

§11.81 What information must I include in my petition for an exemption?

You must include the following information in your petition for an exemption and submit it to FAA as soon as you know you need an exemption.

(a) Your name and mailing address and, if you wish, other contact information such as a fax number, telephone number, or e-mail address:
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Pilot# 3250836CFI

(b) The specific section or sections of 14 CFR from which you seek an exemption:
Part 21; and
§§ 45.23(b);
91.7(a); 91.9(b)(2); 91.103(b);
91.119; 91.121, 91.151(a);
91.203(a) & (b); 91.405(a); 91.407(a)(1);
91.409(a)(2); and 91.417(a) & (b) of
Title 14, Code of Federal Regulations

(c) The extent of relief you seek, and the reason you seek the relief:

Part 21 91.203(a) & (b)

Given the size, weight, speed, and limited operating area associated with the aircraft to be utilized by him, an exemption from 14 CFR part 21, Subpart H (Airworthiness Certificates) subject to certain conditions and limitations, is warranted and meets the requirements for an equivalent level of safety under 14 CFR part 11 and Section 333 of P.L. 112-95 (Section 333).

45.23

Marking of the aircraft because UA will not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering is difficult to place on such a small aircraft with dimensions smaller than the minimal lettering requirement.

Will mark UAS in the largest possible lettering by placing the N-number on its fuselage as required by § 45.29(f) so that anyone assisting him as a spotter will see the markings.

91.405(a), 91.407(a)(1), 91.409(a)(2) and 91.417(a) and (b)

Maintenance inspections may be required and should be granted since they only apply to aircraft with an airworthiness certificate. However as a safety precaution user will perform a preflight inspection of his UAS before each flight as outlined in his operating documents and follow manufacture maintenance recommendations as stated in UA user manual.

91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. There is currently no certificate applicable to this operation, this regulation is inapplicable.

91.9(b)(2) requires an aircraft flight manual in the aircraft, however since there are no pilots or passengers on board his aircraft and given its size, this regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a safety/flight manual with the UAS ground station.

91.103(b)

The PIC will take all actions including reviewing weather, flight battery requirements, landings, and takeoff distances and aircraft performance data before initiation of flight. Stricter requirements with regard to visibility and distance from clouds; this is to both keep the UA from departing the VLOS and to preclude the UA from operating in the NAS. Sun glare will be taken into account. PIC's and VO's ability to still see other air traffic, combined with the PIC's ability to initiate a return-to-home sequence, are sufficient mitigations. The PIC will also account for all relevant site-specific conditions in his or her preflight procedures.

91.119

Prescribes safe altitudes for the operation of civil aircraft, but that it allows helicopters to be operated at lower altitudes in certain conditions. UAS will not be operated above the altitude of 400 feet above ground level (AGL) and will also only operate in safe areas away from the public and traffic, thus "providing a level of safety at least equivalent to or below those in relation to minimum safe altitudes." Given the size, weight, maneuverability, and speed of the UAS, an equivalent or higher level of safety will be achieved.

91.121

Altimeter settings is inapplicable since the UAS utilizes electronic GPS with a barometric sensor. Sensor is calibrated before flight and reads AGL altitudes.

91.151 (a)

Fuel requirements for flight in VFR conditions, prior relief has been granted for manned aircraft to operate at less than prescribed minimums, including Exemption Nos. 2689, 5745, and 10650. In addition, similar UAS-specific relief has been granted in Exemption Nos. 8811, 10808, and 10673 for daytime, VFR conditions. The UAS will land prior to the manufacturer's recommended minimum level of battery power (30%). The operating documents indicate that the low battery level failsafe is triggered when the battery is depleted to a point that may affect the safe return of the aircraft. Users are to return home or land the aircraft immediately when these warnings are shown. Pilot ground station will advise user to return the aircraft to the Home Point when low battery warning is triggered. Aircraft will automatically return to home point if no action is taken after 10 second countdown. User can cancel the return to home any time. The thresholds for these warnings are automatically determined based on the current aircraft altitude and its distance from home point.

Aircraft will land automatically if the current battery level can only support the aircraft to land to the ground from the current altitude. User can use ground station to control the aircraft during landing process.

- (d) The reasons why granting your request would be in the public interest; that is, how it would benefit the public as a whole;

Aerial videography for geographical awareness/mapping and for real estate marketing has been around for a long time through manned fixed wing aircraft and helicopters, but for small business owners, its expense has been cost-prohibitive. Granting this exemption would allow me to provide this service at a much lower cost. Further small UAS will pose no threat to the public given its small size and lack of combustible fuel when compared to larger manned aircraft. The operation of this UAS will minimize ecological damage and promote economic growth by providing information to companies looking to relocate or

build in South Dakota. Farmers can also benefit by using less chemical on crops which will reduce the level of impact on the environment and save them cost.

- (e) The reasons why granting the exemption would not adversely affect safety, or how the exemption would provide a level of safety at least equal to that provided by the rule from which you seek the exemption;

Limitations under which the UAS will operate (i.e. VLOS and at or below 400 feet AGL) and the UAS emergency procedures as well as the size and speed of the aircraft are sufficient mitigations to this risk so that the operations will not adversely affect safety.

- (f) A summary we can publish in the FEDERAL REGISTER, stating:

- (1) The rule from which you seek the exemption; and

Part 21; and
§§ 45.23(b);
91.7(a); 91.9(b)(2); 91.103(b);
91.119; 91.121, 91.151(a);
91.203(a) & (b); 91.405(a); 91.407(a)(1);
91.409(a)(2); and 91.417(a) & (b) of
Title 14, Code of Federal Regulations

- (2) A brief description of the nature of the exemption you seek

M-Kopter Aerials (Michael Klarenbeek) vision is to provide access to unique, customized, and affordable aerial video, and photos using both manned aircraft and unmanned aircraft. I would like an exemption to utilize the cost effectiveness of unmanned aircraft specifically the **DJI Inspire 1**. Being a commercial pilot and instructor I know the cost of manned aircraft is too high and less efficient than small unmanned aircraft. Manned aircraft work great for large areas, but for a single photo/video the price is too high. South Dakota is a very low risk area to fly, and with knowledge of the ATC system I feel flying near airports can still be safe with the right precautions taken.

- (g) Any additional information, views or arguments available to support your request; and

YES – separate documents

Policy and Procedures

Inspire 1 User Manual (EN) v1.0

Flight Battery Safety Guidelines v1.0

Inspire 1 Safety Guidelines v1.0