

To
THE DIRECTOR GENERAL OF CIVIL AVIATION
TECHNICAL CENTRE, OPP. SAFDARJUNG AIRPORT,
NEW DELHI.

Sub: Draft Guidelines for obtaining Unique Identification Number (UIN) & Operation of Civil Unmanned Aircraft System (UAS) – comments reg.
Your Ref. 05/13/2014-AED-Vol-I dated 19.08.2015

Dear Sir,

This letter is regarding the draft guidelines released by the DGCA for obtaining UIN and operation of Civil UAS. The DGCA had sought comments on the draft guidelines from interested persons and agencies. I would like to provide my comments regarding the same in my capacity as a hobbyist building and operating UA models. The para-wise comments and suggestions in respect of the draft circular have been given in detail as well as in a tabular format. Only those paragraphs of the draft circular against which comments/suggestions have been made by me are included below. This also reflects the general concern of the hobbyist community regarding the draft guidelines as discussed on various RC forums.

It is noted with concern that there are certain provisions in the draft circular which are likely to be detrimental to the recreational users and hobbyists of UAs and will stifle the growth of the hobby in India. These have been mentioned in the table and also summarised here:

1. Height limit of 200 ft. : Internationally the allowed altitude without special permission is 400ft. This is only equivalent to a 40 storey building. There are many modern buildings reaching 60 storeys and above. The FAA also specifies the altitude ceiling as 400 feet. It is requested that this limit may be raised to 400ft to align with international rules, at least for recreational users. Operators who wish to fly their UASs over this altitude may approach you for UAOP as described in the draft guidelines.

2. UIN for all UAs: There are several toy grade UAs intended to be operated indoors. These pose no threat to aviation/ human life and it is very impractical to register and affix a registration on such aircraft. We wish to seek exemption from UIN for aircraft that weigh less than 500g. In various other countries as well, such small UAs are not subject to any restrictions. In the USA, UAs from 250g-25Kg may be flown for recreational use, and a simple web-based registration is in place for operators and not on per-UA basis. It is requested UAs weighing less than 500g may be exempted from any registration and operators of recreational UAs up to 5kg may be subjected to simple, web-based AADHAR linked registration.

3. Police verification and WPC requirements: This is a retrograde step which will discourage hobbyists and recreational users. The possibility of harassment and bribery will keep away genuine users and small-scale hobbyists while big UAs flown by commercial companies as well as operators bypassing the law will face no problem. Hobbyists often dismantle one UA and build another with the same parts. It would be difficult to take UIN for every unit. Similarly WPC requirements are satisfied during the time of import as Customs refers such items to WPC. Making individual users go through the process again is not quite logical. WPC is not approachable in rural or small towns either and there is a huge delay involved. It is requested that these provisions be withdrawn for micro and mini category UAs meant for recreational use.

5. Requirement of Citizenship of India for UIN/UAOP: The new and immensely popular sport of FPV Racing is being adopted by the hobbyist community all over the world and championships are being held in different parts of the world. US National Championship and World championship in Dubai have been held recently. FPV flying is gaining acceptance in mainstream international media as a legitimate sport. The UAs used for such events are designed to be as lightweight as possible and are usually flown within low-altitude, short-range courses. To enable foreign participants come to India in case such events are held, we request that this

requirement be waived. It is suggested that foreigners be allowed to bring in their UAs (Micro) and a simple passport-linked online registration scheme may be conceived in such cases, similar to that in USA. This will help encourage one of the fastest growing segments of this hobby and may even benefit the economy as more large organisations begin to invest in this segment.

6. SIM based tracking: The technology required to implement this is not readily available. Such systems will increase the weight, complexity as well as cost of UAs besides decreasing flying time. It is requested that this provision may be dispensed with for UAs of Micro and Mini category that are being operated recreationally. We would suggest an AADHAR-linked online easy registration system similar to that instituted by the FAA in the USA for pilots operating UAs weighing from 500g-5kg. With such an online system in place, the workload of processing registration at DGCA will be less and more people will be encouraged to register and operate their UASs legally. Retrograde rules like requirement for police verification and WPC clearance by end users and resulting harassment/bribe demand will make individual users wary and will prompt them to bypass the rules. In USA, the FAA requires users to register themselves (and not the UAs) for recreational users of UAs upto 25 Kg. weight. For a 21st century device, the rule should not be archaic. So I am again providing the suggestions for a web-based registration system here:

Proposal for Online Registration System for recreational users of UAs (Micro and Mini category) using e-Governance:

- A web portal may be created for registration of Recreational UA Operators
- Operators can be citizens of India or International tourists and can register themselves online. This will be a one-time registration. A reasonably small processing fee can be levied to offset the costs of developing such a system as long as it is not large enough to discourage operators from registering. Domestic operators may be identified and linked with Aadhar Card Number or similar ID proof. International flyers may be identified and linked with their passport numbers
- Once the person self-registers himself/herself online, he/she can register one or more UAs flown by him/her. Photos, weight and other capabilities of the UA e.g camera, FPV, telemetry etc. and similar details can be uploaded by the user himself/herself.
- After entering details of UAs, a printout of UAOP (or UIN) can be generated from the system. The flier should carry the UAOP/UIN during flying and affix it visibly on the aircraft using stickers, decals, permanent marker etc. In case of any illegal or dangerous flying activity, the UAS can be easily traced to the owner.
- No Police verification and WPC clearance by end users will be required. With the above system, the workload of DGCA will be much reduced and all flyers will be clearly identified. No harassment will be made to persons possessing registration printouts. Also authorities can take action against persons without registration documents and seize UAVs not having registration documents.

The comments against the draft circular are given in tabular form below (only the sections against which comments have been given have been mentioned. The rest are omitted):

Original Draft Guideline	Comments/ Suggestions	Reasons
<p>3. CATEGORY OF UA</p> <p>Civil UA are classified in accordance with weight of UA as indicated below:</p> <p>i) Micro :Up to 2kg.</p> <p>ii) Mini : Greater than two kg and less than 20 kg.</p> <p>iii) Small : Greater than 20 kg and less than 150 kg.</p> <p>iv) Large : Greater than 150 kg.</p>	<p>(i) We suggest this be changed to the following classification:</p> <p>i) Micro : 500g-5kg</p> <p>ii) Mini : 5kg-20kg</p> <p>iii) Small : Greater than 20 kg and less than 150 kg.</p> <p>iv) Large : Greater than 150 kg.</p> <p>(ii) All UA below 500g flown by recreational users may be exempted from registration.</p> <p>(iii) In line with US FAA regulations, for recreational users operating Micro and Mini UASs a simple online AADHAR-based registration may be conceived on a per-pilot basis instead of UIN. The requirement for police verification and WPC requirements may be dispensed with for recreational users.</p> <p>(iv) Instead of registering each and every UA, consideration may be made to register UAOP similar to US FAA regulation only for recreational users. Online system will be convenient for users in rural and distant areas.</p>	<p>(i) Most hobby-grade UA fall in the Micro and a few in the Mini category. Thus, toy grade UAs meant for indoor operation do not need to appear in this list.</p> <p>(ii) These are mainly toy-grade meant for recreational use indoors and pose no threat to aviation or human life.</p> <p>(iii) US FAA allows UA users (operating UAVs that weigh up to 25kg) to register online. However instead of UIN for each aircraft, they register as individuals. Each individual with UAOP may fly any number of UA recreationally without needing a UIN for each UAS. No police verification is insisted upon. The same is suggested here for the Micro and Mini categories. This will be beneficial for hobbyists who regularly construct multiple UASs</p>
<p>4.1. All unmanned aircraft intended to be operated in India will require an Unique Identification Number (UIN) issued from DGCA. The UIN can be granted only to:</p> <p>a) a citizen of India; or</p>	<p>A system of passport based registration of Micro UAs may be implemented for those who are not citizens of India.</p>	<p>To promote the new popular sport of FPV racing granting access to foreign participants is necessary. Various educational institutions often conduct RC airshows as part of their annual 'fests' where expert foreign pilots are invited to demonstrate.</p>

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<p>4.2. Following documents are required to be submitted to DGCA for issue of UIN:</p> <p>a) Address of Operator along with contact details with valid identity proof. In case of a company/ organization, TIN number will be accepted;</p> <p>b) Purpose of operation of UA;</p> <p>c) Specification of UAS (manufacturer name, type, model number, year of manufacture, weight and size, type of propulsion system, flying capabilities in terms of maximum endurance, range and height, etc. including details of equipment);</p> <p>d) Verification of character and antecedents of the operator and remote pilots from local sub-divisional police office;</p> <p>e) Permission for all frequencies used in UAS operations from Department of Telecommunication (Wireless Planning and Coordination Wing);</p> <p>f) Copy of Unmanned Aircraft Flight Manual (UAFM);</p> <p>g) Copy of Manufacturer's maintenance guidelines for UAS;</p>	<p>(c) UAs built by hobbyists usually do not have a name, model no. and readily available specifications. Suitable amendment suggested. This also applies to requirements (f) and (g) as these documents are not available for self-built UASs.</p> <p>(d) For recreational use of UA of Micro and Mini category, this may be dispensed with.</p> <p>(e) As WPC requirements are checked during import of radio equipment, this may be dispensed with for recreational users of Micro and Mini category.</p>	<p>(d) Police verification will lead to possible harassment and scope of bribery. A simple online AADHAR based system similar to US FAA is suggested.</p> <p>(e) If users are required to get this clearance, it will cause huge delay and difficulty. Users in remote and rural areas won't get access to WPC.</p>
<p>4.3. The identification plate (made of fire proof material) inscribed with UIN and RF ID tag or SIM shall be affixed to the UA, and appropriate makes to identify ownership.</p>	<p>This plate will increase the weight of UAs and significantly decrease flying time for Micro category UAs. There may not be enough space in some UAs to affix this. The RFID tag/ SIM trackers are not readily available and add significant cost and complexity. Instead, the operator should keep registration papers with them while flying the UASs. They can also affix the UAOP number visibly on each of their aircraft with a simple sticker, permanent marker etc.</p>	

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5. UA OPERATOR PERMIT (UAOP)	AADHAR based, simple, online UAOP registration for recreational users of Micro/ Mini category may be considered instead of a per-model UIN This will be on a per-user basis similar to the procedure mandated by the FAA.	
5.1. All civil UA operations at or above 200ft AGL in uncontrolled airspace for any purpose whatsoever will require UAOP from DGCA.	In line with International norms and the standards fixed by FAA in USA, it is suggested that the height be increased to 400ft. This height is only equivalent to a 40 storey building. Presently, in many cities 60 or 80 storey buildings are being constructed reaching up to 800 feet.	
5.3. Following entities will not require UAOP from DGCA: (a) Civil UA operations below 200ft AGL in uncontrolled airspace and clear of notified prohibited, restricted and danger areas as well as Temporary Segregated Areas (TSA) and Temporary Reserved Areas (TRA). In addition, the operator shall obtain permission from local administration, the concerned ADC. (b) Model aircraft operating below 200ft AGL in uncontrolled airspace & indoor UA for recreational purposes only. (Aero modelling activities carried out within the premises of educational institutions will be considered as recreational purposes).	As suggested earlier in Para 5.1, this height may be increased to 400ft. to align it with International norms.	
6. PROCEDURE FOR ISSUANCE OF UAOP	For recreational users of Micro/ Mini category simple online AADHAR based UAOP registration without police and WPC verification may be done instead of UIN	
6.1. The operator having an UIN intended to conduct civil operation of a UA at or above 200ft AGL in uncontrolled airspace shall submit his application for UAOP to DGCA along with following documents:	As suggested earlier in Para 5.1, this height may be increased to 400ft. to align it with International norms	

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6.7. Import permission shall be obtained from DGCA based on which DGFT shall provide licence for import of UAS.	Import of model aircraft/ multirotors, their spares, parts and accessories, by individuals / clubs / institutions / body, should be permitted without any restrictions or conditions of approval from DGCA, in accordance to the Import Trade Control policies as existing or as maybe modified time to time.	
10. REQUIREMENT FOR OPERATION OF UA		
10.1. Irrespective of weight category, the UAS operator shall intimate Local Administration, ATS unit (for operations at or above 200ft AGL in uncontrolled airspace), BCAS, Aerodrome operator (if applicable) before commencement and after termination of operation. In the event of cancellation of UA operations, the operator shall notify the same to all appropriate authorities as soon as possible.	As suggested earlier in Para 5.1, this height may be increased to 400ft. to align it with International norms. As most recreational UAV operation is conducted in isolated areas, often outside city limits, we request that the requirement for intimation of local authorities be waived for recreational operation. This operation will only be conducted away from sensitive areas, restricted airspace, airports etc. as was already mentioned.	

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<p>10.12 The operator shall ensure that the UA is flown within 500m Visual Line of Sight (VLOS) during the entire period of the flight. (Applicable for micro and mini UA)</p>	<p>We request that this requirement be waived. FPV (first-person view) is a fast emerging segment of recreational UAV operation, where pilots operate their aircraft via a real-time video feed displayed on head-mounted goggles or an LCD monitor. We suggest that the pilot be required to have a trained 'spotter' who will maintain VLOS. We also request that the requirement for a 500m radius be removed. Most hobby-grade control equipment can safely operate at significantly larger ranges. To ensure safety, there can be a mandatory requirement for a 'failsafe' system which would cause the UAS to land/ drop to the ground immediately in case the control link is lost. This would ensure safety as most recreational flying activities are done far away from inhabited areas. FPV 'racing' is becoming an extremely popular sport around the world, with large events such as the US Drone Nationals and Dubai World Drone Prix conducted recently. It is requested that you consider this while formalising the regulations as to encourage this growing hobby and help increase the number of pilots who can represent India on an international stage.</p>	

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<p>10.23 The UA shall have following components/ equipment:</p> <ul style="list-style-type: none"> (a) Identification plate and/ or RF ID. (b) SIM card slot for an app based tracking (Mandatory for Micro & Mini UA); (c) SSR transponder (Mode 'C' or 'S') or ADS-B option (Mandatory for Small & Large UA); (d) GPS/ INS (with option to GPS tracking and Geo Fencing); (e) Detect and avoid capability (if required, operator shall engage an RPA observer) (f) Return Home option (mandatory in the event of failure) 	<ul style="list-style-type: none"> (a) It is requested that UAOP be affixed visibly on all aircraft belonging to the operator using a lightweight medium such a vinyl decal/ sticker, permanent marker etc. (b) This technology is not readily available and will increase weight, space requirement as well as cost of UAs. Integration of such systems will be difficult for most hobbyist operators. It is requested that this provision may be dispensed with for UAs of Micro and Mini category for recreational users. (d) We request that items (d), (e) and (f) not be made mandatory requirements for the Micro category. Such technologies are expensive and difficult to integrate with most hobby-grade UAS. There are pilots who operate several aircraft, often within small wingspans and/ or of low weight such as fixed-wings made of foam. It is not feasible for them to have to install GPS and autopilot capabilities. Small multirotor aircraft designed for racing are intended to be as compact and lightweight as possible and often lack space for any but the bare minimum components. GPS and similar capabilities will add significant cost and weight. As an alternative, I recommend a failsafe mechanism be mad a mandatory requirement. Most of the hobby-grade control systems on the market today have this capability. If the UAS exceeds control range, it can be set to automatically land or drop to the ground, preventing 'flyaways' and subsequent damage. 	

I also wish to add that you may have received communication from the Aero Modelers Association of India (AMAI), an organisation that **claims** to represent the interest of hobby/ recreational UA pilots in India. However, this organisation chooses to discriminate against hobbyists who operate multirotor aircraft as well as are involved in FPV (first-person view) flying. In their letter, they are seeking that use of cameras or GPS systems on board the aircraft not be permitted for recreational use. This is equivalent to a ban on FPV as small, low-resolution board cameras, such as those used in security systems, are required for FPV. These cameras lack the image quality, resolution and zoom to be considered a security risk. By forcing FPV pilots to seek special permission, not that falling under recreational use, the AMAI is actively attempting to discourage FPV flying and multirotors. This is an appallingly selfish move intended to further the interests of their own association as most of their members are not involved with such flying. We request you to consider the popularity of FPV racing as an international sport and help us encourage this sport in India. It is our hope that one day in the near future, India will be represented on the world stage in FPV racing.

I sincerely hope that the concerns of the hobbyists and recreational users will be considered and not clubbed in the same category as that of the commercial operators. The rules may be simplified like that done by FAA in USA so that people are encouraged to comply with the rules. If USA, which has faced significant risks in terms of security, can formulate simple rules in respect of UAs, there is no reason that the same can't be done here in India. The RC hobby is a rewarding and educational one, and we hope that with your guidelines, the various aspects of this hobby will be encouraged.

Thanking You,
Yours Faithfully