
Coordination principles of wheeled aircrafts base layout with air-cushion undercarriage

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We investigated an opportunity of air cushion chassis and light transport aircraft coordinating. The key layout solution was the complete rising of the air-cushion undercarriage in specialized gondolas after take-off. It is shown, that the integration of air cushion chassis platform into the glider demands expansion of empennage area. To parry destabilize moments from air cushion platform with open front and rear shields the blow of empennage with airscrew jets is to be organized. To maintain controllability during take-off and landing appropriate measures should be taken. The simplest way to increase controllability is differential control of engines traction or mounting of extra fins in airscrew jets flow area. The most rational layout decision is the front placement of air-cushion supercharger. It is shown, that the procedure of coordinating base layout of airplane with air-cushion chassis should be carried out at the draft stage.

Key words: layout, aircraft, undercarriage, air-cushion, integration.

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