

NATIONAL NEWSLETTER



extends CRM implementation deadline p. 14





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About the CAAA

The primary objective of the CAAA is to promote safety and professionalism amongst its participating members. The CAAA works with federal and provincial government agencies to design policies that are fair and equitable and, above all, that protect both rural customers and urban dwellers. The CAAA advises regulatory agencies on matters pertaining to the safe and efficient aerial application of pesticides and other crop inputs.

CAAA AND THE ENVIRONMENT

Each of our members believes in environmental safety. They know their business relies on a healthy and sustainable environment. Our members work hard at protecting the environment and have a healthy respect for nature.

CAAA AND SAFETY

Transport Canada, Agriculture Canada, Health Canada, Environment Canada and their provincial and municipal counterparts are only a few of the government departments which the CAAA works with to ensure safe application of pesticides and other products.

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President's Message



MIKE ALARIE President, CAAA

e all come from varying walks of life that contributes to the uniqueness of how we view the world and how and why we choose to make an impact. Long ago, Socrates wrote: "to move the world, we must first move ourselves."

I firmly believe that we all want to make the world a little better than the condition it was in when we entered it. This has been my goal and guiding light since becoming a Director of CAAA. It remains my belief that all parts of the CAAA organization are mutually valuable and must all work together in a balanced and intentional way to accomplish success and longevity.

As many of you know, my term as President shall soon be at an end. As a result, this shall be my last message to members in our New Horizons Newsletter. When I joined the board in 2013, I was not clear to what my impacts would be on our organization. I had some previous board experience and the nexus between governing and directly affecting change in our industry was not crystal clear. I went in with the intention to not only "make a difference" but to become a better ambassador to our brand by devoting myself in every way I could to further advance CAAA's mission and objectives.

I wish to thank CAAA management, staff and the Board of Directors. It was through their leadership, time and talent that we were able to identify, create, plan, coordinate and execute on the many issues facing our industry. Over the past year, CAAA continues to work toward the development of a MET tower database that could be incorporated into our GPS units. We continue to work with immigration on the foreign worker program; PMRA and the re-evaluation of crop protection products such as Mancozeb and glyphosate, and; Transport Canada on a multitude of items including the Risk Assessment and Crew Resource Management. These issues have kept CAAA very busy and active. The CAAA Board works well together and give their time freely to insure objectives are being met. To them I say, Thank you all!

The 2019 CAAA AGM and Conference will be held at the Hotel Bonaventure in Montréal on February 21-23rd. Operator, Pilot, Allied Members and attendees come to this premier event on an annual basis to satisfy professional development needs. Some will come to generate new ideas and obtain fresh perspectives while others will come to build on their established business relationships. Your attendance at the Montréal Conference will provide you with an opportunity to lend your voice to the conversation and become instrumental in moving our association forward.

In closing, I say thank you to all CAAA members for giving me the opportunity to serve you. Safe travels during the holiday season and I look forward to see you in Montréal!

Executive Director's Message



he CAAA Board and the ManageWise staff have been busy the last few months. Starting with the Fall Board meeting in Ottawa where the Board had the opportunity to meet with Brian Rattray, Deputy Director to the Minister of Agriculture, Crop Sector Policy Division; Peter Brander, Chief Registrar and Director General & John David Whall, Senior Evaluation Officer from PMRA and 6 representatives from Transport Canada including Roger Gravelle: A/Program Manager, Commercial

Flight Standards and Pierre Ruel: Chief, Flight Standards. There were many beneficial outcomes from these meetings including a PMRA session that will be presented at the upcoming CAAA Conference in Montreal. We are also excited to unveil an update regarding tower markings from Transport Canada.

The Board also met in Reno, Nevada at the Annual NAAA Conference. Some exciting Member benefits were voted on and we look forward to presenting at the AGM on February 22nd. Prior to the end of 2018 the CAAA submitted a final paper on requested

changes to the Temporary Foreign Workers Program. This program is under review this month and we are hoping for some positive changes to the process for Operators utilizing this program.

The ManageWise staff has been hard at work on membership renewals and the preparations for the upcoming conference in Montreal and it should once again be a top-notch event. Don't forget to register!

See you all in February!



SHARA TARDIF, Executive Director, CAAA



PROFICIAL BEPORTS

Alberta Report

TOM KINNIBURGH, President, AAAA

would like to thank Darren Tiede who has served an abbreviated term as 4A's President for all his hard work. This abbreviated term was due to Darren being appointed Vice President of CAAA in October and will then move up to CAAA President in February.

I'm proud to be back serving as your new 4A's President. It's been a while since I was in this position, 2007 and 2008, I think.

It's nice to see a small association like ours have consistent numbers and volunteers who will join the

Board and serve to better our industry.

Our 4A's conference was another success in Red Deer in early November with a good turnout of pilots present to earn 3 licensing credits. PMRA's Andrea Sawatzky gave an update on Glyphosate and Vivianne Servant spoke about regulatory updates. This was Vivianne's last training session with us as she is retiring at the end of the year. Thank you Vivianne for all that you have done for our association and industry! Kara Ward and Sean Finnerty from Aviation Occupational Health and Safety also spoke about safety and our upcoming

audits. Corey Lange and Rick Kitzler presented a very informative session about power lines and the hazards we deal with on a daily basis.

After the conference a small group of us were treated to a tour at the Airspray Airtankers maintenance facility at the Red Deer Regional Airport; lots of big iron there.

I hope to see everyone in Montréal in February for the CAAA conference. Hope everyone enjoyed the Christmas season.

Saskatchewan Report

TED ANDERSON, President, SAAA

he Wings of Saskatchewan Conference was held on Oct 24-26, which we host in conjunction with the Saskatchewan Aviation Council. It was well attended and successful once again. The twoday event provided an opportunity for four continuing education credits and networking with everyone involved in Aviation in the province. The Board was reduced to 8 directors at our annual meeting. Thank you to outgoing directors Brennan Jardine, Travis Karle, Scott Kosmenko, Glenn Funnell, and George Giesbrecht for volunteering their time to serve on the SAAA Board. Welcome to our new director Ryan Gidych, we look forward to working with you. Next year the Wings of Saskatchewan will be held November 6 - 8, 2019 in Regina at the Delta Hotel.

Saskatchewan Emergency Management and Fire Safety continues to pursue the exemption to add fire suppression to the Ag only Type certificates. Assistant Deputy Minister/Commissioner Duane McKay was in Ottawa to meet with ADM Public Safety & Security Ms. Lori MacDonald who reports directly to the Ministry of Transport in Ottawa. They will then determine the best path and contacts for the submission of their exemption documents. The SEAT Program will utilize only SAAA members in good standing with Turbine Aircraft. Chip Kemper will no longer be running SEAT courses but may be involved in planning new training.

The PMRA has granted a 60-day extension to the consultation period for the proposed re-evaluation decision document of mancozeb. We had very recently sent in a letter requesting an extension,

the CAAA was sending a letter and requested the provinces send it on their letterhead as well. Within a few days of sending the letters we received a response that they were willing to grant a 60-day extension, as a pilot, for the purpose of gathering current agricultural use practice information and for the identification and ranking of the critical agricultural uses of mancozeb by the Saskatchewan Aerial Applicators Association.

We received confirmation that Pratt & Whitney are planning a tour while they are in production for the CAAA during our Conference in Montréal. I look forward to seeing everyone there in February!

Manitoba Report

PAUL SABOURIN, President, MAAA

he MAAA fall meeting was held in Portage la Prairie on November 15th, 2018 and a new executive Board was nominated. Firstly, a heartfelt thank you to outgoing President, Dave Frisch; Vice President, Johnny Bestland and Treasurer, Nelson Almey. Your hard work to represent our membership is greatly appreciated. The MAAA Board thanks Charlie Muller for going from Secretary to Vice President and welcomes Elisha McLean to the role of Secretary/Treasurer.

Historically, the MAAA held two meetings a year, one in the spring and one in the fall. In an attempt

to promote attendance and interest, we will be eliminating the spring meeting and replacing with an annual fall AGM format. We will be aiming for a minimum of 4 continuing education credit (CEC) sessions at every annual AGM. In conjunction with Assiniboine Community College, all 9 required concepts will be covered on a pre-planned rotational basis. That way all attendees will be receiving all of the required CE credits simply by attending the MAAA meeting each year. We are also entertaining changing venues in the Portage la Prairie area to host the AGM. Hint, a fly in option...especially for members commuting long distances.

The MAAA executive attended the CAAA Board meeting held at the NAAA convention in Reno, NV at the beginning of December. That's enough acronyms in one sentence! Topics such as improving the Temporary Foreign Worker processing time, tower markings, ongoing Transport Canada discussions and so on are proving to have positive results to our industry. As well, the MAAA in conjunction with the CAAA are working together with the Mancozeb task force to keep Mancozeb available for both potato growers and aerial applicators alike.

Cheers, See you in Montréal!



AIR SOLUTIONS GROUND SOLUTIONS AG SOFTWARE SOLUTIONS LIGHTBAR GUIDANCE FLOW CONTROL



ECC Report

PAUL ZIMMER President, ECC

Season's Greetings from the ECC!

opefully as of this date everyone is winding down towards the Christmas holidays and can enjoy some quality time with family and friends.

> Today, Friday Dec. 14th it was announced that the CRM

implementation date will be pushed back to September 30, 2019. The CAAA board pushed hard to ensure operators had sufficient time to implement this training as did the other associations faced with this regulation. This new regulation which was to be implemented 18 months from the published date of the Standard is January 31, 2019. Transport Canada inspectors were all over the map here. Some were saying that the training did not apply to 702 Ag Operators, others were sending out notices that the deadline was looming and you better get your submissions in. None addressed the actual wording presented in the Advisory Circular allowing those 18 months from the "publication date of the official Standard" which has not arrived yet. We were also all lead to believe by TC that we are simply aligning our regulations with EASA and the FAA. If you read the Advisory Circular you will note that under 702 on page 9 Aerial Spraying is on the top of the list. What you may not know is that Aerial Spraying in the USA is under Part 137 which was exempt from the requirements to implement CRM training. Again, our

industry has been placed at a disadvantage to our US neighbors with increased costs and increased regulation.

We were also blessed with the final Ruling on Flight and Duty Times in the gazette this week. It is a very long and complicated document which will take substantial time to decipher. Fortunately, 703 operators such as ourselves will have 4 years to comply. 702 Operators will have 2 years to comply but the document indicates there are no changes, so again I am confused.

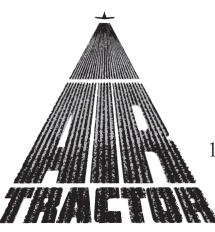
It appears our industry will have some challenges ahead with the continuing push to ban glyphosate. The push to have these formulations banned has escalated by the judgement awarded by a California court to a golf course worker who contributed his cancer to the use of glyphosate. That ruling is under appeal. In New Brunswick this fall, a Liberal government defeated at the polls tried to build a minority coalition government with the Green Party by offering a consideration to put a moratorium on glyphosate spraying on forestry in the Province. Fortunately, the wording did not guarantee a ban of the herbicide so the Greens walked away from the table. Interestingly forestry use is such a small portion of the glyphosate used in comparison to agricultural uses, and the crops sprayed are not headed for the dinner table. Science, reason, and logic have never been the driving force behind most anti-spray activist groups.

In Ontario the elevated levels of Vomitoxin was a serious problem in the corn crop this year due to the wet weather. Much of the harvest was docked or rejected. Those growers that routinely spray their crop with fungicides fared much better than those that chose not to spray. We would expect to see an increase in fungicide applications in 2019 as an insurance policy if for no other reason.

For those operators that have resources helping with the Quebec Spruce Budworm Program there does not seem to be any reductions coming any time soon. Ha's are up in Quebec for 2019 but reductions in New Brunswick have equaled out the aircraft required to existing numbers. A change of Government in Quebec has had no detrimental effect on the support of the program.

To close I understand it was not a normal year for many operators and for some downright dismal. Weather will continue to disrupt our norms in years ahead, but unforeseen politics and trade disputes reducing the demand for our commodities and the prices our growers receive for them will also affect our bottom lines. Hopefully we as operators can make those adjustments to our operations that will keep us operating safely and profitably.

All the best for this Christmas Holiday and look forward to seeing a large contingent of operators, staff, pilots, and participants in Montréal this coming February.



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CAAA is going to Montréal in 2019!

Watch the CAAA website and social media channels for conference updates as they happen! Early Bird Deadline January 31, 2019

MONTRÉAL

Montréal is a big, busy, exhilarating city, with so much to see and do. To give you some ideas and inspiration for your upcoming visit to Montréal, explore the many "moments" you can live in the city. With numerous great restaurants, attractions and activities, we know you will have an excellent time exploring this beautiful city.

To get you started, Montréal Tourism has provided the CAAA with discounts to certain attractions. To view these, please visit the conference page of the CAAA website (www.canadianaerialapplicators.com/conference).

HÔTEL BONAVENTURE

The CAAA has negotiated a room rate of \$179.00 for single or double occupancy. Rooms can now be reserved online at:

bookings.ihotelier.com/bookings.jsp?groupID=2239637&hotelID=97993



AERIAL APPLICATION PARTS & MAINTENANCE



SPOUSE PROGRAM

The 2019 Spouse Program will begin with a visit to the The Grevin Montréal. Meet over 120 wax celebrities from Canada and abroad! This museum is integral to the downtown Montréal's dynamic cultural scene.

From there, the program will proceed to the nearby Essence Restaurant and Bar. Their team of talented chefs will prepare some delicious hors d'oeuvres and eclectic cocktails!

Note, the program participants will be walking to each destination so please dress accordingly. If you are interested in attending the spouse program, please contact Tamara (tamara@managewise.ca or 780-413-0078) in order to confirm your spot.



FEBRUARY 21 - 23
MONTRÉAL, QC

#CAAA2019

The Canadian Aerial Applicators Association 33rd Annual General Meeting, Conference & Trade Show is set to take place at the Hôtel Bonaventure Montréal. Take part in educational speaker sessions, visit 30+ vendors at our trade show, and enjoy the banquet and auction with industry members.

info@canadianaerialapplicators.com www.canadianaerialapplicators.com/conference

BECOMING A MEMBER OF THE CAAA HAS NEVER BEEN SO EASY.

As a valued member of the Canadian Aerial Applicators Association, you can reap the many benefits that comes with being a member of our growing national community of individuals, operators, and allied members. With growth comes responsibility, and we are commited to creating a bright future for pilots and businesses alike.





THE ONLY WAY TO GO IS UP.

Preliminary Schedule

THURSDAY, FEBRUARY 21, 2019

7:00 am	-	10:00 am	Pratt & Whitney Shop Tour
10:30 am	-	12:30 pm	New Entrants Session (Yorkton Aircraft Service)
10:30 am	-	11:30 pm	Speaker Session (Air Tractor/Thrush)
11:30 am	-	12:30 pm	Lunch with Exhibitors
12:30 pm	-	1:30 pm	Exhibits Open
1:45 pm	-	2:45 pm	Speaker Session – Pratt & Whitney Canada
2:45 pm	-	3:45 pm	Exhibits Open
3:45 pm	-	5:45 pm	CAIR Safety Seminar
6:00 pm	-	8:00 pm	Evening Event Hosted by Pratt & Whitney
10:00 pm	-	1:00 am	CAAA Lounge (2 beverage tickets provided)

FRIDAY, FEBRUARY 22, 2019

8:00 am	-	10:00 am	CAAA AGM with Continental Breakfast
10:00 am	-	11:00 am	Exhibits Open
11:00 am	-	12:00 pm	Speaker Session - SOPFIM
12:15 pm	-	1:45 pm	Awards Luncheon
1:45 pm	-	3:45 pm	Exhibits Open
4:00 pm	-	5:00 pm	Speaker Session - PMRA
2:00 pm	-	5:00 pm	Spouse Program (Pre-Registration Required)
6:30 pm	-	7:00 pm	Reception
7:00 pm	-	10:30 pm	Banquet and Auction
10:30 pm	-	1:00 am	CAAA Lounge (2 beverage tickets provided)

SATURDAY, FEBRUARY 23, 2019

8:30 am	-	10:00 am	CAIR AGM with Continental Breakfast
10:00 am	_	12:00 pm	Speaker Session - CRM







CAAA 2019 Membership Renewals

For 2017, The CAAA together with the AAAA, SAAA, MAAA and ECC launched a new Membership renewal system to make your membership renewal simpler and easier. The new renewal system allows you to renew online, in one transaction, not only your CAAA membership but one or more provincial or regional memberships as well. This system will continue for 2019. To renew in one simple online transaction, go to the website at store. canadianaerialapplicators.com/annual dues/new.

Online renewals opened December 1st. Renewal forms will only be sent by mail upon request.

If you have any questions regarding membership renewal, please feel free to contact Shauna by email at shauna@managewise.ca or by phone at 780-413-0078.



e often hear that, "cover cropping isn't a destination, it's a journey." Even the best "cover crop journeymen" make mistakes. To make sure you don't throw the brakes on your soil health journey with cover crops, here's four key items to jog your memory for this fall.

Timing is everything. Watch your planting date charts for all the species in your mixes. This will help ensure you're not planting your cover crops so early that they will mature and go to seed. It can also help set realistic expectations on the growth of your cover crops. Don't plant radishes in October and expect it to be the size of a toddler. It's not going to happen. Also, be aware of that most seed will rot over winter. Other plants that do grow in the spring can be terminated with an herbicide program.

Timing is still everything. If your soil is dry because it has not rained in a month, and your 10-day forecast has zero chances of rain in it, probably steer away from aerial applying cover crops.

Please reread: I did not say to not fly cover crops. Thousands of farmers every year fly cover crops into standing cash crops and have great stands going into winter! I love aerial application because we jump over the hurdle of "I can't plant cover crops because I harvest too late." I just want to emphasize how much rain in your forecast is critical to see a good stand of your cover crops in the fall.

Did I mention timing is everything? Go back to your fields' histories and double check your herbicide residuals. Residuals can linger in the soils from weeks to months depending on the chemistry. If plant-back time exceeds when you can plant a cover crop, don't order the seed. It is hard to get a cover crop established in this situation. Are you not sure when or what rate you sprayed? You can conduct a bioassay test to get an official analysis of any residual herbicide(s) in the soil that would delay the development of your cover crops. See this article from University of Nebraska (http://extensionpublications.unl.edu/assets/pdf/g1891.pdf)

Order and ship your seed ... yesterday. You know you are going to plant cover crops. You will either aerial/surface apply, use a drill or traditional seeder, interseed, slurry manure seed, or use a seed box mounted somewhere on your combine to get the seed to the ground. So why not order your cover crop seed and get it in the barn now?! Your brassicas, broadleaves, and clovers are in good supply throughout the industry. It's no secret that two of the most commonly used cover crops will be in short supply this year; oats and rye (queue @CoverCropGal's anxiety). Canada is in a severe drought where rye is grown. American farmers have switched from growing rye to a crop that is more profitable. Order your seed and ship it now. It might not be available once you are finished harvesting.

From what species can be planted when, to weather and herbicide residuals, and even to ordering your cover crop seed, timing really is everything to make the most of your cover crop planting.

Transport Canada extends CRM implementation deadline

his is to advise that Transport Canada is extending the implementation date of the new Crew Resource Management (CRM) standards from January 31, 2019 to September 30, 2019.

The objective of CRM is to enhance communication, interaction, human factors and management skills of the crew members and others interacting with crew so as to achieve safe operations and to identify risks early.

Accordingly, on 28 July 2017, Transport Canada made new CRM standards applicable to Subparts 702, 703, 704 and 705 of the Canadian Aviation Regulations (CARs), published via the CARAC Activity Reporting System. At the same time, Transport Canada released Advisory Circular (AC) 700-042 Crew Resource Management (CRM), which outlines the means of compliance relating to the CRM standards. CARAC members were also informed of the 18-months implementation timeframe, resulting in the new standards being effective January 31, 2019.

While many operators to this date have completed or are nearing completion of required activities to implement the CRM standards, challenges and concerns have been expressed with respect to the communication of the implementation timelines. Given the recognized benefit and value of CRM, Transport Canada wishes to ensure that organizations have the appropriate time to prepare and implement their respective CRM practices and procedures.

Accordingly, Transport Canada is providing organizations an additional 8 months (from January 31 to September 30, 2019) to have CRM in place and functioning. The department expects compliance of CRM standards by September 30, 2019, and strongly encourages the submission to Transport Canada of any documentation for review, as early as possible. In addition, organizations may start using their CRM documentation as soon as it is submitted to Transport Canada.

In order to support the delayed implementation of the CRM Standards, Transport Canada will issue a global exemption before January 31, 2019.

The CRM standards can be found at: https://www.tc.gc.ca/eng/civilaviation/regserv/cars/list-amendments-standards-not-yet-force.html

We would like to take this opportunity to thank those organizations that have already completed the implementation of the CRM standards.

Should you have any question, please do not hesitate to contact your local Transport Canada Civil Aviation inspector.

Sincerely,

Canadian Aviation Regulation Advisory Council Transport Canada / Government of Canada carrac@tc.gc.ca / TTY: 1-888-675-6863



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Global AI in Agriculture Market Will Rea Zion Market Research

NOVEMBER 30, 2018 | SOURCE: ZION MARKET RESEARCH

ion Market Research has published a new report titled "Al in Agriculture Market by Technology (Machine Learning and Computer Vision), by Component (Hardware, Software, and Services), and by Application (Agriculture Robots, Agricultural Drones, Driverless Tractors, Facial Recognition, Crop Health Monitoring, and Automated Irrigation Systems): Global Industry Perspective,

Comprehensive Analysis, and Forecast 2017-2024". According to the report, global AI in agriculture market was valued at around USD 545 million in 2017 and is expected to reach approximately USD 2,075 million by 2024, at a CAGR of slightly above 21% between 2018 and 2024.

Availability of numerous equipment and modern-day technologies such as intelligent monitoring system, drones, and robots has made agriculture industry a cusp of technological revolution.

Artificial intelligence has diverse application in agriculture ranging from agricultural drones, facial recognition, automated irrigation systems, and driverless tractors. These applications are carried out in correlation with a different type of sensors, GPS systems, radars, and other high-tech gadgets based on Al. Considering these widespread applications, Al is getting a tremendous response from investors globally. This is elaborative by the fact that, in 2011, 67 deals were finalized with Al-related companies that rose to 400 deals in 2015, and cracked 140 contracts



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ich USD 2,075 Million By 2024:

According to the report, global AI in agriculture market was valued at around USD 545 million in 2017 and is expected to reach approximately USD 2,075 million by 2024, at a CAGR of slightly above 21% between 2018 and 2024.

in just the first quarter of 2016. The number of agriculture start-ups successfully placed themselves on the global canvas in a short period owing to their scientific innovations. Prospera, an Israeli start-up, founded in 2014, transformed agriculture by developing a cloud-based solution. It gathers data from the field such as water, soil, aerial images, and integrates with the device to take necessary decisions and use the available resources in an optimum manner.

Increased adoption of artificial intelligence in cattle face recognition and use of IoT sensors for automated irrigation systems &crop health monitoring are few of the factors that are projected to drive the global AI in agriculture market growth in the years ahead. The technology even helps in detecting soil health abnormalities that can be later treated with aerial spraying of pesticides with agricultural drone or robot. Furthermore, the use of AI in spraying pesticides is expected to curtail the spraying cost, amount of pesticides used, and efforts by more than 50%.

However, more than 60% of small and medium scale businesses are not in favor of implementing Al in agriculture. This can hamper the growth of Al in the agriculture market. Whereas, increasing investments in exploring agriculture problems through Alis anticipated opening new growth avenues for global Al in the agriculture market.

Al in the agriculture market is segmented on the basis of technology, component, application, and region. Technology segment is divided into machine learning and computer vision. Computer vision subsegment is anticipated to witness strong growth during the forecast period. Applications of Al in agriculture include agriculture robots, agricultural drones, driverless tractors, crop health monitoring, facial recognition, and automated irrigation systems. Crop health monitoring sub-segment is expected to contribute substantially towards segment share during the forecast period.

Browse the full "Al in Agriculture Market by Technology (Machine Learning and Computer Vision), by Component (Hardware, Software, and Services), and by Application (Agriculture Robots, Agricultural Drones, Driverless Tractors, Facial Recognition, Crop Health Monitoring, and Automated Irrigation Systems): Global Industry Perspective, Comprehensive Analysis, and Forecast 2017-2024" report at https://www.zionmarketresearch.com/report/ai-in-agriculture-market

North America is anticipated to hold a significant share in the global AI in agriculture market, owing to a high adoption rate of modern day technologies for yielding maximum productivity. Various global players are offering services to regional consumers by engaging in a partnership with other leading players. In 2017, Climate Corporation, a subsidiary of Monsanto Company, launched Climate FieldView ag data platform in Western Canada for 2018 growing season. The Climate Corp. and Deveron UAS Corp. announced a strategic partnership that will deliver advanced aerial imagery data integrated with powerful analytics through Climate FieldView™ digital agriculture platform of the Climate Corporation.

Asia Pacific AI in agriculture market is predicted to demonstrate a lucrative growth over the coming years. The growth can be attributed to high adoption of AI in agriculture sector by major countries such as China, South Korea, India, Australia, and Japan. Recently, the global e-commerce giant Alibaba got into farming activity in China by deploying artificial intelligence in farming to assist farmers to increase crop yield, while reducing costs. By using Alibaba's digitally recorded information on their smartphones, the farmers can monitor whether grapes are ready to be plucked or bugs are munching on their apple fields. In order to increase the productivity and yield of agriculture products in Japan, The Kyushu University and Fujitsu Limited agreed to conduct joint research program for a period of next two years commencing from April 2018. To promote technological advancements in agriculture, India

has recently unveiled country's first drone policy which is expected to drive the growth of Al in agriculture in the country. For instance, recently, NITI Aayog partnered with IBM to use Al for developing crop yield prediction model. The main objective of the partnership is to work jointly towards use of Al technology for providing insights to farmers for enhancing crop output, soil yield, and control agriculture inputs along with increasing farmer income. Also, the Maharashtra government in India is planning to use drones in agriculture and the first pilot project will be launched in two districts Yavatmal and Latur in October-November 2018 for rabi crops.

Europe is expected to show a strong growth during the forecast period, owing to massive automation activities witnessed in agriculture across the countries such as Germany, the UK, Spain, and France. The olive growers in Italy and Spain have signed agreements to use AI techniques in agriculture. For instance, the Ministry of Agriculture, Fisheries and Rural Development of Spain in Spain have launched a pilot project in order to study the evolution of the plague of the olive fly using AI techniques.

The LAMEA region is projected to register a substantial growth across AI in agriculture market. Major countries such as Saudi Arabia, the UAE, Brazil, and Argentina are leading the regional market with a notable adoption rate of AI in the agricultural field along with using of cutting-edge technologies in farming activities. (KAUST) King Abdullah University for Science and Technology in Saudi Arabia is investing significantly and taking an initiative of research on desert agriculture. Thus, it is projected that AI will play a vital role in developing ways to tackle water deficiency challenges and prosper desert agriculture in the Middle East countries.



Lawrence loves her ag pilot career

CHRIS HARBRON, REGINA LEADER-POST | UPDATED: OCTOBER 26, 2018

"Every field you go to is different. Nothing's ever exactly the same."

aura Lawrence's career involves many fields — and that's just the way she likes it.

Lawrence is an agriculture pilot, and her job is aerial application.

Most people probably still think of it as crop dusting, but these days many ag pilots hope that old seat-of-the-pants image ends up in the dust bins of history.

Since its origins in the 1920s, the industry has evolved into a focused, safety-conscious, high-tech occupation.

And Lawrence -28, calm, capable and affable - has found her line of work so appealing that she plans to continue with it for the foreseeable future.

Her fondness for aviation can be attributed to

a considerable degree to her immediate family background; her father, Brooke, has enjoyed a successful career as a pilot and flight instructor.

"When I grew up, my dad was a pilot. He flew for the Snowbirds in 1990 and '91," she said during a recent interview at Moose Jaw's municipal airport.

After several postings throughout Canada, the family decamped to Saudi Arabia, where her dad flew for British Aerospace instructing Saudi pilots.

After their return to Canada, Brooke taught at 15 Wing Moose Jaw for a while, then spent about eight years flying for Westlet, and is currently again instructing at 15 Wing.

Further back in the family history, Laura's greatgreat uncle, Royal Canadian Air Force squadron leader Thomas A. Lawrence, was commander of air operations for the Hudson Strait Expedition of 1927-28.

The expedition, operating under challenging northern conditions, conducted an aerial survey of Hudson Strait. There were plans afoot to ship grain from the Prairies to Europe, departing from Hudson Bay, and the purpose of the survey was to study ice conditions and get some idea of how long the annual navigation season might be.

Thomas Lawrence eventually retired with the rank of Air Vice-Marshal.

On her mother's side, Laura's grandfather was a military aviation technician.

Lawrence said her parents told her that if she was interested in flying they would pay for lessons toward a private pilot's licence, so she took them up on their

offer and had her first lesson when she was 17. She got her private licence in 2010.

That same year she started a job as an office assistant at Provincial Airways near Moose Jaw, although she said she initially would have preferred the other posted position — aircraft loader — because she likes doing more hands-on work and was interested in flying.

She ended up working as office manager for seven years.

"I had no idea about aerial application at all until I started working here," Lawrence said. "At first, I didn't think it would be a career for me; I knew I wanted to fly, but I wasn't sure this was it. But after working here for those many years, I decide I wanted to get into it."

She earned her commercial licence in 2016, and that summer, while still working as office manager, did some survey flying in a Cessna 172. That involved taking orthomosaic photos of crops; they can be useful in detecting things like unhealthy plants, hail damage and wildlife damage.

In the spring of 2017, she took her ag pilot training in North Battleford. That year was also her first season of spraying, initially flying a Cessna aircraft called an Ag Truck and then moving up at the end of the year to a more advanced machine, the Air Tractor 401. She also flew that for the 2018 season.

The aerial application season typically extends from May through September, with the busiest months usually July and August.

"It's all dependent on the crops," Lawrence said.

"We have lots of customers who get us every year, no matter what. And then in a wet year, we might get lots of new customers, because people don't want to be driving out in their fields if it's muddy.

"And then we can usually get to a field or spray it way faster than a farmer can with their ground rig. (For instance) for fungicide, the timing can be, you need to spray it within two days, otherwise you may as well not spray it at all. So that's where the airplanes can come in handy."

If the weather is co-operating, the work days can be quite long — up to 14 hours.

"Usually we shut down at lunchtime, or if it gets a little windy, we'll have a break in the afternoon," she said. "So you can end up coming back at nine at night, being done for the day."

A typical work day can see the pilots arrive at the airfield as early as 4:30 a.m.

The loaders, who load the aircraft with whatever product will be sprayed on fields that day, are pulling the planes out while the pilots are in the office getting their first jobs for the day, described on a detailed work order.

The pilots plan their loads and give the information to the loaders, who start mixing them. The pilots check their airplanes, organize the loaders, get warmed up, enter the fields in their GPS, take off and get ready to spray.

When they get to the field, they first make certain it's the right one, by confirming it online via the office with the producer. They can additionally confirm it using landmarks on their map, which they can check against a Google Earth image of the field.

They look for any surrounding hazards, including towers as far as a couple of miles away. Within the field, they look for hazards like power lines, bins, perhaps a wire coming out of a yard, livestock or horses they don't want to spook, someone walking their dog on a road, and so on.

They also determine the direction in which the wind is blowing. The planes are equipped with a smoker, from which the pilots can release some smoke, pull up away and see which way it's moving.

They want to avoid having spray waft through someone's yard, and they also want to know how to set up their flight pattern. The goal is to always be moving upwind of their last pass, so they're not flying through their own spray.

Once all of that information has been gathered, the pilot sprays the field, which may require either just one or several loads of product — depending on the product mix, how much needs to be applied, and the size of the field.

When they're done, they return to the airport and head into the office, to record in the online system all the relevant details of that particular job. Then the office sends a bill to the producer.

Lawrence says the best and most interesting part of aerial application is that "every field you go to is different. Nothing's ever exactly the same."

The most challenging aspect of her job is that "you do get some pretty long hours. You don't get a lot of time off in the summer, so people with families, they might find that hard."

A not-so-great day? "I guess maybe a day where it's windy enough that's it's bumpy up top, so you kind of can get tossed around all day. That can get tiring."

"Ag flying in general is really physically demanding,"

she said. "You're turning, tight turns all the time. You're staying co-ordinated, which is using your feet on the rudder.

"Most of us are lucky enough to have air conditioning, so that really helps; and noise-cancelling helmets as well."

On an ideal day of ag piloting, "the weather cooperates, not too windy, temperature's good, everyone's out being safe and productive, and everyone comes back to the airport at the end of the day," she said.

Lawrence has some advice for anyone wishing to become an ag pilot.

"I'd recommend getting a job, like an aircraft loader job, with one of your local aerial applicators. Most times you can't even get a pilot job, even if you have the course, unless you've worked a year or two on the ground; it's a lot of really good experience.

"Get a membership with your provincial aerial applicators association, as well as the Canadian Aerial Applicators Association. There's lots of people listed as mentors that can help you out. People have their phone numbers, you can call them anytime and ask them questions. That's what they want to do, is help the next generation of ag pilots out.

"I like ag aviation because I get to stay in Saskatchewan, work locally. So for right now, I'm pretty happy just doing this ... the goal is just to keep moving up into bigger airplanes."

NOTE FROM THE OFFICE:

Laura is a CAAA Member and the inaugural winner of the Canadian Agricultural Aviation Scholarship. Do you want to follow Laura's path? The CAAA will be presenting 3 more scholarships in 2019 thanks to our sponsors.

Regulating products of modern plant breeding in Canada

REPRINTED FROM CROPLIFE CANADA

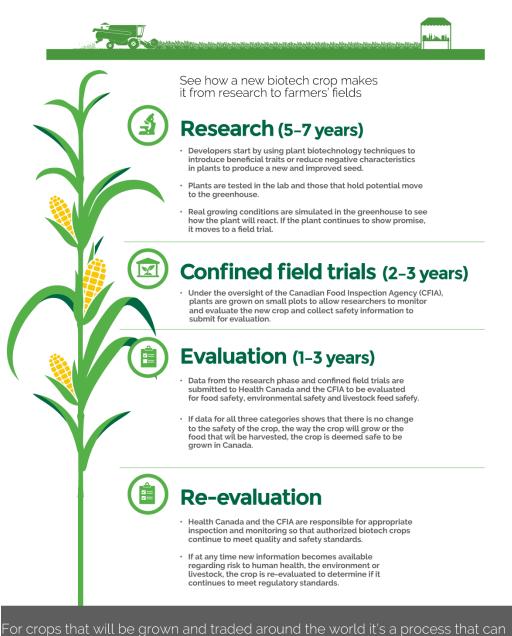
Products of modern plant breeding, including biotech crops, have been regulated carefully in Canada for more than two decades to ensure our country has one of the safest food supplies in the world.

Who regulates products of modern plant breeding?

ealth Canada is responsible for regulating all products of modern plant breeding, including biotech crops, to ensure they are safe for humans, while the Canadian Food Inspection Agency ensures that all crops developed modern plant breeding are safe for the environment and for livestock animal feed. You can read more about the process a new crop developed through modern plant breeding, which includes GMOs, goes through before it's put on the market in From Science to Seed.

Health Canada considers all crops developed through modern plant breeding to be as safe as traditional crops, and genetically modified crops have been endorsed by regulatory agencies around the world including: The World Health Organization; the United Nations Food and Agriculture Organization and the Organization for Economic Cooperation and Development; the U.S. National Academy of Sciences; and the Royal Societies of London and Canada.

The plant science industry maintains several stewardship initiatives to complement Government of Canada regulations, going beyond the legal requirements to promote safe and responsible use of products of modern plant breeding in Canada.



take more than a decade and cost more than \$150 million.

20

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PROFESSIONAL AGRICULTURAL TURBINE AERIAL APPLICATOR

POSTED BY: Wetaskiwin Aerial Applicators Ltd.

EMAIL: <u>waa@telusplanet.net</u> PHONE: 780-352-7833

WETASKIWIN AERIAL APPLICATORS LTD., requires 1 qualified commercially licensed Professional Agricultural Turbine Aerial Applicator for the 2019 season to fly an Air Tractor 502B Turbine. APPLICANTS MUST have 5 years or more experience, a minimum of 1000 hours turbine agricultural experience; AT502 experience; an excellent working knowledge of SATLOC GPS, must be acceptable by CAIR as insurable (accident free record); be a member of the CAAA and be proficient in numeracy and reading, writing, and speaking English. They must also be competent at task planning, organizing, decision making. Applicants must be physically able to perform a physically demanding job in a fast-paced environment. CREDENTIALS: Canadian Commercial Pilots License, Alberta Aerial Pesticide License, Turbine Transition Training, DUTIES: to fly a fixed wing turbine agricultural aircraft safely and efficiently with the SATLOC GPS flight computer, to work with customers to create spray orders, to work in a professional manner with ground support crews, to perform daily checks on a turbine powered aircraft, to keep work logs in an orderly fashion, to be available to work when conditions are optimum, to keep current Canadian Commercial Pilots License and provincial pesticide applicators license. WAGES: Paid Monthly. Rate is \$55.00 per hour, 40 hours per week, overtime with remuneration. Wages are based on acres sprayed. Acres sprayed in a season depend upon weather and farm economy. Bonuses based on performance. Workers Compensation coverage as required by law. EMPLOYMENT TERM: Seasonal: Full Time from May 20, 2019 to September 15, 2019 APPLY BY: 15-Dec-2018. Only successful applicants meeting all requirements will be contacted. APPLICATIONS ACCEPTED THRU EMAIL OR MAIL ONLY. Wetaskiwin Aerial Applicators Ltd. Box 6116 Wetaskiwin, AB Canada T9A 2E8 Website: www. wetaskiwinaerial.ca

4 PROFESSIONAL TURBINE AG PILOTS

POSTED BY: Clayton Air Service Ltd.

EMAIL: applyclaytonairsk@gmail.com

PHONE: **306-497-7401**

2019 LMIA advertisement

Clayton Air Service Ltd is seeking 4 Professional Turbine Ag Pilots for the 2019 spray season. Will be Flying Newer Model Air Tractor 502B Requirements for position: Must be committed to entire season, or have made and agreed to prior arrangements. 4 positions from June 4, 2019 to September 30, 2019 Turbine experienced pilots will be given preference, based on hours and experience, 1000 hrs being a valuable experience target. Training, mentorship and/or apprentice program will be considered for the right individual. Provincial pesticide licences are an asset. 1000 hrs aerial application experience preferred but not required. Job duties are completing aerial application on fields across Saskatchewan and occasionally other provinces. Current Aviation medical Strong ability to adapt to changing situations and maintain a positive attitude with customers, co workers, and supervisors. Strong communication and problem-solving skills. Proficiency in English reading and writing. Capable of operating Satloc guidance systems or equivalent. Must be insurable through our insurance company. Accommodations and vehicle provided during employment Wage \$50/hr, 40 hr/week Bonuses based on performance, workers compensation provided. Accommodations and vehicle provided. Contact: Clayton Rempel Clayton Air Service Ltd Box 87 Leask SK SOJ 1M0 Fax 306-466-9994

1974 CESSNA T210L

 POSTED BY:
 Geoffrey Brayne

 EMAIL:
 brayneg@shaw.ca

 PHONE:
 403-715-9708

 1974 Cessna T210L - USD \$ 134,900

Very nice western Canada based Cessna turbo 210L Centurion II. This low time 210 presents well, boasting upgraded avionics including a Garmin 750 along with a new Hartzell 3 bladed prop. The airplane has been well maintained with complete log books and no known damage history. Annual just completed in October 2018 and is ready to fly.

SPECIFICATIONS

- Year 1974 Manufacture Cessna
- Model Turbo 210L Condition Used
- Serial Number 21060241 Total time (AFTT) 3583
- Flight Rules VFR Number of Seats 6
- Registration C-GIFA Use full load 1380 lbs.
- Engine (SMOH) 460 HRS. (Okanagan Aero Engine, 2008)
- Engine Type Continental TSIO-520-H-4A
- Prop Hartzell PHC-J3YF (2017)

AVIONICS

- Garmin GTN 750 GPS
- Garmin GMA 35 Audio Panel
- GTX 32 Transponder (ACK A30.9 encoder)
- ACK E-04 ELT
- King KX 165 Nav/com
- Garmin VOR indicator with G/S
- King VOR indicator with G/S
- Navomatic Autopilot

ADDITIONAL EQUIPMENT

- EDM-800 engine analyzer
- Vertical card compass
- Rosen sun visors
- Sheep skin front seats
- Built in oxygen (cert. 2013)
- 24 volt system
- Wing tip strobes
- Fuel Capacity 90 gallons US.

TRACMAP FOR SALE

POSTED BY: Jon Bagley

EMAIL: jon@westmanaerial.com

PHONE: **204-729-7723**

New TracMap for sale. Purchased but never used. Includes TracMap Flight 3 with Lightbar, Dongle Modem with wireless connection. Originally paid \$15,500 USD. Will sell for great price.

TURBINE AG PILOT WANTED

POSTED BY: Rick Heard

EMAIL: <u>tarrickfic@hotmail.com</u>

PHONE: **306-741-1969**

Tarrickfic Aerial requires a qualified commercially licensed professional Ag Pilot for the 2019 season to fly an Air Tractor Turbine.

Full time seasonal position with the anticipated start date of June 1st to September 1st, 2019.

Requirements are as follow:

- Canadian Commercial Pilots licence, with a valid appropriate medical
- Saskatchewan and Manitoba Aerial Pesticide Applicators licence
- Must have 5yrs or more experience with a minimum 1000 hours turbine agricultural experience with an AT402 and AT502
- Excellent operational knowledge of Satloc GPS Systems
- Proficient in speaking, reading, and writing English
- Must be acceptable by CAIR as insurable (accident free record)
- Must be able to maintain journey logs as required by Transport Canada guidelines.
- Work with customers and ground crew in a professional manner
- Applicants must be able to complete other duties related to the position, as required

Wages will be \$40.00/hr based upon a 40/hr week and vary depending on experience and acres sprayed. Interested applicants please send resume with references via email.



1976 AG TRUCK FOR SALE

POSTED BY: Jon Bagley

EMAIL: jon@westmanaerial.com

PHONE: **204-729-7723**

1976 Cessna Ag Truck TTSN 4000 Hrs, TSOH 1104 Hrs, SPOH 786 Hrs, Hangered, Superboom, CP nozzles, Radio Package (e/w Company FM Radio, Aircraft Radio), smoker, 54 Gal Fuel Capacity, hydraulic pump, Satloc Bantam GPS e/w Micronair flow monitor, Tail Wheel Lock, Large Tail Wheel (5.00-5), 3 way seat with 5 point harness, Fenders and two spreaders included. Can be sold with fresh annual inspection. Airplane is in excellent condition visually and mechanically.

2008 AT502B FOR SALE

POSTED BY: Jon Bagley

EMAIL: jon@westmanaerial.com

PHONE: **204-729-7723**

2008 AT502B TTSN 2342 Hrs SPOH 63 Hrs (Prop Overhauled Dec 17) One owner since new, no damage history, always hangered, CP nozzles, Radio Package (e/w Company FM Radio, Audio Panel, Transponder, Aircraft Radio), Shadin, smoker, heat, LED Nose Lights, 795 L Fuel Capacity, Satloc G4 GPS e/w flow control and autoboom (ready for Spruce budworm contracts), can be sold with fresh annual inspection. Airplane is in excellent condition visually and mechanically.



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