**CPC**

**COOPERATIVE PATENT CLASSIFICATION**

**B**

**PERFORMING OPERATIONS; TRANSPORTING**

*(NOTES omitted)*

**TRANSPORTING**

**B64**

**AIRCRAFT; AVIATION; COSMONAUTICS**

**B64D**

**EQUIPMENT FOR FITTING IN OR TO AIRCRAFT; FLYING SUITS; PARACHUTES; ARRANGEMENTS OR MOUNTING OF POWER PLANTS OR PROPULSION TRANSMISSIONS IN AIRCRAFT**

**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:

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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.

1/00 Dropping, ejecting, releasing, or receiving articles, liquids, or the like, in flight (with respect to weapon sights devices F41G takes precedence, parachutes per se B64D 17/00; ejectable seats B64D 25/10; ejectable capsules B64D 25/12; 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)

1/02 . . . Dropping, ejecting, or releasing articles (jettisonable fuel reservoirs B64D 37/12)

1/04 . . . the articles being explosive, e.g. bombs (arming or setting bomb fuzes F42C)

1/06 . . . Bomb releasing; Bombs doors

1/08 . . . the articles being load-carrying devices

1/10 . . . Stowage arrangements for the devices in aircraft

1/12 . . . Releasing

1/14 . . . Absorbing landing shocks

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

1/18 . . . by spraying, e.g. insecticides (spraying apparatus per se B05B)

1/20 . . . for sky-writing

1/22 . . . Taking-up articles from earth's surface

3/00 Aircraft adaptations to facilitate towing or being towed (B64D 39/00 takes precedence)

3/02 . . . for towing targets

5/00 Aircraft transported by aircraft, e.g. for release or reberthing during flight (flying units formed by separate aircraft B64C 37/02)

7/00 Arrangements 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; armaments or mountings therefor per se F41)

7/02 . the armaments being firearms

7/04 . . . fixedly mounted

7/06 . . . movably mounted

7/08 . . . Arrangements of rocket launchers { or releasing means } (rocket launchers per se, e.g. rocket pods, F41F 3/06)

9/00 Equipment for handling freight; Equipment for facilitating passenger embarkation or the like (emergency equipment B64D 17/00, B64D 19/00, B64D 25/00; structures integral with fuselage to facilitate loading, fuselage floors specially adapted for freight, steps mounted on and retractable within aircraft B64C; ground installations B64F)

9/003 . . . (Devices for retaining pallets or freight containers (securing freight containers on vehicles B60P 7/00))

2009/006 . . . (Rollers or drives for pallets of freight containers, e.g. PDU)

10/00 Flying suits (helmets in general A42B 3/00; breathing helmets A62B 18/00)

2010/002 . . . (Anti-g suits or garments)

2010/005 . . . (High altitude suits or garments, e.g. partial or total pressure)

2010/007 . . . (Suits with cooling or heating means)

11/00 Passenger or crew accommodation; Flight-deck installations not otherwise provided for
Details specially adapted for aircraft seats (crew galleys, toilet fittings (of general application A47K) and (class dividers B64D 11/0023)

- Adjustable inclination or position of seats
- Adjustable headrests
- Adjustable foot or leg rests
- Adjustable arm rests

- Seats characterised by special features of stationary arms, foot or head rests
- Seats characterised by special upholstery or cushioning features
- Lower frame constructions
- Seats characterised by special features for reducing weight
- Especially adapted for pilots
- Especially adapted for cabin crew
- Width modification of seat assemblies, e.g. for class modification
- Means for fastening seats to floors, e.g. to floor rails
- Seats suspended from aircraft ceiling
- Seats suspended from aircraft walls

13/00 Arrangements or adaptations of air-treatment apparatus for aircraft crew or passenger, or freight space: {or structural parts of the aircraft} (treatment rooms with artificial climate for medical purposes A61G 10/02; respiratory apparatus in general A62B; for vehicles in general B66H)

- Cabin ventilation nozzles
- {the air being used to cool structural parts of the aircraft}
- Automatic control of pressure
- The air being conditioned (pressurising B64D 13/02)
- Environmental Control Systems
- Providing hot air or liquid for deicing aircraft parts, e.g. aerodynamic surfaces or windows
- Combined with auxiliary power units (APU’s)
- [with subsystems for cooling avionics]
- [with arrangements for reducing or managing bleed air, using another air source, e.g. ram air]
- [used in combination with boundary layer control systems]
- [comprising means for distribution effusion of conditioned air in the cabin]
- [with subsystems for cooling food, catering or special loads]
2013/0633 . . . [including chemical reaction-based thermal management systems]
2013/0637 . . . [with CO₂ removers]
2013/0644 . . . [comprising more than one system, e.g. dual systems]
2013/0648 . . . [including electric motors or generators]
2013/0651 . . . [comprising filters, e.g. dust filters]
2013/0659 . . . [comprising provisions for cooling fuel systems]
2013/0662 . . . [with humidity control]
2013/0666 . . . [with means for preventing icing within the ECS components]
2013/067 . . . [with air ionizers]
2013/0677 . . . [comprising on board oxygen generator systems]
2013/0681 . . . [with oxygen control]
2013/0685 . . . [with ozone control]
2013/0688 . . . [with means for recirculating cabin air]
2013/0692 . . . [with special provisions against smoke from cigarettes]
2013/0696 . . . [with provisions for starting power plants]
13/08 . . . the air being heated or cooled
15/00 De-icing or preventing icing on exterior surfaces of aircraft (motor vehicles specially adapted for carrying de-icing equipment B60P)
15/02 . . . by ducted hot gas or liquid
15/04 . . . Hot gas application
15/06 . . . Liquid application (in general B05)
15/08 . . . exuded from surface
15/10 . . . sprayed over surface
15/12 . . . by electric heating (electric heating elements in general H05B)
15/14 . . . controlled cyclically along length of surface
15/16 . . . by mechanical means
15/163 . . . [using electro-impulsive devices]
15/166 . . . [using pneumatic boots]
15/20 . . . Means for detecting icing or initiating de-icing
15/22 . . . Automatic initiation by icing detector
17/00 Parachutes (non-canopied parachutes B64D 19/00)
17/02 . . . Canopy arrangement or construction
17/025 . . . (for gliding chutes)
17/04 . . . formed with two or more canopies arranged about a common axis
17/06 . . . formed with two or more canopies arranged in a cluster
17/08 . . . Secondary or shock-absorbing canopies attached to load line
17/10 . . . Ribbon construction or the like
17/12 . . . constructed to provide variable or non-uniform porosity over area of canopy
17/14 . . . with skirt or air-deflecting panels
17/16 . . . secured to hem of main canopy
17/18 . . . Vent arrangement or construction
17/20 . . . variable in area
17/22 . . . Load suspension
17/24 . . . Rigging lines
17/26 . . . attached to hem of canopy
17/28 . . . attached to apex of canopy
17/30 . . . Harnesses (harnesses per se A62B)
17/32 . . . Construction of quick-release box
17/34 . . . adapted to control direction or rate of descent
17/343 . . . [by reefing means]
17/346 . . . [by anti-squid lines]
17/36 . . . incorporating friction devices or frangible connections to reduce shock loading of canopy (B64D 17/343, B64D 17/346 take precedence)
17/38 . . . Releasable fastening devices between parachute and load or pack
17/383 . . . [Cargo release hooks]
17/386 . . . [Devices adapted to cut lines or straps]
17/40 . . . Packs
17/42 . . . rigid
17/44 . . . forming part of load
17/46 . . . Closing means
17/48 . . . with separate pack for extractor of auxiliary parachute
17/50 . . . formed with separate compartments for main canopy, rigging lines, or auxiliary parachute
17/52 . . . Opening, e.g. manual
17/54 . . . automatic
17/56 . . . responsive to barometric pressure
17/58 . . . responsive to time-delay mechanism
17/60 . . . by static line
17/62 . . . Deployment
17/64 . . . by extractor parachute
17/66 . . . attached to hem of main canopy
17/68 . . . attached to apex of main canopy
17/70 . . . by springs
17/72 . . . by explosive or inflatable means
17/725 . . . [by explosive means]
17/74 . . . Sequential deployment of a plurality of canopies
17/76 . . . facilitated by method of folding or packing
17/78 . . . in association with other load-retarding apparatus
17/80 . . . in association with aircraft, e.g. for braking thereof
19/00 Non-canopied parachutes
19/02 . . . Rotary-wing parachutes
21/00 Testing of parachutes
23/00 Training of parachutists
25/00 Emergency apparatus or devices, not otherwise provided for (parachutes B64D 17/00, B64D 19/00; jettisoning of fuel tanks or fuel per se B64D 37/00; specially adapted for protection against criminal attack, e.g. anti-hijacking systems B64D 450015); safety belts or body harnesses in general A62B 35/00; safety belts or body harnesses for land vehicles B60R 22/00; jettisonable parts of fuselage facilitating emergency escape B64C)
25/02 . . . Supports or holding means for living bodies
25/04 . . . Seat modifications
25/06 . . . Harnessing
25/08 . . . Ejecting or escaping means (escape apertures B64C)
25/10 . . . Ejector seats
25/12 . . . Ejectable capsules
Arrangement or mounting of power plant in aircraft; Aircraft characterised thereby (attitude, flight direction, or altitude control of aircraft by jet reaction B64C)

27/00

2027/005 [ Aircraft with an unducted turbofan comprising contra-rotating rotors, e.g. contra-rotating open rotors (CROR) ]

27/02 . Aircraft characterised by the type or position of power plant (fuselages or wings adapted for mounting power plant B64C)

27/023 . (of rocket type, e.g. for assisting taking-off or braking)

2027/026 . (comprising different types of power plants, e.g. combination of an electric motor and a gas-turbine)

27/04 . of piston type

27/06 . within or attached to wing

27/08 . within or attached to fuselage

27/10 . of gas-turbine type (B64D 27/16 takes precedence)

27/12 . within or attached to wing

27/14 . within or attached to fuselage

27/16 . of jet type

27/18 . within or attached to wing

27/20 . within or attached to fuselage

27/22 . using atomic energy

27/24 . using steam, electricity, or spring force (B64D 27/16 takes precedence)

27/26 . Aircraft characterised by construction of power-plant mounting

2027/262 . (Engine support arrangements or elements)

2027/264 . (comprising box like supporting frames)

2027/266 . (comprising suspension arrangements for supporting vertical loads)

2027/268 . (comprising thrust links)

29/00 Power-plant nacelles, fairings, or cowlings (nacelles not otherwise provided for B64C)

29/02 . associated with wings (wings adapted for mounting power plant B64C)

29/04 . associated with fuselages

29/06 . Attaching of nacelles, fairings or cowlings

29/08 . Inspection panels for power plants

31/00 Power plant control; Arrangement thereof (F02 takes precedence) flying controls B64C)

31/02 . Initiating means

31/04 . actuated personally

31/06 . actuated automatically

31/08 . for keeping cruising speed constant (conjoint control of power plant and propeller B64C)

31/10 . for preventing asymmetric thrust upon failure of one power plant

31/12 . for equalising or synchronising power plants

31/14 . Transmitting means between initiating means and power plants

33/00 Arrangements in aircraft of power plant parts or auxiliaries not otherwise provided for

33/02 . of combustion air intakes (air intakes for gas-turbine plants or jet-propulsion plants per se F02C 7/04; air intakes for combustion engines in general B62M 35/00)

3203/0206 . (comprising noise reduction means, e.g. acoustic liners)

3203/0213 . (specially adapted for auxiliary power units (APU’s))

3203/022 . (comprising bird or foreign object protections)

3203/0226 . (comprising boundary layer control means)

3203/0233 . (comprising de-icing means)

3203/024 . (comprising cooling means)

3203/0246 . (comprising particle separators)

3203/0253 . (specially adapted for particular type of aircraft)

3203/026 . (for supersonic or hypersonic aircraft)

3203/0266 . (specially adapted for particular type of power plants)

3203/0273 . (for jet engines)

3203/028 . (for piston engines)

3203/0286 . (for turbofan engines)

3203/0293 . (for turboprop engines)

33/04 . of exhaust outlets or jet pipes (exhaust outlets for combustion engines in general F01N; jet pipes or nozzles for jet-propulsion plants per se F02K; plants characterised by the form or arrangement of the jet pipe or nozzle F02K (attitude, flight direction, or altitude control by jet reaction B64C))

3203/045 . (comprising infrared suppressors)

33/06 . (Silencing exhaust or propulsion jets (ground installations B64F))

33/08 . of power plant cooling systems (cooling of internal-combustion engines per se F01P; cooling of gas-turbine plants or jet-propulsion plants per se F02C, F02K)

33/10 . . Radiator arrangement

33/12 . . of retractable type

35/00 Transmitting power from power plant to propellers or rotors; Arrangements of transmissions (propellers or rotors per se, helicopter transmissions B64C)

35/02 . characterised by the type of power plant

35/04 . characterised by the transmission driving a plurality of propellers or rotors

35/06 . the propellers or rotors being counter-rotating

35/08 . characterised by the transmission being driven by a plurality of power plants

37/00 Arrangements in connection with fuel supply for power plant (refuelling during flight B64D 39/00)

37/005 . (Accessories not provided for in the groups B64D 37/02 - B64D 37/28)

37/02 . Tanks (tanks constructed integrally with aircraft wings B64C; shape or construction of tanks per se B65D)

37/04 . Arrangement thereof in or on aircraft

37/06 . Constructional adaptations thereof

37/08 . Internal partitioning

37/10 . to facilitate fuel pressurisation

37/12 . jettisonable

37/14 . Filling or emptying (transferring fuels to adjust aircraft trim B64C)

37/16 . Filling systems (ground installations for fuelling aircraft B64F)
Conditioning fuel during filling

Emptying systems

facilitating emptying in any position of tank

using gas pressure

Jettisoning of fuel

Control thereof

Fuel systems for specific fuels

Safety measures not otherwise provided for, e.g. preventing explosive conditions (extinguishing or preventing fires in aircraft A62C)

Fuel tanks with provisions for reduction hydraulic ram shocks due to projectile impacts

Conditioning fuel, e.g. heating (during filling B64D 37/18)

Refuelling during flight (filling or emptying fuel tanks B64D 37/14)

Means for paying-in or out hose

Adaptations of hose construction (pipes in general F16L)

Connecting hose to aircraft; Disconnecting hose therefrom

Power installations for auxiliary purposes

(Mounting arrangements for auxiliary power units (APU's))

(Fuel cells)

(Ram air turbines)

Arrangements or adaptations of instruments (arrangements of cameras B64D 47/08; aeronautical measuring instruments per se G01C)

for indicating aircraft speed or stalling conditions

Aircraft indicators or protectors not otherwise provided for (camouflage F41H 3/00)

[Devices specially adapted to indicate the position of a movable element of the aircraft, e.g. landing gear]

[for indicating symmetry of flaps deflection]

[Devices specially adapted for the protection against criminal attack, e.g. anti-hijacking systems]

(by disabling or restraining attackers)

(by spraying gases in cabins, or by shooting darts with anesthetic effects)

(by monitoring cabins)

(uses cameras)

(detecting passenger or pilot behaviors by sensors, e.g. biometrics)

(by communicating emergency situations to ground control, or between crew members)

(by protecting cabin or luggage from bombs)

(by overriding pilot's controls, or by directing aircraft from ground control to avoid certain paths or zones)

(by avoiding the use of electronic equipment during flight, e.g. of mobile phones or laptops)

[Black boxes, devices automatically broadcasting distress signals]

[Indicators or signs in the cabin, e.g. exit signs or seat numbering]

[Adaptations for use of electronic flight bags in aircraft; Supports therefor in the cockpit]

[Devices for detecting or indicating hard landing]

[Devices for aircraft health monitoring, e.g. monitoring flutter or vibration]

[Fire detection or protection; Erosion protection, e.g. from airborne particles]

[Devices specially adapted to avoid bird strike]

Lightning protectors; Static dischargers (in general H01T)

Landing aids; Safety measures to prevent collision with earth's surface

.. mechanical

.. optical

Equipment not otherwise provided for

.. Arrangements or adaptations of signal or lighting devices

.. the lighting devices being primarily intended to illuminate the way ahead

.. for indicating aircraft presence

.. Arrangements of cameras

Airbags mounted in aircraft for any use

Aircraft or airfield lights using LEDs

Aircraft with means for ground manoeuvring, such as taxiing, using an auxiliary thrust system, e.g. jet-engines, propellers or compressed air

Arrangements of solar panels on aircraft

Electric power distribution systems onboard aircraft

Emergency oxygen systems

.. Supply or distribution systems

.. Oxygen masks; Mask storages (seats combined with storage means, said storage means being specially adapted for emergency equipment B64D 11/0629); Features related to mask deployment

NACA type air intakes