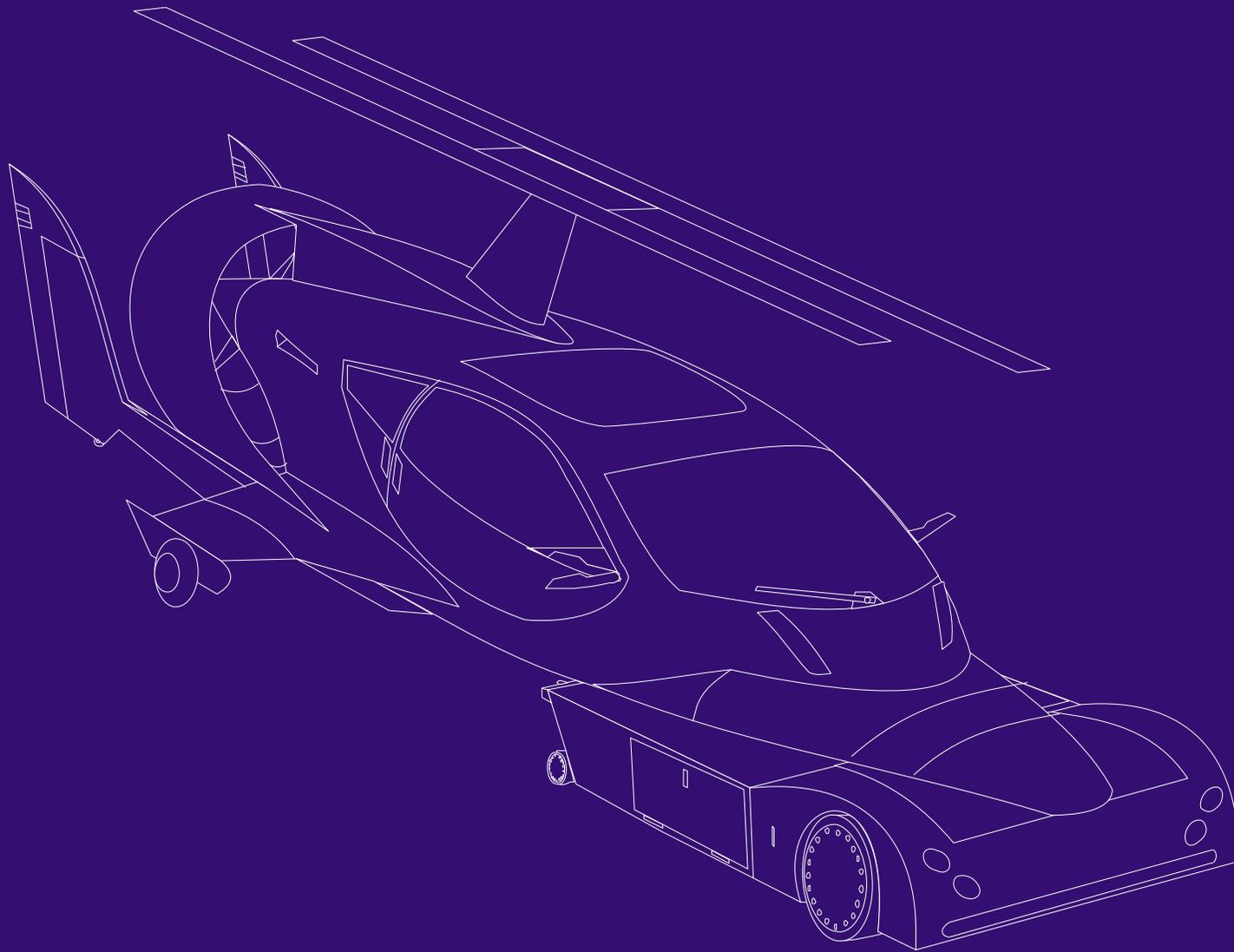


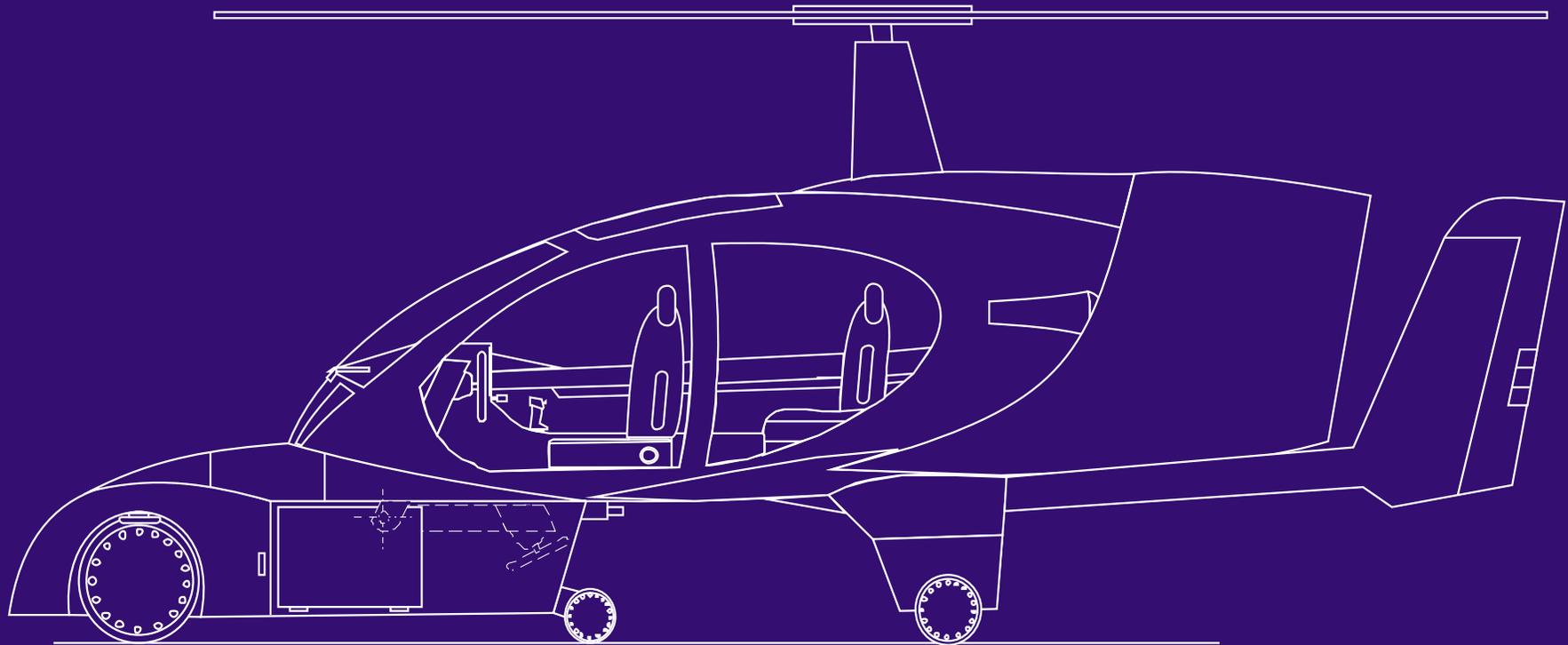
# **VEHICLE FOR ROAD AND AIR TRANSPORT**

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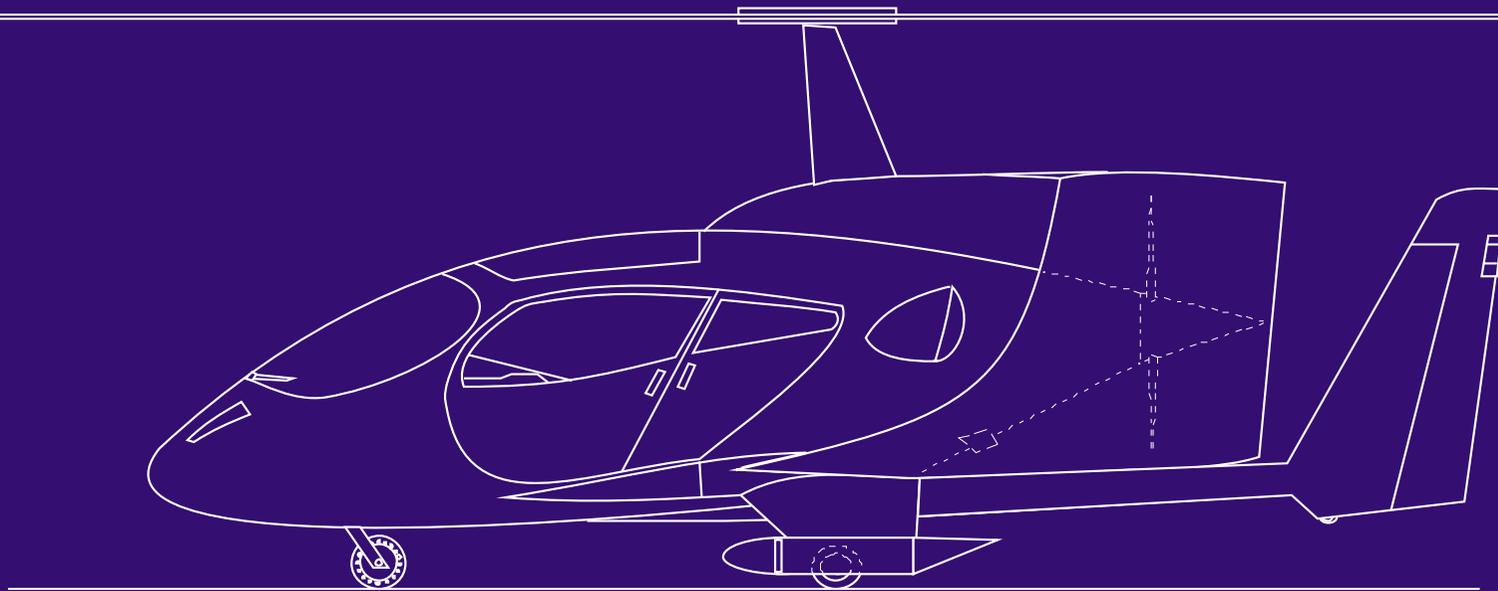




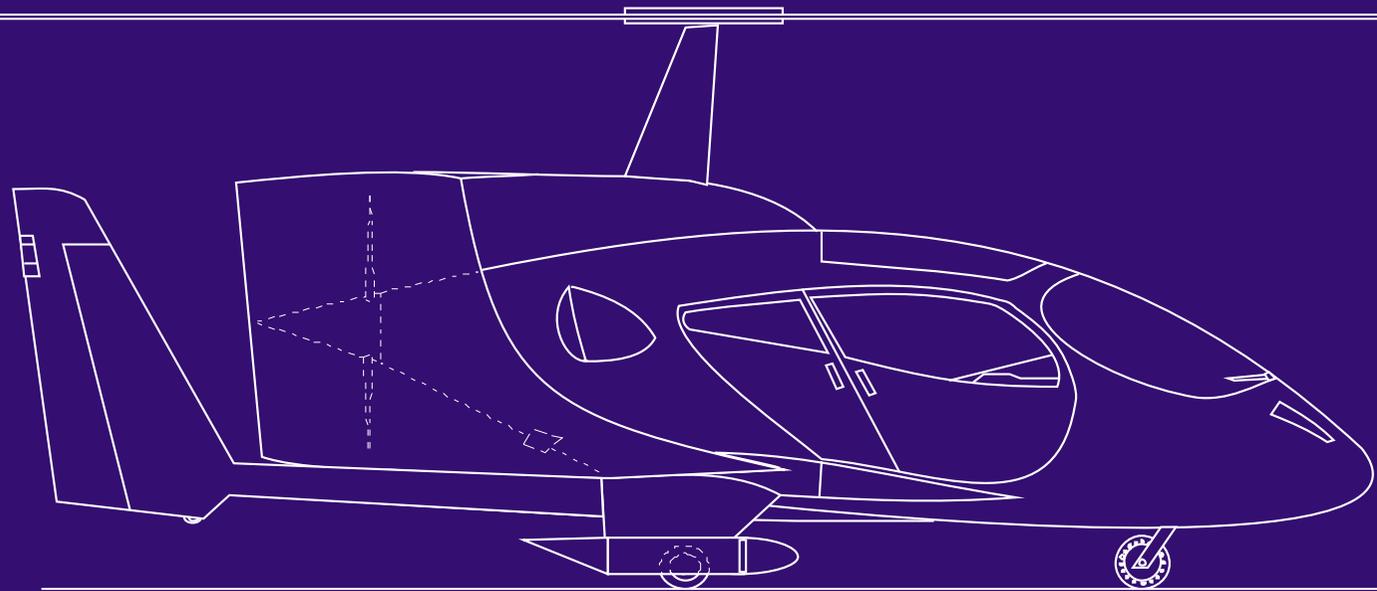
**Isometric view of the vehicle mode, driving in road traffic**



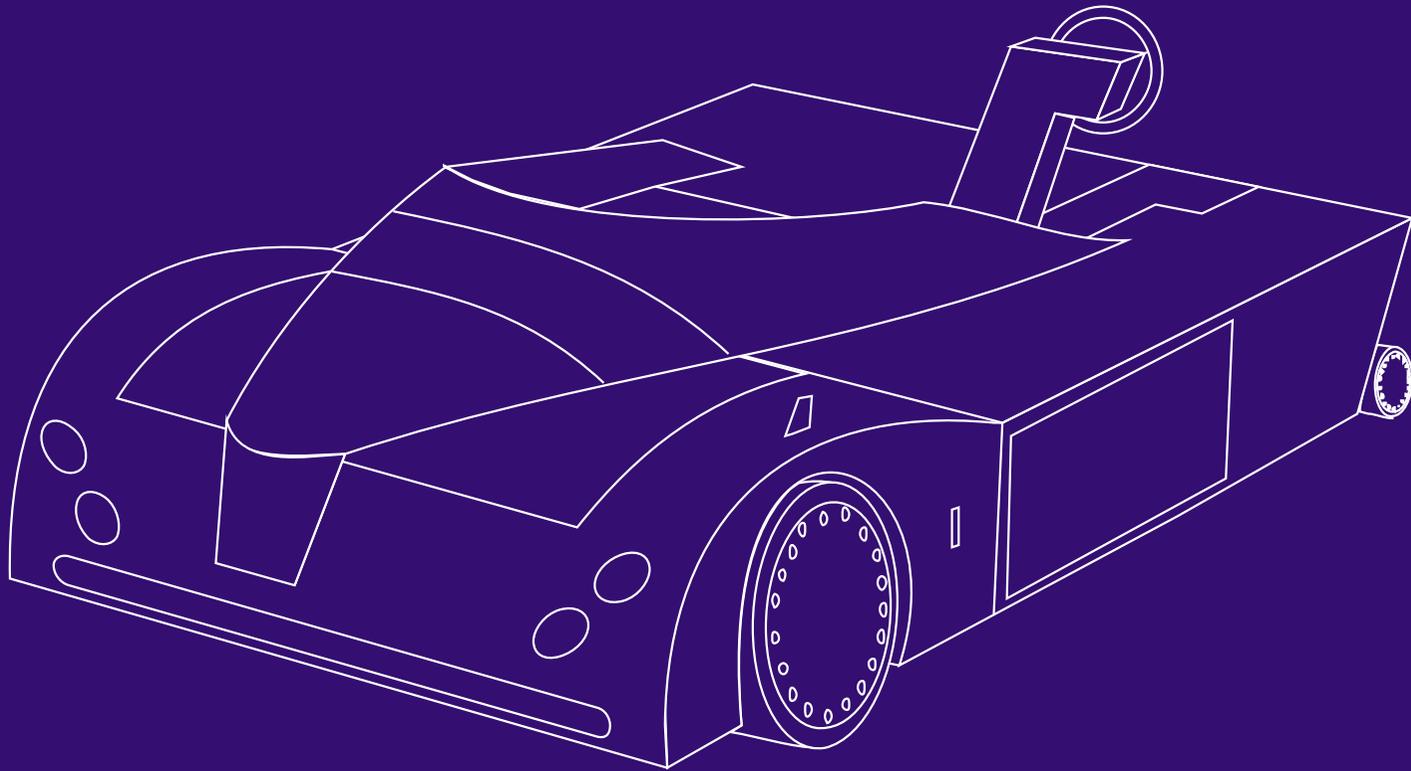
**Side view of vehicle mode, driving in road traffic**



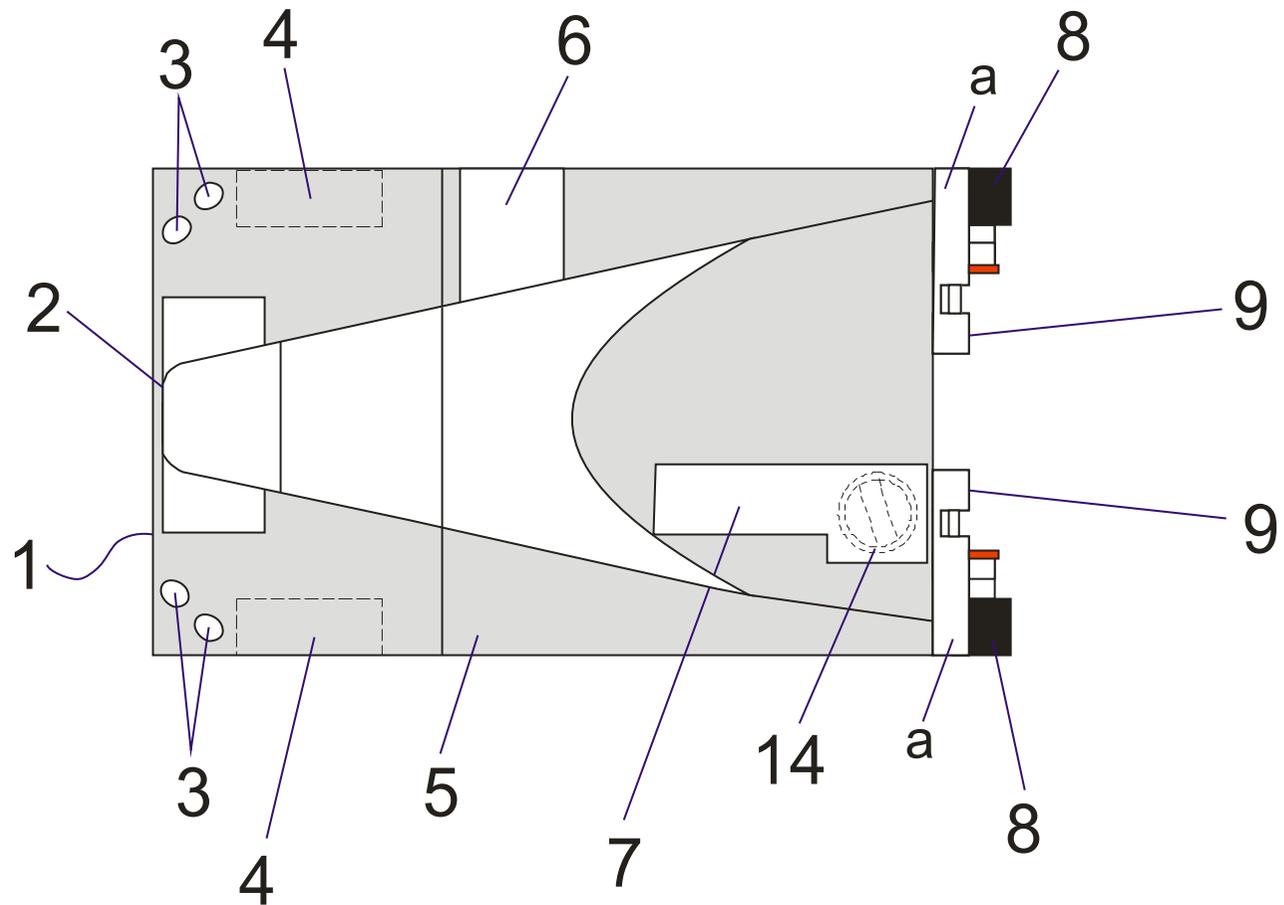
Side view vehicles for flight mode



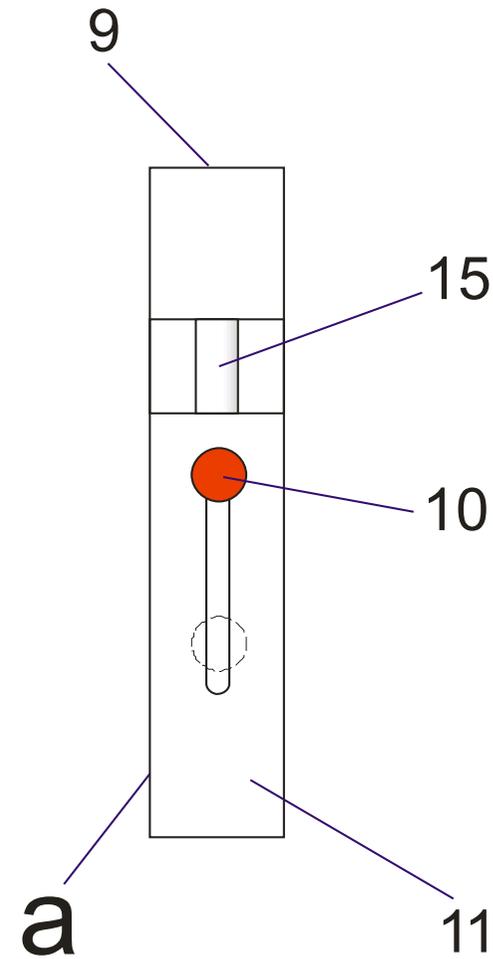
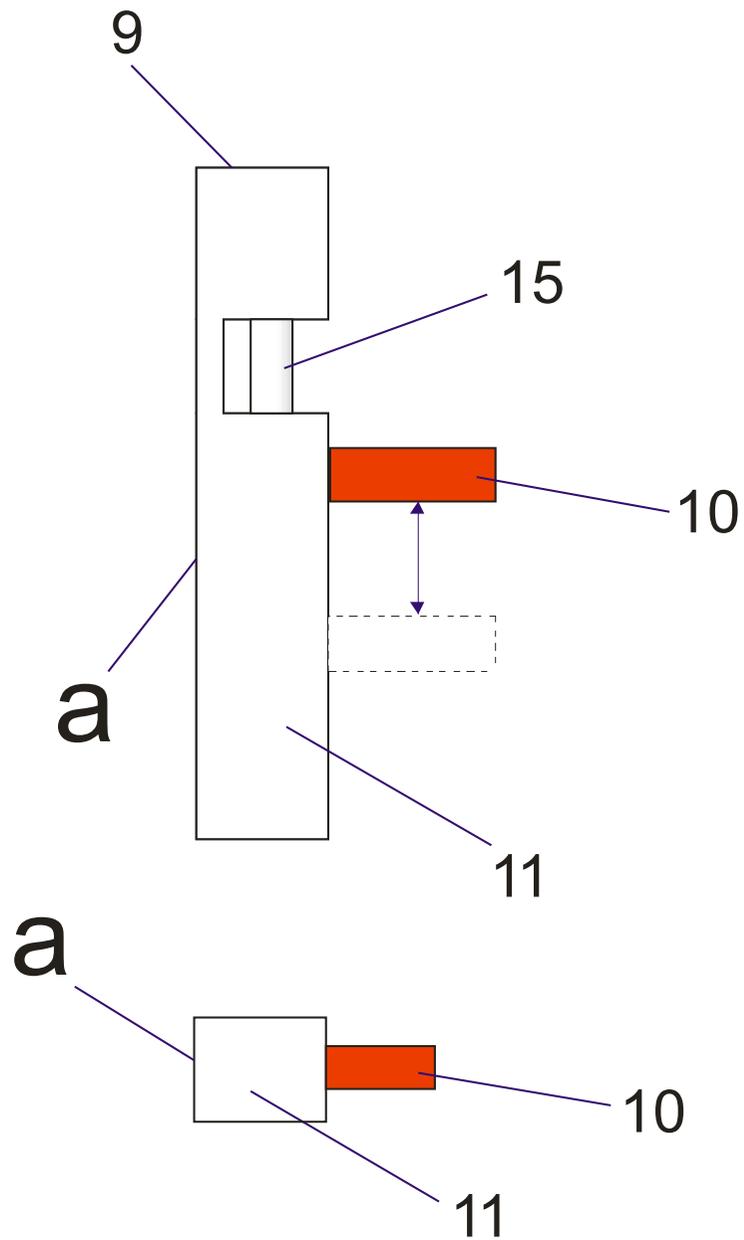
**Side view vehicles for flight mode**



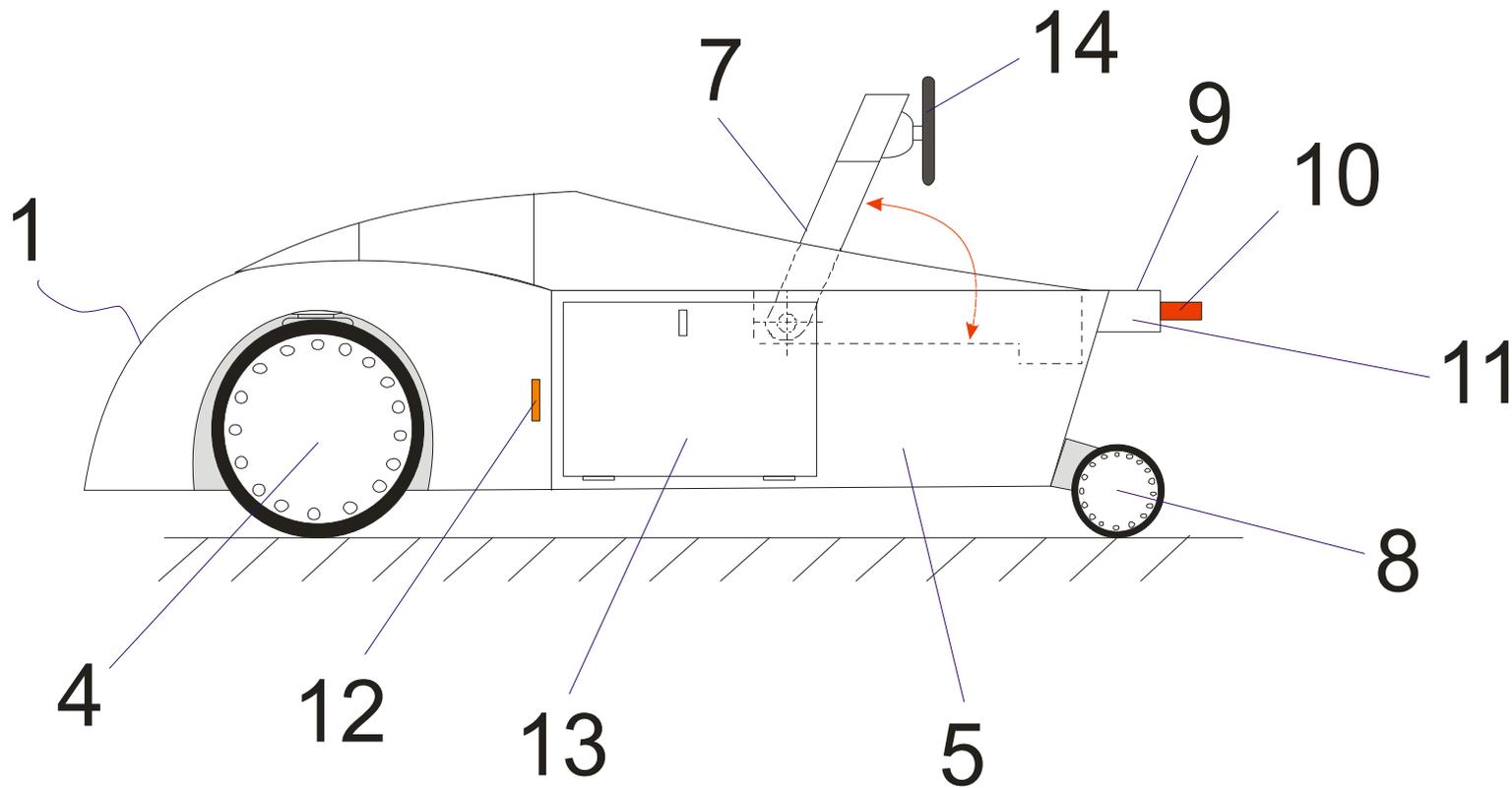
**Isometric view aircraft tug vehicle, adapted for use in road transport.**



**Ground plan of the vehicle tug aircraft, adapted for use in road traffic, with designated areas:**  
**1.tug aircraft, 2.cap space to accommodate different types of cargo, 3. light group,**  
**4. propulsion and control wheels, 5.plating tug, 6. hood,**  
**7. mobile command platform, 8. rear whels, 9. mechanisms for locking the tug to the aircraft, 14. control vehicle**

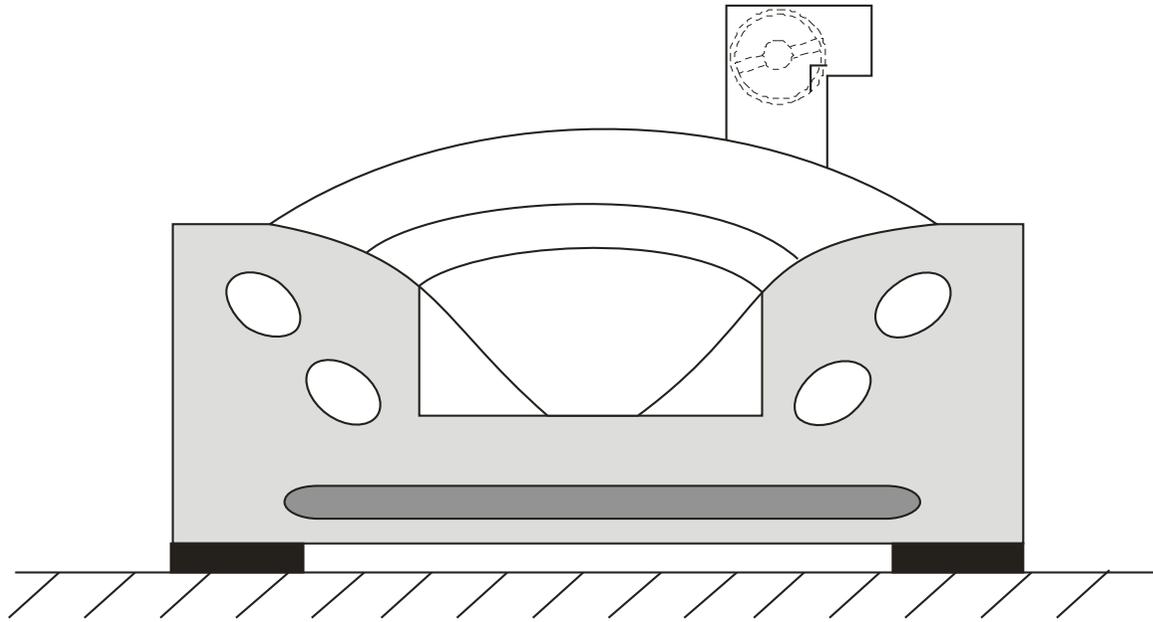


Projections of the locking mechanisms 9. tug aircraft with parts:  
 10.locking lever, 11.housing mechanism,  
 15. Safety device

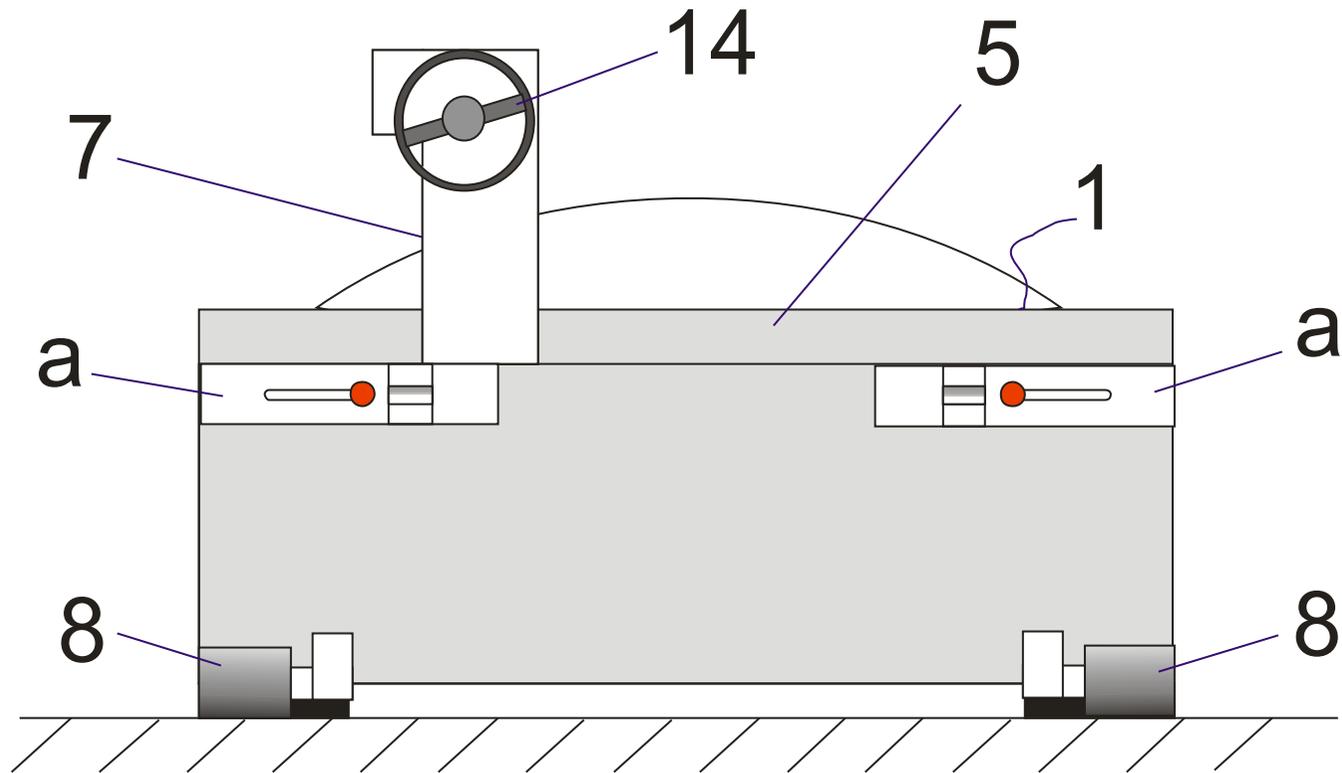


Side view indicating the aircraft tug parts:

- 1. Tug aircraft, 4. motor control wheel, 5. plating tug aircraft,
- 7. mobile command platform with an arrow that shows the directions, 8. rear wheels,
- 9. mechanism for locking the tug to the aircraft, 10. locking lever, 11. housing mechanism, 12. light signals,
- 13. cup space for luggage, 14. control vehicle,



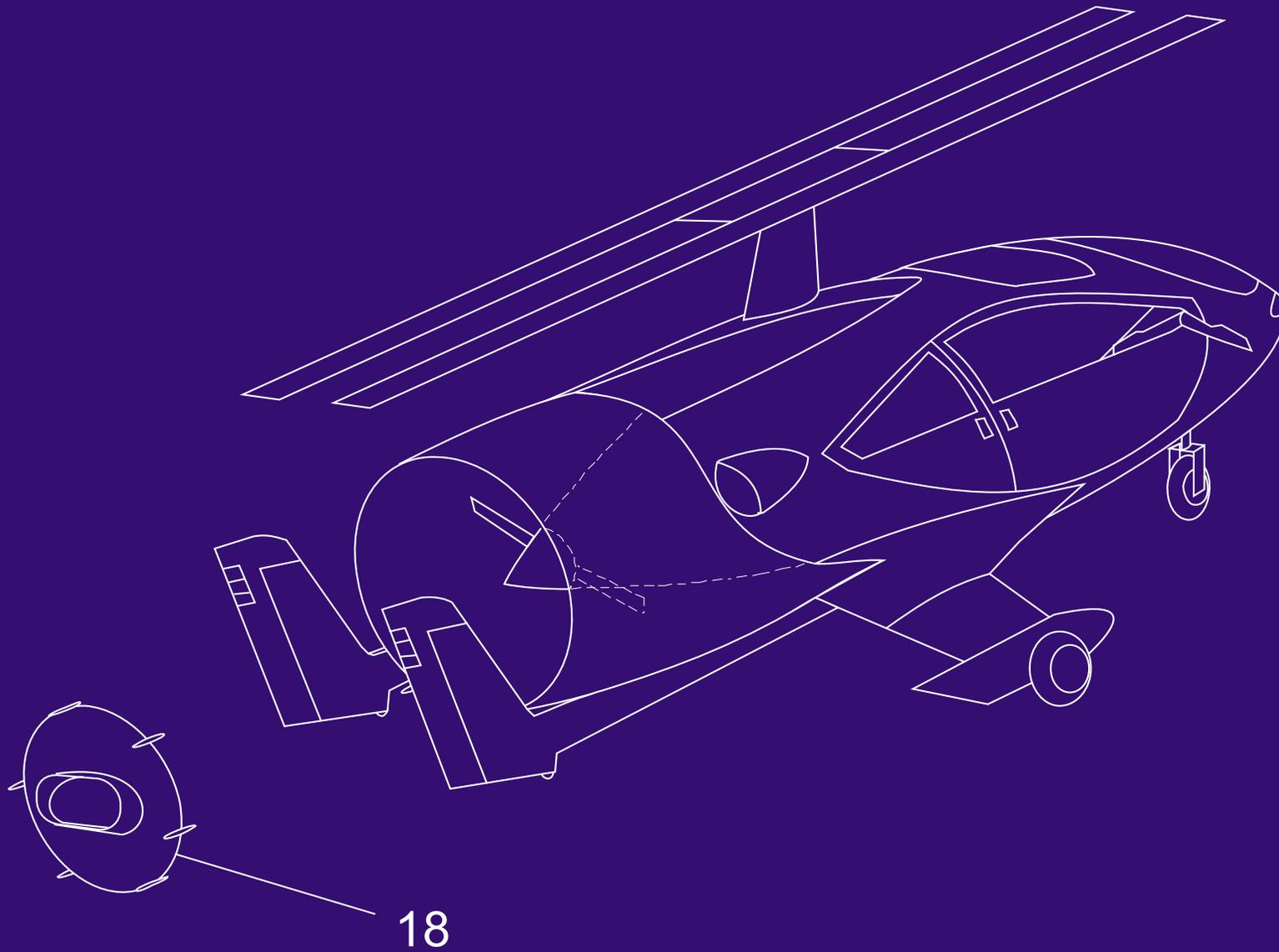
**Front view of aircraft tug**

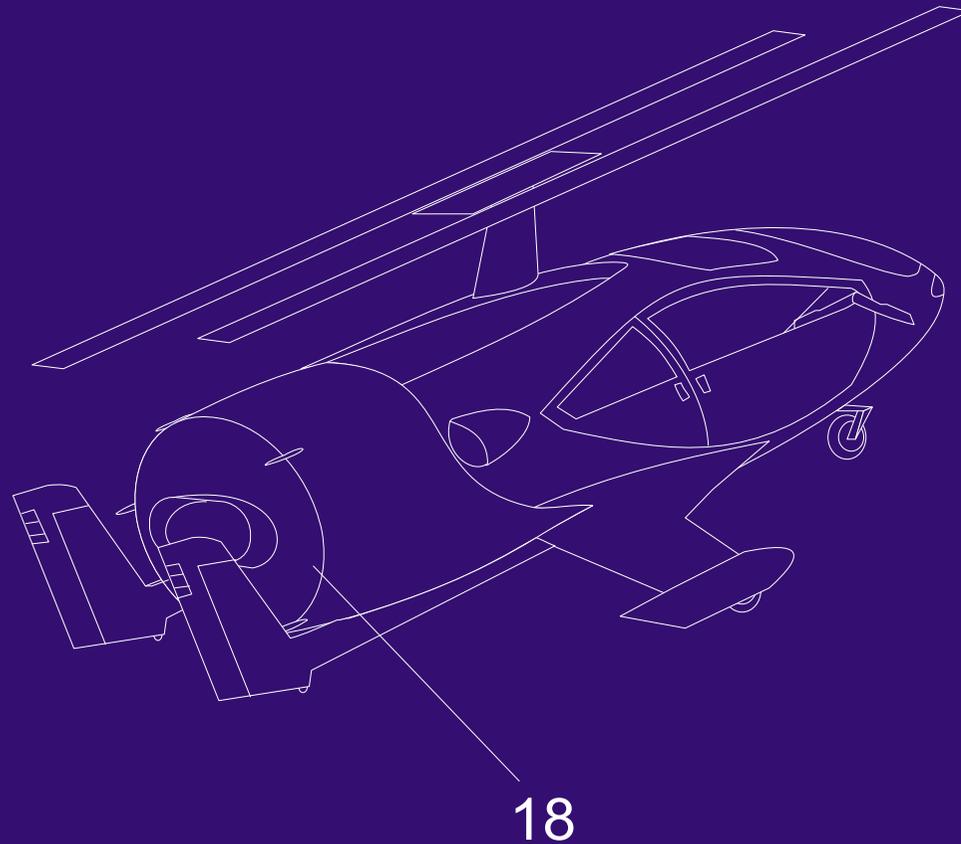


Showing the back side of the tug aircraft: 1 , indicating the parts:

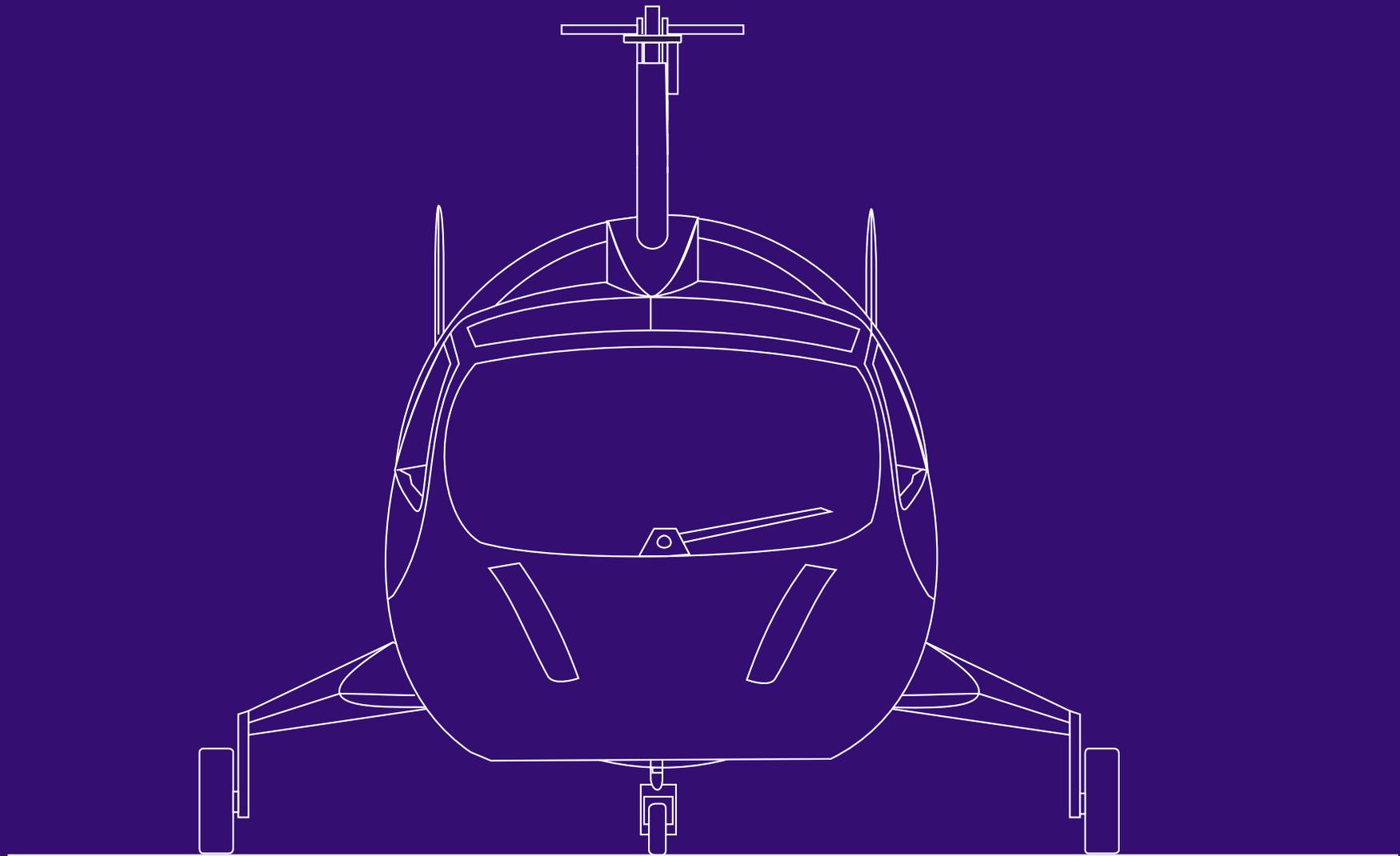
5.Plating tug, 7. mobile command platform, 8. rear wheels, 14. control vehicle, the label (a) mechanism for locking tug with the aircraft

**Isometric view aircraft for ground run mode with: (18) router air flow from the propeller**

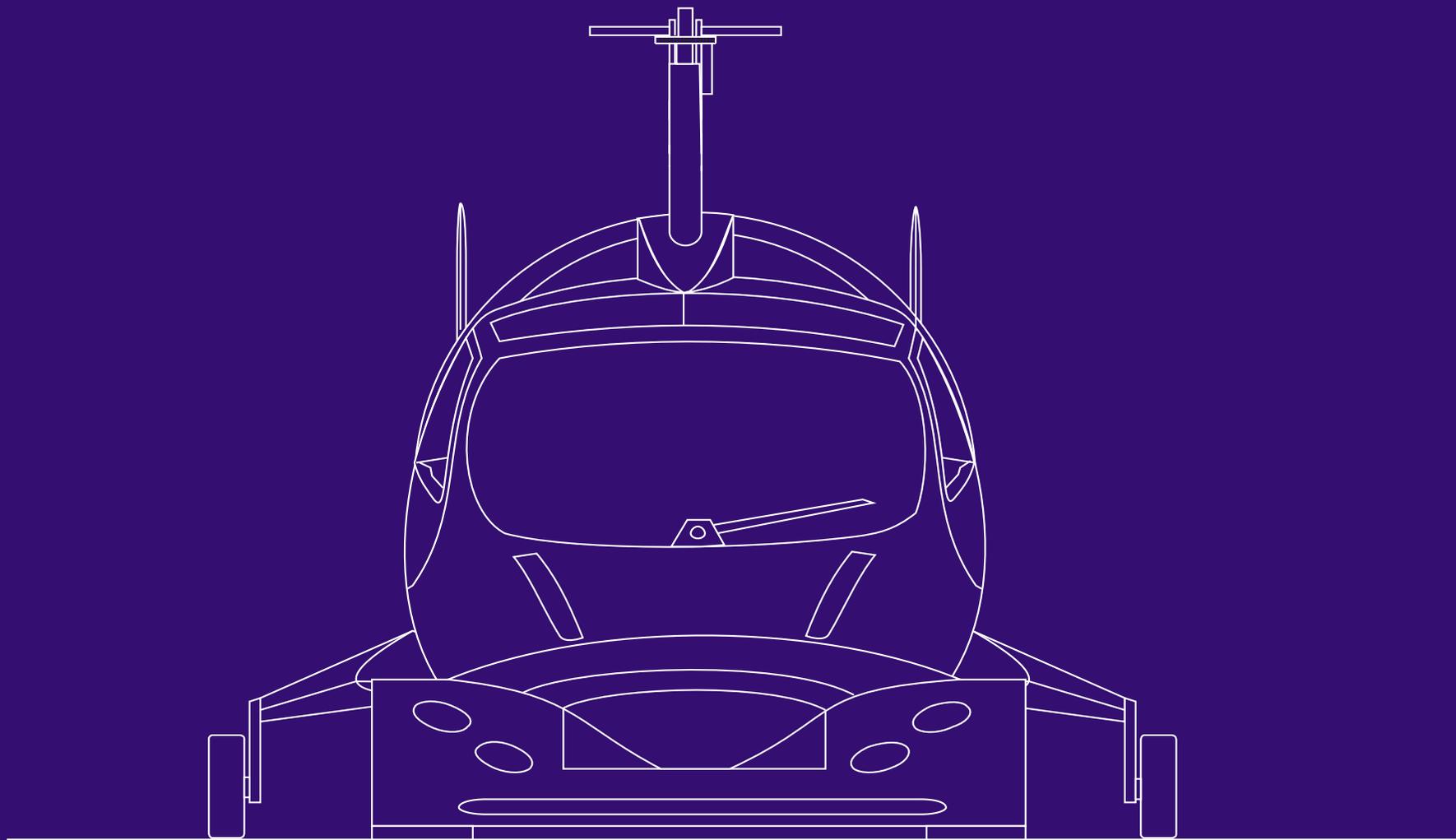




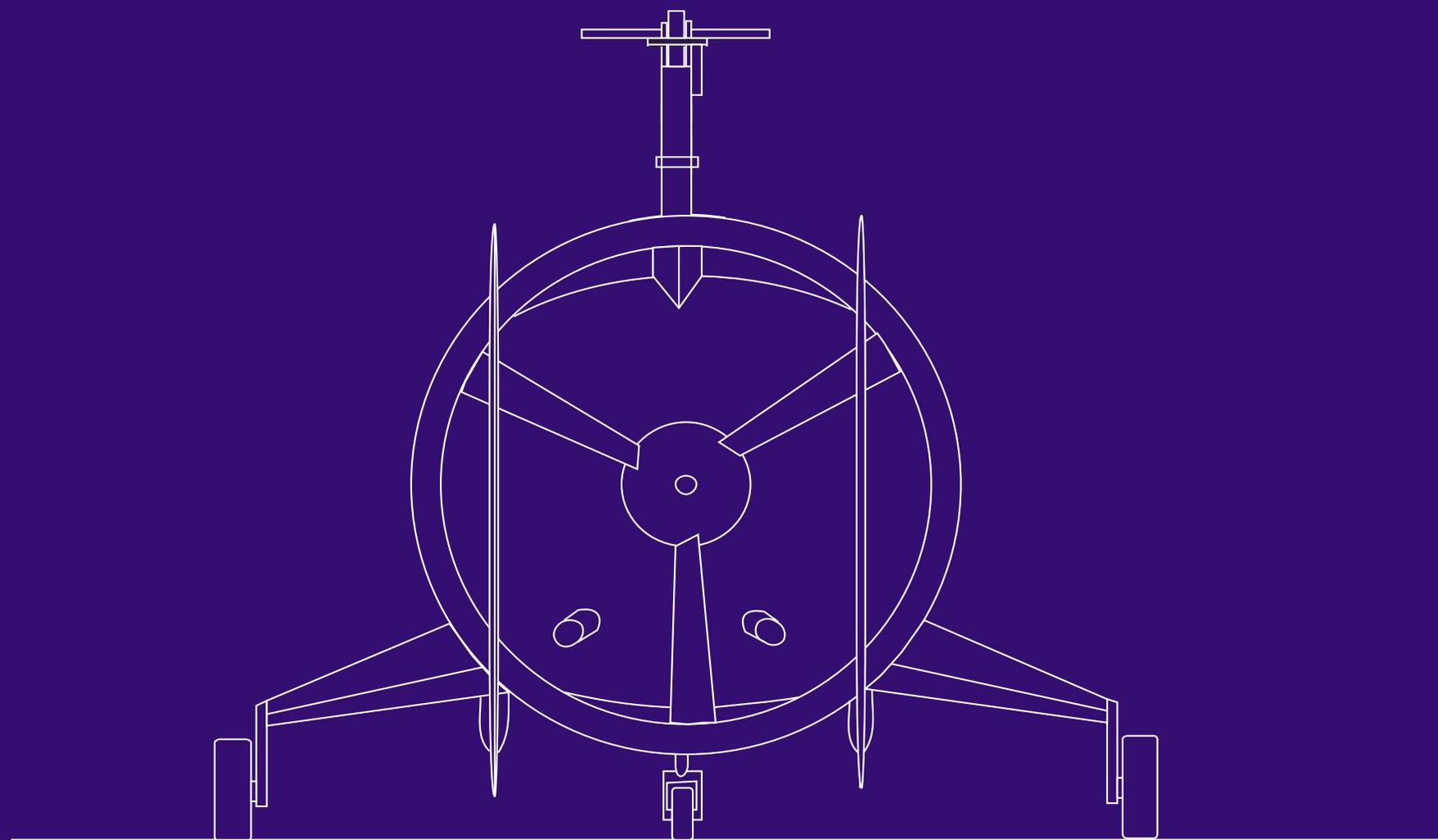
**Isometric view aircraft for ground run mode with:  
(18) mounted air stream  
from the router propellers.**



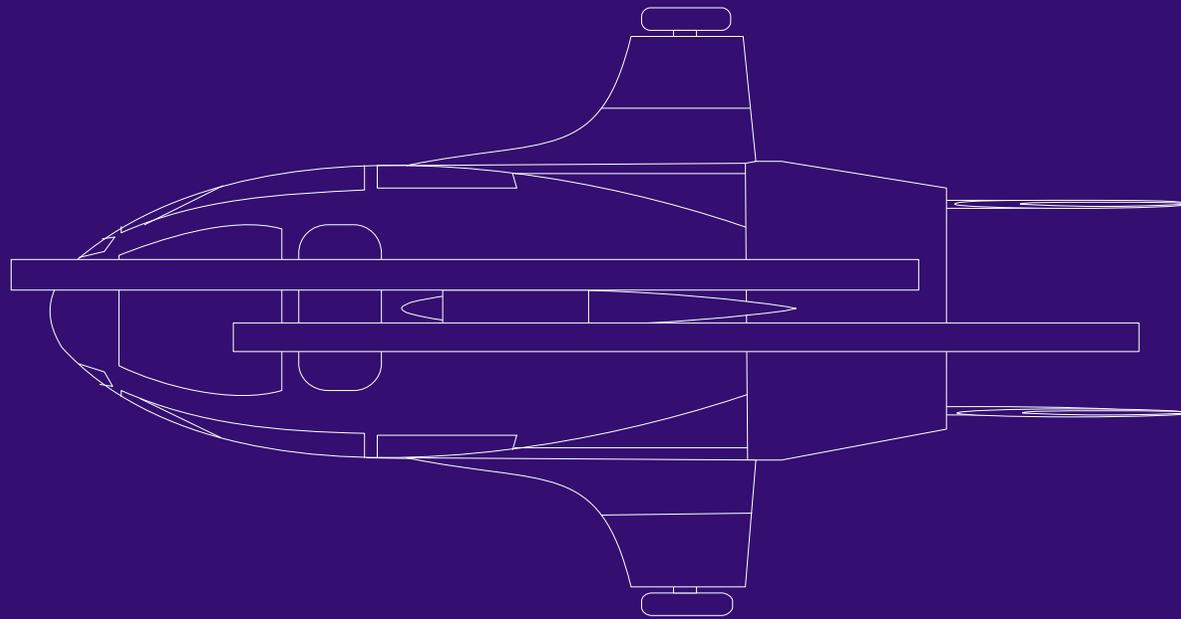
**Front view with folded rotor aircraft**



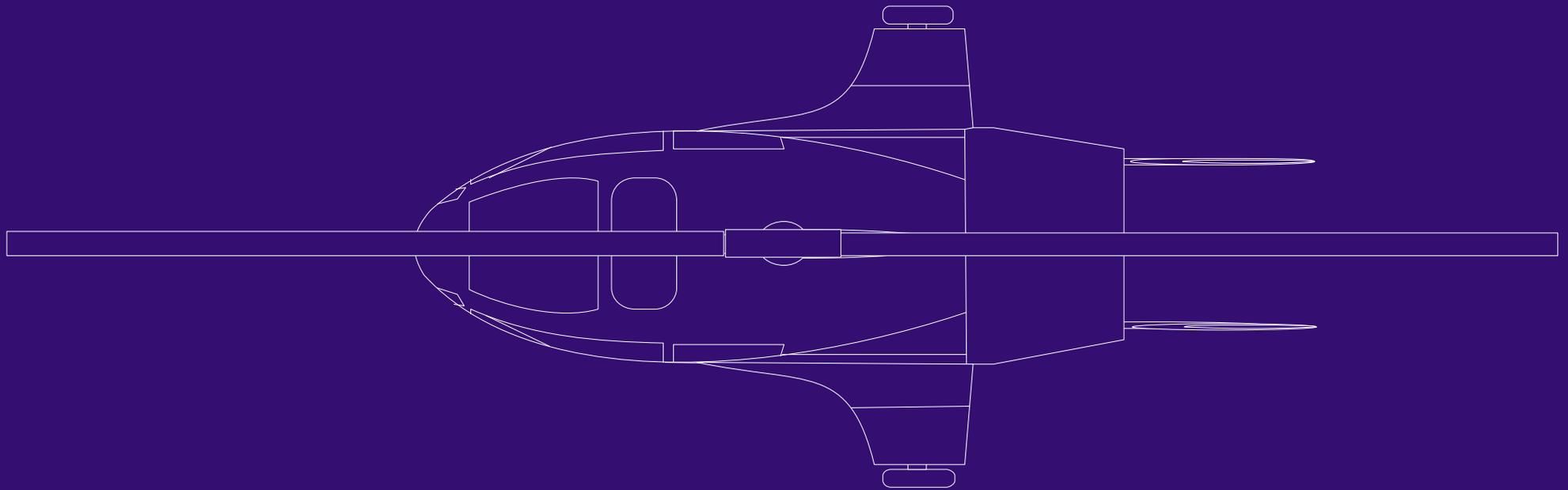
**Front view aircraft set for towing tug**



**Showing the back of the aircraft with folded rotor**

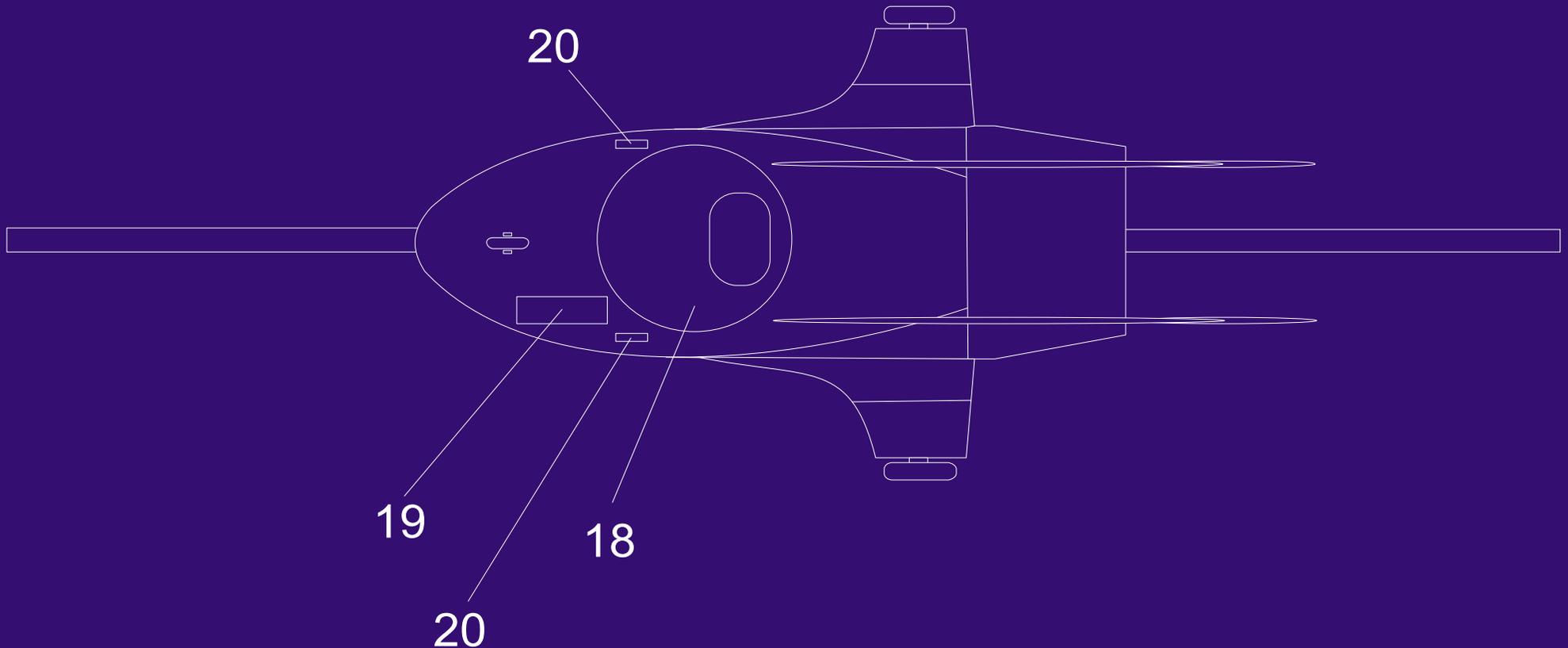


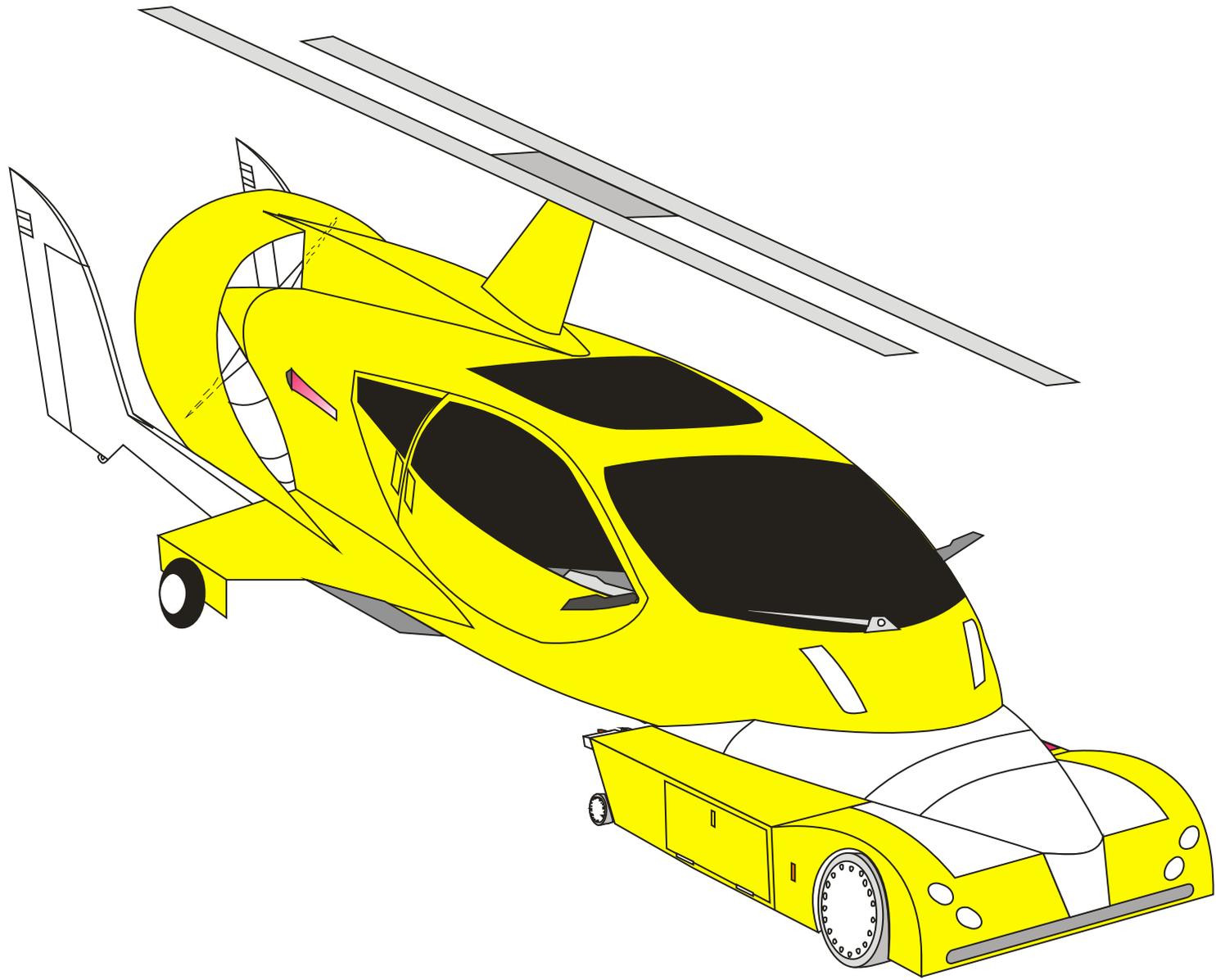
**Floor plan with folded rotor aircraft**

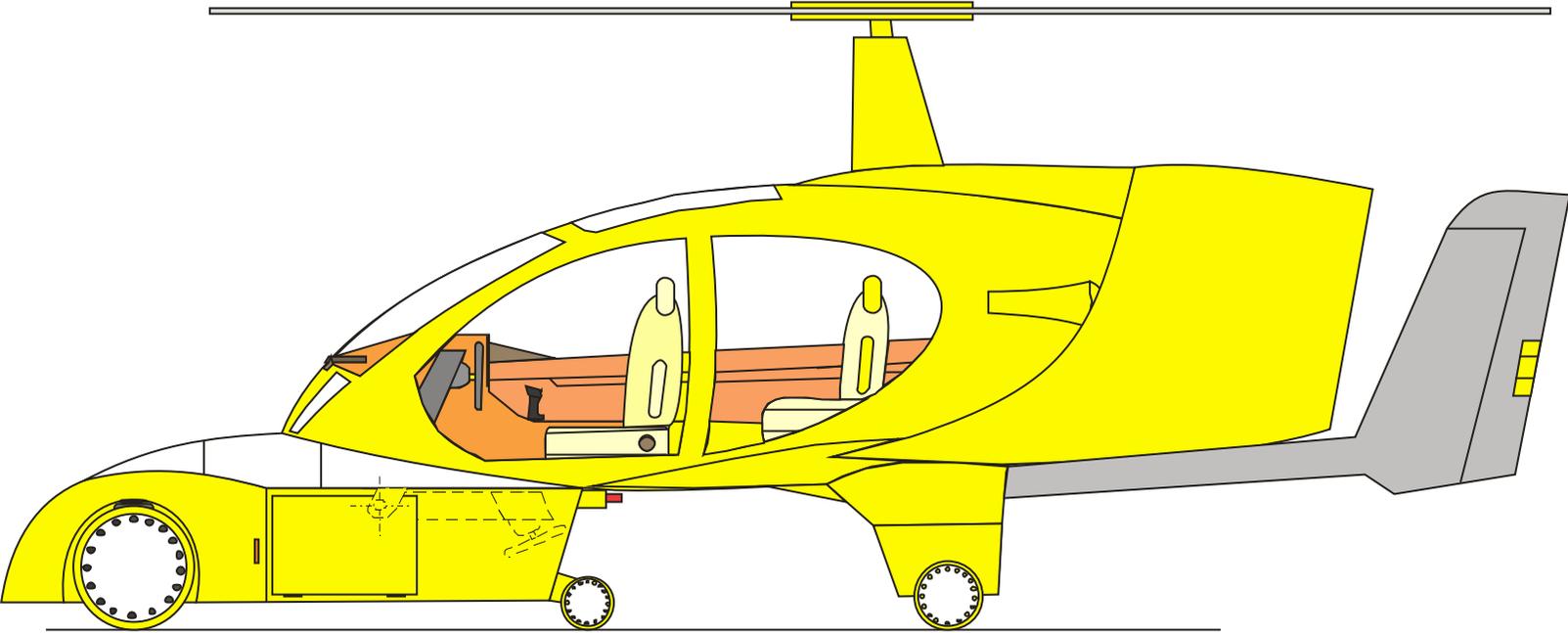


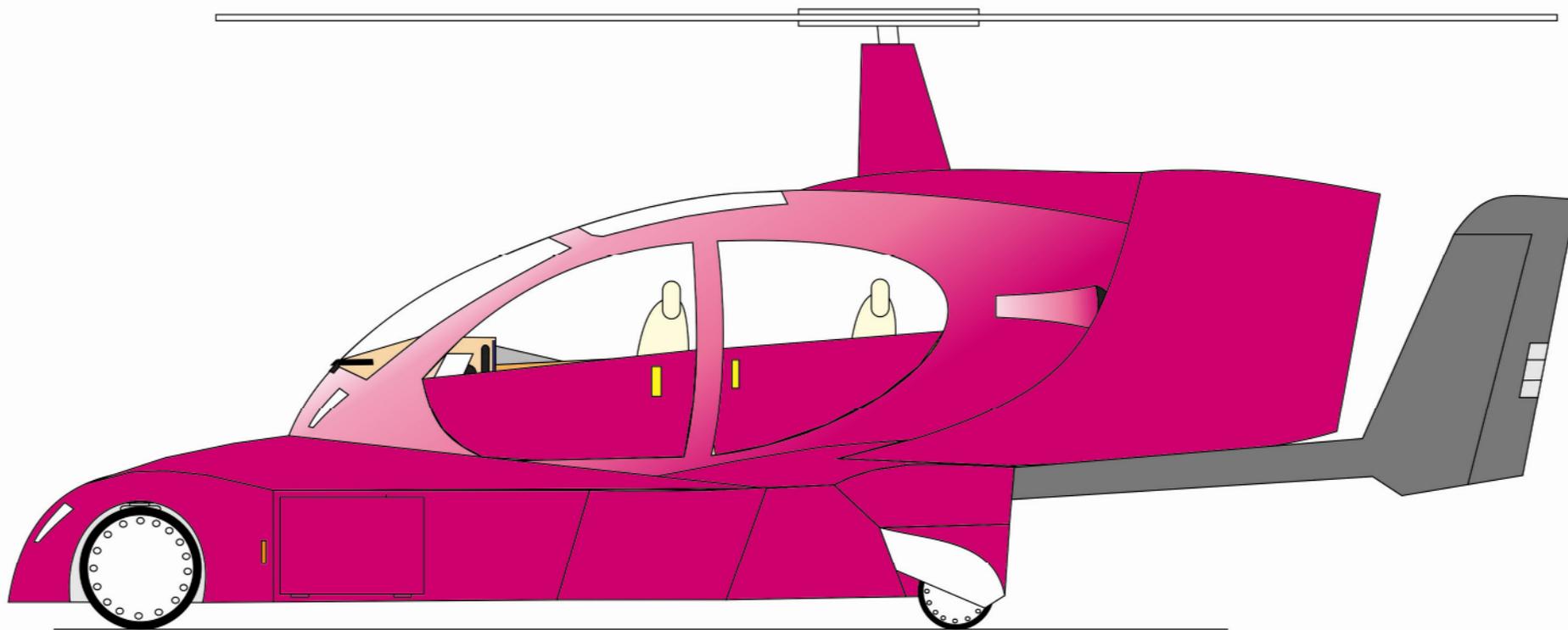
**Floor plan with unfolded rotor aircraft**

**Display the bottom of the aircraft with the indicated sections:**  
**18. router air stream from propeller mounted under the fuselage,**  
**19. cover opening through which passes control platform tug aircraft,**  
**20. point to connect to tug aircraft.**

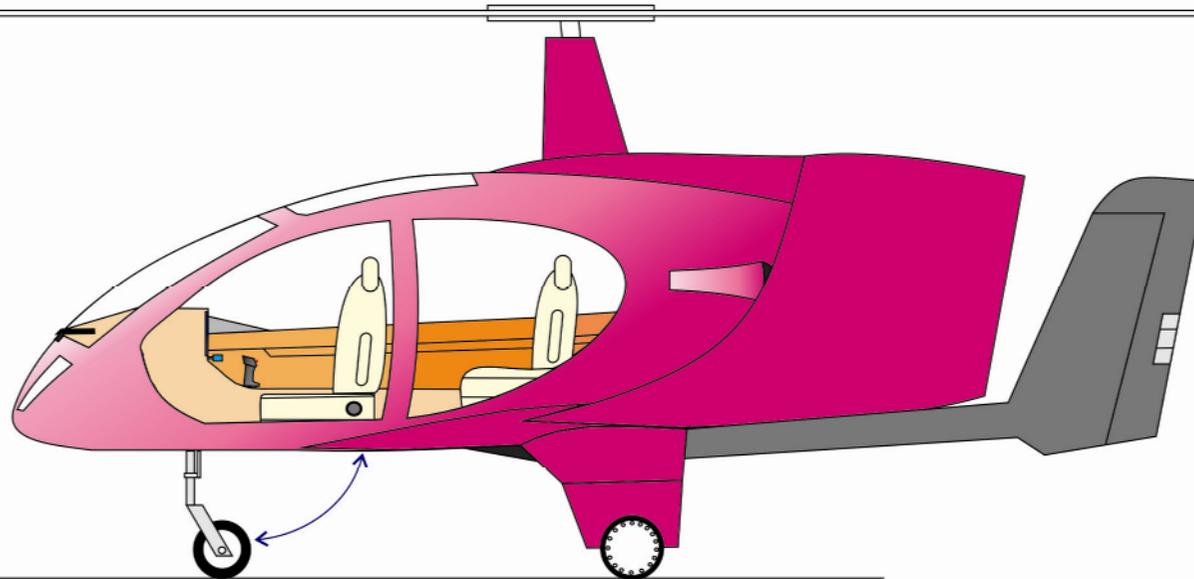




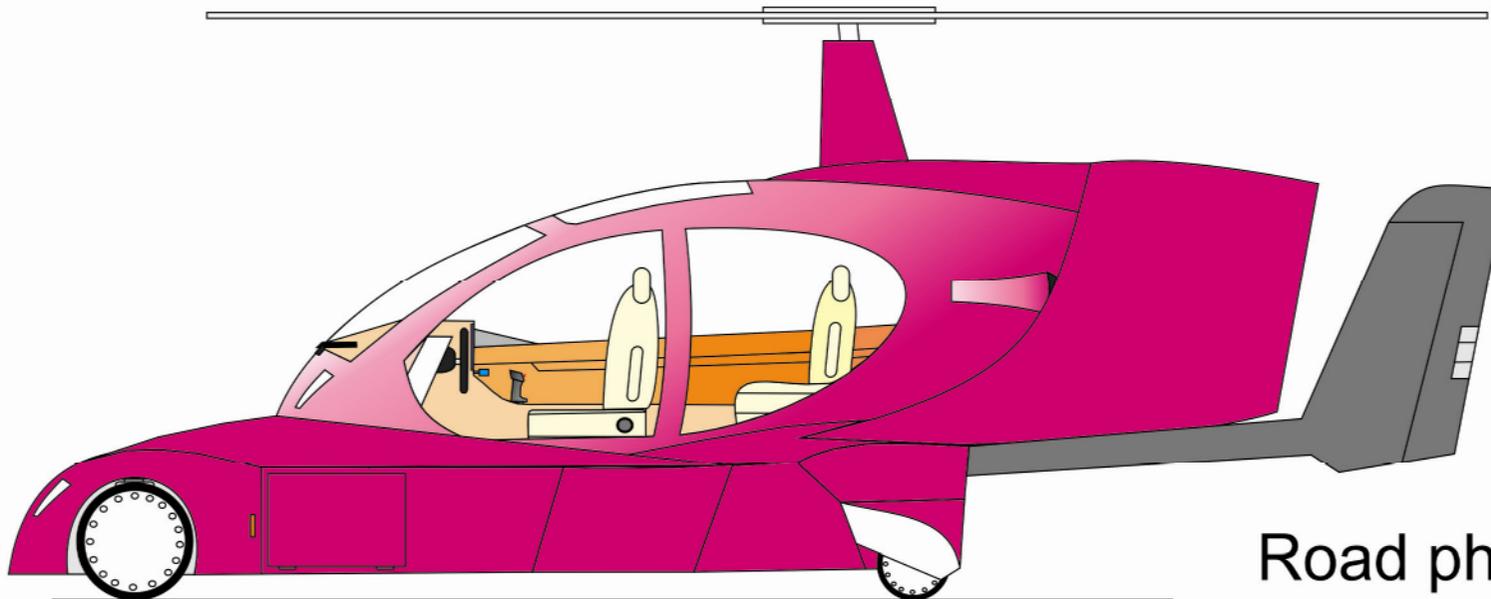


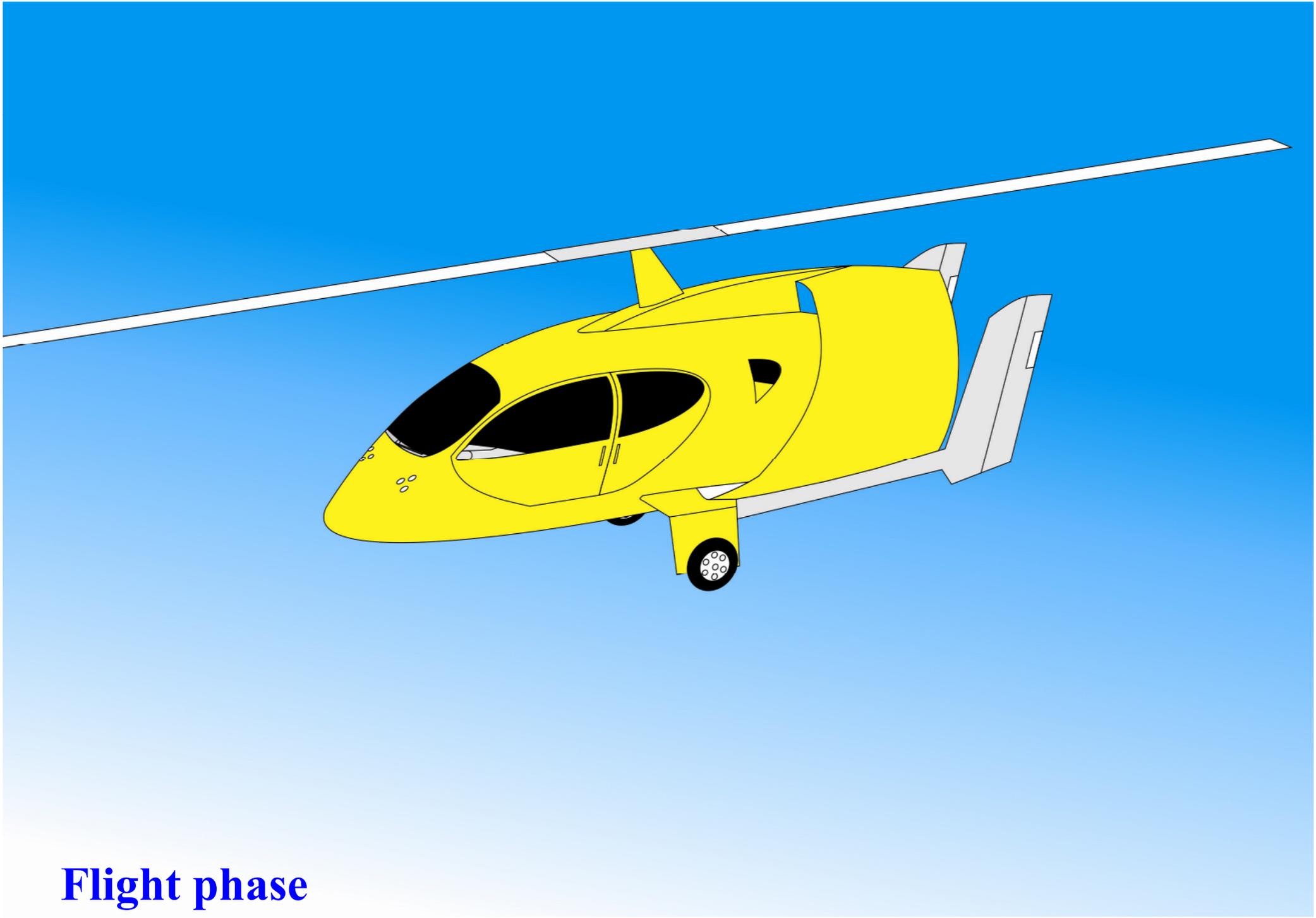


Flight phase



Road phase





**Flight phase**

## VEHICLE FOR THE TRANSPORT OF PASSENGERS AND CARGO IN LAND AND AIR TRANSPORT

Represents a new type of vehicle that is made up of tug and aircraft. Tug aircraft can be equipped with power generators: SUS, an electric or a combination of these two types of plants.

Management tug aircraft is made from aircraft cabins or outside: wireless, cable or mechanically. Tug aircraft to ride the road traffic has a drive-steering wheels with suspension, braking systems and systems to increase vehicle stability while driving.

Tug aircraft with the options provided with a combustion engine fuel from its fuel tank or drawn from the aircraft, performed with an electric motor supplied with electricity from a battery, in a type of hybrid drive with a combination of these aspects of the fuel and electricity. Command of the tug aircraft is conducted through the control unit from the spacecraft or outside. Commands are transmitted: wireless, cable or mechanical connection, the tug aircraft assemblies for: burning-fire operation, management, with the light and sound signaling, control wheels from side to side and back and forth, braking systems, steering and gas engine power, the locking mechanism - release towing cargo. Tug aircraft is connected with the aircraft through the mechanism of the locking-release. After connecting the tug aircraft with the spacecraft, perform the operation of the vehicle as a car. Tug aircraft has additional interior space for the transport of various types of cargo.

After completion of driving overland tug aircraft separates from the aircraft and it continues to work in flight mode. This way we get practical road and flying vehicle whose performance will not decrease, because of different standards and requirements in the design of road vehicles and aircraft. The application of these types of vehicles is broad both in private and with legal entities. The aircraft in this case does not carry the components needed for the management of roads, and therefore does not increase weight load that minimizes parasitic flight characteristics of aircraft, increasing the complexity of maintaining and running costs of vehicles. Second, aircraft rides, owns, or any possibility of movement on the roads. By placing the router on the jet stream behind the propeller propulzor, we get the force that creates thrust and the aircraft drives the country forward. Reverse on the ground if possible mechanism of propeller has the possibility of turning the propeller thrust arms, the position of the thrust back into the position thrust forward. Management direction of flow in this case is done by moving the nose wheel in azimuth. The variant aircraft that has a helicopter transfer of power and command of the main rotor, tail propeller is not required which eliminates the torque rotate the main rotor, the stabilization of the direction in this case is done trimming area for commanding the spacecraft flight direction. To ride on the ground, the longitudinal axis of the rotor arms, come into the position parallel to the longitudinal axis of the aircraft automatically or manually.

Aircraft type : Gyrocopter

Hull Material: Composite Materials

Number of seats: 4

Rotor: Putting the system that is applied to the American manufacturer Žirokopter „ Butterfly Gyrocopters "model, the Super Sky Cycle.“

Landing Gear: Tricycle type with retractable front wheel and the strengthening of stable driving at speeds up to 80 km / hour.

The conversion of automotive engines in aircraft.

Powerplant: Suzuki V6 2.7L is a 6 cylinder, 24 valve, 183 hp @ 6,000 rpm

180 lb ft of torque @ 4,000 rpm

Honda 3.5L V6

Ramp Weight: 139 kg

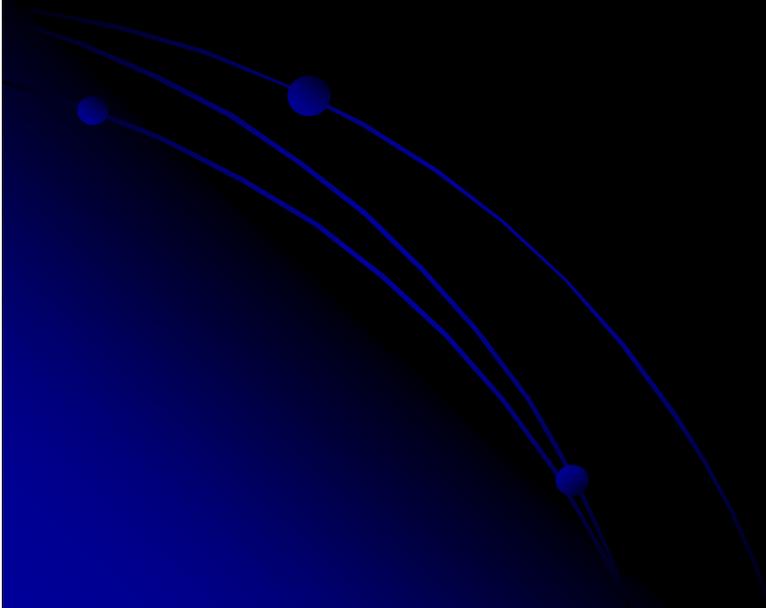
The Honda 3.5L is a 60° V6 4-stroke liquid cooled engine.

Featuring an all-aluminum construction, SOHC (single overhead cams), 24 valves per cylinders, VTEC (variable valve timing and lift electronic control) and multi-port fuel injection it produces 244 hp (182 KW) @ 5,750 rpm and 242 lb ft (328 Nm) of torque @ 4,500 rpm.

Ramp Weight:189 kg

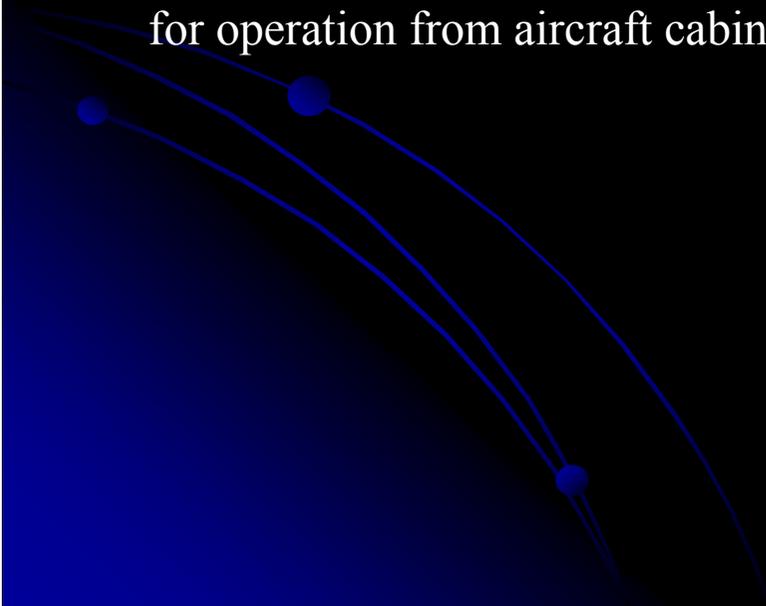
An additional way to drive the aircraft on the ground, is achieved by mounting the router air currents (18) on the output edge of the propeller. After using the router (18) is removed and placed under the aircraft fuselage.

On the craft of equipment for road riding and found that when the mirrors are drawn not create additional air resistance when the aircraft in the flight phase, last light signaling group that is located on the trailing edge of vertical stabilizer aircraft.



Vehicle: Tug aircraft constructive adapted to tow the aircraft up to speed on the roads of 80km/hrs.

- Drive-automotive gasoline engine or electric motor or hybrid.
- Transfer speed-automatic.
- Fuel tank with a device for filling the tank barge in the aircraft and vice versa.
- Light-signaling groups, determined by the regulations for road vehicles traffic.
- Space for the transport of various loads depending on the planned mission.
- Mechanism for connecting the aircraft towing tractor: manual or hydraulic.
- Management mechanisms and suspension tug performed on the model of car.
- Drawing on a platform command (7) that is used when the spacecraft is set on the tractor, passes through the hole at the bottom of the spacecraft, and is fixed in position for operation from aircraft cabins.



## The advantages of this method of transport

- Complete comfort on the road without disturbing the flight characteristics of aircraft, which would resulting installation of integrated circuit for driving on roads in the aircraft.
- The ability of transport, cargo, depending on the task.
- The use of auto gasoline, which is more accessible and cheaper in the field.
- Two ways of driving on land, with the tug aircraft and drive the propeller thrust, where
  - The airflow passing through the router (18) towards the top, thus avoiding strikes air of persons or objects that they find themselves behind the aircraft
- Putting in the hangar of vehicle is not required at the airport, reducing operating costs
  - Use that amount per year on average and up to 6,000 Euros.
- Not necessary airports, since the takeoff and landing required a short runway-PSS
- Operating cost-hour flight is 1 / 10, cost of helicopter flight hours.
- Potential users of such vehicles are:
  - Military and police units
  - Firefighting units
  - Electric Power Companies
- Services for the rapid transport of postal items, with an optimal radius of over 400 km.
- Private customers and many others

# Vehicle for road and air traffic

BAP102802A

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