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# **AOC applications and SMS implementation plans: A worrying picture of systemic inconsistency**

**Report to the Director, Civil Aviation Authority by Walter Wagtendonk and Ian Wood,  
consultant exposition-writers**

**In association with the General Aviation Advocacy Group of New Zealand**

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## Introduction

This report has been prepared following repeated instances of divergence and inconsistency in comments, demands and instructions from CAA officials who deal with documentation associated with Air Operator Certification (AOC) applications and Safety Management Systems (SMS) implementation plans. This has caused confusion and stress, resulting in many hours of frustrating work for officials, applicants and exposition-writing consultants.

To support the accuracy of examples in this report, frequent reference is made to documents and dates but not to names of CAA officials or industry persons associated with the examples. The reason for this is that divulging names might lead to accusations of discrimination, real or imagined, by officials when they deal with those General Aviation persons in the future. However, the names may be presented to the Director on a 'for-his-eyes-only' basis if requested. It should be noted that no GA party was involved in the preparation of this report.

It is also important to note that the report is not submitted in an effort to unfairly criticise individual officials or to be personal. The overriding objective is to highlight the problems that have arisen and to do everything possible to help solve them.

The number of examples has been restricted, to identify the issues as briefly as possible. It is far from a complete list of all known problems. The examples are grouped as follows:

- a) Debatable interpretation of Rules
- b) Discrepancies in requirements and assessments by one official versus others
- c) Wasteful comments and demands that can only be described as nitpicking
- d) Tendency of some officials to enforce their own opinions
- e) Disregard for the need to use scaling when dealing with small operators

### A. Interpretation of Rules

This is an age-old problem that hasn't gone away. Recent examples:

- i. A Part 135 exposition manual assessment by an official highlighted numerous instances where the responsibility for the airworthiness and maintenance of aircraft lay in the hands of the Maintenance Controller, whereas the exposition placed this responsibility in the hands of the CEO.

Part 135.403 clearly states that the holder of an AOC is responsible for the airworthiness and maintenance of aircraft operated by the holder. A legal opinion has confirmed the correctness of the wording in the exposition: the "holder" is/are the Director(s) of the company, which for almost all our clients is the nominated CEO.

- ii. An official insisted that the authorisation for Pilot Maintenance rested with the Maintenance Controller and the Licensed Aircraft Maintenance Engineer (LAME) involved, whereas the exposition correctly stated this to be the responsibility of the Operator consistent with Part 43.51(c)(1).
- iii. It was pointed out by an official to a new AOC applicant that initial training would apply to all persons who would be working under the AOC. The example is expanded in paragraph D (iii).
- iv. A CAA inspector noted that paragraphs in the exposition used only odd numbers, and that this could be confusing to the reader. When it was pointed out that this is how Civil Aviation Rules are numbered, he said that this was explained in the Rules and likewise it should be explained in the exposition. We are not aware of where it is explained in the Rules and we cannot see where confusion arises.
- v. A CAA inspector required that the Operational Management System flowchart be altered to show that all senior persons report directly to the CEO. The flowchart does indeed reflect this requirement but functions such as Air Operations and Maintenance generally overseen by the Operations Manager are listed via the Operations Manager and then to the CEO. This ensures, for example, the

connection between Maintenance Controller, via the Operations Manager, to the CEO. Part 119.101 (a) defines the duties of the CEO in (a) (1) and those for the Operations Manager in (a) (2), i.e. only two persons. Part 119.101 (b) refers to Senior Persons, with an "s". Part 119.101 (b) (1) (iii) includes Maintenance, Air Operations and so on which according to "persons" can be part of the duties or responsibilities of the CEO or Operations Manager. Thus the flowchart currently in our exposition manuals is compliant. Moreover, it describes the practicality for small operators where in some cases there is a nominated CEO who is not on-site every day.

If the responsibilities and functions under the Operations Manager need to be altered as demanded to by-pass the latter, there is a need for almost daily input from a CEO who may not be available.

This example shows a lack of understanding of GA by some officials or an inability to see the pitfalls in their demands.

We could mention more examples where the amount of time wasted by officials and writers, due to inadequate knowledge or misinterpretation of the Rules, was needless and costly.

## **B. Discrepancies in requirements and assessments by one official versus others**

This is perhaps one of the most common and frustrating problems highlighting a distinct lack of communication and, dare we say, absence of supervision within the CAA. It is galling to note these shortcomings within the authority because when it comes to SMS for GA participants, the insistence on good communications and strict oversight of senior management are frequently mentioned preconditions. We submit that the CAA should be just as committed to the SMS principles as industry participants and ensure that its officials speak with one voice.

Recent examples:

- i. An official suggested that Health and Safety (H&S) and Worksafe are introduced as part of SMS discussions. This is also in line with Evaluation Tool para 1.1.2 that mentions workplace Health and Safety. Nevertheless, two other officials stated in August 2017: "It is not a Worksafe concern; it is about aviation safety risks only".
- ii. Word was received that a paragraph in the Flight and Duty (F&D) Time scheme in the exposition was incorrect with regard to night operations. The reason for such a comment was difficult to understand, since the company concerned operates under Visual Flight Rules (VFR), day only. Nevertheless, we had to make a correction and the exposition was re-submitted. Four hours later, a CAA official rang to say that the person who demanded the change was wrong. So we had to change the text again, reassemble the exposition and resend it.
- iii. Part 135 matrices and CAA critique comments: The tables below show how one inspector accepts one thing and another accepts something else. The matrix comments were in respect of matrices submitted to the CAA recently and within less than three months of one another. The Yes/No columns show differences in acceptance of compliance with Rules by two inspectors.

<b>Maintenance Matrix</b>		
<b>Matrix Reference</b>	<b>Operator A</b>	<b>Operator B</b>
12.57 (a) (1)	No	Yes
43.101 (a)	Yes	No
43.105	Yes	No
91.617	Yes	No

<b>VFR Operations Matrix</b>		
<b>Matrix Reference</b>	<b>Operator A</b>	<b>Operator B</b>
119.101 (b) (1) (ii)	Yes	No
119.105	Yes	No
119.115	Yes	No
119.161	Yes	No
119.165	Yes	No
135.73	Yes	No
12.101	Yes	No

<b>Internal Training Matrix</b>		
<b>Matrix Reference</b>	<b>Operator A</b>	<b>Operator B</b>
135.553 (a)	Yes	No
135.557	Yes	No
135.559	Yes	No
135.561	Yes	No
135.565	Yes	No

These are by no means the only examples where differences in compliance assessments occur, but they clearly show an undesirable trend. For example, one official made three adverse comments in his critique on "Becoming Aware of a Hazard" whilst another noted "Very good".

- iv. An example relating to an official's demand that aircraft must be named on the maintenance programme. For example: "Robinson R44 Series – Maintenance Programme" would change to "Robinson R44 ZK-XXX – Maintenance Programme". If the demand were insisted upon, there would need to be separate maintenance programmes for each aircraft. The official is in direct conflict with advice from the CAA over many years that a maintenance programme relates to a type of aircraft and that the exposition must include information regarding which aircraft is covered by which maintenance programme (which includes items and components applicable to each aircraft). Accordingly, Section 5 of exposition manuals contains the following statement:

*The aircraft operating on Air Operations and maintained under the provisions of this manual and the associated maintenance programme (see Section 9 page H1) are: ... then follows the list of aircraft and their serial numbers.*

The exposition therefore clearly identifies the connection between programme and aircraft.

- v. Another example highlights a problem with regard to procedures that have been accepted as compliant in expositions for at least 15 years. The comment made by an official reads:

**Each company procedure listed in the manual should be able to be clearly identified and followed by the staff member using the manual; e.g. the procedure, the scope of the procedure and if necessary what the procedure is for, the person responsible for the procedure (the owner) the people required to follow the procedure, how the procedure is performed.**

This is an impossible 'How long is a piece of string?' demand. The manuals do indeed contain many references to procedures, but the detail demanded in that comment is staggering.

Some procedure examples:

- Pre-flight inspection. It would take a full page to describe the procedure in the required detail. Moreover, it is a procedure taught from the earliest student pilot training days and is contained in the aircraft Flight Manual for quick reference if necessary.
- Cockpit check. To describe the procedure and its scope, who does it and what it is for and how it is performed, would again be to describe the obvious.
- The manual states "Estimating weight of objects to be carried in the aircraft from remote locations can be achieved using a spring scale when practicable". Does the manual need to state the obvious, that the pilot does the weighing? Should it describe how the scale is to be used?
- Cleaning of fuel jerry cans. The manual states these shall be emptied, cleaned and inspected every six months. Is it really worth the space and effort to elaborate on who does the cleaning, with what sort of water, how and why?
- Procedure for retention of work records by the Maintenance Contractor. Does the official really mean that the manual should describe who shall attend to the filing of these records, why they should be filed and retained, and how the procedure is carried out? Clearly, this requires the operator to be at the contractor's base to ensure that the procedure is carried out as written in the exposition and, more to the point, if the contractor changes the "who shall do the filing", an amendment to the exposition is then required.
- The manual contains maintenance programmes which include the requirement for various inspections. Is it the official's objective that the manual describes how a 50-hour inspection is carried out, who does the inspection, why it is done and who is the person responsible for it? ("The owner" - the Chief engineer - would have something to say about that!)

The list could go on and on, but we submit that the official's demand is impracticable and indicates unfamiliarity with the most basics of aviation.

But the crown jewel lies in his final comment:

**The content of the manual appears to be unduly complex for the size of operation.**

This issue is not one to be ignored. Based on previous experience, it is a foregone conclusion that a future CAA official will question some details in the procedures or add to the list and then expect that an amendment be submitted.

- vi. Hazard Registers. Confusion exists here as to whether the hazard register is required to be included in the exposition. Both a yes and a no answer have been received from different CAA inspectors at face-to-face meetings within the last four months.

### **C. Wasteful comments**

Collectively, the time spent by officials zealously focusing on matters of little or no concern, and the time spent in responding by writer and operator, is considerable.

The associated CAA fees at the rate of almost \$300 per hour are a waste of money.

Recent examples:

- i. The exposition states that fuel contents are checked by calibrated dipstick. The CAA comment was "How". This procedure is drilled into student pilots from Day 1 and "How" indicates that the official had little knowledge of it. To make matters worse, the next comment was:
- ii. "Should fuel steps be listed for refuelling?" asked an inspector, referring to what any pilot could immediately recognise as a low-wing aircraft. The question was plainly ludicrous. Both examples show a total lack of understanding of procedures and equipment used by small aircraft operators. The respect for expertise that should be due to CAA officials is badly eroded by such comments.
- iii. The responsibilities listed in expositions for the Maintenance Contractor contain the sentence "the Maintenance Contractor shall ensure that aircraft are maintained in accordance with CARs, Airworthiness requirements, manufacturer's instructions and this manual." Back came the comment: Change "manual" to "exposition".
- iv. A CAA inspector did not like the exposition wording "aircraft logbooks may not be carried in the aircraft." He wanted the word "may" to be changed to "must". Eve was told that she may not eat that apple and, judging by the consequences, there was no misunderstanding of "may" in the command. Are these the sort of things we should be wasting time on?

**D. Tendency of some officials to enforce their own opinions**

As with many of the above topics, this problem is long-standing and indicates a lack of managerial oversight and control.

- i. A simple example is the opinion of an official that the contents of a flowchart textbox should be altered, in spite of the fact that, for years, inspectors have understood the correctness of the contents. The textbox shows:

Pilot contacts Maintenance Controller  
or Maintenance Contractor Chief  
Engineer regarding problems  
experienced in the field.

The instruction from the official was to delete reference to the Maintenance Contractor Chief Engineer, i.e.

Pilot contacts Maintenance Controller  
regarding problems experienced in  
the field.

A large majority of AOC holders are two- and three-man operators who need to spread responsibilities for various tasks over a small number of persons and in many cases the CEO or Operations Manager is also the Maintenance Controller. Consider a situation where the CEO pilot who is also the Maintenance Controller experiences a problem in the field. According to the official's demand, he has to contact himself and explain the problem. Even if the Maintenance Controller is someone else but for is for some reason unavailable, the pilot must under no circumstances contact the chief engineer.

The example shows the official's complete lack of practical experience or, if he has such experience, an inability to think things through. Most importantly, was the instruction discussed among inspectors or with senior management before becoming an actual demand?

- ii. A more serious example relates to Internal Training programmes. Part 135.553(a) requires each holder of an AOC to establish a training programme; 553(b) requires each crew member to be trained in accordance with the training programme; 135.553(c) requires the programme to be

controlled by the AOC holder; and 135.553(d) (1) and (2) permit the option for the AOC holder to conduct the training programme or contract it out to a Part 141 organisation.

In line with Part 135.553, the exposition manuals, in Section 3, clearly describe the requirements including the option which the AOC holder has adopted. In almost all cases, the use of a Part 141 organisation is stated. In addition, an Internal Training programme was developed in 2015 (as part of expositions, and filed with the CAA) which resulted in the following comment from the CAA in an e-mail dated 21 September 2015:

**Forgot to say Walter, more of those training programmes you can get out to the operators that can be tweaked to their own operations the better.**

**Regards**

**Marty Gambrell**

**Flight Operations Inspector - Helicopter and Agricultural Unit**

This leaves no doubt that the programme was suitable and in line with Part 135.553. It should be noted that the Rule does not specify the requirement for a structured syllabus. It simply requires a programme and that was developed and accepted.

It was therefore disturbing to receive the following comments (stated here exactly as received) dated 10 October 2017 from an official who assessed the Training matrix for the applicant of a GA AOC:

**... training programme not found to meet current standards required for detail, comprehensiveness etc. Duties do appear to be defined in Categorisation system but not linked to training programme. Omissions [sic] noted for pilot duties such as detail on human factors training including fatigue management which would require training to carry out proficiently.**

And...

**... some initial training subjects found but not structured syllabus which needs to cover all flight crew duties including aircraft and equipment normal and emergency procedures. Syllabus should include training objectives, training material and standards, order, timeframes etc.**

The demand is excessive and totally beyond the requirements for the AOC applicant concerned (a husband and wife team, a loader driver and one helicopter). Moreover, it dismissed the acceptance of the existing training programme and confronted the applicant with a *fait accompli*, with no warning and without any regard to the submission that was presented to the official concerned after the comments were originally received.

It is interesting to note that, a matter of weeks before the comments were received, a different operator applied for the five-yearly renewal of its GA AOC, which included the assessment of matrices including Internal Training, identical to the applicant mentioned above. Every rule was marked "OK" and the new certificate was issued.

This example highlights a serious issue where - at the whim of one inspector - an accepted programme is wiped without consultation and presented to the AOC applicant as a stop to progress of the application. And when the applicant advised that he was quite unqualified to develop the in-depth syllabus, he was told to get someone to do it for him. It is not hard to understand that the required task would be time-consuming and expensive.

The detail required in the demand is extreme, considering that the part of the training programme that effectively applied to the applicant company is the recurrent training conducted once yearly at the midway point between annual pilot competency checks. For one pilot and one helicopter! More to the point, the applicant had elected the option for the contracted Part 141 organisation to do all training (and checking, for that matter).

Investigations were conducted into the training syllabuses commonly used by a number of Part 141 organisations, one of whom had received renewal of their certificate within recent weeks. It showed



that, in compliance with Part 141 requirements, the CAA has accepted simple and brief syllabuses and in one case none at all. Moreover, some of the contracts contain, amongst others, the following clauses which surely must have been vetted by the CAA before Part 141 certificates were issued:

**Initial training. When contracted to provide this training, the CFI will discuss the scope of training required with the Part 135 organisation concerned and a detailed syllabus will be agreed.**

**Transition training. The transition training must be recorded on the Transition/Recurrent training form, see Appendix page 31.** (Note that there is no mention of a syllabus at all, which is consistent with Part 135.559 as well as Part 135.561.)

**Recurrent training. When contracted to provide recurrent training the instructor will discuss the scope of the training required with the certificate holder and a syllabus for this training will be agreed.**

The option for using Part 141 organisations for training was obviously designed to cater for those applicants who have no instructor qualifications, expertise in training or ability to develop in-depth syllabuses. Yet here we have a situation where a CAA official demands that the applicant designs or buys syllabuses that far outweigh those used and presumably approved for Part 141 organisations.

As mentioned before, the applicant did have an Internal Training programme, as required by Part 135, and designed for use by operator and Part 141 organisation to cover the activities conducted by the operator.

This issue has a serious potential impact on all Part 135 operators. If cancellation of previously approved syllabuses was deemed necessary, it should have been subject to discussion with the industry at best, or failing that, introduced to the industry in a letter similar to the one that was circulated when the title "Operational Instructor" was introduced. Since no such common sense procedure was employed, it can only be assumed that the CAA official concerned acted upon his own opinion. This assumption is strengthened by the fact that, within a matter of weeks, the originally approved syllabus was accepted for the five-yearly renewal of an AOC for one operator, but not for the other AOC applicant.

We now return to SMS principles and specifically to Communication and Management of Change procedures. The example here has far-reaching ramifications and should have been subject to scrutiny within the CAA before accepted syllabuses were cancelled and the requirement for more detailed syllabuses was promulgated. Clearly, communication and Management of Change principles were not complied with inside the CAA yet when it comes to GA operators, such lack of compliance would not be tolerated.

- iii. Referring to paragraph A (iii) and associated with the Internal training programme, the following comment was received from an official on 25 October 2017 by an applicant for a new GA AOC:

**As this is an initial application all requirements in the initial training programme apply as nobody will have worked under the new AOC before.**

We are aware that, under Part 135.557(a), initial training is required before operating under a new GA AOC, but the official neglected to mention Part 135.557(b) which allows a variation in the syllabus if the variation and the reason for the variation are recorded in the pilot's training record. The pilot who will work under the AOC has more than 3000 hours total time including hundreds of hours under Part 135 in the same helicopter that is listed in his new exposition completed while he was working under his previous employer. We consider that the official, in not mentioning Part 135.557(b), was devious and deliberately misleading.

## **E. Scaling for small operators**

On a number of occasions, the CAA has stressed the need for scaling when designing SMS for small operators. As consultant writers, we have tried to comply with that logic; but instead of simplification,

most of the CAA officials we have dealt with presented us with numerous items that added to the expositions.

There is a need for inspectors to realise that we are not dealing with Boeing 747s on intercontinental operations. The vast majority are two- and three-person operations where communication is an everyday occurrence, where training doesn't have to match intricate airline and IFR aspects, where change is discussed and agreed upon without having to spell it out in detail, where supervision by the CEO or Operations Manager is part of daily habit and where the required procedures described in B (v) above are superfluous.

As an example, on a number of occasions during an audit, the officials repeatedly used the phrase "in larger organisations" which clearly showed their entrenched rejection of scaling for the three-man organisation they were auditing. (Diary notes were made of these comments and their frequency).

The apparent lack of experience and knowledge of GA by various CAA officials described in this report are not helpful in ensuring that scaling principles are actually employed. The results are felt in many hours of needless work and heavy expenses.

## **F. Findings**

Based on the examples highlighted above and realising they are but the tip of the iceberg, there is sufficient evidence to show that the CAA needs to improve compliance with its own rules and operating principles.

If the examples had applied to GA operators, they would have been designated as 'findings' during audits and if non-compliance was ongoing, the AOC would be withdrawn (as recently evidenced by a number of grounded companies).

## **G. Recommendations**

It is in no one's interest to see a continuation of the problems described above. For that reason, we ask that the following principles are considered by the CAA, implemented and enforced. This is particularly important considering the time and effort involved in getting all small operators ultimately certified under SMS.

- i. If officials are shown to have demonstrated a lack of industry knowledge or understanding of how GA works, they should be retrained in exactly the same way as demanded by the CAA when a similar shortcoming shows up in a GA operation. Failing improvement, they should be re-assigned.
- ii. No demands for changes to new or existing accepted expositions and their procedures should be tolerated unless those demands comply totally with the Rules.
- iii. Instructions for any changes to procedures in expositions that are seen as "acceptable to the Director" must be subject to prior CAA senior management perusal. In accordance with the Management of Change principles, such changes should be made known to every person in the CAA who is associated with exposition assessment and critique writing. If accepted, this recommendation would go a long way towards standardisation.
- iv. There must be a recognition that many, if not most, small GA operators are untrained and often unable to write exposition manuals or amendments to such manuals. Failing to recognise this unfortunate fact and expecting operators to deal directly with CAA officials is time-wasting, frustrating and costly. As with accountants authorised to deal directly with the IRD, it should be CAA policy that operators are permitted to authorise consultant writers to deal efficiently and speedily with problems on their behalf. This in no way means that operators are less conversant with their expositions and procedures. Any well-respected writer knows that client understanding and participation are essential ingredients for success.

- v. There must be an improvement in coordination between sections and persons within the CAA who deal with GA. The syllabus example in paragraph D (ii) highlights the fact that Part 141 organisations have not been made aware of **“training programme not found to meet current standards required for detail, comprehensiveness etc”**.

A reference such as this, highlighting “standards”, needs to identify the particular standards by reference to a CAA-produced document. Otherwise, the statement is completely meaningless and requires hours of dialogue to establish what the CAA official is referring to.

Yet another example of waste.

Better in-house coordination would surely have alerted Part 141 organisations to the change in training programmes, but none of the organisations we approached was aware of the new requirements.

## **Conclusion**

As stated in the introduction, the intention is to highlight – without rancour – many serious and worrying CAA inconsistencies. They can only be fully understood by using examples.

There is no doubt that many of the problems described have involved large amounts of time which, with respect to the CAA itself, must have collectively involved tens of thousands of wasted dollars. It is also unfortunate that most applicants for AOCs and SMS certification are reluctant to openly object because of perceived repercussions if “the boat is rocked”.

The CAA and General Aviation are together involved in substantial work associated with SMS and continuation of the current flawed methodology within the CAA will hinder progress. This is of no benefit to either the CAA or GA.

The report has identified a number of failures which, in many instances, can be put down to lack of supervision by senior management and the apparent freedom for lower-level officials to express personal opinions and interpretations, and insist on compliance with them.

The worst response to this report would be a war of words; that would ultimately prove useless and costly.

The best response would be an acceptance of the need to rein in those officials who are over-zealous in their critiques or make demands that far outstrip those applicable to small organisations. It must be ensured they thoroughly understand the meaning of “scaling”. This requires firm control by management. If that is not forthcoming, the outlook for cooperation and progress is bleak.

## About the authors

**Walter J Wagtendonk** came to New Zealand as a 21-year-old in late 1951 and the following year was accepted for pilot training in the RNZAF. He graduated in March 1953 and became a flying instructor that same year. After eight years' service, predominantly as an instructor, he retired with the rank of Flight Lieutenant and an A2 instructor rating (2<sup>nd</sup> highest possible).

Rather than entering airline service, Walter elected to stay with instructing, originally with the Nelson Aero Club and subsequently with the Nelson Aviation College which he founded in 1978. He held a civil A-category Instructor rating (the highest possible) and an Instrument rating. The Nelson Aviation College remains a successful and highly respected educational institution.

Walter retired from the college in 1991 and started writing aviation text books covering Private Pilot, Commercial Pilot and Instrument Rating subjects. Under the brand name PilotBooks, he authored seven manuals including *Principles of Helicopter Flight* which is currently published in the USA and widely used worldwide as an official reference. He also co-authored five other training manuals.

While still involved with publishing, he became involved (and is still active) in exposition manual-writing for aviation companies wishing to obtain General Aviation Air Operator Certificates.

Walter was awarded the OBE for services to aviation and specifically for his work towards flight safety.

**Ian Wood** has been known as Iggy since his early days in the RNZAF. He began his flying career in gliders while at high school and soloed at Ardmore in mid-1965. He joined the RNZAF and trained on Harvards and Devons at Wigram before moving on to Vampires and then Skyhawks at Ohakea. As a flying instructor, he completed instructional tours at Wigram and at Changi (on loan to the Singapore Air Force).

On return to New Zealand, he conducted fighter lead-in instruction on the Strikemaster at Ohakea. After a couple of ground tours, he returned to Ohakea as a squadron commander, flying the Strikemaster, providing *ab-initio* and operational flying instruction. A tour at RNZAF Headquarters in Wellington was followed by four more years at Ohakea as the Officer Commanding Strike Wing with five flying units in the wing. During this time, he was involved in the move of RNZAF flying training from Wigram to Ohakea. He left the RNZAF in 1998 with 31 years of service, a total of 4100 hours military flying, qualified as PIC on eight different types.

Iggy joined CTC Aviation Training (NZ) Ltd at Hamilton in 2005 as the chief ground instructor. At CTC, he ran the ground school which taught PPL, CPL, IR and ATPL topics to the New Zealand and United Kingdom requirements. With the help of six staff, about 550 candidates were trained during a period of five years.

In 2010, Walter Wagtendonk offered Iggy the opportunity to assist in exposition manual-writing. Aerostandards Ltd was formed and Iggy now has about 40 air operators who ask him to maintain their Part 135 expositions. He has written expositions for a few Part 115 and Part 141 operators and is quality assurance manager for two aviation operators.

While his CPL, IR, and B-cat instructor ratings have lapsed, Iggy continues to fly gliders, adding to his 380 glider hours on 26 types, and is an active glider tow pilot with more than 2600 tows.