

# ECLA EUROPEAN CLASSIFICATION

## B64C AEROPLANES; HELICOPTERS (air-cushion vehicles B60V)

[N: **WARNING**

[C0903]

The following IPC groups are not used in the internal ECLA classification scheme. Subject matter covered by these groups is classified in the following ECLA groups:

- [B64C35/02](#) covered by [B64C35/00](#)

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### Note

[N9501] As far as possible, classification is made according to constructional features; classification according to particular kinds of aircraft is normally regarded as being of secondary importance, except in cases where this is considered to be the characteristic feature.

**Guide heading:** **Aircraft structures or fairings** ([boundary-layer controls B64C21/00](#))

- B64C1/00** **Fuselages; Constructional features common to fuselages, wings, stabilising surfaces and the like** ([aerodynamical features common to fuselages, wings, stabilising surfaces, and the like B64C23/00](#); [flight-deck installations B64D](#))
- B64C1/00A . [N: Aerodynamic aspects] [N0804]
- B64C1/06 . Frames; Stringers; Longerons; [N: Fuselage sections] [C1207]
- B64C1/06F . . [N: Frames] [N0804]
- B64C1/06F2 . . . [N: specially adapted to absorb crash loads] [N0804]
- B64C1/06F4 . . . [N: Folding or collapsing to reduce overall dimensions, e.g. foldable tail booms (folding or collapsing wings [B64C3/56](#))] [N1010]
- B64C1/06G . . [N: Stringers; Longerons] [N0804] [C1010]
- B64C1/06L . . [N: Spars] [N0804]
- B64C1/06R . . [N: Interior liners] [N0804]
- B64C1/06R2 . . . [N: comprising means for preventing icing or condensation conditions] [N0806]
- B64C1/06S . . [N: Fuselage sections] [N0804] [C1207]
- B64C1/06S2 . . . [N: Joining arrangements therefor] [N1204]
- B64C1/08 . . Geodetic or other open-frame structures
- B64C1/10 . . Bulkheads
- B64C1/12 . . Construction or attachment of skin panels
- B64C1/14 . Windows; Doors; Hatch covers or access panels; Surrounding frame structures; Canopies; Windscreens [N: accessories therefor, e.g. pressure sensors, water deflectors, hinges, seals, handles, latches, windscreen wipers] ([fairings movable in conjunction with undercarriage elements B64C25/16](#); [bomb doors B64D1/06](#)) [C0804]
- B64C1/14B . . [N: Doors; surrounding frames] [C0804]

- B64C1/14B1 . . . [N: Cargo doors, e.g. incorporating ramps]
- B64C1/14B2 . . . [N: Passenger doors] [N0804]
- B64C1/14B2P . . . . [N: of the plug type] [N0804]
- B64C1/14B2S . . . . [N: of the sliding type] [N0804]
- B64C1/14B3 . . . [N: Inspection hatches (for engine cowls [B64D29/08](#))] [N0804]
- B64C1/14B4 . . . [N: Drain masts] [N0804]
- B64C1/14B5 . . . [N: Structures of doors or surrounding frames] [N0804]
- B64C1/14B6 . . . [N: Doors between cockpit and cabin] [N0804]
- B64C1/14C . . [N: Canopies; Windscreens or similar transparent elements]
- B64C1/14C2 . . . [N: Windows ([B64C1/14C3](#) takes precedence)]
- B64C1/14C3 . . . [N: Structure and mounting of the transparent elements in the window or windscreen]
  
- B64C1/16 . specially adapted for mounting power plant
  
- B64C1/18 . Floors
- B64C1/20 . . specially adapted for freight
  
- B64C1/22 . Other structures integral with fuselages to facilitate loading [N: e.g. cargo bays, cranes (cargo door type ramps [B64C1/14B1](#))] [C0804]
  
- B64C1/24 . Step mounted on an retractable within fuselages (readily removable [B64D9/00](#))
  
- B64C1/26 . Attaching the wing or tail units or stabilising surfaces
  
- B64C1/28 . Parts of fuselage relatively movable to improve pilots view
  
- B64C1/30 . Parts of fuselage relatively movable to reduce overall size for storage
  
- B64C1/32 . Severable or jettisonable parts of fuselage facilitating emergency escape (ejector seats [B64D25/10](#))
  
- B64C1/34 . comprising inflatable structural components (connection of valves to inflatable elastic bodies [B60C29/00](#)) [C9501]
  
- B64C1/36 . adapted to receive aerials or radomes (aerials or radomes per se [H01Q](#))
  
- B64C1/38 . Constructions adapted to reduce effects of aerodynamic or other external heating [N: (cooling structural parts of aircrafts with air flow [B64D13/00B](#))] [C9810]
  
- B64C1/40 . Sound or heat insulation, [N: e.g. using insulation blankets (insulating elements for vehicles, in general [B60R13/08](#))] [C1105]
- B64C1/40R . . [N: Arrangement of fasteners specially adapted therefor, e.g. of clips (in vehicles in general [B60R13/02B](#))] [N1105]
- B64C1/40R2 . . . [N: in combination with supports for lines, e.g. for pipes or cables (arrangement of elements of electric or fluid circuits specially adapted for vehicles, in general [B60R16/00](#); supports for pipes, cables or protective tubing [F16L3/00](#); installations of electric cables or lines in vehicles [H02G3/00](#))] [N1105]
  
- B64C3/00**      **Wings** (stabilising surfaces [B64C5/00](#); ornithopter wings [B64C33/02](#))

- B64C3/10 . Shape of wings [C1010]
- B64C3/14 . . Aerofoil profile
- B64C3/14B . . . [N: Circulation Control Airfoils]
- B64C3/16 . . Frontal aspect
  
- B64C3/18 . Spars; Ribs; Stringers (attaching wing unit to fuselage [B64C1/26](#))
- B64C3/18G . . [N: Stringers, longerons] [N0809]
- B64C3/18L . . [N: Spars] [N0809]
- B64C3/18R . . [N: Ribs] [N0809]
  
- B64C3/20 . Integral or sandwich constructions (layered products or sandwich constructions in general B32B) [C1010]
  
- B64C3/22 . Geodetic or other open-frame structures
  
- B64C3/24 . Moulded or cast structures
  
- B64C3/26 . Construction, shape, or attachment of separate skins, e.g. panels
  
- B64C3/28 . Leading or trailing edges attached to primary structures, e.g. forming fixed slots
  
- B64C3/30 . comprising inflatable structural components (connection of valves to inflatable elastic bodies [B60C29/00](#)) [C9501]
  
- B64C3/32 . specially adapted for mounting power plant
  
- B64C3/34 . Integrally-constructed tanks, e.g. for fuel (other aircraft fuel tanks or fuel systems [B64D](#))
  
- B64C3/36 . Structures adapted to reduce effects of aerodynamic or other external heating [N: (cooling structural parts of aircrafts with air flow [B64D13/00B](#))] [C9810]
  
- B64C3/38 . Adjustment of complete wings or parts thereof [C1010]
- B64C3/38B . . [N: Variable incidence wings] [N9805]
- B64C3/40 . . Varying angle of sweep
- B64C3/42 . . Adjusting about chordwise axes
- B64C3/44 . . Varying camber
- B64C3/46 . . . by inflatable elements (connection of valves to inflatable elastic bodies [B60C29/00](#)) [C9501]
- B64C3/48 . . . by relatively-movable parts of wing structures
- B64C3/50 . . . by leading or trailing edge flaps (ailerons [B64C9/00](#))
- B64C3/52 . . Warping
- B64C3/54 . . Varying in area (flaps extendable to increase camber [B64C3/44](#))
- B64C3/54F . . . [N: by foldable elements] [N1010]
- B64C3/56 . . Folding or collapsing to reduce overall dimensions of aircraft
  
- B64C3/58 . provided with fences or spoilers (adjustable for control purposes [B64C9/00](#))
  
- B64C5/00** . **Stabilising surfaces** (attaching stabilising surfaces to fuselage [B64C1/26](#))

- B64C5/02 . Tailplanes ([fins B64C5/06](#))
- B64C5/04 . Noseplanes
- B64C5/06 . Fins ([specially for wings B64C5/08](#))
- B64C5/08 . mounted on or supported by wings
- B64C5/10 . adjustable
- B64C5/12 . . for retraction against or within fuselage or nacelle
- B64C5/14 . . Varying angle of sweep
- B64C5/16 . . about spanwise axes
- B64C5/18 . . in area ([attaching stabilising surfaces to fuselage B64C1/26](#))

#### **B64C7/00 Structures or fairings not otherwise provided for**

- B64C7/02 . Nacelles

#### **B64C9/00 Adjustable control surfaces or members, e.g. rudders ([trimming stabilising surfaces B64C5/10](#))**

- B64C9/02 . Mounting or supporting thereof
- B64C9/04 . with compound dependent movements
- B64C9/06 . with two or more independent movements
- B64C9/08 . bodily displaceable ([varying camber of wings B64C3/44](#))
- B64C9/10 . one surface adjusted by movement of another, e.g. servo tabs ([B64C9/04 takes precedence; adjusting surfaces of different type or function B64C9/12](#))
- B64C9/12 . surfaces of different type or function being simultaneously adjusted
- B64C9/14 . forming slots ([boundary-layer control B64C21/00](#))
- B64C9/14B . . [N: [at an other wing location than the rear or the front \(wings provided with fixed fences or spoilers B64C3/58\)](#)] [N0404] [M1105]
- B64C9/16 . . at the rear of the wing
- B64C9/18 . . . by single flaps
- B64C9/20 . . . by multiple flaps
- B64C9/22 . . at the front of the wing
- B64C9/24 . . . by single flap
- B64C9/26 . . . by multiple flaps
- B64C9/28 . . by flaps at both the front and rear of the wing operating in unison
- B64C9/30 . Balancing hinged surfaces, e.g. dynamically
- B64C9/32 . Air braking surfaces ([braking by parachutes B64D17/80](#))

- B64C9/32A . . [N: associated with wings] [N1105]
- B64C9/32F . . [N: associated with fuselages] [N1105]
- B64C9/34 . collapsing or retracting against or within other surfaces or other members
- B64C9/36 . . the members being fuselages or nacelles
- B64C9/38 . Jet flaps
- B64C11/00** **Propellers, e.g. of ducted type; Features common to propellers and rotors for rotorcraft** ([rotors specially adapted for rotorcraft B64C27/32](#))
- [N: **Note:**  
Documents classified in [B64C11/00B](#) - [B64C11/00L](#) which also contain relevant information, covered by other subgroups of [B64C11/00](#), are also classified in the appropriate subgroup of [B64C11/00](#)  
]
- B64C11/00B . [N: Shrouded propellers]
- B64C11/00C . [N: Braking propellers, e.g. for measuring the power output of an engine]
- B64C11/00D . [N: Variable-diameter propellers; Mechanisms therefor]
- B64C11/00F . [N: Spiral-shaped propellers]
- B64C11/00G . [N: Paddle wheels]
- B64C11/00H . [N: Propulsive discs, i.e. discs having the surface specially adapted for propulsion purposes]
- B64C11/00L . [N: characterised by vibration absorbing or balancing means (**for rotorcraft** [B64C27/00B](#))]
- B64C11/02 . Hub construction
- B64C11/04 . . Blade mountings
- B64C11/06 . . . for variable-pitch blades
- B64C11/06B . . . . [N: variable only when stationary]
- B64C11/08 . . . for non-adjustable blades
- B64C11/10 . . . . rigid
- B64C11/12 . . . . flexible
- B64C11/14 . . Spinners
- B64C11/16 . Blades
- B64C11/18 . . Aerodynamic features
- B64C11/20 . . Constructional features
- B64C11/20B . . . [N: for protecting blades, e.g. coating]
- B64C11/22 . . . Solid blades
- B64C11/24 . . . Hollow blades
- B64C11/26 . . . Fabricated blades

- B64C11/28 . . . Collapsible or foldable blades
- B64C11/30 . Blade pitch-changing mechanisms
  - [N: **Note**  
Groups [B64C11/30B](#), [B64C11/30C](#), [B64C11/30D](#) and [B64C11/30F](#) take precedence over [B64C11/32](#), [B64C11/38](#) and [B64C11/44](#)]
- B64C11/30B . . [N: characterised by blade position indicating means]
- B64C11/30C . . [N: characterised by comprising a governor]
- B64C11/30D . . [N: characterised by being influenced by other control systems, e.g. fuel supply]
- B64C11/30F . . [N: specially adapted for contrarotating propellers]
- B64C11/30F1 . . . [N: automatic]
- B64C11/32 . . mechanical
  - B64C11/32B . . . [N: comprising feathering, braking or stopping systems]
  - B64C11/34 . . . automatic
    - B64C11/34B . . . . [N: actuated by the centrifugal force or the aerodynamic drag acting on the blades]
    - B64C11/34C . . . . [N: actuated by the centrifugal force or the aerodynamic drag acting on auxiliary masses or surfaces]
  - B64C11/36 . . . non-automatic
  - B64C11/38 . . fluid, e.g. hydraulic
    - B64C11/38B . . . [N: comprising feathering, braking or stopping systems]
  - B64C11/40 . . . automatic
  - B64C11/42 . . . non-automatic
  - B64C11/44 . . electric
- B64C11/46 . Arrangements of or constructional features peculiar to multiple propellers [N: ([B64C11/30F](#) takes precedence)]
- B64C11/48 . . Units of two or more coaxial propellers
- B64C11/50 . . Phase synchronisation between multiple propellers
  
- B64C13/00 Control systems or transmitting systems for actuating flying-control surfaces, lift-increasing flaps, air brakes, or spoilers**
- B64C13/02 . Initiating means
  - B64C13/04 . . actuated personally
    - B64C13/06 . . . adjustable to suit individual persons
    - B64C13/08 . . . Trimming zero positions
    - B64C13/10 . . . comprising warning devices
    - B64C13/12 . . . Dual control apparatus
    - B64C13/14 . . . lockable (locking in position to suit individual persons [B64C13/06](#))
    - B64C13/16 . . actuated automatically, e.g. responsive to gust detectors
    - B64C13/18 . . . using automatic pilot
    - B64C13/20 . . . using radiated signals
    - B64C13/22 . . . readily revertible to personal control

- B64C13/24 . Transmitting means
- B64C13/26 . . without power amplification or where power amplification is irrelevant
- B64C13/28 . . . mechanical
- B64C13/30 . . . . using cable, chain, or rod mechanisms
- B64C13/32 . . . . using cam mechanisms
- B64C13/34 . . . . using toothed gearing
- B64C13/36 . . . fluid
- B64C13/38 . . with power amplification
- B64C13/40 . . . using fluid pressure
- B64C13/42 . . . . having duplication or stand-by provisions
- B64C13/44 . . . . overriding of personal controls; with automatic return to inoperative position
- B64C13/46 . . . . with artificial feel
- B64C13/48 . . . . characterised by the fluid being gaseous
- B64C13/50 . . . using electrical energy
- B64C13/50C . . . . [N: Fly-by-Wire]

**B64C15/00 Attitude, flight direction, or altitude control by jet reaction**

- B64C15/02 . the jets being propulsion jets
- B64C15/12 . . the power plant being tiltable
- B64C15/14 . the jets being other than main propulsion jets ([jet flaps B64C9/38](#))

**B64C17/00 Aircraft stabilisation not otherwise provided for**

- B64C17/02 . by gravity or inertia-actuated apparatus
- B64C17/04 . . by pendular bodies
- B64C17/06 . . by gyroscopic apparatus ([automatic pilot control B64C13/18](#))
- B64C17/08 . by ballast supply or discharge ([for lighter-than-air aircraft B64B](#))
- B64C17/10 . Transferring fuel to adjust trim

**B64C19/00 Aircraft control not otherwise provided for**

- B64C19/02 . Conjoint controls

**Guide heading: Influencing air-flow over aircraft surfaces, not otherwise provided for**

**B64C21/00 Influencing air-flow over aircraft surfaces by affecting boundary-layer flow ([boundary-layer control in general F15D](#))**

- B64C21/02 . by use of slot, ducts, porous areas, or the like

- B64C21/02B . . [N: for simultaneous blowing and sucking][N0404]
- B64C21/04 . . for blowing ([B64C21/08](#) takes precedence)
- B64C21/06 . . for sucking ([B64C21/08](#) takes precedence)
- B64C21/08 . . adjustable

- B64C21/10 . using other surface properties, e.g. roughness

#### **B64C23/00**      **Influencing air-flow over aircraft surfaces, not otherwise provided for**

- B64C23/00A . [N: by other means not covered by groups [B64C23/02](#) to [B64C23/08](#), e.g. by electric charges, magnetic panels, piezoelectric elements, static charges or ultrasounds][C0404]
- B64C23/02 . by means of rotating members of cylindrical or similar form
- B64C23/04 . by generating shock waves
- B64C23/06 . by generating vortices
- B64C23/06A . . [N: at the wing tip, e.g. winglets, splines] [N9707]
- B64C23/08 . using Magnus effect

#### **B64C25/00**      **Alighting gear (air-cushion alighting gear [B60V3/08](#))**

- B64C25/00B . [N: Devices not provided for in the groups [B64C25/02](#) to [B64C25/68](#)]
- B64C25/02 . Undercarriages
- B64C25/04 . . Arrangement or disposition on aircraft
- B64C25/06 . . fixed
- B64C25/08 . . non-fixed, e.g. jettisonable
- B64C25/10 . . . retractable, foldable, or the like
- B64C25/12 . . . . sideways
- B64C25/14 . . . . fore-and-aft
- B64C25/16 . . . . Fairings movable in conjunction with undercarriage elements
- B64C25/18 . . . . Operating mechanisms
- B64C25/20 . . . . . mechanical
- B64C25/22 . . . . . fluid
- B64C25/24 . . . . . electric
- B64C25/26 . . . . . Control or locking systems therefor
- B64C25/28 . . . . . with indicating or warning devices
- B64C25/30 . . . . . emergency actuated
- B64C25/32 . characterised by the ground or like engaging elements ([arrestor hooks \[B64C25/68\]\(#\)](#))
- B64C25/34 . . wheeled type, e.g. multi-wheeled bogies
- B64C25/36 . . . Arrangements or adaptations of wheels, tyres, or axles in general ([construction of wheels or axles \[B60B\]\(#\); construction of tyres in general \[B60C\]\(#\)](#))

- B64C25/38 . . . Endless-track type
- B64C25/40 . . . the elements being rotated before touch-down
- B64C25/40P . . . . [N: Powered wheels, e.g. for taxing] [N0811]
- B64C25/42 . . . Arrangements or adaptations of brakes (the ground braking force being regulated, at least in part, by a speed condition, e.g. acceleration or deceleration of the ground engaging alighting gear, [B60T8/32](#)) [M1105]
- B64C25/42B . . . . [N: Braking devices acting by reaction of gaseous medium ([B64C25/42E](#) takes precedence; using rockets [B64D27/02B](#))] [C9709]
- B64C25/42E . . . . [N: Braking devices providing an automatic sequence of braking] [N9709]
- B64C25/44 . . . . Actuating mechanisms
- B64C25/44B . . . . . [N: Brake regulators for preventing somersaulting] [N9709]
- B64C25/46 . . . . . Brake regulators for preventing skidding or aircraft somersaulting [N: (anti-skidding regulators; electric or electronic controllers therefor [B60T8/17P3](#))] [C9709]
- B64C25/48 . . . . . differentially operated for steering purposes
- B64C25/50 . . . Steerable undercarriages; Shimmy damping (steering devices applicable to land vehicles [B62D](#))
- B64C25/50S . . . . [N: Shimmy damping] [N1105]
- B64C25/52 . . . Skis or runners
- B64C25/54 . . . Floats
- B64C25/56 . . . . inflatable (connection of valves to inflatable elastic bodies [B60C29/00](#)) [C9501]
- B64C25/58 . . . Arrangements or adaptations of shock-absorbers or springs (shimmy dampers [B64C25/50](#); vehicle suspension arrangements in general [B60G](#); shock absorber per se [F16F](#))
- B64C25/60 . . . . Oleo legs
- B64C25/62 . . . . Spring shock-absorbers; Springs
- B64C25/64 . . . . . using rubber or like elements
- B64C25/66 . . . Convertible alighting gear; Combinations of different kinds of ground or like engaging elements
- B64C25/68 . . . Arrester hooks (arresting gear, e.g. on aircraft carriers [B64F](#))

**Guide heading:** **Aircraft kinds and components not otherwise provided for**

**B64C27/00** **Rotorcraft; Rotors peculiar thereto** (alighting gear [B64C25/00](#))

- B64C27/00B . . . [N: Vibration damping devices]
- B64C27/00D . . . [N: Safety devices]
- B64C27/00D2 . . . . [N: adapted for detection of blade cracks] [N1204]
- B64C27/00E . . . [N: Rotors tracking or balancing devices]
- B64C27/02 . . . Gyroplanes
- B64C27/02B . . . . [N: Rotor or rotor head construction (for helicopters [B64C27/32](#))] [N9706]
- B64C27/02B2 . . . . . [N: Devices for folding or adjusting the blades] [N9706]

- B64C27/02B3 . . . [N: Construction of the blades; Coating of the blades] [N9706]
- B64C27/02B4 . . . [N: Devices for shifting the rotor axis] [N9706]
- B64C27/02B5 . . . [N: Rotor drives, in particular for taking off; Combination of autorotation rotors and driven rotors] [N9706]
- B64C27/02B6 . . . [N: Devices for converting a fixed wing into an autorotation rotor and viceversa] [N9706]
- B64C27/02C . . [N: Control devices using other means than the rotor] [N9706]
- B64C27/02D . . [N: Other constructional elements; Rotor balancing] [N9706]
  
- B64C27/04 . Helicopters
- B64C27/06 . . with single rotor
- B64C27/08 . . with two or more rotors
- B64C27/10 . . . arranged coaxially
- B64C27/12 . . Rotor drives
- B64C27/14 . . . Direct drive between power plant and rotor hub
- B64C27/16 . . . Drive of rotors by means, e.g. propellers, mounted on rotor blades
- B64C27/18 . . . . the means being jet-reaction apparatus
  
- B64C27/20 . Rotorcraft characterised by having shrouded rotors, e.g. flying platforms
  
- B64C27/22 . Compound rotorcraft, i.e. aircraft using in flight the features of both aeroplane and rotorcraft
- B64C27/24 . . with rotor blades fixed in flight to act as lifting surfaces
- B64C27/26 . . characterised by provision of fixed wings
- B64C27/28 . . with forward-propulsion propellers pivotable to act as lifting rotors
- B64C27/30 . . with provision for reducing drag of inoperative rotor
  
- B64C27/32 . Rotors ([features common to rotors and propellers B64C11/00](#))
- B64C27/32B . . [N: Blade travel limiting devices, e.g. droop stops]
- B64C27/32C . . [N: Circulation-control rotors]
- B64C27/32D . . [N: Retention means relieving the stress from the arm, e.g. tie-bars]
- B64C27/33 . . having flexing arms
- B64C27/35 . . having elastomeric joints
- B64C27/37 . . having articulated joints ([B64C27/33](#), [B64C27/35](#) take precedence)
- B64C27/39 . . . with individually articulated blades, i.e. with flapping or drag hinges
- B64C27/41 . . . with flapping or universal joint, common to the blades
- B64C27/43 . . . . see-saw type, i.e. two-bladed rotor
- B64C27/45 . . . with a feathering hinge only
- B64C27/46 . . Blades
- B64C27/46B . . . [N: Blade tips] [N9610]
- B64C27/467 . . . Aerodynamic features [N: ([B64C27/46B](#) takes precedence)] [N9501] [C9610]
- B64C27/473 . . . Constructional features [N: ([B64C27/46B](#) takes precedence)] [N9501] [C9610]
- B64C27/48 . . . . Root attachment to rotor head [C9501]
- B64C27/50 . . . . Blades foldable to facilitate stowage of aircraft [C9501]

- B64C27/51 . [N: Damping of blade movements]
- B64C27/52 . Tilting of rotor bodily relative to fuselage (of see-saw type construction [B64C27/43](#))
- B64C27/54 . Mechanisms for controlling blade adjustment or movement relative to rotor head, e.g. lag-lead movement
- B64C27/56 . . Initiating means, e.g. actuated personally
- B64C27/57 . . . automatic or condition responsive, e.g. responsive to rotor speed, torque or thrust
- B64C27/58 . . Transmitting means
- B64C27/59 . . . mechanical
- B64C27/605 . . . . including swash plate, spider or cam mechanisms
- B64C27/615 . . . . including flaps mounted on blades
- B64C27/625 . . . . including rotating masses or servo rotors
- B64C27/635 . . . . specially for controlling lag-lead movements of blades
- B64C27/64 . . . . using fluid pressure
- B64C27/68 . . . . using electrical energy
- B64C27/72 . . Means acting on blades
- B64C27/78 . . in association with pitch adjustment of blades of anti-torque rotor
- B64C27/80 . . for differential adjustment of blade pitch between two or more lifting rotors
- B64C27/82 . characterised by the provision of an auxiliary rotor or fluid-jet device for counter-balancing lifting rotor torque or changing direction of rotorcraft

**B64C29/00** **Aircraft capable of landing or taking-off vertically** (attitude, flight direction, or altitude control by jet reaction [B64C15/00](#); rotorcraft [B64C27/00](#); air-cushion vehicles [B60V](#))

- B64C29/00B . [N: having its flight directional axis horizontal when grounded]
- B64C29/00B2 . . [N: the lift during taking-off being created by free or ducted propellers or by blowers]
- B64C29/00B2B . . . [N: the propellers being fixed relative to the fuselage]
- B64C29/00B2C . . . [N: the propellers being tiltable relative to the fuselage]
- B64C29/00B3 . . [N: the lift during taking-off being created by jet motors]
- B64C29/00B3B . . . [N: the motors being fixed relative to the fuselage]
- B64C29/00B3C . . . [N: with vertical jet]
- B64C29/00B3D . . . [N: with horizontal jet and jet deflector]
- B64C29/00B3E . . . [N: the motors being tiltable relative to the fuselage]
- B64C29/00B4 . . [N: the lift during taking-off being created by several motors of different type]
- B64C29/00C . [N: Accessories not provided for elsewhere]
- B64C29/02 . having its flight directional axis vertical when grounded
- B64C29/04 . . characterised by jet-reaction propulsion

**B64C30/00** **Supersonic-type aircraft**

- B64C31/00**      **Aircraft intended to be sustained without power plant; Powered hang-glider-type aircraft; Microlight-type aircraft** [C9501]
- B64C31/02      .    Gliders, e.g. sailplanes ([hang-gliders B64C31/028](#)) [C9501]
- B64C31/024      .    .    with auxiliary power plant [N9501]
- B64C31/028      .    Hang-glider-type aircraft; Microlight-type aircraft [N9501]
- B64C31/028B      .    .    [N: Safety devices] [N9501]
- B64C31/032      .    .    having delta shaped wing [N9501]
- B64C31/036      .    .    having parachute-type wing ([parachutes B64D17/00](#)) [N9501]
- B64C31/04      .    Man-powered aircraft ([ornithopters B64C33/00](#)) [C9501]
- B64C31/06      .    Kites ([hang-gliders B64C31/028](#); [toy aspects A63H27/08](#); [towed targets F41J](#) [N: for propelling boats [B63H9/06E](#); for propelling wind driven boards, control means and harnesses therefor [B63B35/79W4B](#)]) [C0310]
- B64C33/00**      **Ornithopters**
- B64C33/02      .    Wings; Actuating mechanisms therefor
- B64C33/02B      .    .    [N: the entire wing moving either up or down]
- B64C35/00**      **Flying-boats; Seaplanes** ([alighting gear B64C25/00](#))
- B64C35/00A      .    [N: with means for increasing stability on the water] [N9809]
- B64C35/00A1      .    .    [N: using adjustable auxiliary floats] [N9809]
- B64C35/00A2      .    .    [N: using auxiliary floats at the wing tips] [N9809]
- B64C35/00B      .    [N: with propellers, rudders or brakes acting in the water] [N9809]
- B64C35/00C      .    [N: with lift generating devices] [N9809]
- B64C35/00D      .    [N: Specific control surfaces therefor] [N9809]
- B64C35/00P      .    [N: Amphibious sea planes] [N9809]
- B64C37/00**      **Convertible aircraft** ([vehicles capable of travelling in or on different media B60E](#))
- B64C37/02      .    Flying units formed by separate aircraft ([towing, air-refuelling, or aircraft-carrying aircraft B64D](#))
- B64C39/00**      **Aircraft not otherwise provided for**
- B64C39/00B      .    [N: Flying saucers]
- B64C39/00C      .    [N: with wings, paddle wheels, bladed wheels, moving or rotating in relation to the fuselage ([rotorcraft B64C27/00](#), [ornithopters B64C33/00](#))]

- B64C39/00C1 . . [N: about a horizontal transversal axis]
- B64C39/00C2 . . [N: about a vertical axis]
- B64C39/00C3 . . [N: about a longitudinal axis]
  
- B64C39/02 . characterised by special use
- B64C39/02B . . [N: Tethered aircraft]
- B64C39/02C . . [N: of the remote controlled vehicle type, i.e. RPV]
- B64C39/02D . . [N: for use as personal propulsion unit]
- B64C39/02E . . [N: Micro-sized aircraft] [N9912]
  
- B64C39/04 . having multiple fuselages or tail booms
  
- B64C39/06 . having disc- or ring-shaped wings [N: ([B64C39/00B](#) takes precedence)]
- B64C39/06B . . [N: having annular wings]
- B64C39/06B1 . . . [N: with radial airflow]
- B64C39/06C . . [N: having channel wings]
- B64C39/06D . . [N: having multiple wings joined at the tips]
  
- B64C39/08 . having multiple wings [N: ([B64C39/06](#) takes precedence)]
  
- B64C39/10 . All-wing aircraft [N: ([B64C39/00B](#) takes precedence)]
  
- B64C39/12 . Canard-type aircraft