## COOPERATIVE PATENT CLASSIFICATION

### B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

### TRANSPORTING

#### B64 AIRCRAFT; AVIATION; COSMONAUTICS

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

**NOTE**

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.

**WARNINGS**

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   - B64C 35/02 covered by B64C 35/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

### Aircraft structures or fairings (boundary-layer controls B64C 21/00)

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/00</td>
<td>Fuselages; Constructional features common to fuselages, wings, stabilising surfaces and the like (aerodynamical features common to fuselages, wings, stabilising surfaces, and the like B64C 23/00; flight-deck installations B64D)</td>
</tr>
<tr>
<td>1/0009</td>
<td>(Aerodynamic aspects)</td>
</tr>
<tr>
<td>2001/0018</td>
<td>[comprising two decks adapted for carrying passengers only]</td>
</tr>
<tr>
<td>2001/0027</td>
<td>. . . [arranged one above the other]</td>
</tr>
<tr>
<td>2001/0036</td>
<td>. . . [arranged side by side at the same level]</td>
</tr>
<tr>
<td>2001/0045</td>
<td>. [Fuselages characterised by special shapes]</td>
</tr>
<tr>
<td>2001/0054</td>
<td>. [Fuselage structures substantially made from particular materials]</td>
</tr>
<tr>
<td>2001/0063</td>
<td>. . . [from wood]</td>
</tr>
<tr>
<td>2001/0072</td>
<td>. . . [from composite materials]</td>
</tr>
<tr>
<td>2001/0081</td>
<td>. . . [from metallic materials]</td>
</tr>
<tr>
<td>2001/009</td>
<td>. [comprising decompression panels or valves for pressure equalisation in fuselages or floors]</td>
</tr>
</tbody>
</table>

1/06 . Frames; Stringers; Longerons { Fuselage sections }

1/061 . [Frames]

1/062 . . . [specially adapted to absorb crash loads]

1/063 . . . [Folding or collapsing to reduce overall dimensions, e.g. foldable tail booms (folding or collapsing wings B64C 3/56)]

1/064 . . . [Stringers; Longerons]

1/065 . . . [Spars]

1/066 . . . [Interior liners]

1/067 . . . [comprising means for preventing icing or condensation conditions]

1/068 . . . [Fuselage sections]

1/069 . . . [Joining arrangements therefor]

1/08 . . . [Geodetic or other open-frame structures]

1/10 . . . [Bulkheads]

1/12 . . . Construction or attachment of skin panels

1/14 . Windows; Doors; Hatch covers or access panels; Surrounding frame structures; Canopies; Windscreens { accessories therefor, e.g. pressure sensors, water deflectors, hinges, seals, handles, latches, windscreen wipers } (fairings movable in conjunction with undercarriage elements B64C 25/16; bomb doors B64D 1/06)

1/1407 . . . [Doors; surrounding frames]

1/1415 . . . [Cargo doors, e.g. incorporating ramps]

1/1423 . . . [Passenger doors]

1/143 . . . . [of the plug type]

1/1438 . . . . [of the sliding type]

1/1446 . . . . [Inspection hatches (for engine cowls B64D 29/08)]

1/1453 . . . . [Drain masts]

1/1461 . . . . [Structures of doors or surrounding frames]

1/1469 . . . . [Doors between cockpit and cabin]

1/1476 . . . . [Canopies; Windscreens or similar transparent elements]

1/1484 . . . . [Windows (B64C 1/1492 takes precedence)]

1/1492 . . . . [Structure and mounting of the transparent elements in the window or windscreen]

1/16 . . . specially adapted for mounting power plant

1/18 . . . Floors

1/20 . . . specially adapted for freight

1/22 . . . Other structures integral with fuselages to facilitate loading {, e.g. cargo bays, cranes (cargo door type ramps B64C 1/1415)}

1/24 . . . Steps mounted on, and retractable within, fuselages (readily removable B64D 9/00)

1/26 . . . Attaching the wing or tail units or stabilising surfaces

1/28 . . . Parts of fuselage relatively movable to improve pilots view

1/30 . . . Parts of fuselage relatively movable to reduce overall size for storage
Aircraft structures or fairings

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1/32 . Severable or jettisonable parts of fuselage facilitating emergency escape (ejector seats B64D 25/10)

1/34 . comprising inflatable structural components (connection of valves to inflatable elastic bodies B60C 29/00)

1/36 . adapted to receive antennas or radomes (antennas or radomes per se H01Q)

1/38 . Constructions adapted to reduce effects of aerodynamic or other external heating (cooling structural parts of aircrafts with air flow B64D 13/006)

1/40 . Sound or heat insulation, e.g., using insulation blankets (insulating elements for vehicles, in general B60R 5/32)

1/403 ... [Arrangement of fasteners specially adapted therefor, e.g., of clips (in vehicles in general B60R 13/0206)]

1/406 ... [in combination with supports for lines, e.g., pipes or cables (arrangement of elements of electric or fluid circuits specially adapted for vehicles, in general B60R 16/00; supports for pipes, cables or protective tubing F16L 3/00; installations of electric cables or lines in vehicles H02G 3/00)]

3/00 Wings (stabilising surfaces B64C 5/00; ornithopter wings B64C 33/02)

3/10 . Shape of wings

3/14 . Aerofoil profile

3/141 ... [Circulation Control Airfoils]

2003/142 ... [with variable camber along the airfoil chord]

2003/143 ... [comprising interior channels]

2003/144 ... [including a flat surface on either the extrados or intrados]

2003/145 ... [comprising ‘Gurney’ flaps]

2003/146 ... [comprising leading edges of particular shape]

2003/147 ... [comprising trailing edges of particular shape]

2003/148 ... [comprising protuberances, e.g., for modifying boundary layer flow]

2003/149 ... [for supercritical or transonic flow]

3/16 . Frontal aspect

3/18 . Spars; ribs; stringers (attaching wing unit to fuselage B64C 1/26)

3/182 ... [strings, longerons]

3/185 ... [spars]

3/187 ... [ribs]

3/20 . Integral or sandwich constructions (layered products or sandwich constructions in general B32B)

3/22 . Geodetic or other open-frame structures

3/24 . Moulded or cast structures

3/26 . Construction, shape, or attachment of separate skins, e.g., panels

3/28 . Leading or trailing edges attached to primary structures, e.g., forming fixed slots

3/30 . comprising inflatable structural components (connection of valves to inflatable elastic bodies B60C 29/00)

3/32 . specially adapted for mounting power plant

3/34 . Integrally-constructed tanks, e.g., for fuel (other aircraft fuel tanks or fuel systems B64D)

3/36 . Structures adapted to reduce effects of aerodynamic or other external heating (cooling structural parts of aircrafts with air flow B64D 13/006)

3/38 . Adjustment of complete wings or parts thereof

3/385 ... [Variable incidence wings]

3/40 . Varying angle of sweep

3/42 . Adjusting about chordwise axes

3/44 . Varying camber

2003/445 ... [by changing shape according to the speed, e.g., by morphing]

3/46 . by inflatable elements (connection of valves to inflatable elastic bodies B60C 29/00)

3/48 . by relatively-moveable parts of wing structures

3/50 . by leading or trailing edge flaps (ailerons B64C 9/00)

3/52 . Warping

3/54 . Varying in area (flaps extendable to increase camber B64C 3/44)

2003/543 ... [by changing shape according to the speed, e.g., by morphing]

3/546 ... [by foldable elements]

3/56 . Folding or collapsing to reduce overall dimensions of aircraft

3/58 . provided with fences or spoilers (adjustable for control purposes B64C 9/00)

5/00 Stabilising surfaces (attaching stabilising surfaces to fuselage B64C 1/26)

5/02 . Tailplanes (fins B64C 5/06)

5/04 . Noseplanes

5/06 . Fins (especially for wings B64C 5/08)

5/08 . mounted on or supported by wings

5/10 . adjustable

5/12 . for retraction against or within fuselage or nacelle

5/14 . Varying angle of sweep

5/16 . about spanwise axes

5/18 . in area (attaching stabilising surfaces to fuselage B64C 1/26)

7/00 Structures or fairings not otherwise provided for

7/02 . Nacelles

9/00 Adjustable control surfaces or members, e.g., rudders (trimming stabilising surfaces B64C 5/10)

2009/005 ... [Ailerons]

9/02 . Mounting or supporting thereof

9/04 . with compound dependent movements

9/06 . with two or more independent movements

9/08 . bodily displacable (varying camber of wings B64C 3/44)

9/10 . one surface adjusted by movement of another, e.g., servo tabs (B64C 9/04 takes precedence; adjusting surfaces of different type or function B64C 9/12)

9/12 . surfaces of different type or function being simultaneously adjusted

9/14 ... [forming slots (boundary-layer control B64C 21/00)]

2009/143 ... [comprising independently adjustable elements for closing or opening the slot between the main wing and leading or trailing edge flaps]

9/146 ... [at an other wing location than the rear or the front (wings provided with fixed fences or spoilers B64C 3/58)]

9/16 . at the rear of the wing

9/18 ... by single flaps

9/20 ... by multiple flaps

9/22 ... at the front of the wing

9/24 ... by single flap

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CPC - 2019.08
Aircraft structures or fairings

11/00 Propellers, e.g. of ducted type; Features common
to propellers and rotors for rotorcraft (rotors
specially adapted for rotorcraft B64C 27/32)

NOTE
Documents classified in
B64C 11/001 - B64C 11/008 which also
contain relevant information, covered by other
subgroups of B64C 11/00, are also classified in the
appropiate subgroup of B64C 11/00

11/001 . . . (Shrouded propellers)
11/002 . . . (Braking propellers, e.g. for measuring the power
output of an engine)
11/003 . . . (Variable-diameter propellers; Mechanisms
therefor)
11/005 . . . (Spiral-shaped propellers)
11/006 . . . (Paddle wheels)
11/007 . . . (Propulsive discs, i.e discs having the surface
specialy adapted for propulsion purposes)
11/008 . . . (characterised by vibration absorbing or balancing
means (for rotorcraft B64C 27/001))
11/02 . Hub construction
11/04 . . . Blade mountings
11/06 . . . for variable-pitch blades
11/065 . . . . . . . . . . (variable only when stationary)
11/08 . . . for non-adjustable blades
11/10 . . . . . . . . rigid
11/12 . . . . . . . . flexible
11/14 . . . Spinners
11/16 . . . Blades
11/18 . . Aerodynamic features
11/20 . . Constructional features
11/205 . . . . (for protecting blades, e.g coating)
11/22 . . . Solid blades
11/24 . . . Hollow blades
11/26 . . . Fabricated blades
11/28 . . . Collapsible or foldable blades
11/30 . . Blade pitch-changing mechanisms

NOTE
Groups B64C 11/301, B64C 11/303,
B64C 11/305 and B64C 11/306 take precedence
over B64C 11/32, B64C 11/38 and B64C 11/44

11/301 . . . (characterised by blade position indicating
means)
11/303 . . . (characterised by comprising a governor)
11/305 . . . (characterised by being influenced by other
control systems, e.g. fuel supply)
11/306 . . . (specially adapted for contrarotating propellers)
11/308 . . . (automatic)

11/32 . . . mechanical
11/325 . . . [comprising feathering, braking or stopping
systems]
11/34 . . . automatic
11/343 . . . . . . (actuated by the centrifugal force or the
aerodynamic drag acting on the blades)
11/346 . . . . . . (actuated by the centrifugal force or the
aerodynamic drag acting on auxiliary masses
or surfaces)
11/36 . . . non-automatic
11/38 . . fluid, e.g. hydraulic
11/385 . . . [comprising feathering, braking or stopping
systems]
11/40 . . . automatic
11/42 . . . non-automatic
11/44 . . . electric
11/46 . . . Arrangements of or constructional features peculiar
to multiple propellers { (B64C 11/306 takes
precedence})
11/48 . . . Units of two or more coaxial propellers
11/50 . . . Phase synchronisation between multiple
propellers

13/00 Control systems or transmitting systems for
actuating flying-control surfaces, lift-increasing
flaps, air brakes, or spoilers

13/02 . . . Initiating means
13/04 . . . . actuated personally

WARNING
Group B64C 13/04 is impacted by
reclassification into groups B64C 13/042,
B64C 13/0421, B64C 13/0423, B64C 13/0425,
B64C 13/0427, and B64C 13/044.

All groups listed in this Warning should be
considered in order to perform a complete
search.

13/042 . . . . [operated by hand]

WARNING
Groups B64C 13/042, B64C 13/0421,
B64C 13/0423, B64C 13/0425, and
B64C 13/0427 are incomplete pending
reclassification of documents from groups
B64C 13/04, B64C 13/046, B64C 13/08,
B64C 13/10, B64C 13/12, and B64C 13/14.

All groups listed in this Warning should be
considered in order to perform a complete
search.

13/0421 . . . . {control sticks for primary flight controls}
13/0423 . . . . {yokes or steering wheels for primary flight
controls}
13/0425 . . . . {for actuating trailing or leading edge flaps,
air brakes or spoilers}
13/0427 . . . . {for actuating trim}
Aircraft structures or fairings

13/044 ... [operated by feet, e.g. pedals]

**WARNING**

Group B64C 13/044 is incomplete pending reclassification of documents from groups B64C 13/04, B64C 13/06, B64C 13/08, B64C 13/10, B64C 13/12, and B64C 13/14.

All groups listed in this Warning should be considered in order to perform a complete search.

13/06 ... adjustable to suit individual persons

**WARNING**

Group B64C 13/06 is impacted by reclassification into groups B64C 13/042, B64C 13/0421, B64C 13/0423, B64C 13/0425, B64C 13/0427, and B64C 13/044.

All groups listed in this Warning should be considered in order to perform a complete search.

13/08 ... Trimming zero positions

**WARNING**

Group B64C 13/08 is impacted by reclassification into groups B64C 13/042, B64C 13/0421, B64C 13/0423, B64C 13/0425, B64C 13/0427, and B64C 13/044.

All groups listed in this Warning should be considered in order to perform a complete search.

13/10 ... comprising warning devices

**WARNING**

Group B64C 13/10 is impacted by reclassification into groups B64C 13/042, B64C 13/0421, B64C 13/0423, B64C 13/0425, B64C 13/0427, and B64C 13/044.

All groups listed in this Warning should be considered in order to perform a complete search.

13/12 ... Dual control apparatus

**WARNING**

Group B64C 13/12 is impacted by reclassification into groups B64C 13/042, B64C 13/0421, B64C 13/0423, B64C 13/0425, B64C 13/0427, and B64C 13/044.

All groups listed in this Warning should be considered in order to perform a complete search.

13/14 ... lockable (locking in position to suit individual persons B64C 13/06)

**WARNING**

Group B64C 13/14 is impacted by reclassification into groups B64C 13/042, B64C 13/0421, B64C 13/0423, B64C 13/0425, B64C 13/0427, and B64C 13/044.

All groups listed in this Warning should be considered in order to perform a complete search.

13/16 ... actuated automatically, e.g. responsive to gust detectors

13/18 ... using automatic pilot

13/20 ... using radiated signals

13/22 ... readily reversible to personal control

13/24 ... Transmitting means

13/26 ... without power amplification or where power amplification is irrelevant

13/28 ... mechanical

**WARNING**

Groups B64C 13/28, B64C 13/30, B64C 13/32, and B64C 13/34 are impacted by reclassification into groups B64C 13/341, B64C 13/343, and B64C 13/345.

All groups listed in this Warning should be considered in order to perform a complete search.

13/30 ... using cable, chain, or rod mechanisms

13/32 ... using cam mechanisms

13/34 ... using toothed gearing

13/341 ... [having duplication or stand-by provisions]

**WARNING**

Group B64C 13/341 is incomplete pending reclassification of documents from groups B64C 13/28, B64C 13/30, B64C 13/32, B64C 13/34, B64C 13/42, B64C 13/44, and B64C 13/46.

All groups listed in this Warning should be considered in order to perform a complete search.

13/343 ... [overriding of personal controls; with automatic return to inoperative position]

**WARNING**

Group B64C 13/343 is incomplete pending reclassification of documents from groups B64C 13/28, B64C 13/30, B64C 13/32, B64C 13/34, B64C 13/42, B64C 13/44, and B64C 13/46.

All groups listed in this Warning should be considered in order to perform a complete search.
Aircraft structures or fairings

13/345 . . . . { with artificial feel }

**WARNING**

Group B64C 13/345 is incomplete pending reclassification of documents from groups B64C 13/28, B64C 13/30, B64C 13/32, B64C 13/34, B64C 13/42, B64C 13/44, and B64C 13/46.

All groups listed in this Warning should be considered in order to perform a complete search.

13/36 . . . fluid

13/38 . . . with power amplification

13/40 . . . using fluid pressure

**WARNING**

Group B64C 13/40 is impacted by reclassification into groups B64C 13/504, B64C 13/505, B64C 13/506, and B64C 13/507.

All groups listed in this Warning should be considered in order to perform a complete search.

13/42 . . . . having duplication or stand-by provisions

**WARNING**

Group B64C 13/42 is impacted by reclassification into groups B64C 13/341, B64C 13/343, B64C 13/345, B64C 13/504, B64C 13/505, B64C 13/506, and B64C 13/507.

All groups listed in this Warning should be considered in order to perform a complete search.

13/44 . . . . overriding of personal controls; with automatic return to inoperative position

**WARNING**

Group B64C 13/44 is impacted by reclassification into groups B64C 13/341, B64C 13/343, B64C 13/345, B64C 13/504, B64C 13/505, B64C 13/506, and B64C 13/507.

All groups listed in this Warning should be considered in order to perform a complete search.

13/46 . . . . with artificial feel

**WARNING**

Group B64C 13/46 is impacted by reclassification into groups B64C 13/341, B64C 13/343, B64C 13/345, B64C 13/504, B64C 13/505, B64C 13/506, and B64C 13/507.

All groups listed in this Warning should be considered in order to perform a complete search.

13/48 . . . . characterised by the fluid being gaseous

13/50 . . . . using electrical energy

**WARNING**

Group B64C 13/50 is impacted by reclassification into groups B64C 13/504, B64C 13/505, B64C 13/506, and B64C 13/507.

All groups listed in this Warning should be considered in order to perform a complete search.

13/503 . . . . { Fly-by-Wire }

**WARNING**

Group B64C 13/503 is impacted by reclassification into groups B64C 13/504, B64C 13/505, B64C 13/506, and B64C 13/507.

All groups listed in this Warning should be considered in order to perform a complete search.

13/504 . . . . { using electro-hydrostatic actuators [EHA's] }

**WARNING**

Group B64C 13/504 is incomplete pending reclassification of documents from groups B64C 13/40, B64C 13/42, B64C 13/44, B64C 13/46, B64C 13/50, and B64C 13/503.

Group B64C 13/504 is also impacted by reclassification into groups B64C 13/505, B64C 13/506, and B64C 13/507.

All groups listed in this Warning should be considered in order to perform a complete search.

13/505 . . . . { having duplication or stand-by provisions }

**WARNING**

Group B64C 13/505 is incomplete pending reclassification of documents from groups B64C 13/40, B64C 13/42, B64C 13/44, B64C 13/46, B64C 13/50, and B64C 13/503.

All groups listed in this Warning should be considered in order to perform a complete search.

13/506 . . . . { overriding of personal controls; with automatic return to inoperative position }

**WARNING**

Group B64C 13/506 is incomplete pending reclassification of documents from groups B64C 13/40, B64C 13/42, B64C 13/44, B64C 13/46, B64C 13/50, and B64C 13/503.

All groups listed in this Warning should be considered in order to perform a complete search.
13/057 . . . . [with artificial feel]

**WARNING**

Group B64C 13/507 is incomplete pending reclassification of documents from the following groups: B64C 13/40, B64C 13/42, B64C 13/44, B64C 13/46, B64C 13/50, and B64C 13/53. All groups listed in this Warning should be considered in order to perform a complete search.

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**15/00** Attitude, flight direction, or altitude control by jet reaction

15/02 . . . the jets being propulsion jets
15/12 . . . the power plant being tiltable
15/14 . . . the jets being other than main propulsion jets (jet flaps B64C 9/38)

**17/00** Aircraft stabilisation not otherwise provided for

17/02 . . . by gravity or inertia-actuated apparatus
17/04 . . . by pendular bodies
17/06 . . . by gyroscopic apparatus (automatic pilot control B64C 13/18)
17/08 . . . by ballast supply or discharge (for lighter-than-air aircraft B64B)
17/10 . . . Transferring fuel to adjust trim

**19/00** Aircraft control not otherwise provided for

19/02 . . . Conjoint controls

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

21/00 Influencing air-flow over aircraft surfaces by affecting boundary-layer flow (boundary-layer control in general F15D)

21/02 . . . by use of slot, ducts, porous areas, or the like
21/02/. . . . (for simultaneous blowing and sucking)
21/04 . . . for blowing (B64C 21/08 takes precedence)
21/06 . . . for sucking (B64C 21/08 takes precedence)
21/08 . . . adjustable
21/10 . . . using other surface properties, e.g. roughness

23/00 Influencing air-flow over aircraft surfaces, not otherwise provided for

23/005 . . . [by other means not covered by groups B64C 23/02 - B64C 23/08, e.g. by electric charges, magnetic panels, piezoelectric elements, static charges or ultrasounds]
23/02 . . . by means of rotating members of cylindrical or similar form
23/04 . . . by generating shock waves
23/06 . . . by generating vortices
23/065 . . . [at the wing tips]
23/069 . . . [using one or more wing tip airfoil devices, e.g. winglets, splines, wing tip fences or raked wingtips]
23/072 . . . . . [the wing tip airfoil devices being moveable in their entirety]
23/076 . . . . . . [the wing tip airfoil devices comprising one or more separate moveable members therein affecting the vortices, e.g. flaps]
23/08 . . . using Magnus effect

**25/00** Alighting gear (air-cushion alighting gear B60V 3/08)

25/001 . . . [Devices not provided for in the groups B64C 25/02 - B64C 25/68]
2025/003 . . . [Means for reducing landing gear noise, or turbulent flow around it, e.g. landing gear doors used as deflectors]
2025/005 . . . [Tail skids for fuselage tail strike protection on tricycle landing gear aircraft]
2025/006 . . . [Landing gear legs comprising torque arms]
2025/008 . . . [Comprising means for modifying their length, e.g. for kneeling, for jumping, or for leveling the aircraft]
2025/02 . . . Undercarriages
2025/04 . . . Arrangement or disposition on aircraft
2025/06 . . . fixed
2025/08 . . . non-fixed, e.g. jettisonable
2025/10 . . . retractable, foldable, or the like
2025/12 . . . . . . sideways
2025/125 . . . . . . . [into the fuselage, e.g. main landing gear pivotally retracting into or extending out of the fuselage]

2025/14 . . . fore-and-aft
2025/16 . . . Fairings movable in conjunction with undercarriage elements
2025/18 . . . . . . Operating mechanisms
2025/20 . . . . . . mechanical
2025/22 . . . . . . fluid
2025/24 . . . . . . electric
2025/26 . . . . . . Control or locking systems therefor
2025/28 . . . . . . . . with indicating or warning devices
2025/30 . . . . . . . . emergency actuated
2025/32 . . . . . . . . characterised by the ground or like engaging elements (arrester hooks B64C 25/68)
2025/325 . . . . . . . . . [specially adapted for helicopters]
2025/34 . . . . . . . . . wheeled type, e.g. multi-wheeled bogies
2025/345 . . . . . . . . . [Multi-wheel bogies having one or more steering axes]
2025/36 . . . Arrangements or adaptations of wheels, tyres, or axles in general (construction of wheels or axles B60B; construction of tyres in general B60C)
2025/38 . . . . . . . . . endless-track type
2025/40 . . . . . . . . . the elements being rotated before touch-down
2025/405 . . . . . . . . . [Powered wheels, e.g. for taxing]
2025/42 . . . 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, B60T 8/32)
2025/423 . . . . . . . . . [Braking devices acting by reaction of gaseous medium (B64C 25/426 takes precedence; using rockets B64D 27/023)]
2025/426 . . . . . . . . . [Braking devices providing an automatic sequence of braking]
2025/44 . . . . . . . . . Actuating mechanisms
2025/445 . . . . . . . . . [Brake regulators for preventing somersaulting]
2025/46 . . . . . . . . . Brake regulators for preventing skidding or aircraft somersaulting ([anti-skidding regulators; electric or electronic controllers therefor B60T 8/1703])
2025/48 . . . . . . . . . differentially operated for steering purposes
Aircraft kinds and components not otherwise provided for

**27/00** Rotorcraft; Rotors peculiar thereto (alighting gear B64C 25/00)

27/001... [Vibration damping devices]
27/002... [mounted between the rotor drive and the fuselage]
27/003... [mounted on rotor hub, e.g. a rotary force generator]
27/004... [using actuators, e.g. active systems]
27/005... [using suspended masses]
27/006... [Safety devices]
27/007... [adapted for detection of blade cracks]
27/008... [Rotors tracking or balancing devices]
27/01... Gyroplanes
27/021... [Rotor or rotor head construction (for helicopters B64C 27/32)]
27/022... [Devices for folding or adjusting the blades]
27/023... [Construction of the blades; Coating of the blades]
27/024... [Devices for shifting the rotor axis]
27/025... [Rotor drives, in particular for taking off; Combination of autorotation rotors and driven rotors]
27/026... [Devices for converting a fixed wing into an autorotation rotor and viceversa]
27/027... [Control devices using other means than the rotor]
27/028... [Other constructional elements; Rotor balancing]
27/04... Helicopters
27/06... with single rotor
27/08... with two or more rotors
27/10... arranged coaxially
27/12... Rotor drives
27/125... [including toroidal transmissions, e.g. of the CVT type]
27/14... Direct drive between power plant and rotor hub
27/16... Drive of rotors by means, e.g. propellers, mounted on rotor blades
27/18... the means being jet-reaction apparatus
27/20... Rotorcraft characterised by having shrouded rotors, e.g. flying platforms
Aircraft kinds and components not otherwise provided for

29/04 . . . characterised by jet-reaction propulsion
30/00 Supersonic-type aircraft
31/00 Aircraft intended to be sustained without power plant; Powered hang-glider-type aircraft; Microlight-type aircraft
31/02 . . . Gliders, e.g. sailplanes (hang-gliders B64C 31/028
31/024 . . . with auxiliary power plant
31/028 . . . Hang-glider-type aircraft; Microlight-type aircraft
31/0285 . . . (Safety devices
31/032 . . . having delta shaped wing
31/036 . . . having parachute-type wing (parachutes B64D 17/00)
31/04 . Man-powered aircraft (ornithopters B64C 33/00)
31/06 . Kites (hang-gliders B64C 31/028; toy aspects A63H 27/08; towed targets F41J ; for propelling boats B63H 9/0685; for propelling wind driven boards, control means and harnesses therefor B63B 35/7976)
2031/065 . . . (of inflatable wing type)
33/00 Ornithopters
33/02 . . . Wings; Actuating mechanisms therefor
33/025 . . . (the entire wing moving either up or down)
35/00 Flying-boats; Seaplanes (alighting gear B64C 25/00)
35/001 . . . (with means for increasing stability on the water)
35/002 . . . (using adjustable auxiliary floats)
35/003 . . . (using auxiliary floats at the wing tips)
35/005 . . . (with propellers, rudders or brakes acting in the water)
35/006 . . . (with lift generating devices)
35/007 . . . [Specific control surfaces therefor]
35/008 . . . [Amphibious sea planes]
37/00 Convertible aircraft (vehicles capable of travelling in or on different media B60F)
37/02 . . . Flying units formed by separate aircraft (towing, air-refuelling, or aircraft-carrying aircraft B64D)
39/00 Aircraft not otherwise provided for
39/001 . . . [Flying saucers]
39/003 . . . (with wings, paddle wheels, bladed wheels, moving or rotating in relation to the fuselage (rotorcraft B64C 27/00, ornithopters B64C 33/00))
39/005 . . . (about a horizontal transversal axis)
39/006 . . . (about a vertical axis)
39/008 . . . (about a longitudinal axis)
39/02 . . . characterised by special use
39/022 . . . (Tethered aircraft)
39/024 . . . (of the remote controlled vehicle type, i.e. RPV)
39/026 . . . (for use as personal propulsion unit)
39/028 . . . (Microsized aircraft)
39/04 . . . having multiple fuselages or tail booms
39/06 . . . having disc- or ring-shaped wings ((B64C 39/001 takes precedence))
39/062 . . . (having annular wings)
39/064 . . . (with radial airflow)
39/066 . . . (having channel wings)
39/068 . . . (having multiple wings joined at the tips)
39/08 . . . having multiple wings ((B64C 39/06 takes precedence))
39/10 . All-wing aircraft ((B64C 39/001 takes precedence))
2039/105 . . . (of blended wing body type)
Aircraft kinds and components not otherwise provided for

**2201/00** Unmanned aerial vehicles; Equipment therefor

- . Canard-type aircraft
- . Unmanned aerial vehicles; Equipment therefor
  - . characterized by type of aircraft
  - . characterized by landing method
  - . by being caught in mid-air, or next to the ground, e.g., using a net
  - . by deploying parachutes, or the like
  - . by landing horizontally, e.g., on a runway
  - . Methods for transport, or storage of unmanned aerial vehicles
  - . in containers
  - . in rucksacks, or bags to be carried by persons
  - . by waterborne vehicles, e.g., ships or submarines, or by hovercraft
  - . by airborne vehicles, e.g., airplanes or helicopters
  - . by landborne vehicles, e.g., trucks, lorries, tanks, or cars
  - . having stealth characteristics

**2203/00** Flying model aircraft, flying toy aircraft

**2211/00** Modular constructions of airplanes or helicopters

**2220/00** Active noise reduction systems

**2230/00** Boundary layer controls

- . by using acoustic waves generated by transducers
- . by actively generating fluid flow
- . by explicitly adjusting fluid flow, e.g., by using valves, variable aperture or slot areas, variable pump action or variable fluid pressure
- . by influencing fluid flow by means of surface cavities, i.e., net fluid flow is null
- . by influencing fluid flow by heating using other means than combustion
- . by using electromagnetic tiles, fluid ionizers, static charges or plasma
- . achieving noise reductions
- . by blowing other fluids over the surface than air, e.g., He, H, O or exhaust gases
- . by using small jets that make the fluid flow oscillate
- . by passively inducing fluid flow, e.g., by means of a pressure difference between both ends of a slot or duct
- . by using a surface having multiple apertures of relatively small openings other than slots
- . by using passive resonance cavities, e.g., without transducers
- . by using riblets or hydrophobic surfaces
- . at propeller or rotor blades