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Commentary to the HPCR Manual on  
International Law Applicable to  
Air and Missile Warfare

*Elaborated by the Drafting Committee of the  
Group of Experts under the supervision of  
Professor Yoram Dinstein.*

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## HPCR COMMENTARY TO RULE 1

### Section A

### Definitions

#### 1. For the purposes of this Manual –

1. The definitions in this Section of the Manual were drafted by the Group of Experts. When they reflect a treaty text, the Commentary will quote that source, or at least cite it.
2. Definitions have to be read in the context of the Black-letter Rules appearing in the substantive Sections of this Manual. Generally speaking, it is in that context that the question whether the definition is applicable to non-international armed conflicts has to be addressed. Clearly, some definitions – e.g., Neutral (see Rule 1 (aa)) – have no bearing upon non-international armed conflict (this will be so indicated in the respective Commentary on the relevant substantive Black-letter Rules).
3. On the other hand, it is necessary to take into account provisions such as Art. 2 (6) of the 1996 Amended Protocol II to the CCW<sup>1</sup> and Art. 1 (f) of the Second Protocol to the 1954 Hague Convention.<sup>2</sup> Both the 1996 Amended Protocol II to the CCW<sup>3</sup> and the Second Protocol

<sup>1</sup> Art. 2 (6) of the 1996 Amended Protocol II to the CCW: “‘Military objective’ means, so far as objects are concerned, any object which by its nature, location, purpose or use makes an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage.”

<sup>2</sup> Art. 1 (f) of the Second Protocol to the 1954 Hague Convention: “‘military objective’ means an object which by its nature, location, purpose, or use makes an effective contribution to military action and whose total or partial destruction, capture or neutralisation, in the circumstances ruling at the time, offers a definite military advantage.”

<sup>3</sup> Art. 1 (1) and Art. 1 (2) of the 2001 Amendment to the CCW, as adopted by the Second Review Conference of the CCW: “(1) This Convention and its annexed Protocols shall apply in the situations referred to in Article 2 common to the Geneva Conventions of 12 August 1949 for the Protection of War Victims, including any situation described in paragraph 4 of Article I of Additional Protocol I to these Conventions. (2) This Convention

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to the 1954 Hague Convention<sup>4</sup> now apply both in international and non-international armed conflict.

**(a) “Air” or “airspace” means the air up to the highest altitude at which an aircraft can fly and below the lowest possible perigee of an earth satellite in orbit. Under international law, airspace is classified as either national airspace (that over the land, internal waters, archipelagic waters, and territorial seas of any State) or international airspace (that over contiguous zones, exclusive economic zones, the high seas, and territory not subject to the sovereignty of any State).**

1. Every State has sovereignty over the airspace above its land and water territory.<sup>5</sup>

2. Until the advent of the first artificial satellites in 1957, it was widely assumed that national airspace had no upper limit. However, once artificial satellites were launched into orbit around Earth, it soon became obvious that the area in which they travel does not come within any national airspace.

3. Satellites in low Earth orbit have to travel at minimal speeds of about 8 km (5 miles) per second in order not to slip out of their orbit due to the force of gravity. Even very thin air will heat up and slow down a satellite due to friction. The atmosphere will cause such objects traveling below an altitude of approximately 100 km (about 328,000 feet) for any prolonged time to lose speed, fall down and burn up in the process. The lowest point of the orbit (“perigee”) of an artificial satellite will therefore have to be above that altitude.

4. Aircraft, deriving their support in the atmosphere from the reactions of the air (see Rule 1 (d)), have not been able to reach – in sustained flight – altitudes where satellites travel. Jet planes have great difficulties

and its annexed Protocols shall also apply, in addition to situations referred to in paragraph 1 of this Article, to situations referred to in Article 3 common to the Geneva Conventions of 12 August 1949. This Convention and its annexed Protocols shall not apply to situations of internal disturbances and tensions, such as riots, isolated and sporadic acts of violence, and other acts of a similar nature, as not being armed conflicts.”

<sup>4</sup> Art. 22 (1) of the Second Protocol to the 1954 Hague Convention: “This Protocol shall apply in the event of an armed conflict not of an international character, occurring within the territory of one of the Parties.”

<sup>5</sup> Art. 1 of the Chicago Convention (“Sovereignty”): “The contracting States recognize that every State has complete and exclusive sovereignty over the airspace above its territory.”

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exceeding 25 km (about 82,000 feet), while balloons can reach approximately 35 km (about 115,000 feet).<sup>6</sup>

5. Because of the decreasing density of the air, winged aircraft have to travel at ever-higher speeds in order to reach higher altitudes. At an altitude of approximately 100 km, a winged aircraft has to travel at about 8 km/sec. This is equal to orbital velocity, which means that the centrifugal force would prevent it from falling down, thus making the concept of winged flight meaningless. While this altitude of approximately 100 km is commonly accepted as distinguishing between aeronautical and astronautical flights, it has not gained universal approval for purposes of international law.

6. Ballistic missiles and aircraft that for a limited period of time follow a ballistic trajectory can, in principle, reach any altitude, including the region between the “highest altitude at which an aircraft can fly” under present technology and “below the lowest possible perigee of an earth satellite in orbit”. It is not settled whether they would violate the airspace of any foreign State because of overflight at such intermediate altitude. Similar problems may arise if future technology makes it possible for some vehicle to hover or fly at such intermediate altitude, or to travel at orbital velocity at such altitude without slowing down and burning due to friction.

7. For the purposes of Rule 1 (a), national territory encompasses land, internal waters, archipelagic waters and the territorial sea under the sovereignty of a given State.<sup>7</sup> As far as the territorial sea is concerned, it must be observed that the right of innocent passage – to which all foreign ships are entitled<sup>8</sup> – does not extend to the airspace above the water.

8. As regards international straits<sup>9</sup> and archipelagic sea lanes,<sup>10</sup> aircraft of all States enjoy the right of transit passage.

<sup>6</sup> At the time of writing, the world altitude record for air-breathing jet propelled aircraft in controlled horizontal flight is 25,929 meters. Air balloons have reached 34,688 meters.

<sup>7</sup> Art. 2 of the Chicago Convention (“Territory”): “For the purposes of this Convention the territory of a State shall be deemed to be the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of such State.”

<sup>8</sup> Art. 17 of UNCLOS (“Right of innocent passage”): “Subject to this Convention, ships of all States, whether coastal or land-locked, enjoy the right of innocent passage through the territorial sea.”

<sup>9</sup> Art. 38 of UNCLOS, see fn. 446.

<sup>10</sup> Art. 53 of UNCLOS, see fn. 447.

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9. National military manuals treat this subject in different ways and do not therefore throw much light on the question of the highest altitude of the national airspace.<sup>11</sup>

10. “Territory not subject to the sovereignty of any State” refers to some parts of Antarctica.<sup>12</sup> In theory, it also refers to the possibility of new emerging islands in the high seas.

**(b) “Air or missile operations” mean military operations in armed conflict involving the use of aircraft or missiles of all types; whether in offence or defence; and whether or not over the territory of one of the Belligerent Parties.**

1. “Air or missile operations” is the generic phrase in this Manual referring to any military airborne activities. This includes attack and interception by all types of aircraft or missiles.

2. The term “air or missile operations” covers not only the phase when the aircraft or the missile is in flight, but also activities directly connected to the actual use of the aircraft or missile such as deployment, launching, guidance or retrieval. Such activities can take place in the air, on the ground or from a vessel. They can also take place before, during or after the flight phase of the aircraft or missile.

<sup>11</sup> Para. 217 of the German ZDv: “The dividing line between the airspace of the national territory of a state and outer space shall be drawn where, due to existing physical conditions, the density of the air is small enough to permit the employment of satellites. According to the present state of the art, the minimum flight altitude of satellites ranges between 80 and 110 km above ground level.”

Para. 12.13 of the UK Manual (“Vertical extent of airspace”): “Views differ as to the precise vertical and horizontal extent of airspace. For practical purposes, it can be said that the upper limit to a state’s rights in airspace is above the highest altitude at which an aircraft can fly and below the lowest possible perigee of an earth satellite in orbit. The result is that anything in orbit or beyond can safely be regarded as in outer space.”

Para. 1.10 of the NWP (“Outer space”): “The upper limit or airspace subject to national jurisdiction has not been authoritatively defined by international law. International practice has established that airspace terminates at some point below the point at which artificial satellites can be placed in orbit without free-falling to earth.”

<sup>12</sup> Para. 2 of Art. IV of the Antarctic Treaty: “No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.”



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3. The phrase “military operations” means (i) operations involving actual or potential use of force against an enemy; and (ii) operations in direct support of the aforementioned operations.

4. The words “in armed conflict” clarify that the military operations referred to in this Manual must take place in such context and not in connection with incidents that do not reach the legal threshold of armed conflict (see Section B). Operations for law-enforcement purposes are therefore not included, notwithstanding any use of force in their course. Such operations are normally conducted by police units, which are not considered combatants, unless incorporated into the armed forces.<sup>13</sup> Similar considerations apply to the coast guard.

5. When the armed forces undertake operations in support of civil society that are not related to actual – or potential – use of force against an enemy in times of armed conflict, such operations are not considered “military” in the sense of this Manual, although they could be qualified as “military” under national law.

6. The phrase “air and missile warfare”, as used in the title of this Manual, adverts to air or missile operations that are specifically related to hostilities. In addition to air or missile combat operations (see Rule 1(c)), air or missile operations include surveillance, weather, reconnaissance, search-and-rescue, transport and other operations that may not be directly related to ongoing hostilities.

7. The inclusion of operations “whether in offence or defence” is intended to highlight the fact that an operation’s tactical or operational character has no bearing on the law of international armed conflict applicable to it. Thus, for instance, there is no distinction in the terminology of this Manual between an offensive attack and a defensive counter-attack. For the definition of “attack”, see Rule 1 (e).

8. Subject to the relevant rights of Neutrals (see Section X), Rule 1 (b) emphasizes that air or missile operations may take place anywhere. This includes: (i) the airspace above the national territory of all Belligerent Parties; (ii) the airspace above the high seas and above territory not subject to the sovereignty of any State; and (iii) the airspace above the contiguous

<sup>13</sup> Art. 43 (3) of AP/I: “Whenever a Party to a conflict incorporates a paramilitary or armed law enforcement agency into its armed forces it shall so notify the other Parties to the conflict.”

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zones or the EEZ of all States (including Neutrals). The concepts of the EEZ and the continental shelf refer to the exploitation of natural resources. For the purposes of air or missile operations, these zones and areas are international waters and the air above them is international airspace. See also Rule 107 (e) and paragraph 3 of the Commentary on Rule 166.

**(c) “Air or missile combat operations” mean air or missile operations designed to injure, kill, destroy, damage, capture or neutralize targets, the support of such operations, or active defence against them.**

1. Air combat operations include attacks by aircraft on other aircraft and on surface targets (on land or at sea).
2. Missile combat operations include attacks on aircraft, surface targets (on land or at sea) or on other missiles by missiles from land or sea based platforms, as well as surface-to-surface missile strikes.
3. Air or missile combat operations are not confined to those aircraft or missiles conducting an “attack” (see Rule 1 (e)). Air combat operations typically include multiple elements, e.g., refueling; jamming of enemy radars; suppression of enemy defences by attacking enemy radar stations and anti-aircraft artillery or missile sites; use of airborne warning and control systems; bombing; fighter escort and fighter sweeps preceding bomber attacks. Operations integral to ground or naval combat against the enemy, such as dropping an airborne force or using airborne platforms to control attacks on enemy naval vessels, are likewise included in the scope of the term.
4. The targets of air or missile combat operations can be persons or objects. Rule 10 (b) explains which targets may lawfully be attacked.

**(d) “Aircraft” means any vehicle – whether manned or unmanned – that can derive support in the atmosphere from the reactions of the air (other than the reactions of the air against the earth’s surface), including vehicles with either fixed or rotary wings.**

1. As used in this Manual, the term aircraft is used in its broadest sense, extending to airplanes (fixed-wing aircraft), helicopters (rotary-wing aircraft) and even balloons, blimps and dirigibles. The definition of aircraft is not limited in terms of function (e.g., combat, transport, refuelling, etc.), status (e.g., military, civilian, etc.), or size (e.g., from large transport