# SECTION B — PERFORMING OPERATIONS; TRANSPORTING

## B64 AIRCRAFT; AVIATION; COSMONAUTICS

### B64B LIGHTER-THAN-AIR AIRCRAFT (ground installations for aircraft in general B64F)

**1/00 Lighter-than-air aircraft [1, 2006.01]**
1/02 • Non-rigid airships (B64B 1/58 takes precedence; balloons B64B 1/40) **[1, 2006.01]**
1/04 • • the profile being maintained by ties or cords connecting opposite surfaces **[1, 2006.01]**
1/06 • Rigid airships; Semi-rigid airships (B64B 1/58 takes precedence) **[1, 2006.01]**
1/08 • • Framework construction **[1, 2006.01]**
1/10 • • Tail unit construction (B64B 1/12 takes precedence) **[1, 2006.01]**
1/12 • • Movable control surfaces **[1, 2006.01]**
1/14 • • Outer covering **[1, 2006.01]**
1/16 • • • rigid **[1, 2006.01]**
1/18 • • • Attachment to structure **[1, 2006.01]**
1/20 • • provided with wings or stabilising surfaces **[1, 2006.01]**
1/22 • • Arrangement of cabins or gondolas **[1, 2006.01]**
1/24 • • Arrangement of propulsion plant (B64B 1/34 takes precedence) **[1, 2006.01]**
1/26 • • • housed in ducts **[1, 2006.01]**
1/28 • • • housed in nacelles **[1, 2006.01]**
1/30 • • • Arrangement of propellers **[1, 2006.01]**
1/32 • • • • surrounding hull **[1, 2006.01]**
1/34 • • • • of lifting propellers **[1, 2006.01]**
1/36 • • Arrangement of jet reaction apparatus for propulsion or directional control **[1, 2006.01]**
1/38 • • Controlling position of centre of gravity **[1, 2006.01]**
1/40 • Balloons (B64B 1/58 takes precedence; toy balloons A63H 27/10) **[1, 2006.01]**
1/42 • • Construction or attachment of stabilising surfaces **[1, 2006.01]**
1/44 • • adapted to maintain predetermined altitude **[1, 2006.01]**
1/46 • • associated with apparatus to cause bursting **[1, 2006.01]**
1/48 • • • to enable load to be dropped by parachute **[1, 2006.01]**
1/50 • • Captive balloons **[1, 2006.01]**
1/52 • • • attaching trailing entanglements **[1, 2006.01]**
1/54 • • • connecting two or more balloons in superimposed relationship **[1, 2006.01]**
1/56 • • • stabilised by rotary motion **[1, 2006.01]**
1/58 • Arrangements or construction of gas-bags; Filling arrangements (connection of valves to inflatable elastic bodies B60C 29/00) **[1, 2006.01]**
1/60 • • Gas-bags surrounded by separate containers of inert gas **[1, 2006.01]**
1/62 • • Controlling gas pressure, heating, cooling, or discharging gas **[1, 2006.01]**
1/64 • • Gas-valve operating mechanisms **[1, 2006.01]**
1/66 • Mooring attachments **[1, 2006.01]**
1/68 • Water flotation gear **[1, 2006.01]**
1/70 • Ballasting arrangements **[1, 2006.01]**

### B64C AEROPLANES; HELICOPTERS

**Note(s) [3]**

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.

**Subclass index**

**Aircraft structures or fairings**

**1/00 Fuselages; Constructional features common to fuselages, wings, stabilising surfaces or the like [1, 2006.01]**
1/06 • Frames; Stringers; Longerons **[1, 2006.01]**
1/08 • • Geodetic or other open-frame structures **[1, 2006.01]**
1/10 • • Bulkheads **[1, 2006.01]**
1/12 • • Construction or attachment of skin panels **[1, 2006.01]**
1/14 • Windows; Doors; Hatch covers or access panels; Surrounding frame structures; Canopies; Windscreens (fairings movable in conjunction with undercarriage elements B64C 25/16; bomb doors B64D 1/06) **[1, 2006.01]**
1/16 • specially adapted for mounting power plant **[1, 2006.01]**
1/18 • Floors **[1, 2006.01]**
1/20 • • specially adapted for freight **[1, 2006.01]**
1/22 • Other structures integral with fuselages to facilitate loading **[1, 2006.01]**
1/24 • Steps mounted on, and retractable within, fuselages **[1, 2006.01]**
1/26 • Attaching the wing or tail units or stabilising surfaces **[1, 2006.01]**
1/28 • Parts of fuselage relatively movable to improve pilots view **[1, 2006.01]**
1/30 • Parts of fuselage relatively movable to reduce overall dimensions of aircraft **[1, 2006.01]**
1/32 • Severable or jettisonable parts of fuselage facilitating emergency escape **[1, 2006.01]**
1/34 • comprising inflatable structural components **[1, 2006.01]**
1/36 • adapted to receive antennas or radomes **[1, 2006.01]**
1/38 • Constructions adapted to reduce effects of aerodynamic or other external heating **[1, 2006.01]**
1/40 • Sound or heat insulation **[1, 2006.01]**

**3/00 Wings** (ornithopter wings B64C 33/02) **[1, 2006.01]**
3/10 • Shape of wings **[1, 2006.01]**
3/14 • • Aerofoil profile **[1, 2006.01]**
3/16 • • Frontal aspect **[1, 2006.01]**
3/18 • Spars; Ribs; Stringers **[1, 2006.01]**
3/20 • Integral or sandwich constructions **[1, 2006.01]**
3/22 • Geodetic or other open-frame structures **[1, 2006.01]**
3/24 • Moulded or cast structures **[1, 2006.01]**
3/26 • Construction, shape, or attachment of separate skins, e.g. panels **[1, 2006.01]**
3/28 • Leading or trailing edges attached to primary structures, e.g. forming fixed slots **[1, 2006.01]**
3/30 • comprising inflatable structural components **[1, 2006.01]**
3/32 • specially adapted for mounting power plant **[1, 2006.01]**
3/34 • Tanks constructed integrally with wings, e.g. for fuel or water **[1, 2006.01]**
3/36 • Structures adapted to reduce effects of aerodynamic or other external heating **[1, 2006.01]**
3/38 • Adjustment of complete wings or parts thereof **[1, 2006.01]**
3/40 • • Varying angle of sweep **[1, 2006.01]**
3/42 • • Adjusting about chordwise axes **[1, 2006.01]**
3/44 • • Varying camber **[1, 2006.01]**
3/46 • • • by inflatable elements **[1, 2006.01]**
3/48 • • • by relatively-movable parts of wing structures **[1, 2006.01]**
3/50 • • • by leading or trailing edge flaps **[1, 2006.01]**
3/52 • • Warping **[1, 2006.01]**
3/54 • • Varying in area **[1, 2006.01]**
3/56 • • Folding or collapsing to reduce overall dimensions of aircraft **[1, 2006.01]**
3/58 • provided with fences or spoilers (adjustable for control purposes B64C 9/00) **[1, 2006.01]**

**5/00 Stabilising surfaces [1, 2006.01]**
5/02 • Tailplanes **[1, 2006.01]**
5/04 • Noseplanes **[1, 2006.01]**
5/06 • Fins (B64C 5/08 takes precedence) **[1, 2006.01]**
5/08 • mounted on, or supported by, wings **[1, 2006.01]**
5/10 • adjustable **[1, 2006.01]**
5/12 • • for retraction against or within fuselage or nacelle **[1, 2006.01]**
5/14 • • Varying angle of sweep **[1, 2006.01]**
5/16 • • about spanwise axes **[1, 2006.01]**
5/18 • • in area **[1, 2006.01]**

**7/00 Structures or fairings not otherwise provided for [1, 2006.01]**
7/02 • Nacelles **[1, 2006.01]**

**9/00 Adjustable control surfaces or members, e.g. rudders** (trimming stabilising surfaces B64C 5/10) **[1, 2006.01]**
9/02 • Mounting or supporting thereof **[1, 2006.01]**
9/04 • with compound dependent movements **[1, 2006.01]**
9/06 • with two or more independent movements **[1, 2006.01]**
9/08 • bodily displaceable **[1, 2006.01]**
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) **[1, 2006.01]**
9/12 • surfaces of different type or function being simultaneously adjusted **[1, 2006.01]**
9/14 • forming slots **[1, 2006.01]**
9/16 • • at the rear of the wing **[1, 2006.01]**
9/18 • • • by single flaps **[1, 2006.01]**
9/20 • • • by multiple flaps **[1, 2006.01]**
9/22 • • at the front of the wing **[1, 2006.01]**
9/24 • • • by single flap **[1, 2006.01]**
9/26 • • • by multiple flaps **[1, 2006.01]**

9/28 • • by flaps at both the front and rear of the wing operating in unison **[1, 2006.01]**
9/30 • Balancing hinged surfaces, e.g. dynamically **[1, 2006.01]**
9/32 • Air braking surfaces **[1, 2006.01]**
9/34 • collapsing or retracting against or within other surfaces or other members **[1, 2006.01]**
9/36 • • the members being fuselages or nacelles **[1, 2006.01]**
9/38 • Jet flaps **[1, 2006.01]**

**11/00 Propellers, e.g. of ducted type; Features common to propellers and rotors for rotorcraft [1, 2006.01]**
11/02 • Hub construction **[1, 2006.01]**
11/04 • • Blade mountings **[1, 2006.01]**
11/06 • • • for variable-pitch blades **[1, 2006.01]**
11/08 • • • for non-adjustable blades **[1, 2006.01]**
11/10 • • • • rigid **[1, 2006.01]**
11/12 • • • • flexible **[1, 2006.01]**
11/14 • • Spinners **[1, 2006.01]**
11/16 • Blades **[1, 2006.01]**
11/18 • • Aerodynamic features **[1, 2006.01]**
11/20 • • Constructional features **[1, 2006.01]**
11/22 • • • Solid blades **[1, 2006.01]**
11/24 • • • Hollow blades **[1, 2006.01]**
11/26 • • • Fabricated blades **[1, 2006.01]**
11/28 • • • Collapsible or foldable blades **[1, 2006.01]**
11/30 • Blade pitch-changing mechanisms **[1, 2006.01]**
11/32 • • mechanical **[1, 2006.01]**
11/34 • • • automatic **[1, 2006.01]**
11/36 • • • non-automatic **[1, 2006.01]**
11/38 • • fluid, e.g. hydraulic **[1, 2006.01]**
11/40 • • • automatic **[1, 2006.01]**
11/42 • • • non-automatic **[1, 2006.01]**
11/44 • • electric **[1, 2006.01]**
11/46 • Arrangements of, or constructional features peculiar to, multiple propellers **[1, 2006.01]**
11/48 • • Units of two or more coaxial propellers **[1, 2006.01]**
11/50 • • Phase synchronisation between multiple propellers **[1, 2006.01]**

**13/00 Control systems or transmitting systems for actuating flying-control surfaces, lift-increasing flaps, air brakes, or spoilers [1, 2006.01]**
13/02 • Initiating means **[1, 2006.01]**
13/04 • • actuated personally **[1, 2006.01]**
13/06 • • • adjustable to suit individual persons **[1, 2006.01]**
13/08 • • • Trimming zero positions **[1, 2006.01]**
13/10 • • • comprising warning devices **[1, 2006.01]**
13/12 • • • Dual control apparatus **[1, 2006.01]**
13/14 • • • lockable **[1, 2006.01]**
13/16 • • actuated automatically, e.g. responsive to gust detectors **[1, 2006.01]**
13/18 • • • using automatic pilot **[1, 2006.01]**
13/20 • • • using radiated signals **[1, 2006.01]**
13/22 • • • readily revertible to personal control **[1, 2006.01]**
13/24 • Transmitting means **[1, 2006.01]**
13/26 • • without power amplification or where power amplification is irrelevant **[1, 2006.01]**
13/28 • • • mechanical **[1, 2006.01]**
13/30 • • • • using cable, chain, or rod mechanisms **[1, 2006.01]**
13/32 • • • • using cam mechanisms **[1, 2006.01]**
13/34 • • • • using toothed gearing **[1, 2006.01]**
13/36 • • • fluid **[1, 2006.01]**
13/38 • • with power amplification **[1, 2006.01]**
13/40 • • • using fluid pressure **[1, 2006.01]**
13/42 • • • • having duplication or stand-by provisions **[1, 2006.01]**
13/44 • • • • overriding of personal controls; with automatic return to inoperative position **[1, 2006.01]**
13/46 • • • • with artificial feel **[1, 2006.01]**
13/48 • • • • characterised by the fluid being gaseous **[1, 2006.01]**
13/50 • • • using electrical energy **[1, 2006.01]**

**15/00 Attitude, flight direction or altitude control by jet reaction [1, 3, 2006.01]**
15/02 • the jets being propulsion jets **[1, 2006.01]**
15/12 • • the power plant being tiltable **[1, 2006.01]**
15/14 • the jets being other than main propulsion jets (jet flaps B64C 9/38) **[1, 2006.01]**

**17/00 Aircraft stabilisation not otherwise provided for [1, 2006.01]**
17/02 • by gravity or inertia-actuated apparatus **[1, 2006.01]**
17/04 • • by pendular bodies **[1, 2006.01]**
17/06 • • by gyroscopic apparatus **[1, 2006.01]**
17/08 • by ballast supply or discharge **[1, 2006.01]**
17/10 • Transferring fuel to adjust trim **[1, 2006.01]**

**19/00 Aircraft control not otherwise provided for [1, 2006.01]**
19/02 • Conjoint controls **[1, 2006.01]**

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

**21/00 Influencing air flow over aircraft surfaces by affecting boundary layer flow [1, 2006.01, 2023.01]**
21/01 • Boundary layer ingestion [BLI] propulsion **[2023.01]**
21/02 • by use of slot, ducts, porous areas or the like **[1, 2006.01]**
21/04 • • for blowing **[1, 2006.01, 2023.01]**
21/06 • • for sucking (BLI propulsion B64C 21/01) **[1, 2006.01, 2023.01]**
21/08 • • adjustable **[1, 2006.01, 2023.01]**
21/10 • using other surface properties, e.g. roughness **[1, 2006.01]**

**23/00 Influencing air flow over aircraft surfaces, not otherwise provided for [1, 2006.01]**
23/02 • by means of rotating members of cylindrical or similar form **[1, 2006.01]**
23/04 • by generating shock waves **[1, 2006.01]**
23/06 • by generating vortices **[1, 2006.01]**
23/08 • using Magnus effect **[1, 2006.01]**

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**25/00 Alighting gear** (air-cushion alighting gear B60V 3/08) **[1, 2006.01]**
25/02 • Undercarriages **[1, 2006.01]**
25/04 • • Arrangement or disposition on aircraft **[1, 2006.01]**
25/06 • • fixed **[1, 2006.01]**
25/08 • • non-fixed, e.g. jettisonable **[1, 2006.01]**

25/10 • • • retractable, foldable, or the like **[1, 2006.01]**
25/12 • • • • sideways **[1, 2006.01]**
25/14 • • • • fore-and-aft **[1, 2006.01]**
25/16 • • • • Fairings movable in conjunction with undercarriage elements **[1, 2006.01]**
25/18 • • • • Operating mechanisms **[1, 2006.01]**
25/20 • • • • • mechanical **[1, 2006.01]**
25/22 • • • • • fluid **[1, 2006.01]**
25/24 • • • • • electric **[1, 2006.01]**
25/26 • • • • • Control or locking systems therefor **[1, 2006.01]**
25/28 • • • • • • with indicating or warning devices **[1, 2006.01]**
25/30 • • • • • • emergency actuated **[1, 2006.01]**
25/32 • characterised by elements which contact the ground or similar surface (arrester hooks B64C 25/68) **[1, 2006.01]**
25/34 • • wheeled type, e.g. multi-wheeled bogies **[1, 2006.01]**
25/36 • • • Arrangements or adaptations of wheels, tyres or axles in general **[1, 2006.01]**
25/38 • • endless-track type **[1, 2006.01]**
25/40 • • the elements being rotated before touch-down **[1, 2006.01]**
25/42 • • Arrangement or adaptation of brakes **[1, 4, 2006.01]**
25/44 • • • Actuating mechanisms **[1, 2006.01]**
25/46 • • • • Brake regulators for preventing skidding or aircraft somersaulting **[1, 2006.01]**
25/48 • • • • differentially operated for steering purposes **[1, 2006.01]**
25/50 • • Steerable undercarriages; Shimmy-damping **[1, 2006.01]**
25/52 • • Skis or runners **[1, 2006.01]**
25/54 • • Floats **[1, 2006.01]**
25/56 • • • inflatable **[1, 2006.01]**
25/58 • • Arrangements or adaptations of shock-absorbers or springs (shimmy-dampers B64C 25/50) **[1, 2006.01]**
25/60 • • • Oleo legs **[1, 2006.01]**
25/62 • • • Spring shock-absorbers; Springs **[1, 2006.01]**
25/64 • • • • using rubber or like elements **[1, 2006.01]**
25/66 • • Convertible alighting gear; Combinations of different kinds of ground or like engaging elements **[1, 2006.01]**
25/68 • Arrester hooks **[1, 2006.01]**

**Aircraft kinds or components not otherwise provided for**

**27/00 Rotorcraft; Rotors peculiar thereto [1, 2006.01]**
27/02 • Gyroplanes **[1, 2006.01]**
27/04 • Helicopters **[1, 2006.01]**
27/06 • • with single rotor **[1, 2006.01]**
27/08 • • with two or more rotors **[1, 2006.01, 2023.01]**
27/10 • • • arranged coaxially **[1, 2006.01, 2023.01]**
27/12 • • Rotor drives **[1, 2006.01]**
27/14 • • • Direct drive between power plant and rotor hub **[1, 2006.01]**
27/16 • • • Drive of rotors by means, e.g. propellers, mounted on rotor blades **[1, 2006.01]**
27/18 • • • • the means being jet-reaction apparatus **[1, 2006.01]**
27/20 • Rotorcraft characterised by having shrouded rotors, e.g. flying platforms **[1, 2006.01, 2023.01]**
27/22 • Compound rotorcraft, i.e. aircraft using in flight the features of both aeroplane and rotorcraft **[1, 2006.01]**
27/24 • • with rotor blades fixed in flight to act as lifting surfaces **[1, 2006.01]**
27/26 • • characterised by provision of fixed wings **[1, 2006.01]**
27/28 • • with forward-propulsion propellers pivotable to act as lifting rotors **[1, 2006.01]**
27/30 • • with provision for reducing drag of inoperative rotor **[1, 2006.01]**
27/32 • Rotors **[1, 2006.01]**
27/33 • • having flexing arms **[3, 2006.01]**
27/35 • • having elastomeric joints **[3, 2006.01]**
27/37 • • having articulated joints **[3, 2006.01]**
27/39 • • • with individually articulated blades, i.e. with flapping or drag hinges **[3, 2006.01]**
27/41 • • • with flapping hinge or universal joint, common to the blades **[3, 2006.01]**
27/43 • • • • see-saw type, i.e. two-bladed rotor **[3, 2006.01]**
27/45 • • • with a feathering hinge only **[3, 2006.01]**
27/46 • • Blades **[1, 2006.01]**
27/467 • • • Aerodynamic features **[6, 2006.01]**
27/473 • • • Constructional features **[6, 2006.01]**
27/48 • • • • Root attachment to rotor head **[1, 2006.01]**
27/50 • • • • Blades foldable to facilitate stowage of aircraft **[1, 2006.01]**
27/51 • Damping of blade movements **[3, 2006.01]**
27/52 • Tilting of rotor bodily relative to fuselage (of see-saw type construction B64C 27/43) **[1, 2006.01]**
27/54 • Mechanisms for controlling blade adjustment or movement relative to rotor head, e.g. lag-lead movement **[1, 2006.01]**
27/56 • • characterised by the control initiating means, e.g. manually actuated **[1, 2006.01]**
27/57 • • • automatic or condition responsive, e.g. responsive to rotor speed, torque or thrust **[3, 2006.01]**
27/58 • • Transmitting means, e.g. interrelated with initiating means or means acting on blades (means acting on blades B64C 27/72) **[1, 2006.01]**
27/59 • • • mechanical **[3, 2006.01]**
27/605 • • • • including swash plate, spider or cam mechanisms **[3, 2006.01]**
27/615 • • • • including flaps mounted on blades **[3, 2006.01]**
27/625 • • • • including rotating masses or servo rotors **[3, 2006.01]**
27/635 • • • • specially for controlling lag-lead movements of blades **[3, 2006.01]**
27/64 • • • using fluid pressure, e.g. having fluid power amplification **[1, 3, 2006.01]**
27/68 • • • using electrical energy, e.g. having electrical power amplification **[1, 3, 2006.01]**
27/72 • • Means acting on blades **[1, 2006.01]**
27/78 • • in association with pitch adjustment of blades of anti-torque rotor **[1, 2006.01]**
27/80 • • for differential adjustment of blade pitch between two or more lifting rotors **[1, 2006.01]**
27/82 • characterised by the provision of an auxiliary rotor or fluid-jet device for counter-balancing lifting-rotor torque or changing direction of rotorcraft **[1, 2006.01]**

**29/00 Aircraft capable of landing or taking-off vertically, e.g. vertical take-off and landing [VTOL] aircraft** (rotorcraft B64C 27/00) **[1, 2006.01]**

29/02 • having its flight directional axis vertical when grounded **[1, 2006.01]**

29/04 • • characterised by jet-reaction propulsion **[1, 2006.01]**

**30/00 Supersonic type aircraft [3, 2006.01]**

**31/00 Aircraft intended to be sustained without power plant; Powered hang-glider-type aircraft; Microlight-type aircraft [1, 2006.01]**

31/02 • Gliders, e.g. sailplanes (hang-gliders B64C 31/028) **[1, 6, 2006.01]**

31/024 • • with auxiliary power plant **[6, 2006.01]**

31/028 • Hang-glider-type aircraft; Microlight-type aircraft **[6, 2006.01]**

31/032 • • having delta shaped wing **[6, 2006.01]**

31/036 • • having parachute-type wing **[6, 2006.01]**

31/04 • Man-powered aircraft **[1, 2006.01]**

31/06 • Kites (toy aspects A63H 27/08; airborne towed targets, e.g. kites, F41J 9/10) **[1, 2006.01, 2020.01]**

**33/00 Ornithopters [1, 2006.01]**

33/02 • Wings; Actuating mechanisms therefor **[1, 2006.01]**

**35/00 Flying-boats; Seaplanes [1, 2006.01]**

35/02 • Flying-boat hulls **[3, 2006.01]**

**37/00 Convertible aircraft [1, 2006.01]**

37/02 • Flying units formed by separate aircraft (towing B64D 3/00; aircraft transported by aircraft B64D 5/00; air-refuelling B64D 39/00) **[1, 2006.01]**

**39/00 Aircraft not otherwise provided for [1, 2006.01, 2023.01]**

39/02 • characterised by special use **[1, 2006.01, 2023.01]**

39/04 • having multiple fuselages or tail booms **[3, 2006.01]**

39/06 • having disc- or ring-shaped wings **[3, 2006.01]**

39/08 • having multiple wings **[3, 2006.01]**

39/10 • All-wing aircraft **[3, 2006.01]**

39/12 • Canard-type aircraft **[3, 2006.01]**

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**99/00 Subject matter not provided for in other groups of this subclass [2010.01, 2023.01]**

## B64D EQUIPMENT FOR FITTING IN OR TO AIRCRAFT; FLIGHT SUITS; PARACHUTES; ARRANGEMENT OR MOUNTING OF POWER PLANTS OR PROPULSION TRANSMISSIONS IN AIRCRAFT

**Subclass index**



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**1/00 Dropping, ejecting, releasing or receiving articles, liquids, or the like, in flight** (weapon sights or aiming F41G; refuelling during flight B64D 39/00; launching apparatus for projecting projectiles or missiles F41F 1/00, F41F 7/00; rocket or torpedo launchers F41F 3/00) **[1, 2006.01]**

1/02 • Dropping, ejecting, or releasing articles (jettisonable fuel reservoirs B64D 37/12) **[1, 2006.01]**

1/04 • • the articles being explosive, e.g. bombs **[1, 2006.01]**

1/06 • • • Bomb releasing; Bomb doors **[1, 2006.01]**

1/08 • • the articles being load-carrying devices **[1, 2006.01]**

1/10 • • • Stowage arrangements for the devices in aircraft **[1, 2006.01]**

1/12 • • • Releasing **[1, 2006.01]**

1/14 • • • Absorbing landing shocks **[1, 2006.01]**

1/16 • Dropping or releasing powdered, liquid or gaseous matter, e.g. for fire-fighting (jettisoning fuel B64D 37/26) **[1, 5, 2006.01]**

1/18 • • by spraying, e.g. insecticides **[1, 2006.01]**

1/20 • • for sky-writing **[1, 2006.01]**

1/22 • Taking-up articles from earth's surface **[1, 2006.01]**

**3/00 Aircraft adaptations to facilitate towing or being towed [1, 2006.01]**

3/02 • for towing targets **[1, 2006.01]**

**5/00 Aircraft transported by aircraft, e.g. for release or reberthing during flight [1, 2006.01]**

**7/00 Arrangement of military equipment, e.g. armaments, armament accessories or military shielding, in aircraft; Adaptations of armament mountings for aircraft** (dropping bombs or the like B64D 1/00) **[1, 2006.01]**

7/02 • the armaments being firearms **[1, 2006.01]**
7/04 • • fixedly mounted **[1, 2006.01]**
7/06 • • movably mounted **[1, 2006.01]**
7/08 • Arrangement of rocket launchers **[1, 2006.01]**

**9/00 Equipment for handling freight; Equipment for facilitating passenger embarkation or the like [1, 2006.01]**

**10/00 Flight suits [3, 2006.01]**

**11/00 Passenger or crew accommodation; Flight-deck installations not otherwise provided for [1, 2006.01]**

11/02 • Toilet fittings **[1, 2006.01]**
11/04 • Galleys **[1, 2006.01]**
11/06 • Arrangements or adaptations of seats (seat constructions for emergency purposes B64D 25/04) **[1, 2006.01]**

**13/00 Arrangements or adaptations of air-treatment apparatus for aircraft crew or passengers, or freight space [1, 2006.01]**

13/02 • the air being pressurised **[1, 2006.01]**
13/04 • • Automatic control of pressure **[1, 2006.01]**
13/06 • the air being conditioned (pressurising B64D 13/02) **[1, 2006.01]**
13/08 • • the air being heated or cooled **[1, 2006.01]**

**15/00 De-icing or preventing icing on exterior surfaces of aircraft [1, 2006.01]**

15/02 • by ducted hot gas or liquid **[1, 2006.01]**
15/04 • • Hot gas application **[1, 2006.01]**
15/06 • • Liquid application **[1, 2006.01]**
15/08 • • • exuded from surface **[1, 2006.01]**
15/10 • • • sprayed over surface **[1, 2006.01]**
15/12 • by electric heating (heating arrangements specially adapted for transparent or reflecting areas H05B 3/84) **[1, 5, 2006.01]**
15/14 • • controlled cyclically along length of surface **[1, 2006.01]**
15/16 • by mechanical means, e.g. pulsating mats or shoes attached to, or built into, surface **[1, 2006.01]**
15/18 • • the surface being an aerofoil, rotor, or propeller **[1, 2006.01]**
15/20 • Means for detecting icing or initiating de-icing **[1, 2006.01]**
15/22 • • Automatic initiation by icing detector **[1, 2006.01]**

**17/00 Parachutes** (non-canopied parachutes B64D 19/00) **[1, 2006.01]**

17/02 • Canopy arrangement or construction **[1, 2006.01]**
17/04 • • formed with two or more canopies arranged about a common axis **[1, 2006.01]**
17/06 • • formed with two or more canopies arranged in a cluster **[1, 2006.01]**
17/08 • • Secondary or shock-absorbing canopies attached to load line **[1, 2006.01]**
17/10 • • Ribbon construction or the like **[1, 2006.01]**
17/12 • • constructed to provide variable or non-uniform porosity over area of canopy **[1, 2006.01]**
17/14 • • with skirt or air-deflecting panels **[1, 2006.01]**
17/16 • • • secured to hem of main canopy **[1, 2006.01]**
17/18 • • Vent arrangement or construction **[1, 2006.01]**
17/20 • • • variable in area **[1, 2006.01]**
17/22 • Load suspension **[1, 2006.01]**
17/24 • • Rigging lines **[1, 2006.01]**
17/26 • • • attached to hem of canopy **[1, 2006.01]**
17/28 • • • attached to apex of canopy **[1, 2006.01]**
17/30 • • Harnesses **[1, 4, 2006.01]**
17/32 • • • Construction of quick-release box **[1, 2006.01]**
17/34 • • adapted to control direction or rate of descent **[1, 2006.01]**
17/36 • • incorporating friction devices or frangible connections to reduce shock loading of canopy **[1, 2006.01]**
17/38 • • Releasable fastening devices between parachute and load or pack **[1, 2006.01]**
17/40 • Packs **[1, 2006.01]**
17/42 • • rigid **[1, 2006.01]**
17/44 • • • forming part of load **[1, 2006.01]**
17/46 • • Closing means **[1, 2006.01]**
17/48 • • with separate pack for extractor of auxiliary parachute **[1, 2006.01]**
17/50 • • formed with separate compartments for main canopy, rigging lines, or auxiliary parachute **[1, 2006.01]**
17/52 • • Opening, e.g. manual **[1, 2006.01]**
17/54 • • • automatic **[1, 2006.01]**
17/56 • • • • responsive to barometric pressure **[1, 2006.01]**
17/58 • • • • responsive to time-delay mechanism **[1, 2006.01]**
17/60 • • • • by static line **[1, 2006.01]**
17/62 • Deployment **[1, 2006.01]**
17/64 • • by extractor parachute **[1, 2006.01]**
17/66 • • • attached to hem of main canopy **[1, 2006.01]**
17/68 • • • attached to apex of main canopy **[1, 2006.01]**
17/70 • • by springs **[1, 2006.01]**
17/72 • • by explosive or inflatable means **[1, 2006.01]**
17/74 • • Sequential deployment of a plurality of canopies **[1, 2006.01]**
17/76 • • facilitated by method of folding or packing **[1, 2006.01]**
17/78 • in association with other load-retarding apparatus **[1, 2006.01]**
17/80 • in association with aircraft, e.g. for braking thereof **[1, 2006.01]**

**19/00 Non-canopied parachutes [1, 2006.01]**

19/02 • Rotary-wing parachutes **[1, 2006.01]**

**21/00 Testing of parachutes [1, 2006.01]**

**23/00 Training of parachutists [1, 2006.01]**

**25/00 Emergency apparatus or devices, not otherwise provided for [1, 4, 2006.01]**

25/02 • Supports or holding means for living bodies (for ejector seats B64D 25/115) **[1, 5, 2006.01]**
25/04 • • Seat modifications **[1, 2006.01]**
25/06 • • Harnessing **[1, 4, 2006.01]**
25/08 • Ejecting or escaping means **[1, 2006.01]**
25/10 • • Ejector seats **[1, 2006.01]**

25/102 • • • Propelling means, e.g. by a combination of catapult and rocket means **[5, 2006.01]**
25/105 • • • • by catapult means only **[5, 2006.01]**
25/108 • • • • by rocket means only **[5, 2006.01]**
25/11 • • • Controlling attitude or direction of ejector seat or associated mechanism prior to ejection **[5, 2006.01]**
25/112 • • • Controlling attitude or direction of ejector seat after ejection **[5, 2006.01]**
25/115 • • • Occupant restraining, positioning or protecting devices **[5, 2006.01]**
25/118 • • • Separation of occupant from seat after ejection **[5, 2006.01]**
25/12 • • Ejectable capsules **[1, 2006.01]**
25/14 • • Inflatable escape chutes **[1, 2006.01]**
25/16 • • Dinghy stowage **[1, 2006.01]**
25/18 • • Flotation gear **[1, 2006.01]**
25/20 • • Releasing of crash-position indicators **[1, 2006.01]**

**27/00 Arrangement or mounting of power plants in aircraft; Aircraft characterised by the type or position of power plants [1, 2006.01]**
27/02 • Aircraft characterised by the type or position of power plants **[1, 2006.01]**
27/04 • • of piston type **[1, 2006.01]**
27/06 • • • within, or attached to, wings **[1, 2006.01]**
27/08 • • • within, or attached to, fuselages **[1, 2006.01]**
27/10 • • of gas-turbine type (jet aircraft B64D 27/16) **[1, 2006.01]**
27/12 • • • within, or attached to, wings **[1, 2006.01]**
27/14 • • • within, or attached to, fuselages **[1, 2006.01]**
27/16 • • of jet type **[1, 2006.01]**
27/18 • • • within, or attached to, wings **[1, 2006.01]**
27/20 • • • within, or attached to, fuselages **[1, 2006.01]**
27/22 • • using atomic energy **[1, 2006.01]**
27/24 • • using steam or spring force (jet aircraft B64D 27/16) **[1, 2006.01, 2024.01]**
27/30 • • Aircraft characterised by electric power plants **[2024.01]**
27/31 • • • within, or attached to, wings **[2024.01]**
27/32 • • • within, or attached to, fuselages **[2024.01]**
27/33 • • • Hybrid electric aircraft **[2024.01]**
27/34 • • • All-electric aircraft **[2024.01]**
27/35 • • • Arrangements for on-board electric energy production, distribution, recovery or storage **[2024.01]**
27/351 • • • • using energy recovery **[2024.01]**
27/353 • • • • using solar cells **[2024.01]**
27/355 • • • • using fuel cells **[2024.01]**
27/357 • • • • using batteries **[2024.01]**
27/359 • • • • using capacitors **[2024.01]**
27/40 • Arrangements for mounting power plants in aircraft **[2024.01]**

**29/00 Power-plant nacelles, fairings or cowlings [1, 2006.01]**
29/02 • associated with wings **[1, 2006.01]**
29/04 • associated with fuselages **[1, 2006.01]**
29/06 • Attaching of nacelles, fairings, or cowlings **[1, 2006.01]**
29/08 • Inspection panels for power plants **[1, 2006.01]**

**31/00 Power plant control systems; Arrangement of power plant control systems in aircraft [1, 2006.01, 2024.01]**
31/02 • Initiating means **[1, 2006.01]**
31/04 • • actuated personally **[1, 2006.01]**
31/06 • • actuated automatically **[1, 2006.01, 2024.01]**
31/08 • • • for keeping cruising speed constant **[1, 2006.01]**
31/09 • • • in response to power plant failure **[2024.01]**
31/10 • • • • for preventing asymmetric thrust **[1, 2006.01]**
31/12 • • • for equalising or synchronising power plants **[1, 2006.01]**
31/14 • Transmitting means between initiating means and power plants **[1, 2006.01]**
31/16 • for electric power plants **[2024.01]**
31/18 • • for hybrid-electric power plants **[2024.01]**

**33/00 Arrangement in aircraft of power plant parts or auxiliaries not otherwise provided for [1, 2006.01]**
33/02 • of combustion air intakes **[1, 2006.01]**
33/04 • of exhaust outlets or jet pipes **[1, 3, 2006.01]**
33/08 • of power plant cooling systems **[1, 2006.01]**
33/10 • • Radiator arrangement **[1, 2006.01]**
33/12 • • • of retractable type **[1, 2006.01]**

**35/00 Transmitting power from power plants to propellers or rotors; Arrangements of transmissions [1, 2006.01]**
35/02 • specially adapted for specific power plants **[1, 2006.01, 2024.01]**
35/021 • • for electric power plants **[2024.01]**
*35/022* • • • *of hybrid-electric type* ***[2024.01, 2025.01]***
*35/023* • • • • *of series-parallel type* ***[2024.01, 2025.01]***
*35/024* • • • • *of series type* ***[2024.01, 2025.01]***
*35/025* • • • • *of parallel type* ***[2024.01, 2025.01]***
*35/026* • • • *the electric power plant being integral with the propeller or rotor* ***[2024.01, 2025.01]***
35/04 • characterised by the transmission driving a plurality of propellers or rotors **[1, 2006.01]**
35/06 • • the propellers or rotors being counter-rotating **[1, 2006.01]**
*35/08* • *characterised by the transmission being driven by a plurality of power plants (for hybrid-electric power plants B64D 35/022)* ***[1, 2006.01, 2025.01]***

**37/00 Arrangements in connection with fuel supply for power plant** (refuelling during flight B64D 39/00) **[1, 2006.01]**
37/02 • Tanks (tanks constructed integrally with aircraft wings B64C 3/34) **[1, 2006.01]**
37/04 • • Arrangement thereof in or on aircraft **[1, 2006.01]**
37/06 • • Constructional adaptations thereof **[1, 2006.01]**
37/08 • • • Internal partitioning **[1, 2006.01]**
37/10 • • • to facilitate fuel pressurisation **[1, 2006.01]**
37/12 • • • jettisonable **[1, 2006.01]**
37/14 • • Filling or emptying (transferring fuels to adjust aircraft trim B64C 17/10) **[1, 2006.01]**
37/16 • • • Filling systems (ground installations for fuelling aircraft B64F 1/28) **[1, 2006.01]**
37/18 • • • • Conditioning fuel during filling **[1, 2006.01]**
37/20 • • • Emptying systems **[1, 2006.01]**
37/22 • • • • facilitating emptying in any position of tank **[1, 2006.01]**
37/24 • • • • using gas pressure **[1, 2006.01]**
37/26 • • • • Jettisoning of fuel **[1, 2006.01]**
37/28 • • • • Control thereof **[1, 2006.01]**
37/30 • Fuel systems for specific fuels **[1, 2006.01]**
37/32 • Safety measures not otherwise provided for, e.g. preventing explosive conditions **[1, 2006.01]**

37/34 • Conditioning fuel, e.g. heating (during filling B64D 37/18) **[1, 2006.01]**

**39/00 Refuelling during flight [1, 2006.01]**

39/02 • Means for paying-in or out hose **[1, 2006.01]**

39/04 • Adaptations of hose construction **[1, 2006.01]**

39/06 • Connecting hose to aircraft; Disconnecting hose therefrom **[1, 2006.01]**

**41/00 Power installations for auxiliary purposes [1, 2006.01]**

**43/00 Arrangements or adaptations of instruments [1, 2006.01]**

43/02 • for indicating aircraft speed or stalling conditions **[1, 2006.01]**

**45/00 Aircraft indicators or protectors not otherwise provided for [1, 2006.01]**

45/02 • Lightning protectors; Static dischargers **[1, 2006.01]**

45/04 • Landing aids; Safety measures to prevent collision with earth's surface **[1, 2006.01]**

45/06 • • mechanical **[1, 2006.01]**

45/08 • • optical **[1, 2006.01]**

**47/00 Equipment not otherwise provided for [1, 2006.01]**

47/02 • Arrangements or adaptations of signal or lighting devices **[1, 2006.01]**

47/04 • • the lighting devices being primarily intended to illuminate the way ahead **[1, 2006.01]**

47/06 • • for indicating aircraft presence **[1, 2006.01]**

47/08 • Arrangements of cameras **[1, 2006.01]**

## B64F GROUND OR AIRCRAFT-CARRIER-DECK INSTALLATIONS SPECIALLY ADAPTED FOR USE IN CONNECTION WITH AIRCRAFT; DESIGNING, MANUFACTURING, ASSEMBLING, CLEANING, MAINTAINING OR REPAIRING AIRCRAFT, NOT OTHERWISE PROVIDED FOR; HANDLING, TRANSPORTING, TESTING OR INSPECTING AIRCRAFT COMPONENTS, NOT OTHERWISE PROVIDED FOR

**Note(s) [3]**

In this subclass, the following terms or expressions are used with the meanings indicated:

- "installations" embraces equipment, including mobile equipment, peculiar to use in connection with aircraft and not fitted thereto;
- "ground installations" embraces waterborne installations.

**1/00 Ground or aircraft-carrier-deck installations [1, 2006.01, 2024.01]**

1/02 • for arresting aircraft, e.g. nets or cables **[1, 2006.01]**

1/04 • for launching aircraft **[1, 2006.01, 2024.01]**

1/06 • • using catapults **[1, 2006.01]**

1/08 • • using winches **[1, 2006.01]**

1/10 • • using self-propelled vehicles **[1, 2006.01, 2024.01]**

1/12 • for anchoring aircraft **[1, 2006.01]**

1/14 • • Towers or masts for mooring airships or balloons **[1, 2006.01]**

1/16 • • Pickets or ground anchors; Wheel chocks **[1, 2006.01]**

1/18 • Visual or acoustic landing aids **[1, 2006.01]**

1/20 • • Arrangement of optical beacons **[1, 2006.01]**

1/22 • for handling aircraft **[1, 2006.01, 2024.01]**

1/221 • • for handling seaplanes **[2024.01]**

1/222 • • for storing aircraft, e.g. in hangars **[2024.01]**

1/223 • • for towing aircraft **[2024.01]**

1/225 • • • Vehicles specially adapted therefor, e.g. aircraft tow tractors **[2024.01]**

1/227 • • • • for direct connection to aircraft, e.g. tow tractors without towing bars **[2024.01]**

1/228 • • • • remotely controlled; operating autonomously **[2024.01]**

1/24 • • Adaptations of turntables **[1, 2006.01]**

1/26 • for reducing engine or jet noise; Protecting airports from jet erosion **[1, 2006.01]**

1/28 • Liquid-handling installations specially adapted for fuelling stationary aircraft **[1, 2006.01]**

1/30 • for embarking or disembarking passengers **[1, 2006.01]**

1/305 • • Bridges extending between terminal building and aircraft, e.g. telescopic, vertically adjustable **[3, 2006.01]**

1/31 • • Passenger vehicles specially adapted to co-operate, e.g. dock, with aircraft or terminal buildings **[3, 2006.01]**

1/315 • • Mobile stairs **[3, 2006.01]**

1/32 • for handling freight **[1, 2006.01]**

1/34 • for starting propulsion plant **[1, 2006.01]**

1/35 • for supplying electrical power to stationary aircraft **[2024.01]**

1/36 • Other airport installations (ground installations for de-icing aircraft B64F 5/20) **[1, 2006.01, 2017.01, 2024.01]**

**3/00 Ground installations specially adapted for captive aircraft [1, 2006.01]**

3/02 • with means for supplying electricity to aircraft during flight **[1, 2006.01]**

**5/00 Designing, manufacturing, assembling, cleaning, maintaining or repairing aircraft, not otherwise provided for; Handling, transporting, testing or inspecting aircraft components, not otherwise provided for [1, 2006.01, 2017.01]**

5/10 • Manufacturing or assembling aircraft, e.g. jigs therefor **[2017.01]**

5/20 • Ground installations for de-icing aircraft **[2017.01]**

5/23 • • by liquid application; Spraying installations therefor, e.g. fitted on vehicles **[2017.01]**

5/27 • • by irradiation, e.g. of infrared radiation **[2017.01]**

5/30 • Cleaning aircraft **[2017.01]**

5/40 • Maintaining or repairing aircraft **[2017.01]**

5/45 • • Repairing leakages in fuel tanks **[2017.01]**

5/50 • Handling or transporting aircraft components **[2017.01]**

5/60 • Testing or inspecting aircraft components or systems **[2017.01]**

## B64G COSMONAUTICS; VEHICLES OR EQUIPMENT THEREFOR

**Note(s)**

1. This subclass covers only vehicles, equipment or the like, which are specially adapted for cosmonautics.
2. This subclass does not cover vehicles and equipment applicable to both cosmonautics and aeronautics, which are covered by the appropriate aeronautical subclasses of class B64.
3. In this subclass, the following term is used with the meaning indicated:
   - "cosmonautics" includes all transport outside the earth's atmosphere, and thus includes artificial earth satellites, and interplanetary and interstellar travel.

**1/00 Cosmonautic vehicles [1, 3, 2006.01]**

1/10 • Artificial satellites; Systems of such satellites; Interplanetary vehicles (space shuttles B64G 1/14) **[1, 2006.01]**
1/12 • • manned **[3, 2006.01]**
1/14 • Space shuttles **[3, 2006.01]**
1/16 • Extraterrestrial cars **[3, 2006.01]**
1/22 • Parts of, or equipment specially adapted for fitting in or to, cosmonautic vehicles **[3, 2006.01]**
1/24 • • Guiding or controlling apparatus, e.g. for attitude control **[3, 2006.01]**
1/26 • • • using jets **[3, 2006.01]**
1/28 • • • using inertia or gyro effect **[3, 2006.01]**
1/32 • • • using earth's magnetic field **[3, 2006.01]**
1/34 • • • using gravity gradient **[3, 2006.01]**
1/36 • • • using sensors, e.g. sun-sensors, horizon sensors **[3, 2006.01]**
1/38 • • • damping of oscillations, e.g. nutation dampers **[3, 2006.01]**
1/40 • • Arrangements or adaptations of propulsion systems **[3, 2006.01]**
1/42 • • Arrangements or adaptations of power supply systems **[3, 2006.01]**
1/44 • • • using radiation, e.g. deployable solar arrays **[3, 2006.01]**
1/46 • • Arrangements or adaptations of devices for control of environment or living conditions **[3, 2006.01]**
1/48 • • • for treatment of the atmosphere (B64G 1/50 takes precedence) **[3, 2006.01]**
1/50 • • • for temperature control **[3, 2006.01]**
1/52 • • Protection, safety or emergency devices; Survival aids **[3, 2006.01]**
1/54 • • • Protection against radiation **[3, 2006.01]**
1/56 • • • Protection against meteoroids or space debris **[3, 2006.01]**
1/58 • • • Thermal protection, e.g. heat shields **[3, 2006.01]**
1/60 • • Crew or passenger accommodations **[3, 2006.01]**
1/62 • • Systems for re-entry into the earth's atmosphere; Retarding or landing devices **[3, 2006.01]**
1/64 • • Systems for coupling or separating cosmonautic vehicles or parts thereof, e.g. docking arrangements **[3, 2006.01]**
1/66 • • Arrangements or adaptations of apparatus or instruments, not otherwise provided for **[3, 2006.01]**
1/68 • • • of meteoroid or space debris detectors **[3, 2006.01]**

**3/00 Observing or tracking cosmonautic vehicles [1, 2006.01]**

**4/00 Tools specially adapted for use in space [3, 2006.01]**

**5/00 Ground equipment for vehicles, e.g. starting towers, fuelling arrangements** (B64G 3/00 takes precedence) **[1, 2006.01]**

**6/00 Space suits [3, 2006.01]**

**7/00 Simulating cosmonautic conditions, e.g. for conditioning crews [1, 2006.01]**

**99/00 Subject matter not provided for in other groups of this subclass [2009.01]**

## B64U UNMANNED AERIAL VEHICLES [UAV]; EQUIPMENT THEREFOR [2023.01]

**Note(s) [2023.01]**

1. This subclass covers vehicles which are specially adapted for unmanned aeronautical use and the equipment therefor.
2. This subclass does not cover:
   - computer control systems for the control of position, course, altitude or attitude, which are covered by group G05D 1/00;
   - traffic control of UAVs, which is covered by group G08G 5/00.
3. Aircraft or equipment applicable to both manned and unmanned use should be classified in this subclass and in the subclasses of class B64 which are appropriate for the manned use.
4. Details or features of UAVs and their equipment which are not covered by this subclass should be classified in the relevant subclasses of class B64.
5. In this subclass it is desirable to add the indexing codes of group B64U 101/00, covering particular uses or applications of the UAVs.

**10/00 Type of UAV [2023.01]**

10/10 • Rotorcrafts **[2023.01]**
10/11 • • Autogyros **[2023.01]**
10/13 • • Flying platforms **[2023.01]**
10/14 • • • with four distinct rotor axes, e.g. quadcopters **[2023.01]**
10/16 • • • with five or more distinct rotor axes, e.g. octocopters **[2023.01]**
10/17 • • Helicopters (flying platforms B64U 10/13) **[2023.01]**

10/20 • Vertical take-off and landing [VTOL] aircraft (flying platforms B64U 10/13; helicopters B64U 10/17) **[2023.01]**
10/25 • Fixed-wing aircraft (VTOL aircraft B64U 10/20) **[2023.01]**
10/30 • Lighter-than-air aircraft, e.g. aerostatic aircraft **[2023.01]**
10/40 • Ornithopters **[2023.01]**
10/50 • Glider-type UAVs, e.g. with parachute, parasail or kite (for landing B64U 70/83) **[2023.01]**
10/60 • Tethered aircraft **[2023.01]**
10/70 • Convertible aircraft, e.g. convertible into land vehicles **[2023.01]**
10/80 • UAVs characterised by their small size, e.g. micro air vehicles [MAV] **[2023.01]**

**20/00 Constructional aspects of UAVs** (of lift-producing means B64U 30/00) **[2023.01]**
20/10 • for stealth, e.g. reduction of cross-section detectable by radars **[2023.01]**
20/20 • for noise reduction **[2023.01]**
20/30 • for safety, e.g. with frangible components (rotor guards B64U 30/299) **[2023.01]**
20/40 • Modular UAVs **[2023.01]**
20/50 • Foldable or collapsible UAVs (with frangible components B64U 20/30) **[2023.01]**
20/60 • UAVs characterised by the material **[2023.01]**
20/65 • • Composite materials **[2023.01]**
20/70 • Constructional aspects of the UAV body **[2023.01]**
20/73 • • Monocoque body **[2023.01]**
20/75 • • the body formed by joined shells or by a shell overlaying a chassis **[2023.01]**
20/77 • • the body being formed integrally with wings or rotor supports **[2023.01]**
20/80 • Arrangement of on-board electronics, e.g. avionics systems or wiring **[2023.01]**
20/83 • • Electronic components structurally integrated with aircraft elements, e.g. circuit boards carrying loads **[2023.01]**
20/87 • • Mounting of imaging devices, e.g. mounting of gimbals **[2023.01]**
20/90 • Cooling **[2023.01]**
20/92 • • of avionics **[2023.01]**
20/94 • • of rotors or rotor motors **[2023.01]**
20/96 • • using air **[2023.01]**
20/98 • • using liquid, e.g. using lubrication oil **[2023.01]**

**30/00 Means for producing lift; Empennages; Arrangements thereof [2023.01]**
30/10 • Wings **[2023.01]**
30/12 • • Variable or detachable wings, e.g. wings with adjustable sweep **[2023.01]**
30/14 • • • detachable **[2023.01]**
30/16 • • • movable along the UAV body **[2023.01]**
30/20 • Rotors; Rotor supports **[2023.01]**
30/21 • • Rotary wings **[2023.01]**
30/24 • • Coaxial rotors **[2023.01]**
30/26 • • Ducted or shrouded rotors **[2023.01]**
30/27 • • Rim-driven rotors **[2023.01]**
30/29 • • Constructional aspects of rotors or rotor supports; Arrangements thereof **[2023.01]**
30/291 • • • Detachable rotors or rotor supports **[2023.01]**
30/292 • • • • Rotors or rotor supports specially adapted for quick release **[2023.01]**
30/293 • • • Foldable or collapsible rotors or rotor supports **[2023.01]**
30/294 • • • Rotors arranged in the UAV body **[2023.01]**
30/295 • • • Rotors arranged in the wings **[2023.01]**
30/296 • • • Rotors with variable spatial positions relative to the UAV body (foldable or collapsible rotors B64U 30/293) **[2023.01]**
30/297 • • • • Tilting rotors **[2023.01]**
30/298 • • • Helicopter flybars **[2023.01]**
30/299 • • • Rotor guards (ducted or shrouded rotors B64U 30/26; guards used as ground propulsion B64U 60/60) **[2023.01]**
30/30 • Lift-producing means using radial airflow **[2023.01]**
30/40 • Empennages, e.g. V-tails (foldable or collapsible UAVs B64U 20/50) **[2023.01]**

**40/00 On-board mechanical arrangements for adjusting control surfaces or rotors; On-board mechanical arrangements for in-flight adjustment of the base configuration** (control of position, course, altitude or attitude of air or space vehicles, e.g. automatic pilot, G05D 1/00) **[2023.01]**
40/10 • for adjusting control surfaces or rotors **[2023.01]**
40/20 • for in-flight adjustment of the base configuration **[2023.01]**

**50/00 Propulsion; Power supply [2023.01]**
50/10 • Propulsion (rotors specially adapted for rotorcraft or VTOL B64U 30/20) **[2023.01]**
50/11 • • using internal combustion piston engines **[2023.01]**
50/12 • • using turbine engines, e.g. turbojets or turbofans **[2023.01]**
50/13 • • using external fans or propellers **[2023.01]**
50/14 • • • ducted or shrouded **[2023.01]**
50/15 • • using combustion exhausts other than turbojets or turbofans, e.g. using rockets, ramjets, scramjets or pulse-reactors **[2023.01]**
50/16 • • using means other than air displacement or combustion exhaust, e.g. water or magnetic levitation **[2023.01]**
50/18 • • Thrust vectoring **[2023.01]**
50/19 • • using electrically powered motors **[2023.01]**
50/20 • Transmission of mechanical power to rotors or propellers **[2023.01]**
50/23 • • with each propulsion means having an individual motor **[2023.01]**
50/27 • • with a single motor serving two or more rotors or propellers **[2023.01]**
50/30 • Supply or distribution of electrical power **[2023.01]**
50/31 • • generated by photovoltaics **[2023.01]**
50/32 • • generated by fuel cells **[2023.01]**
50/33 • • generated by combustion engines **[2023.01]**
50/34 • • In-flight charging (photovoltaics B64U 50/31) **[2023.01]**
50/35 • • • by wireless transmission, e.g. by induction **[2023.01]**
50/36 • • • by wind turbines, e.g. ram air turbines [RAT] **[2023.01]**
50/37 • • Charging when not in flight **[2023.01]**
50/38 • • • by wireless transmission **[2023.01]**
50/39 • • Battery swapping **[2023.01]**

**60/00 Undercarriages [2023.01]**
60/10 • specially adapted for use on water **[2023.01]**
60/20 • specially adapted for uneven terrain **[2023.01]**
60/30 • detachable from the body **[2023.01]**
60/40 • foldable or retractable **[2023.01]**

60/50 • with landing legs **[2023.01]**
60/55 • • the legs being also used as ground propulsion **[2023.01]**
60/60 • with rolling cages **[2023.01]**
60/70 • Movable wings, rotor supports or shrouds acting as ground-engaging elements **[2023.01]**

**70/00 Launching, take-off or landing arrangements [2023.01]**
70/10 • for releasing or capturing UAVs by hand **[2023.01]**
70/20 • for releasing or capturing UAVs in flight by another aircraft **[2023.01]**
70/30 • for capturing UAVs in flight by ground or sea-based arresting gear, e.g. by a cable or a net **[2023.01]**
70/40 • Landing characterised by flight manoeuvres, e.g. deep stall **[2023.01]**
70/50 • Launching from storage containers, e.g. from submarine missile tubes **[2023.01]**
70/60 • Take-off or landing of UAVs from a runway using their own power **[2023.01]**
70/70 • Launching or landing using catapults, tracks or rails (launching from storage containers B64U 70/50) **[2023.01]**
70/80 • Vertical take-off or landing, e.g. using rockets (rotorcrafts B64U 10/10; VTOL aircraft B64U 10/20) **[2023.01]**
70/83 • • using parachutes, balloons or the like **[2023.01]**
70/87 • • using inflatable cushions **[2023.01]**
70/90 • Launching from or landing on platforms **[2023.01]**
70/92 • • Portable platforms **[2023.01]**
70/93 • • • for use on a land or nautical vehicle **[2023.01]**
70/95 • • Means for guiding the landing UAV towards the platform, e.g. lighting means **[2023.01]**
70/97 • • Means for guiding the UAV to a specific location on the platform, e.g. platform structures preventing landing off-centre **[2023.01]**
70/99 • • Means for retaining the UAV on the platform, e.g. dogs or magnets **[2023.01]**

**80/00 Transport or storage specially adapted for UAVs [2023.01]**
80/10 • with means for moving the UAV to a supply or launch location, e.g. robotic arms or carousels **[2023.01]**
80/20 • with arrangements for servicing the UAV **[2023.01]**
80/25 • • for recharging batteries; for refuelling **[2023.01]**
80/30 • with arrangements for data transmission **[2023.01]**
80/40 • for two or more UAVs **[2023.01]**
80/50 • the UAVs being disassembled **[2023.01]**
80/60 • by wearable objects, e.g. garments or helmets **[2023.01]**
80/70 • in containers (B64U 80/60 takes precedence) **[2023.01]**
80/80 • by vehicles **[2023.01]**
80/82 • • Airborne vehicles **[2023.01]**
80/84 • • Waterborne vehicles **[2023.01]**
80/86 • • Land vehicles **[2023.01]**

**Indexing scheme associated with groups B64U 10/00-B64U 80/00 [2023.01]**

**101/00 UAVs specially adapted for particular uses or applications [2023.01]**

101/05 • for sports or gaming, e.g. drone racing **[2023.01]**
101/10 • for generating power to be supplied to a remote station, e.g. UAVs with solar panels **[2023.01]**
101/15 • for conventional or electronic warfare **[2023.01]**
101/16 • • for controlling, capturing or immobilising other vehicles **[2023.01]**
101/17 • • for detecting, disrupting or countering communications **[2023.01]**
101/18 • • for dropping bombs; for firing ammunition **[2023.01]**
101/19 • • for use as targets or decoys **[2023.01]**
101/20 • for use as communications relays, e.g. high altitude platforms **[2023.01]**
101/21 • • for providing Internet access **[2023.01]**
101/23 • • for providing telephone services **[2023.01]**
101/24 • • for use as flying displays, e.g. advertising or billboards **[2023.01]**
101/25 • for manufacturing or servicing **[2023.01]**
101/26 • • for manufacturing, inspections or repairs **[2023.01]**
101/28 • • for painting or marking **[2023.01]**
101/29 • • for cleaning **[2023.01]**
101/30 • for imaging, photography or videography **[2023.01]**
101/31 • • for surveillance **[2023.01]**
101/32 • • for cartography or topography **[2023.01]**
101/35 • for science, e.g. meteorology **[2023.01]**
101/40 • for agriculture or forestry operations **[2023.01]**
101/45 • for releasing liquids or powders in-flight, e.g. crop-dusting **[2023.01]**
101/47 • • for fire fighting **[2023.01]**
101/55 • for life-saving or rescue operations; for medical use **[2023.01]**
101/56 • • for locating missing persons or animals **[2023.01]**
101/57 • • for bringing emergency supplies to persons or animals in danger, e.g. ropes or life vests **[2023.01]**
101/58 • • for medical evacuation, i.e. the transportation of persons or animals to a place where they can receive medical care **[2023.01]**
101/60 • for transporting passengers; for transporting goods other than weapons **[2023.01]**
101/61 • • for transporting passengers **[2023.01]**
101/64 • • for parcel delivery or retrieval **[2023.01]**
101/66 • • • for retrieving parcels **[2023.01]**
101/67 • • the UAVs comprising tethers for lowering the goods **[2023.01]**
101/69 • • the UAVs provided with means for airdropping goods, e.g. deploying a parachute during descent **[2023.01]**
101/70 • for use inside enclosed spaces, e.g. in buildings or in vehicles **[2023.01]**
101/75 • for extra-terrestrial use, e.g. on the Moon or Mars **[2023.01]**