

B64D

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

Definition statement

This place covers:

- Dropping, ejecting, releasing or receiving articles in flight;
- Arrangements of military equipment;
- Equipment for handling freight;
- Flight suits;
- Passenger or crew accommodation; arrangements of seats;
- Air-treatment;
- De-icing;
- Parachutes;
- Emergency apparatus;
- Mounting power plant in aircraft, nacelles fairings, arrangement of power plants;
- Power plant control
- Transmitting power from power plants to propellers or rotors;
- Fuel supply;
- Fuel tanks;
- Refuelling during flight;
- Arrangements of instruments;
- Indicators.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Equipment for UAVs	B64U
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Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

hybrid	power plants or aircraft having two or more different sources of motive power which may be used together or alternately
hybrid electric	power plants or aircraft having electric motors and combustion engines driving the ultimate propulsive elements, e.g. propellers. Three types of hybrid electric aircraft or propulsion plants are identified according to the arrangement of the prime movers: series, parallel and series-parallel.
hybrid electric; series type	comprises a combustion engine driving an electric generator which powers electric propulsion motors
hybrid electric; parallel type	comprises a combustion engine and an electric motor for mutual or common propulsion of the ultimate propulsive elements

hybrid electric; series-parallel type	comprises power-split devices allowing the power path from the combustion engine to the ultimate propulsive element to be either fully mechanical, fully electric as in a series type or a combination of the two
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B64D 1/00

Dropping, ejecting, releasing or receiving articles, liquids, or the like, in flight (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](#); weapon sights or aiming [F41G](#))

Relationships with other classification places

Ejector seats or ejectable capsules for ejecting or releasing humans in case of emergency are covered by groups [B64D 25/10](#) and [B64D 25/12](#).

References

Limiting references

This place does not cover:

Refuelling during flight	B64D 39/00
Apparatus for launching projectiles or missiles from barrels, e.g. cannons	F41F 1/00
Rocket or torpedo launchers	F41F 3/00
Launching apparatus for projecting projectiles or missiles otherwise than from barrels	F41F 7/00
Weapon sights; Aiming	F41G

Informative references

Attention is drawn to the following places, which may be of interest for search:

Parachutes	B64D 17/00
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B64D 1/04

the articles being explosive, e.g. bombs

Definition statement

This place covers:

- Ejector systems for missiles;
- Devices for separating bombs from fuselage.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Rocket launchers	B64D 7/08
Bombs; Missiles	F42B

Ammunition fuzes; Arming or safety means therefor	F42C
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B64D 1/06

Bomb releasing; Bomb doors

Definition statement

This place covers:

Bomb bays in fuselages

Bomb doors of bomb bays.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Bombs	F42B
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B64D 1/10

Stowage arrangements for the devices in aircraft

Definition statement

This place covers:

Arrangements for holding the load in the aircraft fuselage or means adapted to release the load.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Retaining devices for pallets or freight containers	B64D 9/003
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B64D 1/12

Releasing

Definition statement

This place covers:

Extractor parachutes

Ejector devices.

B64D 1/14

Absorbing landing shocks

Definition statement

This place covers:

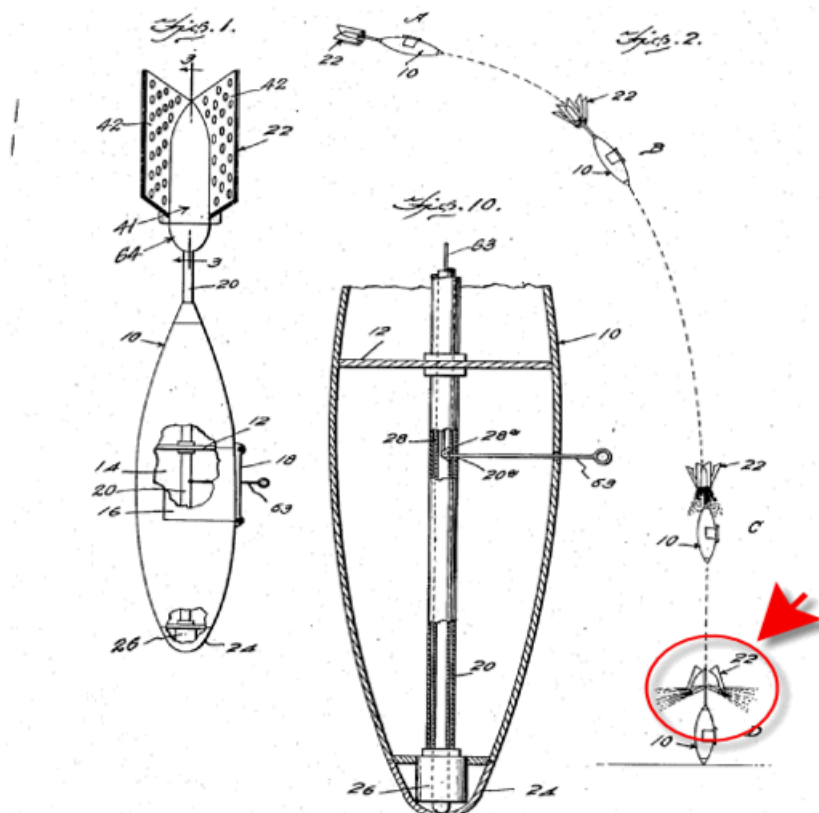
Rockets used as braking devices.

Definition statement

Cushioning devices; shock absorbers, springs, etc. for absorbing landing chocks on load-carrying articles dropped/ejected/released from an aircraft.

Illustrative example of subject matter classified in this group:

One or more rocket could be positioned on the load and ignited just prior to touch-down, such that the rocket thrust brakes/cushions the arrival on the ground, as shown in this example (ignited rockets (22) circled in red):



B64D 1/16

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

Definition statement

This place covers:

Fire fighting aircraft

Water baskets hanging below helicopters.

References

Limiting references

This place does not cover:

Jettisoning fuel	B64D 37/26
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Fire prevention, containment or extinguishing specially adapted for particular objects or places	A62C 3/00
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B64D 1/18

by spraying, e.g. insecticides

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Spraying or atomising apparatus in general	B05B
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B64D 1/22

Taking-up articles from earth's surface

Definition statement

This place covers:

Devices adapted on aircraft for hanging loads

Helicopter devices for transporting hanging loads

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Repair of electric lines	H02G 1/02
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B64D 3/00

Aircraft adaptations to facilitate towing or being towed

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Refuelling during flight	B64D 39/00
Ground or aircraft-carrier-deck installations for launching aircraft	B64F 1/04
Ground or aircraft-carrier-deck installations for towing aircraft	B64F 1/223
Towing ropes per se	D07B

B64D 3/02**for towing targets****Definition statement**

This place covers:

Devices mounted on aircraft for towing targets.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Towed airborne targets	F41J 9/10
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B64D 5/00**Aircraft transported by aircraft, e.g. for release or reberthing during flight****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Flying units formed by separate aircraft	B64C 37/02
Space shuttles	B64G 1/14

B64D 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](#))

Definition statement

This place covers:

Stealth structures

Armoured structures.

References**Limiting references**

This place does not cover:

Bomb releasing	B64D 1/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Weapons	F41
Armour in general	F41H

Camouflage in general	F41H 3/00
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B64D 7/08

Arrangement of rocket launchers

Definition statement

This place covers:

Rail systems for rockets.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Ejector systems for missiles	B64D 1/04
Aircraft rocket launchers	F41F 3/06

B64D 9/00

Equipment for handling freight; Equipment for facilitating passenger embarkation or the like

Definition statement

This place covers:

Loading systems and methods

Cargo handling.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Parachutes	B64D 17/00
Non-canopied parachutes	B64D 19/00
Emergency apparatus or devices, not otherwise provided for	B64D 25/00
Securing freight containers or forwarding containers on vehicles	B60P 7/13
Fuselage floors specially adapted for freight	B64C 1/20
Structures integral with fuselages to facilitate loading	B64C 1/22
Steps mounted on, and retractable within, fuselages	B64C 1/24
Ground installations for embarking or disembarking passengers	B64F 1/30
Ground installations for handling freight	B64F 1/32
Large rigid containers specially adapted for air transport	B65D 88/14
Roller ways	B65G 13/00
Weighing aircraft	G01G 19/07
Determining centre of gravity in aircraft	G01M 1/125

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

power drive unit [PDU]	powered rollers and drives to move containers and pallets within aircraft fuselages or cargo bays
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B64D 9/003

{Devices for retaining pallets or freight containers}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Securing freight containers on vehicles	B60P 7/13
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B64D 10/00

Flight suits

Definition statement

This place covers:

- Garments for pilots, e.g. G-suits, trousers or bladders;
- Helmets;
- Oxygen supply, e.g. valves, pilots' masks or controllers.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Helmets in general	A42B 3/00
Respiratory or breathing apparatus	A62B 7/00
Protective clothing for use at high altitudes	A62B 17/00
High-altitude pressure suits	A62B 17/008
Breathing masks or helmets	A62B 18/00
Space suits	B64G 6/00

B64D 11/00

Passenger or crew accommodation; Flight-deck installations not otherwise provided for

Definition statement

This place covers:

Cabin layouts

Passengers' oxygen masks.

B64D 11/0007**{Devices specially adapted for food or beverage distribution services}****Definition statement***This place covers:*

Food and beverage distribution systems

Interaction between trolley and cabin.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Trolleys adapted to be used in vehicles	A47B 31/06
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B64D 11/0015**{Arrangements for entertainment or communications, e.g. radio, television}****Definition statement***This place covers:*

Aircraft cabin layouts characterised by arrangements of components for amusement or media, e.g. arrangements of monitors, speakers or control means therefor

Arrangements of communication means for cabin crew or passenger use

Display of navigation data on monitors for passenger information

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Accessories for chairs, adaptations for incorporating lamps, radio sets, bars, telephones, ventilation, heating or cooling arrangements or the like	A47C 7/72
Arrangements or adaptations of other passenger fittings (of radio sets, television sets, telephones, stowing or holding appliances) in land-type vehicles	B60N 3/00
Furniture for vessels	B63B 29/04
Combined measuring instruments indicating more than one navigational value, e.g. for aircraft	G01C 23/00

Special rules of classificationDocuments concerning only the data transfer between components of an aircraft cabin entertainment/communication system are attributed the symbol [B64D 11/0015](#) as additional information only.

B64D 11/0023**{Movable or removable cabin dividers, e.g. for class separation}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Aircraft bulkheads	B64C 1/10
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B64D 11/02**Toilet fittings****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Sanitary equipment; Accessories therefor, e.g. toilet accessories	A47K
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B64D 11/06**{Arrangements of seats, or adaptations or details specially adapted for aircraft seats (crew seat constructions for emergency purposes [B64D 25/04](#))}****Definition statement***This place covers:*

Arrangements, configurations or modifications of seats or chairs, or particular seat or chair structures for aeronautic passengers. For passengers only, unless otherwise stated (Seats specially adapted for pilots [B64D 11/0689](#) and Seats specially adapted for cabin crew [B64D 11/0691](#)).

References**Limiting references***This place does not cover:*

Crew seat constructions for emergency purposes	B64D 25/04
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Chairs adapted for special (ground) purposes	A47C 1/00
Theatre, auditorium, or similar chairs	A47C 1/12
Vehicle seats	B60N 2/00
Arrangement or mounting of seats in vehicles	B60N 2/005
Vehicle seat accessories	B60N 3/00
Railway seats	B61D 33/00
Marine vessel seats	B63B 2029/043

Special rules of classification

A document will be considered as disclosing an aircraft seat if:

- this use is explicitly mentioned,
- it is evident from the drawings that it is such a seat, or
- if the document originates from the aircraft industry or an airline.

B64D 11/0604

{including a bed, e.g. cocoon type passenger seat modules}

Definition statement

This place covers:

- Seat or chair units combined with a generally horizontal surface for a reclining person and can include a canopy-type structure substantially enclosing the occupant(s)
- Additional and separate surfaces or parts to form a bed

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Crew member rest berths	B64D 2011/0076
Passenger bed units attached to the fuselage ceiling	B64D 2011/0084
Arrangements of stretchers in aircraft cabins	B64D 2011/0092
Aircraft passenger seats convertible to a bed	B64D 11/0641

B64D 11/0605

{including tables or desks}

Definition statement

This place covers:

Seat or chair units combined with a generally horizontal surface above a floor and can include storage space

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangements or adaptations of other passenger fittings, of table or tray	B60N 3/002
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B64D 11/0606

{with privacy shells, screens, separators or the like (class dividers
[B64D 11/0023](#))}

Definition statement

This place covers:

Seat or chair units combined with visual obstructions to other passengers

References

Limiting references

This place does not cover:

Class dividers	B64D 11/0023
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B64D 11/0607

{with devices specially adapted for exercising during travel; with devices specially adapted to prevent thrombosis}

Definition statement

This place covers:

Seats or chairs combined with appliances for a person's conditioning, muscle development, or anticlotting

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Stools or chairs having exercising means or having special therapeutic or ergonomic effects	A47C 9/002
Pneumatic or hydraulic massage	A61H 9/00
Pneumatic massage with intermittent or alternately inflated bladders or cuffs	A61H 9/0078
Physical therapy devices for anti-thrombosis or anti-clotting	A61H 2209/00
Vehicle seats with massaging systems	B60N 2/976

B64D 11/0611

{with means for holding the passenger in a standing position}

Definition statement

This place covers:

Seats or chairs combined with a structure to steady an upright person

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Safety belts or body harnesses in vehicles	B60R 22/00
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B64D 11/0612**{specially adapted for children}****Definition statement***This place covers:*

Seat or chair modifications or accessories for accommodating a pre-adult aircraft passenger

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Vehicle passenger seats for children	B60N 2/26
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B64D 11/0616**{with ejection means}****Definition statement***This place covers:*

Seats combined with a device to propel a passenger away from the seat

References**Application-oriented references***Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Pilot type ejection seats	B64D 25/10
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Ejecting or escaping means	B64D 25/08
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B64D 11/0619**{with energy absorbing means specially adapted for mitigating impact loads for passenger seats, e.g. at a crash}****Definition statement***This place covers:*

Seats or chairs combined with a device or special design to dissipate deceleration

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Seat modifications for pilots	B64D 25/04
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Seat constructed to protect the occupant from the effect of abnormal g-forces	B60N 2/42
Arrangements or fittings on vehicles for protecting or preventing injuries to occupants	B60R 21/00

B64D 11/062

{Belts or other passenger restraint means for passenger seats}

Definition statement

This place covers:

Seats or chairs combined with a torso or limb encircling device, or a device to hold an aircraft passenger in place

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Harnessing for pilots	B64D 25/06
Safety belts or body harnesses in general	A62B 35/00
Safety belts or body harnesses in vehicles	B60R 22/00

B64D 11/06205

{Arrangements of airbags}

Definition statement

This place covers:

Seats or chairs combined with a device to hold a passenger in place including an inflatable confining device

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Inflatable occupant restraints or confinements designed to inflate upon impact or impending impact, e.g. air bags	B60R 21/16
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B64D 11/0624

{Arrangements of electrical connectors, e.g. for earphone, internet or electric supply}

Definition statement

This place covers:

Seats or chairs combined with a configuration of mated conductors used to transmit sound, images, or current

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangement of elements of electric or fluid circuits specially adapted for vehicles	B60R 16/00
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B64D 11/0626

{with individual temperature or ventilation control}

Definition statement

This place covers:

Seats or chairs combined with personal heating, cooling, or air circulation means

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Cabin ventilation nozzles	B64D 2013/003
Heating or ventilating devices for a vehicle	B60N 2/56

B64D 11/0627

{Seats combined with storage means}

Definition statement

This place covers:

Seats or chairs combined with a cabinet or cabinet-type structure

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Stowage devices for passengers' personal luggage in aircraft	B64D 11/003
Personal storage means or waste disposal bags	B64D 11/0636
Stowing or holding appliances inside vehicle primarily intended for personal property smaller than a suitcase	B60R 7/00

B64D 11/0636

{Personal storage means or waste disposal bags}

Definition statement

This place covers:

Seats or chairs with storage means for a passenger's carry-on belongings or for garbage disposal

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Stowage devices for passengers' personal luggage in aircraft	B64D 11/003
Seats combined with cabinet-type storage means	B64D 11/0627
Stowing or holding appliances inside vehicle primarily intended for personal property smaller than a suitcase	B60R 7/00

B64D 11/0639

{with features for adjustment or converting of seats}

Definition statement

This place covers:

Seats or chairs having structures permitting repositioning seat or chair portions or altering the configuration

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Reclining or easy chairs	A47C 1/02
Vehicle seat or part thereof being movable, e.g. adjustable	B60N 2/02

B64D 11/06395

{characterised by the arrangement of electric motors for adjustment}

Definition statement

This place covers:

Arrangement of powered devices to reposition or alter a seat portion

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Reclining or easy chairs adjustable via electric motor	A47C 1/0242
Vehicle seat or part thereof being movable or adjustable via an electric motor	B60N 2/02246

B64D 11/064**{Adjustable inclination or position of seats}****Definition statement**

This place covers:

Seat or chair tilt or position configuration

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Reclining or easy chairs	A47C 1/02
Vehicle seat or part thereof being movable, e.g. adjustable	B60N 2/02

B64D 11/0642**{Adjustable headrests}****Definition statement**

This place covers:

Seats or chairs with a repositionable support for a passenger's portion above the torso, including the neck and/or the head

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Chairs with head rest	A47C 7/46
Vehicle seat with movable or adjustable head rest	B60N 2/806

B64D 11/0643**{Adjustable foot or leg rests}****Definition statement**

This place covers:

Seats or chairs with a repositionable support for a passenger's lower body, including legs and/or feet

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Chairs with leg or foot rest	A47C 1/034 , A47C 7/506
Seats for vehicle with leg or foot rest	B60N 2/995 , B60N 3/06

B64D 11/0644**{Adjustable arm rests}****Definition statement**

This place covers:

Seats or chairs with a repositionable passenger upper body extremity support, such as one or both arms

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Chairs with adjustable arm rest	A47C 1/03 , A47C 7/541
Vehicle seat with adjustable arm rests	B60N 2/763

B64D 11/0646**{Seats characterised by special features of stationary arms, foot or head rests}****Definition statement**

This place covers:

Seats or chairs with particular characteristic of fixed supports for body parts other than the torso

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Chairs with head rest	A47C 7/36
Chairs with leg or foot rests	A47C 7/50
Chairs with stationary arm rests	A47C 7/54
Seats for vehicle with arm rests	B60N 2/75
Seats for vehicles with fixed head rest	B60N 2/803
Seats for vehicle with leg or foot rests	B60N 2/995 , B60N 3/06

B64D 11/0647**{Seats characterised by special upholstery or cushioning features}****Definition statement**

This place covers:

Seats or chairs with particular characteristic of a soft covering or padding

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chair of special materials	A47C 5/00
Vehicle seat with upholstery	B60N 2/70

B64D 11/0648

{Lower frame constructions}

Definition statement

This place covers:

Seat or chair frames, understructure or substructure between seat pan and fastening means to a floor

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Crash frames	B64D 11/0619
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Vehicle seat constructed to protect the occupant from the effect of abnormal-forces, e.g. crash or safety seats	B60N 2/42
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B64D 11/0649

{Seats characterised by special features for reducing weight}

Definition statement

This place covers:

Seat or chair design or components therefore minimizing the weight

- Designs without a frame, e.g. using a back plate
- Use of materials such as plastic, aluminum, composites, etc. with the objective task to reduce weight
- Pneumatic elements
- One piece design, i.e. integral back and bottom
- Hollow pieces, e.g. tubular frame members

B64D 11/0691**{specially adapted for cabin crew}****Definition statement***This place covers:*

Seats or chairs designed to be deployed during take-off and landing and stowed during flight, e.g. foldable seats on a wall or bulkhead specifically for a purser or flight attendant

B64D 11/0693**{Width modification of seat assemblies, e.g. for class modification}****Definition statement***This place covers:*

Seats or chairs with means for transverse adjustment, e.g. to accommodate an additional person

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Vehicle seats with transverse adjustment of arm rests	B60N 2/777
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B64D 11/0696**{Means for fastening seats to floors, e.g. to floor rails}****Definition statement***This place covers:*

Seat-side structures to attach a seat or chair to receiving means of a cabin floor

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Vehicle seat positioning and locking mechanism	B60N 2/919
Floors specially adapted for fixing freight	B64C 1/20

B64D 11/0697**{Seats suspended from aircraft ceiling}****Definition statement***This place covers:*

Structure to attach seats or chairs to the passenger cabin overhead surface

B64D 11/0698**{Seats suspended from aircraft walls}****Definition statement***This place covers:*

Structure to attach seats or chairs to the passenger cabin side or generally vertical surface

- Hammock type seats
- Seats used in troop transport aircraft

B64D 13/00**Arrangements or adaptations of air-treatment apparatus for aircraft crew or passengers, or freight space****Definition statement***This place covers:*

Accessories for air-conditioning systems, e.g. valves, nozzles, air mixing chambers.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Treatment rooms with artificial climate for medical purposes	A61G 10/02
Respiratory apparatus in general	A62B
Arrangements of heating, cooling, ventilating or other air-treating devices specially adapted for passenger or goods spaces of vehicles in general	B60H
Valves in general	F16K

B64D 13/006**{the air being used to cool structural parts of the aircraft}****Definition statement***This place covers:*

Arrangements and devices to direct cooling air from air-conditioning to structural parts of the aircraft.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Conditioning fuel	B64D 37/34
Fuselage structures adapted to reduce the effects of aerodynamic or other external heating	B64C 1/38
Aircraft heat insulation	B64C 1/40
Wing constructions adapted to reduce effects of aerodynamic or other external heating	B64C 3/36

B64D 13/02**the air being pressurised****Definition statement***This place covers:*

Cabin pressurising valves

Security devices.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Valves	F16K 1/00
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B64D 13/04**Automatic control of pressure****Definition statement***This place covers:*

Cabin pressurising systems.

B64D 13/06**the air being conditioned (pressurising [B64D 13/02](#))****Definition statement***This place covers:*

Air conditioning systems, e.g. air cycle machines.

References**Limiting references***This place does not cover:*

Cabin pressurising systems	B64D 13/02
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Air cycle machines in general	F25B 9/004
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Glossary of terms*In this place, the following terms or expressions are used with the meaning indicated:*

ECS	Environmental control system
OBOGS	On-Board Oxygen Generation System

B64D 13/08**the air being heated or cooled****Definition statement**

This place covers:

Systems for cooling or heating cabin air, e.g. using heat from radiator.

Heaters

Cabin ventilation systems.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Heating, cooling or ventilating devices in vehicles	B60H 1/00
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B64D 15/00**De-icing or preventing icing on exterior surfaces of aircraft****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Motor vehicles specially adapted for carrying de-icing equipment	B60P 3/00
Ground-installations for de-icing aircraft	B64F 5/20

B64D 15/06**Liquid application****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Spraying or atomising apparatus in general	B05B
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B64D 15/12

by electric heating (heating arrangements specially adapted for transparent or reflecting areas [H05B 3/84](#))

References**Limiting references**

This place does not cover:

Heating arrangements specially adapted for transparent or reflecting areas	H05B 3/84
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Electric heating not otherwise provided for	H05B
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B64D 17/72

by explosive or inflatable means

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Arrangements of valves to inflatable elastic bodies	B60C 29/00
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B64D 25/00

Emergency apparatus or devices, not otherwise provided for

Definition statement

This place covers:

Fire extinguishing

Safety airbags.

References**References out of a residual place**

Examples of places in relation to which this place is residual:

Parachutes	B64D 17/00
Non-canopied parachutes	B64D 19/00
Arrangement of jettisonable fuel tanks in or on aircraft	B64D 37/12
Systems for jettisoning of fuel	B64D 37/26

Informative references

Attention is drawn to the following places, which may be of interest for search:

Protection against criminal attack	B64D 45/0015
Safety belts or body harnesses in general	A62B 35/00
Fire prevention, containment or extinguishing specially adapted for aircraft	A62C 3/08
Safety belts or body harnesses for land vehicles	B60R 22/00
Severable or jettisonable parts of fuselage facilitating emergency escape	B64C 1/32

B64D 25/02**Supports or holding means for living bodies****Definition statement**

This place covers:

Restraining means for pilot's legs, head or arms in ejection seats.

B64D 25/04**Seat modifications****Definition statement**

This place covers:

Crashworthy seats

Adapted or integrated swimming vests.

B64D 25/08**Ejecting or escaping means****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Windows; Doors; Canopies	B64C 1/14
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B64D 25/14**Inflatable escape chutes****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Arrangements of valves to inflatable elastic bodies	B60C 29/00
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B64D 25/18**Flotation gear****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Aircraft alighting gear	B64C 25/00
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B64D 27/00**Arrangement or mounting of power plants in aircraft; Aircraft characterised by the type or position of power plants****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Attitude, flight direction or altitude control of aircraft by jet reaction	B64C 15/00
Propulsion or power supply in UAVs	B64U 50/00

B64D 27/02**Aircraft characterised by the type or position of power plants****Definition statement**

This place covers:

Aircraft characterised by particular disposition or arrangement of power plants.

Aircraft characterised by the type of power plants.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Fuselages specially adapted for mounting power plants	B64C 1/16
Wings specially adapted for power plants	B64C 3/32
Helicopters with drive of rotors by means, e.g. propellers, mounted on rotor blades	B64C 27/16

B64D 27/04**of piston type****Definition statement**

This place covers:

Structures for mounting piston type power plants in aircraft, independently of the position of the same.

B64D 27/06**within, or attached to, wings****Definition statement***This place covers:*

Structures for mounting piston type power plant at the wing of the aircraft.

B64D 27/08**within, or attached to, fuselages****Definition statement***This place covers:*

Structures for mounting piston type power plant at the fuselage of the aircraft.

B64D 27/10**of gas-turbine type (jet aircraft [B64D 27/16](#))****Definition statement***This place covers:*

Aircraft characterised by the use of gas turbine power plants to drive the propulsive elements, such as propellers or rotors, primarily those using turboshaft or turboprop power plants.

References**Limiting references***This place does not cover:*

Jet-propulsion aircraft	B64D 27/16
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Hybrid electric aircraft	B64D 27/33
Auxiliary power units [APUs]	B64D 41/00
Gas turbine plants per se	F02C

B64D 27/12**within, or attached to, wings****Definition statement***This place covers:*

Structures for mounting turboprop type power plants at the wing of the aircraft.

B64D 27/14**within, or attached to, fuselages****Definition statement***This place covers:*

Structures for mounting turboprop type power plants at the fuselage of the aircraft.

B64D 27/16**of jet type****Definition statement***This place covers:*

Aircraft characterised by the use of jet-propulsion power plants, e.g. by using turbojet, turbofan, propfan or ramjet power plants.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Jet propulsion plants per se	F02K
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B64D 27/18**within, or attached to, wings****Definition statement***This place covers:*

Structures for mounting turbofan type power plants at the wing of the aircraft.

B64D 27/20**within, or attached to, fuselages****Definition statement***This place covers:*

Structures for mounting turbofan type power plants at the fuselage of the aircraft.

B64D 27/24**using steam or spring force (jet aircraft [B64D 27/16](#))****References****Limiting references***This place does not cover:*

Jet aircraft	B64D 27/16
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B64D 27/30**Aircraft characterised by electric power plants****Definition statement**

This place covers:

Aircraft characterised by the use of electric power plants for propulsion.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Propulsion of electrically propelled vehicles	B60L
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B64D 27/33**Hybrid electric aircraft****Definition statement**

This place covers:

Aircraft characterised by the use of electric motors and combustion engines to drive the ultimate propulsive elements, e.g. propellers.

References**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Supply of electrical power generated by combustion engines for UAVs, e.g. hybrid systems	B64U 50/33
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangements of transmissions specially adapted for hybrid electric power plants	B64D 35/022
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B64D 27/34**All-electric aircraft****Definition statement**

This place covers:

Aircraft propulsion systems relying solely on electrical propulsion, i.e. without combustion engine power plants.

B64D 27/35**Arrangements for on-board electric energy production, distribution, recovery or storage****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Power plant control systems; Arrangement of power plant control systems in aircraft	B64D 31/00
Power transmission arrangements specially adapted for electric power plants	B64D 35/021
Electric power networks; Circuit arrangements or systems for supplying or distributing electric power; Systems for storing electric energy	H02J
Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries	H02J 7/00
Systems for storing electric energy specially adapted for power networks	H02J 15/00

B64D 27/351**using energy recovery****Definition statement**

This place covers:

Arrangements for recovering energy from the propulsion system, e.g. power recovery turbines or propellers operating as wind motors during descent.

B64D 27/353**using solar cells****References****Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Supply of electrical power generated by photovoltaics for UAVs	B64U 50/31
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Photovoltaic [PV] power generation	H02S
Individual photovoltaic cells, e.g. solar cells	H10F 10/00
Integrated devices, or assemblies of multiple devices, comprising at least one photovoltaic cell covered by group H10F 10/00 , e.g. photovoltaic modules	H10F 19/00

B64D 27/355**using fuel cells****References****Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Supply of electrical power generated by fuel cells for UAVs	B64U 50/32
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Propulsion of electrically propelled vehicles using propulsion power supplied by batteries or fuel cells	B60L 50/50
Fuel cells per se	H01M 8/00

B64D 27/357**using batteries****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Propulsion of electrically propelled vehicles using propulsion power supplied by batteries or fuel cells	B60L 50/50
Primary cells	H01M 6/00
Secondary cells	H01M 10/00

B64D 27/359**using capacitors****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Propulsion of electrically propelled vehicles using propulsion power supplied by capacitors	B60L 50/40
Capacitors per se	H01G

B64D 27/40

Arrangements for mounting power plants in aircraft

Definition statement

This place covers:

Arrangements for mounting power plants to aircraft wings, fuselages or similar structures, such as elastomeric joints used for this purpose.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fuselages specially adapted for mounting power plants	B64C 1/16
Wings specially adapted for mounting power plants	B64C 3/32
Frames and supporting elements for rotary-piston engines	F01C 21/007
Supporting or mounting arrangements for non-positive-displacement engines, e.g. for turbine casings	F01D 25/28
Mounting or supporting of gas turbine plants	F02C 7/20

B64D 29/00

Power-plant nacelles, fairings or cowlings

Definition statement

This place covers:

Fairings, seals or liners.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Aircraft nacelles not otherwise provided for	B64C 7/02
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B64D 29/02

associated with wings

Definition statement

This place covers:

Aerodynamic aspects of connection elements between engine nacelle and wing.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Wings specially adapted for mounting power plants	B64C 3/32
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B64D 29/04**associated with fuselages****Definition statement**

This place covers:

Aerodynamic aspects of connection elements between engine nacelle and fuselage.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Fuselages specially adapted for mounting power plants	B64C 1/16
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B64D 29/06**Attaching of nacelles, fairings or cowlings****Definition statement**

This place covers:

Operating mechanisms for cowlings or panels

Latches

Supports for thrust reversers.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Panels or cowls per se	B64D 29/08
Latches	E05B 9/00
Thrust reversers for turbine engines	F02K 1/70

B64D 29/08**Inspection panels for power plants****Definition statement**

This place covers:

- Panels;
- Cowls.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Operating mechanisms for cowlings or panels	B64D 29/06
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B64D 31/00**Power plant control systems; Arrangement of power plant control systems in aircraft****Definition statement**

This place covers:

Systems and devices for controlling the operation of aircraft power plants.

Relationships with other classification places

Group [B64D 31/00](#) covers the arrangement or mounting of power plant control systems in aircraft, whereas group [B64D 27/40](#) covers arrangements for mounting of power plants in aircraft.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Aircraft propeller blade pitch-changing mechanisms	B64C 11/30
Control systems or transmitting means for actuating flying-control surfaces, lift-increasing flaps, air brakes or spoilers	B64C 13/00
Aircraft conjoint control not otherwise provided for	B64C 19/02
Rotorcraft with mechanisms for controlling blade adjustment or movement relative to rotor head	B64C 27/54
Controlling gas-turbine plants; Controlling fuel supply in air-breathing jet-propulsion plants	F02C 9/00
Controlling combustion engines	F02D
Control or regulation of electric motors	H02P

B64D 31/02**Initiating means****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Initiating means for actuating flying-control surfaces, lift-increasing flaps, air brakes or spoilers	B64C 13/02
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B64D 31/08**for keeping cruising speed constant****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Propeller blade pitch-changing mechanisms characterised by being influenced by power plant control systems	B64C 11/305
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B64D 31/14**Transmitting means between initiating means and power plants****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Transmitting means for actuating flying-control surfaces, lift-increasing flaps, air brakes or spoilers	B64C 13/24
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B64D 31/16**for electric power plants****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Control of electric motors	H02P
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B64D 33/00**Arrangement in aircraft of power plant parts or auxiliaries not otherwise provided for****Definition statement***This place covers:*

Power plant starting systems.

B64D 33/02**of combustion air intakes****Definition statement***This place covers:*

Air intakes.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Air intakes for gas-turbine or jet propulsion plants per se	F02C 7/04
Air intakes for internal combustion engines	F02M 35/00

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

APU	auxiliary power unit
ECS	environmental control system

B64D 33/04

of exhaust outlets or jet pipes

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Attitude, flight direction or altitude control of aircraft by jet reaction	B64C 15/00
Exhaust apparatus for internal combustion engines	F01N
Jet propulsion plants characterised by the form or arrangement of the jet pipe or nozzle	F02K 1/00

B64D 33/06

{Silencing exhaust or propulsion jets}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Ground installations for reducing engine or jet noise	B64F 1/26
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B64D 33/08

of power plant cooling systems

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Cooling of internal-combustion engines per se	F01P
Cooling of gas-turbine plants per se	F02C 7/12
Cooling of jet-propulsion plants per se	F02K

B64D 35/00

Transmitting power from power plants to propellers or rotors; Arrangements of transmissions

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Arrangement or mounting of transmissions in vehicles	B60K 17/00
Aircraft propellers	B64C 11/00
Rotor drives for helicopters	B64C 27/12
Rotors for rotorcraft	B64C 27/32
Gearing	F16H
Lubrication	F16N

B64D 35/022

of hybrid-electric type

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Hybrid electric aircraft	B64D 27/33
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B64D 35/023

of series-parallel type

Definition statement

This place covers:

Transmission arrangements comprising power-split devices, allowing the power path from the combustion engine to the ultimate propulsive element to be either fully mechanical, fully electric as in a series type, or a combination of the two.

B64D 35/024

of series type

Definition statement

This place covers:

Transmission arrangements comprising a combustion engine driving an electric generator, which powers electric propulsion motors. The combustion engine does not mechanically drive the same propulsor as the electric motor.

B64D 35/025**of parallel type****Definition statement***This place covers:*

Transmission arrangements comprising a combustion engine and an electric motor for mutual or common propulsion of the ultimate propulsive elements. The combustion engine and the electric motor are generally separate systems.

B64D 35/026**the electric power plant being integral with the propeller or rotor****Definition statement***This place covers:*

The propeller or rotor being an integral component of the electric motor, such as when the rotor of the electric power plant is integrated into the propeller or propulsive rotor.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Arrangements for handling mechanical energy structurally associated with dynamo-electric machines	H02K 7/00
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B64D 35/08**characterised by the transmission being driven by a plurality of power plants (for hybrid-electric power plants [B64D 35/022](#))****References****Limiting references***This place does not cover:*

Arrangement of transmissions specially adapted for hybrid-electric power plants	B64D 35/022
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B64D 37/00**Arrangements in connection with fuel supply for power plant (refuelling during flight [B64D 39/00](#))****Definition statement***This place covers:*

Fuel supply systems

Gauging.

References

Limiting references

This place does not cover:

Refuelling during flight	B64D 39/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Fuel tanks for vehicles	B60K 15/00
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B64D 37/005

{Accessories not provided for in the groups [B64D 37/02](#) - [B64D 37/28](#)}

Definition statement

This place covers:

Plugs for fuel tanks

Other accessories for fuel supply.

B64D 37/02

Tanks (tanks constructed integrally with aircraft wings [B64C 3/34](#))

References

Limiting references

This place does not cover:

Tanks constructed integrally with aircraft wings	B64C 3/34
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Tanks in general	B65D
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B64D 37/32

Safety measures not otherwise provided for, e.g. preventing explosive conditions

Definition statement

This place covers:

- Inerting systems;
- Fire extinguishing;
- Ram shock protection.

References

References out of a residual place

Examples of places in relation to which this place is residual:

Fire prevention, containment or extinguishing specially adapted for aircraft	A62C 3/08
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B64D 39/00

Refuelling during flight

Definition statement

This place covers:

Controlling the position of the refuelling boom or hose.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Filling or emptying fuel tanks	B64D 37/14
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Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

refuelling boom	rigid pipe for refuelling
refuelling hose	flexible hose for refuelling; normally rolled on a reel

B64D 39/02

Means for paying-in or out hose

Definition statement

This place covers:

Reels for refuelling hoses

Telescopic arrangements for refuelling booms.

B64D 39/04

Adaptations of hose construction

Definition statement

This place covers:

Constructional details or accessories for refuelling booms or hoses.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Pipes or hoses in general	F16L
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B64D 39/06

Connecting hose to aircraft; Disconnecting hose therefrom

Definition statement

This place covers:

Valves for refuelling booms or hoses

Connection devices for booms or hoses

Connection devices for the receiving aircraft.

B64D 41/00

Power installations for auxiliary purposes

Definition statement

This place covers:

Mounting Auxiliary Power Units (APU) in aircraft.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Auxiliary Power Units (APU)	F02K
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Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

APU	Auxiliary Power Unit
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B64D 43/00

Arrangements or adaptations of instruments

Definition statement

This place covers:

Cockpit dashboards.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangement of cameras in or to aircraft	B64D 47/08
Aeronautical measuring instruments per se	G01C
Combined instruments indicating more than one navigational value, e.g. for aircraft	G01C 23/00
Head-up displays [HUD]	G02B 27/01

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

HUD	head-up display
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B64D 43/02

for indicating aircraft speed or stalling conditions

Definition statement

This place covers:

Arrangement of Pitot tubes.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Flight data probes	G01P 13/025
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B64D 45/00

Aircraft indicators or protectors not otherwise provided for

Definition statement

This place covers:

- Mounting and arrangement of crash recorders;
- Miscellaneous indicators.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Stealth or armoured structures	B64D 7/00
Camouflage	F41H 3/00
Crash recorders casings	H05K 5/00

Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- "crash recorder" and "black box"

B64D 45/0005

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

Definition statement

This place covers:

Asymmetric flap detection systems

Landing gear deployment detection systems.

B64D 45/0015

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

Definition statement

This place covers:

Protection systems against hijacking.

B64D 45/0028

{doors or door arrangements specially adapted to restrict unauthorized access}

Relationships with other classification places

Doors or door arrangements specially adapted to restrict unauthorized access are classified in this place ([B64D 45/0028](#)) and in [B64C 1/1469](#) (multiple classification).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Locks	E05B
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B64D 45/0061

{by protecting cabin or cargo hold from bombs}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Armour; Armour plates	F41H 5/00
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B64D 45/02**Lightning protectors; Static dischargers****Definition statement**

This place covers:

Conductive rivets

Making composite structures conductive.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Conductive or anti-static coatings	C08J 7/044
Overvoltage protection resistors; Arrestors	H01C 7/12 , H01C 8/04
Self-interrupters	H01G 9/18
Lightning protectors in general	H01T
Overvoltage arresters using spark gaps	H01T 4/00
Emergency protective circuit arrangements	H02H
Carrying-off electrostatic charges	H05F 3/00

B64D 2231/025**Oxygen masks; Mask storages; Features related to mask deployment****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Aircraft seats combined with storage means, said storage means being specially adapted for emergency equipment	B64D 11/0629
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