What do SACAA regulations involve?

Part 101 Regulations are very extensive for RPA Operators and for the operator involve quite a lot, luckily, from a production standpoint you only need to be concerned with 5 documents you can request from the operator in order to determine:

A) Are the legal?
B) What are their operational limitations?

**RPL**  
Remote Pilot License. This is issued by the SACAA, the pilot of the aircraft must be rated on the aircraft they are flying.

**ASL**  
An Air Service License is issued by the Department of Transport which legally allows the operator to charge for a service or supply a service where there is financial gain for any party.

**RLA**  
Remote Letter of Approval. This shall be issued once the aircraft has been deemed airworthy and the maintenance plan approved.

**ROC**  
Remote Operator’s Certificate. This document is issued after the SACAA is satisfied that the operator’s manual of operations, safety management system and quality assurance program are of an acceptable standard.

**Ops Spec**  
The Operational Specification is a document issued by the SACAA detailing what permissions and operational limitations in relation to Part 101 that the operator may offer. This is a VERY important document to peruse as not all operators have been given the same permissions and operational requirements for the same permission may differ from operator to operator.
OP’s SPEC SAMPLE

Featured left is a sample of what an “Op’s Spec” issued by the SACAA looks like.

What is important to note in the Ops Spec are the operational limitations the SACAA has placed on the operator. As you can see in the image, Timeslice Cinematography has been granted a number of permissions such as flying at night, near people and over public roads. Each operator may have a different protocol that they need to follow when conducting these operations and production should make sure they are aware of operational procedures specific to the operator they are using.
The payload of a drone is affected by altitude, weather, flight path and the environment such as trees, proximity to people and or buildings. These factors will have a direct bearing on the payload (camera and lensing) that the drone is able to carry. It is always advisable that you have a “plan B” which is a lighter payload, should any of the above conditions become adverse. The lighter the payload, the more maneuverable the aircraft is and the more controllable it is.

Weather is taken into account both on the ground and in the air. Air pockets and deviations in temperature which affect the drone while in flight may not be felt on the ground. The PIC shall make use of a MET report to determine weather feasibility which can change continuously.

Environmental factors such as footpaths, traffic, trees, electrical wires, buildings and proximity to people all affect how maneuverable the aircraft is in relation to its payload, the weather and required flight path. Permits also will play a role as to where you may and may not fly. The drone may not fly over any property or people the production does not have direct control of.

For safety reasons, the flight path of the aircraft needs to be determined before the aircraft takes off. This needs to be communicated to the pilot by the Director. The flight path will be limited by other influencing factors such as payload, weather and environment.
OPERATIONAL FACTORS

Operational factors such as payload, flight path, weather and environment are used when conducting the risk assessment featured on the right.

MITIGATION

Should an operation fall outside of the acceptable risk indexes, the risk needs to be mitigated. For example, in windy conditions the pilot in command may feel they will have better control of the aircraft by lightening the payload. This would allow the operation to proceed but may result in a different lens choice.

Another example would be a complex flight path when there is wind. The pilot in command may decide that the operation is possible with a less complex flight path.

ASSESSING RISK

In all instances the pilot in command shall have the final say as whether they are happy to proceed with the operation or not. Flying in certain wind speeds or a particular flight path for example is very dependent on the pilot’s skill level, size of the drone and may vary from operator to operator.
PERMITS AND PERMISSIONS

Film Permits
When filming on City owned property, production or the client will need to apply for a film permit from the relevant local authority. The time allocation for this will depend on the local authority and well as how complete the supporting documentation is. The operator will supply production with any operator related information and insurance documentation that the permit office may require. Production will need to ensure that they have permission from any building or property owners which the drone will be flying over or near. Full lock off and control of any public roads or walk ways will be required. The drone may never under any circumstances fly over general public.

Flight Plans
When conducting an initial risk assessment, the operator will determine if they are flying in controlled airspace. If flying in controlled airspace, the operator is required by law to file a flight plan in the form of a “Flexible Use of Airspace” application or FUA. This application if to ensure that the RPA will not affect any manned aircraft operating in the area and if a manned aircraft does fly into the RPA’s area of operation, that the control tower can advise the RPA pilot of such activity and how to proceed. FUA applications usually take around 48 hours, so it is vital that any controlled airspace operations are confirmed within this time period.

Indemnity and Permissions
When filming on private property and that property falls into controlled airspace, an FUA application will still need to be filed. In addition to this, production will need to ensure that they have the land and or property’s owner’s permission as well as an indemnity form signed by cast which are being filmed.

Drone operators are required by law to carry public liability insurance, but the sum of such insurance may vary from operator to operator.
CONTROLLED AIRSPACE

PARAMETERS TO BE CONSIDERED AND PLANNED FOR

Air Traffic Control Services require at least 48 hours to approve an FUA Application. No RPA may fly in controlled airspace without permission from ATSU. This is for the safety of manned aircraft. Drones may not fly in prohibited airspace such as the Voortrekker monument. SANParks can grant permission should they deem operations safe. Areas such as the V&A Waterfront would require a complete lock-off from the public so would not be feasible.

Manned aircraft always have right of way and use of airspace. Should for an unforeseen circumstance, such as a search and rescue, the airspace be occupied by a manned aircraft, ATSU shall advise the RPA pilot to land and await further instructions as to when they may resume operations. This may have a bearing on production schedule which should be planned for.

Before commencing operations in controlled airspace the RPA pilot will request permission to commence operations from ATSU. Should a manned aircraft be in the area, the pilot will be advised to standby while the manned aircraft passes and be notified by ATSU when operations are safe to commence.
DRONE COSTINGS

IN RELATION TO TIMESLICE CINEMATOGRAPHY

Packages

It is necessary for drone operators to offer a complete package in that all the equipment on the drone as well as the crew using it need special approval from the SACAA in terms of airworthiness, training, maintenance programs and operational procedures.

Insurance is also very specific and the drone operator needs to ensure that all the equipment the drone is carrying is properly insured.

These all factor into the cost.

Crew and Training

Timeslice Cinematography makes use of the three man crew which include a RPL holder pilot, an Air Safety Officer who holds an ATPL and a camera operator. All these crew members all have had the relevant SACAA prescribed certificates.

Insurance

Timeslice Cinematography carries USD 5 Million public liability insurance and well as its own insurance for all of its equipment. This is included in the costing.

Ground Infrastructure

Ground infrastructure included in the package include a van with a generator for on site battery charging ensuring continual operation, fuel, safety equipment, radios, compressor as well as the conducting of risk assessments, location assessments, FUA applications, spares for the drone and completion of all SACAA required documentation such as safety briefings, battery logs, hazard and occurrence reports etc.

Drone and Camera Equipment

Timeslice Cinematography packages include the Freefly Alta Drone, either an Alexa Mini or Red Weapon Cameras as well as a Movi Gimbal and Arri Wireless Focus. It is worth noting the the Freefly Alta not a “home built attempt” and is a state of the art machine with full telemetry on all motors, allowing the safety officer to observe and take immediate action if any abnormal function is noted. The Alta also has a number of unique safety features.

Planning

Your success is our success. At Timeslice Cinematography we are happy to plan and advise on the best way to mitigate operational risks and hazards to ensure a successful end result for everyone.