

# Significant Timeline Events for Small Unmanned Aircraft Systems (sUAS) 1926 – 2017

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This publication focuses on critical timeline events as they relate to the development and use of **non-military** unmanned aircraft and regulated air flight. The foundation of unmanned aircraft dates back to the early 20th century (1914-1918) and is certainly tied to military applications<sup>1</sup>. Based on Charles Lindbergh's successful flight across the Atlantic in 1927, companies recognized the general public's interest in aviation and as a result began offering model airplane kits. The consumer model aircraft market continued to develop during the 1930s and 40s as a result of the miniaturization of gas engines and availability of balsa wood for aircraft frames<sup>2</sup>. The development of autonomous unmanned aircraft has progressed rapidly in recent years as a result of the realization of useful applications and the miniaturization of electronics used in these advanced aircraft systems. The following provides some highlights of the history and development of small unmanned aircraft systems (sUAS) for non-military uses.

# Drone Timeline

1926 to 2017



<b>1926</b> MAY 20	Air Commerce Act (cornerstone of the federal government's regulation of civil aviation) <sup>3</sup>	<b>2012</b> FEB 1	FAA Modernization and Reform Act of 2012 (safe integration of civil UAS into NAS by Sept. 30, 2015) <sup>13</sup>
<b>1928</b> JAN 31	Cackle Corner Poultry Farm order issued regarding property owner's claims to airspace rights <sup>4</sup>	<b>2013</b> FEB	DroneDeploy founded <sup>14</sup>
<b>1936</b>	Founding of the Academy of Model Aeronautics (AMA)	<b>2013</b> MARCH	AUVSI publishes 'The Economic Impact of Unmanned Aircraft Systems Integration in the United States' <sup>15</sup>
<b>1946</b> MAY 27	United States v. Causby (regulated flight altitude over private land) <sup>5</sup>	<b>2013</b> DEC 1	Amazon's Jeff Bezos proposes package delivery by drones <sup>16</sup>
<b>1958</b> AUG 23	Federal Aviation Act establishes the Federal Aviation Administration (FAA) and abolishes its predecessor, the Civil Aeronautics Administration (CAA) <sup>6</sup>	<b>2013</b> DEC 30	FAA selects six sites for unmanned aircraft research <sup>17</sup>
<b>1981</b> JUNE 9	FAA AC 91-57, Model Aircraft Operating Standards <sup>7</sup>	<b>2014</b> MAR 6	NTSB ruling 'Huerta v. Pirker' (first-ever enforcement action against drone operator) <sup>18</sup>
<b>1991</b>	Yamaha begins to market its first unmanned rotary aircraft, R50	<b>2014</b> JUNE 18	FAA Interpretation of the Special Rule for Model Aircraft, 14 CFR (Code of Federal Regulations) 91 <sup>19</sup>
<b>1998</b>	Draganfly founded by Christine and Zenon Draga <sup>8</sup>	<b>2014</b> SEPT 25	FAA exemptions for commercial UAS movie and TV production <sup>20</sup>
<b>2006</b>	MikroKopter founded by Holger Buss and Ingo Busker <sup>9</sup>	<b>2014</b> NOV 18	NTSB reverses ruling on 'Huerta v. Pirker' <sup>21</sup>
	DJI founded by Frank Wang <sup>10</sup>	<b>2014</b> DEC 10	Congressional Hearing, Transportation and Infrastructure Committee: U.S. Unmanned Aircraft Systems: Integration, Oversight, and Competitiveness <sup>22</sup>
<b>2009</b>	3D Robotics founded by Chris Anderson & Jordi Muñoz <sup>11</sup>	<b>2014</b> DEC 22	Know Before You Fly program is launched <sup>23</sup>
<b>2010</b>	PrecisionHawk founded <sup>12</sup>	<b>2015</b> JAN 6	FAA 333 exemptions for realtor Douglas Trudeau (Tierra Antigua Reality, Tucson, AZ) and Advanced Aviation Solutions (Spokane, WA) <sup>24</sup>

**2015**  
JAN 8 | FAA issues UAS guidance for law enforcement<sup>25</sup>

**2015**  
JAN 27 | Drone crashes on White House lawn<sup>26</sup>

**2015**  
FEB 15 | NPRM (Notice of Proposed Rulemaking): Operation and Certification of Small Unmanned Aircraft Systems<sup>27</sup>

**2015**  
FEB 15 | Presidential Memorandum: Promoting Economic Competitiveness While Safeguarding Privacy, Civil Rights, and Civil Liberties in Domestic Use of Unmanned Aircraft Systems<sup>28</sup>

**2015**  
MAR 19 | FAA grants Amazon experimental airworthiness certificate<sup>29</sup>

**2015**  
MAR 23 | FAA streamlines UAS COAs for Section 333<sup>30</sup>

**2015**  
APR 9 | FAA summary grants speed UAS exemptions<sup>31</sup>

**2015**  
APR 30 | Amazon files patent for 'Unmanned Aerial Vehicle Delivery System' approved by USPTO<sup>32</sup>

**2015**  
MAY 1 | FAA grants 333 Exemption to Yamaha for RMAX helicopter for commercial agricultural spraying<sup>33</sup>

**2015**  
MAY 6 | FAA announces UAS Pathfinder Program (industry partners on 3 focus areas related to 'line-of-sight')<sup>34</sup>

**2015**  
SEPT 2 | FAA releases updated Model Aircraft Operating Standards (AC 91-57A)<sup>35</sup>

**2015**  
DEC 21 | FAA requires all owners of **model aircraft** to register using an on-line system<sup>36</sup>

**2016**  
JAN 11 | FAA releases change to Model Aircraft Operating Standards (AC 91-57A)<sup>37</sup>

**2016**  
MAR 31 | FAA expands **on-line** sUAS registration to commercial and public users<sup>38</sup>

**2016**  
MAY 4 | FAA releases legal memorandum on 'Educational Use of UAS'<sup>39</sup>

**2016**  
AUG 29 | FAA Part 107 Rule (Operation and Certification of Small Unmanned Aircraft Systems) goes into effect<sup>40</sup>

**2017**  
MAY 19 | FAA Aircraft Registration for Model Aircraft overruled<sup>41</sup>

**2017**  
JUNE 21 | FAA Establishes Drone I.D. Rulemaking Committee<sup>42</sup>

**2017**  
SEP 21 | Singer v. City of Newton, case declaring local drone law illegal<sup>43</sup>

**2017**  
OCT 11 | FAA announces Low Altitude Authorization and Notification Capability (LAANC) program<sup>44</sup>

**2017**  
OCT 18 | Federal test of local sharing drone regulation<sup>45</sup>

**2017**  
OCT 18 | FAA approves automated ATC drone approval process<sup>46</sup>

**2017**  
OCT 25 | FAA announces drone integration program<sup>47</sup>

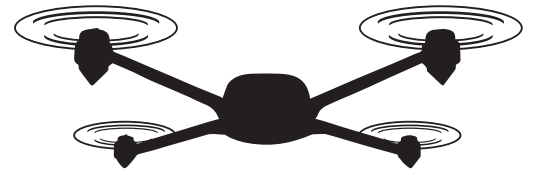
**2017**  
OCT 25 | DJI demonstrates 'drone license plate' technology<sup>48</sup>

**2017**  
OCT 30 | FAA initiates new on-line COA Application Processing Systems (CAPS)<sup>49</sup>

**2017**  
DEC 12 | FAA hobby aircraft registration reinstated<sup>50</sup>

## SOURCES

- <sup>1</sup> <http://www.historynet.com/the-rise-of-unmanned-aircraft.htm>
- <sup>2</sup> <http://www.modelaircraft.org/museum/aerohistory.aspx>
- <sup>3</sup> [https://www.faa.gov/about/history/milestones/media/FAA\\_Origins.pdf](https://www.faa.gov/about/history/milestones/media/FAA_Origins.pdf)
- <sup>4</sup> <http://fly.historicwings.com/2013/01/cackle-corner/>
- <sup>5</sup> <https://supreme.justia.com/cases/federal/us/328/256/>
- <sup>6</sup> [https://www.faa.gov/about/history/brief\\_history/](https://www.faa.gov/about/history/brief_history/)
- <sup>7</sup> [http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgAdvisoryCircular.nsf/0/1acfc3f689769a56862569e70077c9cc/\\$FILE/ATTBJMAC/ac91-57.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/1acfc3f689769a56862569e70077c9cc/$FILE/ATTBJMAC/ac91-57.pdf)
- <sup>8</sup> <http://www.draganfly.com/our-story/index.php>
- <sup>9</sup> <http://en.wikipedia.org/wiki/MikroKopter>
- <sup>10</sup> <https://successstory.com/companies/dji>
- <sup>11</sup> <http://3drobotics.com/about/>
- <sup>12</sup> <http://www.precisionhawk.com/media/topic/precisionhawk-closes-investment-round-led-by-red-hat-founder-bob-young-and-the-innovate-indiana-fund-of-indiana-university/>
- <sup>13</sup> <http://www.gpo.gov/fdsys/pkg/CRPT-112hrpt381/pdf/CRPT-112hrpt381.pdf>
- <sup>14</sup> <https://www.forbes.com/sites/amitchowdhry/2017/10/16/dronedeploy/#27221b76592d>
- <sup>15</sup> <http://www.auvsi.org/our-impact/economic-report>
- <sup>16</sup> <http://www.cbsnews.com/news/amazons-jeff-bezos-looks-to-the-future/>
- <sup>17</sup> <http://www.faa.gov/news/updates/?newsId=75399>
- <sup>18</sup> <http://www.nts.gov/legal/alj/Documents/Pirker-CP-217.pdf>
- <sup>19</sup> [https://www.faa.gov/uas/media/model\\_aircraft\\_spec\\_rule.pdf](https://www.faa.gov/uas/media/model_aircraft_spec_rule.pdf)
- <sup>20</sup> [http://www.faa.gov/news/press\\_releases/news\\_story.cfm?cid=TW251&newsId=17194](http://www.faa.gov/news/press_releases/news_story.cfm?cid=TW251&newsId=17194)
- <sup>21</sup> <http://www.scribd.com/doc/246992557/NTSB-ruling>
- <sup>22</sup> <http://transportation.house.gov/calendar/eventsingle.aspx?eventid=398520>
- <sup>23</sup> <http://knowbeforeyoufly.org/>
- <sup>24</sup> <https://www.faa.gov/news/updates/?newsId=81164>
- <sup>25</sup> <http://www.faa.gov/news/updates/?newsId=81244>
- <sup>26</sup> <http://www.reuters.com/article/2015/01/26/us-america-whitehouse-device-idUSKBN0KZ0UD20150126>
- <sup>27</sup> <http://www.gpo.gov/fdsys/pkg/FR-2015-02-23/pdf/2015-03544.pdf>
- <sup>28</sup> <https://www.whitehouse.gov/the-press-office/2015/02/15/presidential-memorandum-promoting-economic-competitiveness-while-safeguarding>
- <sup>29</sup> <https://www.faa.gov/news/updates/?newsId=82225>
- <sup>30</sup> <http://www.faa.gov/news/updates/?newsId=82245>
- <sup>31</sup> <http://www.faa.gov/news/updates/?newsId=82485>
- <sup>32</sup> <http://appft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PG01&p=1&u=%2Fmetahtml%2FPTO%2Fsrchnum.html&r=1&f=G&l=50&s1=%2220150120094%22.PGNR.&OS=DN/20150120094&RS=DN/20150120094>
- <sup>33</sup> <https://www.thompsoncoburn.com/insights/publications/item/2015-05-06/faa-grants-exemption-for-large-crop-spraying-unmanned-aircraft>
- <sup>34</sup> [https://www.faa.gov/news/press\\_releases/news\\_story.cfm?newsId=18756](https://www.faa.gov/news/press_releases/news_story.cfm?newsId=18756)
- <sup>35</sup> [https://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC\\_91-57A.pdf](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_91-57A.pdf)
- <sup>36</sup> <http://knowbeforeyoufly.org/register-your-drone/>
- <sup>37</sup> [https://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC\\_91-57A\\_Ch\\_1.pdf](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_91-57A_Ch_1.pdf)
- <sup>38</sup> <https://www.faa.gov/news/updates/?newsId=85305>
- <sup>39</sup> [http://www.faa.gov/uas/resources/uas\\_regulations\\_policy/media/interpretation-educational-use-of-uas.pdf](http://www.faa.gov/uas/resources/uas_regulations_policy/media/interpretation-educational-use-of-uas.pdf)
- <sup>40</sup> [http://www.faa.gov/uas/media/RIN\\_2120-AJ60\\_Clean\\_Signed.pdf](http://www.faa.gov/uas/media/RIN_2120-AJ60_Clean_Signed.pdf)
- <sup>41</sup> <http://www.wolfenstock.com/TaylorvFAA/TaylorFAAOpinion.pdf>
- <sup>42</sup> [https://www.faa.gov/news/updates/?newsId=88289&omniRss=news\\_updatesAoc&cid=101\\_N\\_U](https://www.faa.gov/news/updates/?newsId=88289&omniRss=news_updatesAoc&cid=101_N_U)
- <sup>43</sup> <https://jrupprechtlaw.com/category/drone-lawsuits>
- <sup>44</sup> [https://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=22615](https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=22615)
- <sup>45</sup> <http://archive.is/41cmj>
- <sup>46</sup> <http://www.businessnewsdaily.com/10296-faa-laanc-automated-drone-approval.html>
- <sup>47</sup> <https://www.faa.gov/news/updates/?newsId=89007>
- <sup>48</sup> <http://www.dji.com/newsroom/news/dji-demonstrates-drone-license-plate-technology-and-knowledge-quiz#.WfDLi8Xipbs.twitter>
- <sup>49</sup> [https://www.faa.gov/about/office\\_org/headquarters\\_offices/ato/service\\_units/systemops/aim/organizations/uas/coa/](https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/aim/organizations/uas/coa/)
- <sup>50</sup> <https://techcrunch.com/2017/12/12/trump-signs-bill-reinstating-the-faas-drone-registration-requirement/>



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