SOUTH AFRICAN
CIVIL AVIATION AUTHORITY

SKYwatch

SAFETY BRIEF

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Safety in Aeromodelling:
Key Practices and Guidelines for Secure Flights

Remote Aircraft Compliance

SOARING HIGH:
A Glimpse into the SACAA's 25th Anniversary Celebration

Understanding Aerodromes in South Africa

The Critical Role of Aircraft Maintenance Organisations (AMOs)

Breaking The Nose Gear During Landing

Foreword by
Ms Poppy Khoza – Director of Civil Aviation

Hello!

I would like to take a moment to welcome you to this last SkyWatch edition of 2024, an issue that we hope you find informative and engaging as you immerse yourselves in this busy festive period.

Year 2024 has been a monumental one for all of us in the aviation sector. As much as we witnessed continued recovery levels across the industry, economists still indicated that aviation growth in Africa did not necessarily match up to our peers in other continents. We welcome the steady growth nonetheless and take the good with the bad as we look forward to another promising year ahead.

On the aviation safety, security and environment side, we have noted significant improvements that we plan to build on as the Regulator working side by side with you as important contributors to upholding this noble course.

As a State, we have recorded positive progress towards closing the ICAO findings raised against the State on both safety and security. Of note is that the SACAA-related findings, particularly on aviation security, have been closed successfully. We are working hard to close the targeted safety-related findings before the end of the financial year in March 2025. With such progress, we look forward to the next round of audits by ICAO in the near future.

Whilst we are pleased about the progress on our international obligations as a signatory State to the Chicago Convention, we also recognise the need to be adaptive to the evolving landscape of regulatory service improvements. We are on a journey to improve the manner in which we regulate through the introduction of technological advances to facilitate a better experience for you whenever you transact with SACAA. In the next editions, we will cover the improved offerings and educate you about the recent developments as we make your experience more exciting. We commit ourselves to providing regulatory services in a manner that is consistent with innovative developments in this sector.

In this edition, we will look back to the 25-year celebrations of the SACAA. This milestone is a testament to our stability and longevity as an organisation. I trust you found it as remarkable as I did to mark this occasion, celebrating all we've achieved over the years while laying the foundation for what's to come in future.

Some exciting initiatives are also on the horison, many of which we will roll out in the New Year. One of them is relocating our headquarters from Ikhaya Lokundiza in Midrand to Centurion. Expect more communication from us regarding this move in the coming months.

Along with our new premises, we will unveil our new brand identity, which signifies a modern and forward-looking approach to our work. This change is a visual reflection of SACAA's journey and our dedication to the highest standards of service in aviation safety, security, and environmental regulation.

In this edition, we also delve into the realm of aerodrome safety with further updates after the introduction of Subpart 5 of the Civil Aviation Regulations. These new regulations provide a tailored

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approach to managing South Africa's diverse aerodrome landscape, ensuring that safety remains a priority without unnecessary complexity for smaller and private aerodromes. This change, which was implemented in 2023, allows the SACAA to focus resources on higher-risk facilities while making compliance more manageable for smaller operations.

We've also made important strides in the safety of model aviation which involves flying scaled-down, remote-controlled aircraft such as drones. By adhering to safety practices like pre-flight inspections, proficiency assessments, and the careful handling of emergencies, drone operators are now better equipped to enjoy their craft while ensuring public safety.

There is a segment on drone usage and the importance of compliance in the UAS (Unmanned Aircraft Systems) sector that is continuing to grow. Our work to improve UAS compliance, both for commercial and recreational operators, has created a more robust regulatory framework, helping to ensure that the safety of our skies is maintained as drone technology evolves.

Lastly, we focus on the role of Aircraft Maintenance Organisations (AMOs) in enhancing airworthiness and safety. With the constant advancement of aviation technology, the expertise and diligence of AMOs have been crucial in ensuring that our aircraft remain in peak operational condition, ready for safe flights.

LOOKING TO THE FUTURE

In this season of celebration and reflection, and as we close the year 2024, let me take the time to extend my heartfelt gratitude to all those who have contributed to the success of our South African aviation sector and hope that you are enjoying your well deserved break and those who are travelling that you will enjoy your travels in the coming weeks. I look forward to continued collaboration with you as we work together to improve the safety and security of our skies and ground systems. Until then, Happy New Year and happy flying!

Yours in aviation,

Ms Poppy Khoza
Director of Civil Aviation

Safety in Aeromodelling:

Key Practices and Guidelines for Secure Flights

Submitted by the South African Model Aircraft Association (www.samaa.org.za)

Similar to full-scale flying, aeromodelling has significant safety considerations. Pilots must follow guidelines to ensure the safety of themselves, spectators, and property.

Aeromodelling, a popular hobby and competitive sport involving aeromodelling aircraft, continues to grow worldwide, drawing in hobbyists of all ages. While exhilarating, the activity demands strict adherence to safety measures to prevent accidents and ensure that the enjoyment of flying these model aircraft remains safe for participants and bystanders alike. This article explores the key safety guidelines for aeromodelling, providing insights into the importance of proper preparation, equipment checks, and awareness.

THE IMPORTANCE OF SAFETY REGULATIONS

Aeromodelling aircraft, though small compared to full-sized planes, can pose significant risks if not handled properly. High-speed propellers, mechanical failures, and loss of control can result in injury, property damage, or even fatalities. Therefore, most aeromodelling organisations, like the **South African Model Aircraft Association (SAMAA)**, implement stringent safety rules to ensure controlled environments for flying.

One of the primary safety measures involves adhering to designated flying fields or clubs that follow established safety protocols, including no-fly zones, and having spotters on hand.

Flying in uncontrolled environments like public parks can increase the risk of accidents, especially in areas with heavy pedestrian traffic.

Pre-Flight Inspections

Proper inspection of aeromodelling equipment is vital before any flight. Pilots should always ensure the following:

- **Radio system check:** Ensure there's no interference or low battery power that could result in loss of control.
- **Airframe integrity:** Check for any damage to the model, including wings, fuselage, and control surfaces.
- **Motor and propeller condition:** A damaged propeller or malfunctioning motor could lead to in-flight mechanical failures.
- **Battery charge:** A low or damaged battery may cause the aircraft to lose power mid-flight.

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Risk Assessments and Proficiency

For many pilots, flying a maiden aircraft (one that's newly built or significantly modified) is one of the riskiest aspects of aeromodelling. Consulting an experienced club instructor or seasoned flyer to observe the aircraft can significantly reduce the risks associated with new aircraft, ensuring that any design flaws or mechanical issues are caught early.

In many cases, proficiency ratings, such as **bronze, silver, or gold pilot ratings**, also come into play, as they determine a pilot's level of competence.

Safety in Crowded Events

Safety becomes even more critical at public aeromodelling events such as airshows or festivals, where large crowds can gather. Pilots flying at these events must follow strict safety protocols, including maintaining safe distances from the crowd and fellow flyers. Prearranged **spotters or callers** assist pilots by keeping them informed of their surroundings, reducing the chances of midair collisions or incidents that could endanger the crowd.

The recent **SAMAA Fly-In Festival** is an example where organisers emphasised these measures. Pilots with higher proficiency levels were required to have qualified spotters, while the airspace was carefully managed to avoid any dangerous incidents.

Handling Emergencies

Despite all precautions, emergencies can still occur. To mitigate the risks, most clubs and associations insist on having **emergency procedures** in place. This includes having first-aid kits readily available and ensuring that all club members are familiar with the location of the nearest emergency services. Having spotters and other club members present can also expedite emergency responses in case of an incident.

The Future of Safety in Aeromodelling

As aeromodelling technology continues to advance, the safety challenges associated with this hobby also evolve. However, with proper training, adherence to safety guidelines, and a commitment to maintaining high standards of responsibility, aeromodelling can remain a safe and exciting hobby for years to come.

Organisations like **SAMAA** continue to play a crucial role in educating members and implementing safety standards, ensuring that aeromodelling stays as thrilling as it is safe.

Conclusion

Flying aeromodelling aircraft safely requires thorough preparation, careful adherence to safety protocols, and continuous risk assessment. Whether flying solo or participating in events, pilots must remain vigilant and prioritise safety to protect themselves, spectators, and property from potential accidents. The aeromodelling community can continue to take pleasure in this fulfilling pastime without compromising on security by adhering to established criteria and keeping up with the most recent safety procedures.

BREAKING THE NOSE GEAR DURING LANDING

written by Charlie Marais

Sequence of Events Leading to Nose Gear Failure

On Tuesday morning, 14 May 2024, a flight instructor and a student pilot on board a Piper Cherokee 180F with registration ZS-IKJ took off on a training flight from Port Alfred Aerodrome (FAPA) in the Eastern Cape province to conduct circuit-and-landing exercises. Visual meteorological conditions (VMC) by day prevailed at the time of the flight, which was conducted under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.

The crew took off at 0520Z and executed six circuits and landings; thereafter, the flight instructor disembarked from the aircraft, and the student pilot continued with the solo consolidation circuits.

The flight instructor observed the student pilot's solo exercises on Runway (RWY) 10L from the air traffic control (ATC) tower. During the first circuit, as the student pilot approached the runway for landing, the radio officer in the tower instructed him to execute a go-around due to the presence of another aircraft on the runway.. The student pilot obliged. He then conducted a second circuit, which was uneventful. On the third circuit, the student pilot decided to execute a go-around as he felt the aircraft's approach was too high. During the fourth circuit, the student pilot stated that the aircraft flew past the reference point (240 metres from the threshold) at approximately 290 feet (ft) above ground level (AGL). He further stated that he could not remember the indicated airspeed. The aircraft touched down hard (with the nose gear first), and the student pilot retracted the flaps; thereafter, he lost directional control of the aircraft, and it exited the runway; it impacted a bush on the left side of the runway before it stopped. Another flight instructor who was about to depart taxied to ZS-IKJ, boarded the aircraft (ZS-IKJ), and turned off the master switch, as well as removed the key from the ignition slot. The aircraft's nose wheel had failed, and the right-wing leading edge and the propeller were damaged. No person was injured.

Probable Cause(s)

The aircraft's height above ground level was too high on the final approach, and the pilot flared the aircraft, which resulted in a hard landing with the nose gear first, which subsequently failed. This led to a runway excursion to the left.

Comments by Charlie Marais

During my time at Westline Aviation, nose gear failures and damage to the firewall where the nose gear is attached, if not ever present, were always the main threat to the serviceability, and as such, availability of our light aircraft fleet. The problem of nose wheel landings had been a source of accidents from as far back as I can recall.

An entirely avoidable accident type and somewhat devastating to our available fleet to do ab initio training with. Yes, fixing the aircraft was always possible, and very seldom, to my knowledge, did anybody ever get seriously hurt. There may have been the odd tragic result, but as a rule, there was just aircraft damage and little to no human injuries. The issue is that, in the majority of situations, this problem has a training genesis, along with some extremely strange additional precipitators. It is simple because the boss blames the teacher and the teacher blames the pupil, but the underlying reason is never found or described for use in a future prevention effort.

It is the result of faulty training, but when one has been trained insufficiently or incorrectly, the resultant accident should not be dismissed as "one of those things."

There is a lot of ego involved, and no one wants to take the blame, either after the accident or in the runup to the accident.

My estimation, based on exposure to many pilot instructors trained by poorly trained instructors, is that more than 50% of all aircraft instructors do not have the basic training of approach and landing down to an acceptable art. Okay, I am only trying

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BREAKING THE NOSE GEAR DURING LANDING

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to be nice about that low estimation, but I am sure I have your attention. Just for one time, drop your ego and listen to the argument that will follow. However, one needs guts to lend your ear to advice that may show your ignorance, but do not take it personally, as your instructor was also not trained correctly.

Yes, a good landing is normally preceded by a good approach. But a good approach does not guarantee a good landing.

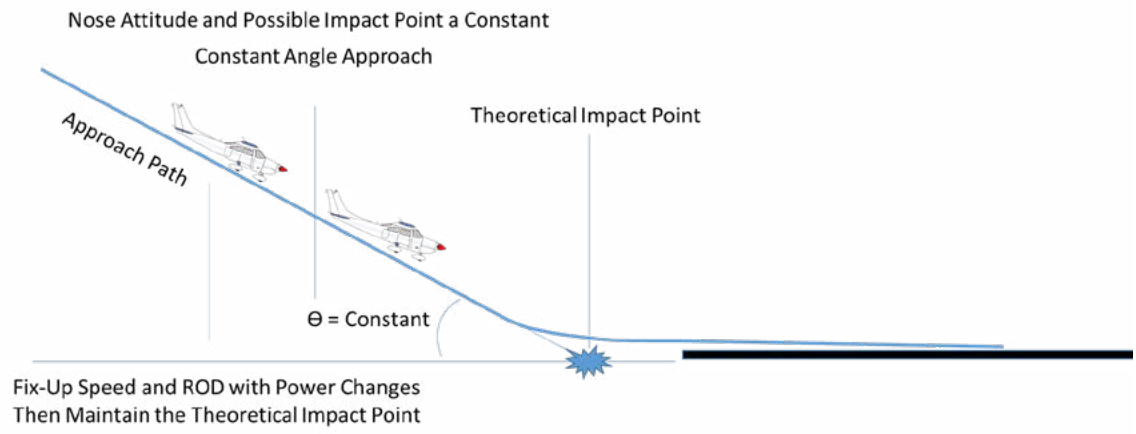
It is obvious that the approach precedes the round-out, hold-off and touch down, or go-around, and purely for that reason the landing starts with first getting the approach sorted out. Normally the students would have the downwind, base leg, and intercepting final under control at an acceptable level. Flying a final approach has one or two tips and no tricks, but solid understanding and execution.

The rule is that attitude controls speed, and rate of descent is controlled by power. Let me rattle the cage a little. In a normal descent these aspects are true, so as on final approach, but the application of this knowledge is different in application. When I select an attitude for a speed during a normal descent exercise, I can control the rate of descent with power, meaning that when either of the desired constants selected, speed and ROD, can be fixed independently. Not so during an instrument flight-controlled descent and then also not on final approach. Think of it as this kind of descent is in a rather confined space, whereas just descending from one flight level to enter the final approach phase has fewer issues that need fast corrective action. Pitching the nose to try to get the speed right will result in a sort of phugoid on the final approach, just enough to make the passenger feel ill or very uncomfortable. The final approach is a brief descent phase, and attitude changes tend to put you outside the approach path, which is a constant angle by nature. A final approach is no different from an ILS approach. You must stay in the ever-decreasing lateral and vertical limits as the ground is getting closer. Well, the runway I mean to say, so we are flying down a funnel.

The final approach line is a straight line and does not reflect speed, just a continuous constant angle, coupled to a rate of descent, at a selected speed, but I cannot pitch the nose up or down as I will depart the straight line of descend, so I initiate the fix by reducing the power.

Once the power is less, the nose will tend to pitch towards the undercarriage, and now this resultant moment must be stopped by applying back pressure on the yolk to maintain the nose of the aircraft along the descent line.

Should we find ourselves low in the approach, first increase the power, and in this way, the nose will have to be lifted slightly, reducing the ROD, helping to regain the glide path.



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The nose attitude thus stays at a fixed point, about four fingers below the threshold. This is a bit like playing chicken as we tend to increase the nose attitude the closer we get to Mother Earth. Do not raise the nose until the round-out starts.

Think of training your students to do only one action in only one-dimensional change, even if you fly in a three-dimensional environment.

Listen, do not close the throttle during the round-out or level-off phase. Should you allow this, you are increasing the tasks while the high dimension needs all your attention. From the point where the descent is broken by levelling off, no other action must take place. This round-out must be done while the flying pilot is looking outside at the runway. The idea is to level off lower than 20 feet above the runway and fly that part to stabilise the aircraft centre, or longitudinal axis, perfectly aligned with the centreline of the runway.

From the time the level off started, the speed in the ballpark, or within 5 knots of the desired, there is absolutely no need to look inside the cockpit. This is the secret. Mother Earth will rise up and strike you if you take your eyes and, consequently, your mental focus away from your level-off or round-out. From the moment of starting the round-out to fly level and straight above the runway until stopping or peeping to see the speed on a go-around, the eyes may not get into the cockpit.

Note that until established level and straight with the runway, the throttle was not touched. Now, when stability is reached, the throttle is retarded in a slow, smooth motion to a position of completely closed. Looking anywhere but outside to negotiate the runway is normally the beginning of a bad to terrible to a crash landing. The nose in this hold-off and denying the landing time is crucial, as the nose must rise enough for the main wheels to make first contact.

Direction and alignment of the aircraft's longitudinal axis with the runway is a rudder task, nothing else. Drifting left or right of the line, while perfectly aligned, is the task of the ailerons. Avoiding the landing, while maintaining the same height as before and lower, is the task of a pitch increase through the yoke. The only time we get a fright is when we did not pay attention as the eyes were where they should not have been. Once on the nose, higher than the main wheels, and the aircraft descends faster than you expected, do not yank on the stick. Yanking starts a balloon, and the sequence following that has no good outcome. I will discuss how to recover from this state a little later. So, the only way to protect the nose wheel is to make sure it is not the first to contact the runway. This is important; it is a reality of engineering, physics, and demonstrated outcomes, not a recommendation.The idea is to avoid the landing till the speed makes this impossible. The stall warning activation is a good sign, as this is when the aircraft will land herself. If we fly taildraggers, this will be the three-point attitude, unless you have oversized tyres. In the nose wheel aircraft, activating the stall warning is not necessary but still ensures the minimum touchdown speed. On touchdown and then after-landing run, either to strop or to effect a takeoff, eyes inside the cockpit stays devastatingly stupid with dire results guaranteed.

Before I talk about the takeoff when doing touch and goes, the flap settings are one of those very important assets on your aircraft. Landings in all aircraft are required to be performed with full flap.

No, Charlie, we are doing touch-and-go circuits, and full flap is just too much. Nonsense. The best control stability on the final and lowest speed of touchdown is achieved with full flap. That is how the manufacturer designed the aircraft. Yes, Charlie, but what about doing a baulked landing, or if there is no time to retract the flaps to the takeoff position? Full flap does not make the take-off part dangerous, but there is a very specific way to accelerate when having such an amount of drag.

Take special note that should you fly a Cirrus, taking off with full flap is lethal due to the higher speed wing design, which, when coupled to full power and full flap, leads to tip stalling prior to root stalling. I have written a full article about this, and although the Cirrus POH does not explain this, it warns about flap settings. Takeoffs may not be performed with full flap. In SA we have two well-documented fatal accidents due to this fact.

In summary, the aircraft's nose must remain constant during the final approach, which is a straight descending line with an aiming point. Power must be used to start all corrections, and then the stick or yoke must be used to modify the aiming point.

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BREAKING THE NOSE GEAR DURING LANDING

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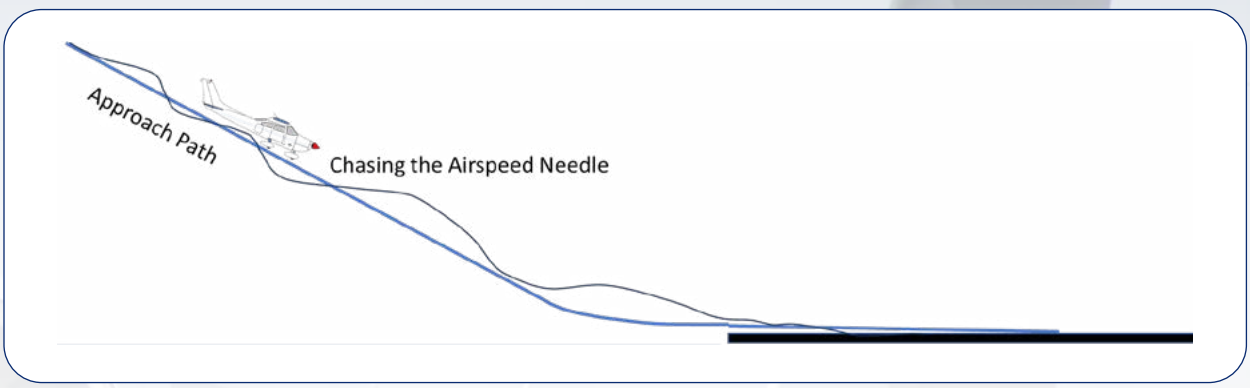
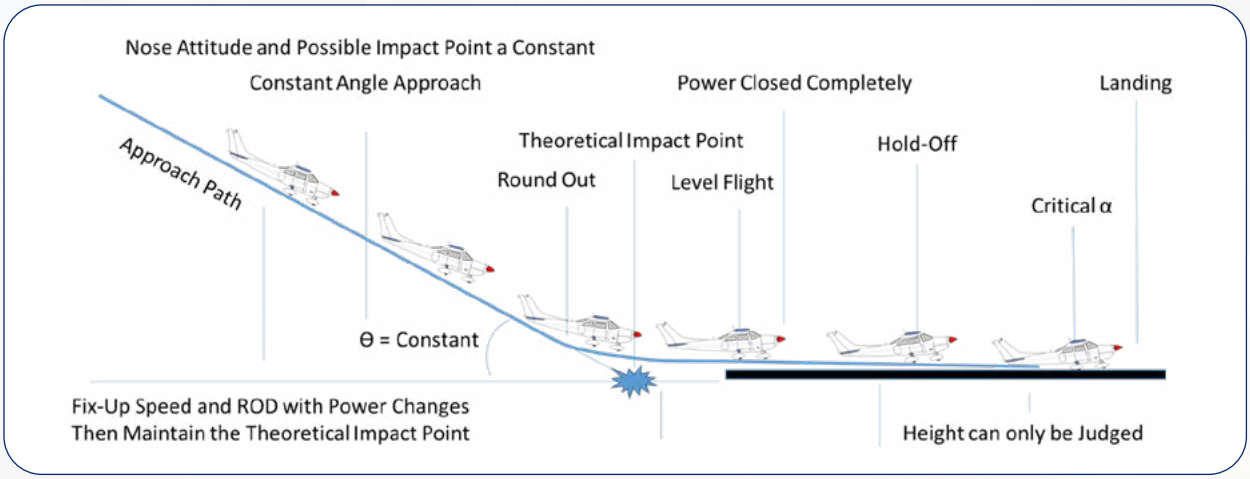


The round-out phase is with power to allow all concentration to go into the levelling of the aircraft with a specific low height and alignment.

The landing phase starts with the throttle closure and immediately catching the nose tendency to pitch down, by sufficiently increasing the back pressure.

From the roundout till the aircraft is stationary, or when effecting a go-around, eyes may never enter the cockpit.



Blindfold cockpit check. Oh, something we do not actually do anymore? Well, then how do you expect the student to select the flap during the go-around run if looking inside to pinpoint when the flap lever is the only choice?

Taking your eyes inside the cockpit means that the directional control of the aircraft is immediately at stake. My experience is that students and many qualified pilots cannot even touch the throttle without having to look inside to guide the hands. Not teaching a student or any pilot for that matter on finding the way inside the cockpit without looking inside is paramount to setting the individual up for failure. Then, picking the flaps up during the after-landing run becomes dodgy as I have seen so many going for the wrong lever. Take note that when the undercarriage is selected up, the uplocks will immediately give way, and even if you select the undercarriage down immediately it will not stop the aircraft weight to win the contest. Stop, identify, confirm, and select. As a result, there are no eyes in the cockpit from the round-out until the aircraft is motionless.

If it needs to be a touch and go, reducing the flap to the take-off position is normally when eyes are forced inside the cockpit, so to avoid this, your instructor taught you to land with take-off flap and that solves the problem. Less flap during the hold-off phase before touch down prolongs the period before landing and ballooning is

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more probable. Ballooning is the start of the cycle of yolk madness that leads to broken nose wheels. It goes like this; too much back pressure on the yoke and not concentrating outside on keeping the aircraft level with the runway, starts a balloon. Slightly later than is safe, the pilot sees the balloon and takes immediate action. The yoke is now moved forward without referencing and with a larger input that is required. The plane is now nose low, and typically the pilot can't prevent the nose wheel from making contact with the runway until it's too late.. By now the pilot pulled back on the yolk, as the aircraft whiplashes onto the rear wheels leading to the aircraft becoming airborne and ballooning even more.

The over correction leads to a porpoise flight profile, and by the third nose wheel contact, it gives up and departs from the attachment points on the fire wall. All of this was initiated by the pilot not looking at the nose attitude, in relation to the outside horizon, and then trying to correct a mistake, but increasing the mistake magnitude.

Is it possible to avoid ballooning? No, not entirely as from time to time our judgement is slightly out, such as after a long navigation exercise. With the correct approach and hold-off, the chances are many times less, but not a guarantee of never happening again. I talked about how to prevent a balloon from exploding, but sometimes we are caught off guard, and the next crucial skill is recovering from a balloon—unless you don't like nose wheels. The way to recover from a balloon is to stop the pitching moment and departing inertia of the aircraft, but in a definite referenced way. You must use the horizon outside the cockpit and only lower the nose of the aircraft to a straight and level attitude. Speed is low and yes, the aircraft sink rate will be higher than normal, but from this position you have a chance to negotiate the landing attitude by lifting the nose attitude, enough to protect the nose wheel and the rear wheels will impact slightly harder, but normally well in acceptable scope.

Pay close attention now. Should the first balloon be over corrected for, and the nose impacts the runway first and Mother Earth rejects you, take full power immediately. Careful now, the trim settings are not correct, and the aircraft will tend to pitch further up.

Looking at the horizon and pitching the nose to the level attitude just above the runway and maintain level flight leaving the flap settings alone, the aircraft will accelerate and now trimming is vital, followed by a normal circuit where we try again. Not looking outside to manage the nose attitude to the horizon normally leads to a stall and here I am afraid, very few ever walk away. When ballooning, do not touch the flaps, that is fuel on the fire actions.

Full flap, full power and even better in ground effect, your light aircraft will stall at a scary low speed. However; any change in load factor or any harsh movements that increase the g-forces, will be a very bad idea. Be gentle and let the aircraft accelerate first, then when climbing speed, remember that flaps must be lifted in the notches, allowing the speed to increase at least 5 knots between reduction of flaps.

A touch and go always make us vulnerable during the rotation to get airborne. This is due to the trim situation. Know about this and if you have no choice to trim, which we normally do not have, fly the pressures on the yolk according to the horizon, maintain your eyes outside and trim without looking inside. To comment on the "unstick" of the aircraft- "Unstick" is that moment when the aircraft leaves the runway and becomes airborne. To get into the air, many people intentionally unstick the aeroplane after increasing the speed enough. This normally leads to an excessive nose attitude and always needs correction.

The secret is for the aircraft to do the take-off, and you just play an assisting part. I remember on Impala jets we accelerated to a speed, then selected a nose attitude and when the aircraft generates enough lift as the speed increases, it takes off by itself. We normally do not use it to those specifics, but here is the tip, as the rotation speed nears, very gently increase the back pressure on the yolk, slowly but continually, and soon the aircraft will become airborne by just floating into the air.

Yes, I am talking ab initio training, but on types later in your life, the techniques I discuss will serve you well as a point of departure, applying techniques as required and situation dependent. Hard pushing and pulling is not good, and only used in desperation, with devastating results if the speed is low. We can't all be fighter pilots, but even aerobatic pilots can master the art of smooth and gentle inputs, used in an exponential way. This only means that you can initiate a turn in the aircraft so that no one notices, and then increase the rate of input to represent cosine curve acceleration.

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BREAKING THE NOSE GEAR DURING LANDING

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CONCLUSION

You can make up your mind as to how the accident I was supposed to comment on, happened. However, here are some pointers that one cannot ignore:

- Once you learn to fly outside references, your flight accuracy and safety will immediately become better and more successful.
- Final approach is a straight line and not a phugoid.
- During level-off, concentrate on the runway outside and do not close the power.
- Once the level flight in the hold-off prior to landing is reached, reduce the power slowly, anticipating that the nose tendency will be to drop. Just counteract this tendency and beware of overreaction.
- The aircraft in full flap condition is the configuration that we must teach approaches
- From the time you start to round-out, there is nothing inside the cockpit of value, just distraction.
- The aircraft will fly on a whisper if full flap, full power, level attitude and even better when in ground effect.
- A blindfold cockpit check is something that a student must pass, if not, you are setting the individual up for failure.
- Should the landing be so hard that you are back in the air, or after overreaction of a balloon, take power and go around.

We must all be refreshed on how to teach the touch and go's as most present methods are wrong. A student breaking the aircraft on landing is more detrimental to the ego and perceptive capability of the instructor.

Then, when you hear the truth, but stay with inferior ways, your ability to grow is seriously suspect.

Understanding Aerodromes in South Africa

A SIMPLIFIED GUIDE

Submitted by Mr. Nelson Nkabiti – Senior Manager: Aerodromes & Facilities (SACAA)

Imagine the bustling hub of an international airport, teeming with scheduled flights. Now, picture a quiet airstrip, primarily used for training purposes. Both are aerodromes, but their needs are vastly different. The International Civil Aviation Organization (ICAO) sets global standards, primarily focused on large, busy airports. However; South Africa recognises the diverse landscape of its aviation industry, including smaller, less complex aerodromes.

A Tailored Approach: Subpart 5

To address this diversity, South Africa introduced Subpart 5 of its Civil Aviation Regulations (Part 139). This regulation simplifies requirements for smaller aerodromes, alleviating the regulatory burden and streamlining operations.

Types of Aerodromes under Subpart 5

Subpart 5 categorises approved aerodromes into four types:

- **Type A:** Aerodromes used for charter operations.
- **Type B:** Aerodromes used for flight training (excluding gliders and balloons).
- **Type C:** Aerodromes located near existing facilities or other aerodromes, where operations might pose a risk to other activities.
- **Registered Aerodromes:** Aerodromes for private use with no commercial operations like charter, training, etc.

It is important to note that Subpart 5 regulations are less stringent than those for certified or licensed aerodromes, which cater to public use and adhere to stricter guidelines.

A Significant Leap Forward: Benefits of Subpart 5

The implementation of Subpart 5 in 2023 marked a significant milestone. It has streamlined the oversight process, reducing the number of aerodromes under intense scrutiny. This allows aviation authorities to focus on high-risk facilities, ensuring safety without unnecessary bureaucracy.

Key Benefits for Aerodromes

- Reduced Compliance Costs: Simplified regulations lead to lower compliance costs.
- Improved Efficiency: Streamlined processes enhance operational efficiency.
- Enhanced Safety: While less stringent, Subpart 5 maintains a baseline level of safety.
- Reduced Exemptions: Fewer exemptions are required, further simplifying the process.

Conclusion: A Balanced Approach

South Africa's approach to aerodrome regulations strikes a balance between safety and efficiency. By recognising the unique needs of different aerodromes, the country ensures a well-managed aviation system. Subpart 5 is a testament to this commitment, providing a flexible and practical regulatory framework that fosters the growth of South Africa's aviation industry.

To learn more about aerodromes and facilities in South Africa, visit the South African Civil Aviation Authority website: https://www.caa.co.za/industry-information/airports/

Remote Aircraft Compliance

Article by Jonathan Bates
Jonathan is a director at VIO Aviation Solutions

There has been a sizable year-on-year increase in the number of UAS operated globally for private use, and this is also the case in South Africa. The proliferation in the number of UAS's and their ease of access brings in the question of compliance, and specifically the compliance in South Africa to Part 101 of the Regulations.

The following elements assist with improving compliance in the drone space:

Clear policies and procedures; Training, monitoring, and reporting; Risk management.

Compliance with the Regulations in the commercial UAS sector is more straightforward with the policies and procedures clearly made available through approved ATO's providing UAS training prior to becoming a commercial operator.

There is a requirement for both the UAS and pilot to be registered with the CAA, allowing for monitoring and reporting within this sector.

Additionally, the pilot's skill and knowledge levels are assessed in the issuing of a certificate, while the UAS undergoes a series of tests and checks to ensure that they are airworthy and compliant in accordance with a series of mechanical and other requirements to manage and mitigate any risk from commercial UAS operations.

The private or recreational UAS operations pose several challenges that are not as easily overcome by Regulatory requirements, as the aircraft and operator are not known and therefore more difficult to regulate. Additionally, private UAS operators may not have been directed to or have knowledge of the required regulations. Internationally there are requirements for private UAS operators to complete an online theory course to obtain a certificate where a minimum level of UAS aerodynamics and regulations is assessed online. Similarly, the use of a private UAS is managed via a register with the serial number and aircraft type being logged on a national database.

These interventions do provide some framework to help manage this type of private UAS operation. There are, however, flaws in its overall effectiveness and ability to capture a large portion of this segment because of it being a reactive control and requiring voluntary identification of the UAS operator, notwithstanding it being a requirement to operate.

New UAS sales could force the purchaser to show proof of a registration document (preventative control); however, this does not address those UAS's already in the airspace.

The challenge facing the UAS industry is to encourage private users to be compliant rather than forcing them to be compliant if serious inroads are to be made with the existing private remote aircraft owners.

Some strategies for encouraging compliance in the recreational sector include rewarding compliant flights, making access to the compliance requirements easier, and the use of technology to simplify compliance efforts.

There are some changes to the Regulations being discussed that aim to ease the existing complexities for recreational or private UAS operations.

UAS technology is advancing exponentially, and modern drones can now detect and avoid accidents with other aircraft and drones. The acceptance of liability is an area that most drone manufacturers are avoiding, and therefore the onus is placed back on the pilot by limiting the technology embedded in the drones and controllers. The use of technology within the drone can, therefore, only go so far in managing compliance through automatic enforcement or limitations on where an aircraft is used without the oversight of commercial UAS operational requirements.

To encourage increased compliance in the recreational space, there needs to be a real benefit for these private or recreational operators to want to be compliant. As mentioned earlier, one of the options is to provide easy access to the regulations and a simple and understandable technology tool to assist pilots to operate within the regulations. The use of a platform is voluntary in the recreational space; however, it does encourage compliance in what is typically a difficult segment to regulate through potentially bringing pilots together, fostering a culture of integrity and a desire to be compliant.

The use of online platforms ensures that Regulations are made easy, accessible, and understandable, even without the pilot having to attend theoretical and practical drone courses.

The Critical Role of Aircraft Maintenance Organisations (AMOs):

ENHANCING AVIATION SAFETY

Submitted by Mr. Richard Mafahla - Manager: Aircraft Maintenance (Airworthiness)

The Foundation of Airworthiness

Airworthiness is a cornerstone of aviation safety, ensuring that aircraft are fit for their intended purpose and comply with safety regulations. Aircraft Maintenance Organisations (AMOs) are at the forefront of this effort, tasked with maintaining aircraft to the highest standards. They perform routine inspections, repairs, modifications, and overhauls, all of which are essential to keeping aircraft operational and safe.

Regulatory Compliance and Oversight

The South African Civil Aviation Authority establishes regulations and technical standards that AMOs must adhere to. These regulations are designed to ensure that maintenance practices meet safety standards and that personnel tasked with maintenance are adequately trained and qualified. The approval process for AMOs is meticulous, requiring comprehensive documentation and demonstration of capability to perform maintenance tasks. Regular audits and inspections of AMOs by the Civil Aviation Authority are critical. These assessments verify compliance with regulatory requirements and provide an opportunity for AMOs to improve their processes. Continuous oversight fosters a culture of accountability and encourages AMOs to adopt best practices in safety management.

Emphasising Safety Management Systems (SMS)

A significant trend in aviation safety is the implementation of Safety Management Systems (SMS) within AMOs. SMS is a systematic approach to managing safety risks, focusing on proactive measures rather than reactive ones. AMOs that adopt SMS can identify potential hazards before they result in incidents, thereby enhancing overall safety. Training and education are vital components of an effective SMS. AMOs must ensure that all personnel are familiar with safety protocols and understand their role in maintaining airworthiness. Regular safety briefings, workshops, and simulations can help foster a safety-first mindset among staff.

The Importance of Technological Advancements

In today's rapidly evolving aviation landscape, technology plays a crucial role in enhancing safety. AMOs must stay abreast of technological advancements, including predictive maintenance tools, data analytics, and remote monitoring systems. These technologies can provide invaluable insights into aircraft performance, enabling AMOs to address issues before they escalate. Moreover, the integration of digital platforms for maintenance record-keeping streamlines processes and enhances traceability. By harnessing technology, AMOs can operate more efficiently while maintaining the highest safety standards.

Continuous Improvement and Industry Collaboration

Aviation safety is a shared responsibility. AMOs must collaborate with aircraft manufacturers, regulatory bodies, and other stakeholders to foster a culture of continuous improvement. By sharing best practices and lessons learnt from incidents, the aviation community can collectively enhance safety outcomes. Furthermore, AMOs should actively participate in industry forums and workshops to stay informed about emerging safety issues and regulatory changes. This engagement not only benefits individual organisations but also contributes to the overall safety ethos of the aviation sector.

Conclusion

As we look to the future of aviation, the role of AMOs in ensuring safety and airworthiness cannot be overstated. By adhering to regulatory frameworks, implementing robust safety management systems, embracing technological advancements, and fostering collaborative industry relationships, AMOs can significantly enhance aviation safety. Our commitment to these principles will ultimately lead to safer skies for all. In closing, let us remember that safety is not merely a compliance requirement; it is a fundamental value that must permeate every facet of our operations. Together, we can uphold the highest standards of aviation safety and continue to build a robust and resilient aviation ecosystem.

SOARING HIGH

A Glimpse into the SACAA's 25th Anniversary Celebration

Submitted by Mr. Moses Mushovholwa; Aviation Development - SACAA

Imagine the roar of engines, the thrill of flight, and the excitement of discovery all wrapped into one unforgettable event. That's exactly what unfolded at the South African Civil Aviation Authority's (SACAA) 25th Anniversary Celebration Air Show held earlier this year, at Wonderboom Airport in Gauteng. This spectacular event was a feast for the senses and a testament to the SACAA's dedication to aviation safety and development.

The air show was more than just a celebration; it was a platform for education, inspiration, and community engagement. Learners from Gauteng and Mpumalanga schools flocked to the event, eager to explore the diverse career opportunities within the aviation industry.

From pilots and air traffic controllers to engineers and maintenance technicians, there was something for everyone to discover.

The event was graced by the presence of the then Honourable Minister of Transport, Ms. Sindisiwe Chikunga, who delivered a keynote address highlighting the SACAA's significant contributions to the aviation sector. The Minister commended the organisation for its commitment to safety, security, and gender equality, emphasising its role in fostering a thriving aviation industry.

As the day unfolded, the skies came alive with a breathtaking display of aerial acrobatics. Jet planes twisted and turned, leaving trails of smoke in their wake, while helicopters performed daring manoeuvres that left the crowd gasping in awe. The sound of engines thundering overhead created an electric atmosphere that was both exhilarating and awe-inspiring.

Beyond the air show, the event offered a wealth of educational opportunities. Industry experts were on hand to share their knowledge and experience, guiding learners on their career paths. Learners had the chance to interact with aviation professionals, learning about the challenges and rewards of working in the field.

For the general public, the air show was a chance to witness the power and beauty of aviation first-hand. Families enjoyed delicious food from local vendors, while children marvelled at the impressive aircraft on display.

The event was a celebration of aviation, a testament to the SACAA's commitment to safety and security, and a source of inspiration for future generations.

As the sun began to set, casting a golden glow over the airport, the SACAA's 25th Anniversary Celebration Air Show ended. It was an event that will be remembered for years to come, a testament to the passion, dedication, and innovation that drives the aviation industry in South Africa.

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