

# DRABPOL<sup>®</sup> AUTOMOTIVE NEWS

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Quarterly Newsletter no 3(84) July - August - September 2019



*December 17, 1903 - Wilbur and Orville Wright - the first flight in history*  
*1909 - Glenn Curtiss wins the competition at the aviation exhibition in Reims, France*  
*On July 5, 1929 - the pioneers join their forces forming Curtiss-Wright Corporation*  
*The 1970s of the 20th century - the company enters the automotive market*  
*July 2019 - Curtiss-Wright signs a cooperation agreement with Drabpol*

## CURTISS - WRIGHT

„The fundamental principle of transportation is its safety”

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## FROM THE EDITOR

### Ladies and Gentlemen! Dear Readers !

A beautiful summer and an intense beginning of autumn is already behind us. And all of these because of the annual participation in the International Defense Industry Exhibition in Kielce, as well as preparations for the Busworld Europe in Brussels.

At this year's MSPO, in which we have been participating for 11 years, we presented a comprehensive offer for both combat vehicles and soldiers. Our solutions have been used for many years in numerous vehicles for the military purpose - which could be seen at the event in Kielce.

As we promised in the previous issue, we present our new business partner - Curtiss-Wright. We would like to encourage you to read an interesting history of this American concern that is related to the beginnings of global aviation. Today Curtiss -Wright is an international giant that operates on markets, such as: defense, aviation, power engineering and industry. Our company cooperates with its Industrail Division that is responsible for distribution and service of advanced solutions in the field of industrial electronics. For more information, see the "Cover Story" section on pages 15-18.

We wish you pleasant reading !

Alicja Drabczyńska



**DRABPOL**  
AUTOMOTIVE NEWS

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## A visit at our partner's headquarters in Montreal



# With a visit at TM4

In August, at the invitation of our partner – DANA-TM4 company – we went to Montreal, Canada, to the headquarters of the manufacturer of TM4 electric motors.

The meeting aimed at presenting the company's new structures and products after TM4 was taken over by DANA concern, which took place last year.

At that time, DANA bought 55% of TM4 shares from the original founder, Hydro-Quebec. In the meantime, it has also taken over some other companies, such as Oerlikon, SME Group oraz Nordesa, becoming a global leader of cutting-edge solutions that increase efficiency of powertrain systems in all types of vehicles.

In November, it will be the two years since we became a representative of TM 4 in Central and Eastern Europe. We had the opportunity and pleasure to visit our Canadian partner before. However, it was the first visit in Montreal after changing the owner of the company. The meeting was an opportunity to renew cooperation agreement between our companies and discuss our joint technical, commercial and marketing activities concerning offered products. We also had the opportunity to thoroughly get familiar with the new

solutions that were included in the DanaTM 4 offer as a result of the above mentioned merger. It is worth to add that during our visit, DanaTM4's production line was being reorganized and optimized to increase production capacity and meet the growing market demand for the company's products.

One of the reasons for inviting us to Montreal was also the fact that DanaTM4 management board wanted to personally get to know the management board of our company and our team dealing with their products in Europe.

After official talks, our Canadian partners showed us the most charming spots in Montreal that impressed us a lot.

We would like to say thank you for the invitation, productive talks and a warm welcome.



At Dana tm4 headquarters in Montreal – from the left: Marco Bolduc – Director DanaTM4, Paweł Drabczyński - President, Antonio Valencia – Senior Vice President DanaTM4, Grzegorz Stawicki – PM /Drabpol and Olivier Bernatchez – Sales Manager DanaTM4.

## 27th International Defense Industry Exhibition in Kielce

3-6 September



# SOLUTIONS FOR LAND FORCES

We have been present at the largest event of the national defense industry – MSPO trade fair in Kielce for eleven years. We present there our wide offer for both the aviation sector and special vehicles dedicated to military applications and for the soldiers themselves.

Strictly for land forces, we presented EnerSys Ltd. lead-acid batteries, from the military ARMASAFE plus series – in particular three models 12FV120, 12FV75 and 12FV55. All of them use TPPL (Thin Plate Pure Lead), AGM (Absorbed Glass Mat) and VRLA (Valve Regulated Lead Acid) technologies.

The offer of EnerSys batteries was supplemented by the demonstrator of Battery Monitoring System – BMS, DataCell II type, from the same manufacturer.

We promoted the above mentioned solutions together with EnerSys Sales Manager – Mr. Neil Chilton, who shared with us his observations concerning technical side of products.

*For combat vehicles, we presented three models of EnerSys lead-acid batteries from the military series ARMASAFE plus.*



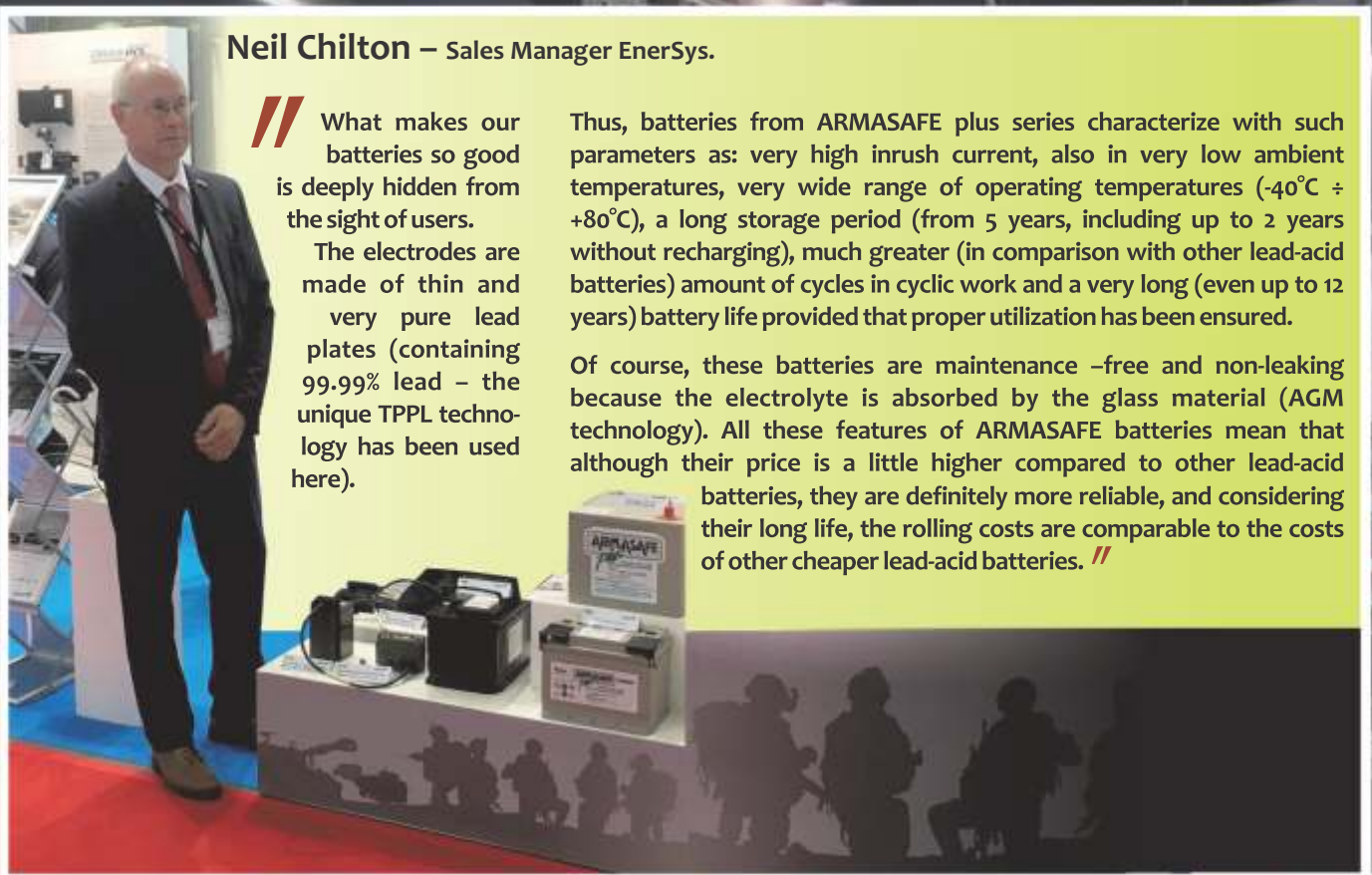
## Neil Chilton – Sales Manager EnerSys.

What makes our batteries so good is deeply hidden from the sight of users.

The electrodes are made of thin and very pure lead plates (containing 99.99% lead – the unique TPPL technology has been used here).

Thus, batteries from ARMASAFE plus series characterize with such parameters as: very high inrush current, also in very low ambient temperatures, very wide range of operating temperatures ( $-40^{\circ}\text{C} \div +80^{\circ}\text{C}$ ), a long storage period (from 5 years, including up to 2 years without recharging), much greater (in comparison with other lead-acid batteries) amount of cycles in cyclic work and a very long (even up to 12 years) battery life provided that proper utilization has been ensured.

Of course, these batteries are maintenance-free and non-leaking because the electrolyte is absorbed by the glass material (AGM technology). All these features of ARMASAFE batteries mean that although their price is a little higher compared to other lead-acid batteries, they are definitely more reliable, and considering their long life, the rolling costs are comparable to the costs of other cheaper lead-acid batteries. //



Our offer in the scope of batteries also included solutions of the DENCHI Power company. The first was a small lithium-ion battery, type BB2590 SMBus dedicated to powering electrical devices operated by a single soldier, as well as for self-propelled robots used for military, police or research purposes.

This battery is successfully used in the light reconnaissance robot – "BALSA", constructed by Warsaw PIAP. It has also found application in the underwater robot, called „Cyber Ryba” (cyber fish) that belongs to the Polish Naval Academy (Akademia Marynarki Wojennej) and was created by engineers from the Cracow University of Technology (Politechnika Krakowska).



The battery offer at the fair also included DENCHI Power solutions - like lithium-ion battery BB2590 SMBus, dedicated to self-propelled robots or powering electrical devices operated by a single soldier.

This battery was presented at our stand with the SPC portable charger for the soldier, together with a charging cable and a power cable for connection to a DC voltage source. Denchi offer also included a power supply, enabling connection of the SPC charger to AC power supply source in the range from 100 to 240V AC at a frequency of 50 – 60Hz. (AC Adaptor), equipped with a cable for connection to an AC voltage source and a cable for connecting the SPC charger power cable.

## MILITARY VEHICLES WITH ARMASAFE BATTERIES AT MSPO

Our batteries are successfully used in numerous vehicles for military purposes. Some of them were presented at this year's trade fair – equipped with EnerSys lead-acid batteries from the military ARMASAFE plus series. These include the prototype of the the new infantry fighting vehicle – BORSUK or the prototype of KTO ROSOMAK BMS – a wheeled armoured personnel carrier. Both vehicles were equipped with the DATACELL II – Battery Monitoring System (BMS). Armasafe batteries were also applied in the upgraded Leopard 2PL and Leopard 2A5 tanks, the propelled gun-howitzer - AHS Krab (155 mm), the modernized reconnaissance vehicles: BWR-1S and BWR-1D and the LOTR transporter from AMZ Kutno – also equipped with Continental electronics, please read more on that below.



**BORSUK**

## Continental - Electronics

Our customers were also attracted by multi-functional displays - here specifically dedicated to combat vehicles. A perfect example was Continental's MultiViu Professional – a display fully programmed by our engineers that was specifically dedicated to the Rosomak armoured personnel carrier.

Display solutions have been successfully used in many vehicles for military purposes for years. At this year's MSPO, AMZ Kutno presented Bóbr 3, an armoured amphibious vehicle, in a newer

version – LOTR. The vehicle uses the CAN bus with KIBES 32 on-board electronics and MOKI 3 board as a display in the housing.



The multifunctional displays that were presented at our stand can be used in many vehicles for military purposes, we can precisely program and customize them in accordance with customer needs.



**BÓBR 3 - LOTR version**

The new, armoured amphibious vehicle from AMZ Kutno has been equipped with the KIBES 32 on-board electronics system and MOKI 3.



**ROSOMAK BMS**



**LEOPARD 2PL**

AUTOBOX company presented a wide range of products. Its exposition involved three vehicles, including the modernized electric Star 266M2 with automatic gear-box. This lightweight, electric truck has been equipped with a FlexCluster instrument panel, programmed and configured in accordance with the wishes and needs of the Starachowice manufacturer.

It is also worth to mention a trade fair presentation of a new version of Honker M-AX, which was an effect of a comprehensive taking over of Honker by Auto-box company.

For many years our exposition has included the armored Jelcz heavy truck/ tractor equipped with our sensors and Can Cockpit indicators – of pressure and temperature, as well as the tank and the washer pump. This vehicle could be seen at the stand of Huta Stalowa Wola.

We would like to say thank you for the pleasant atmosphere at our customers' stands, as well for visiting our exposition. We were pleased to welcome representatives of companies such as Autosan and INGRAM, Huta Stalowa Wola S.A., Zakłady Mechaniczne Bumar Łabędy S.A., ROSOMAK S.A., Wojskowe Zakłady Motoryzacyjne S.A., AMZ-Kutno S.A., and representatives of Industrial Research Institute for Automation and Measurements, as well as the top management of Tank and Automotive Service of the Inspectorate for Armed Forces Support.



**STAR**

The modernized, electric Star 266M2 from AUTOBOX has been equipped with FlexCluster that was programmed and configured in accordance with manufacturer needs.



**JELCZ**

Sensors and indicators of the VDO CANcockpit series have been installed in Jelcz armoured tractor, presented at the Huta Stalowa Wola stand, for many years.

# KONVEKTA solutions at SOLARISPOSIUM PROBALTCIA

At the end of summer, we traditionally took part in a technical conference organized by Solaris Bus& Coach for Baltic countries - Lithuania, Latvia and Estonia.



Same as last year, Konvekta was one of the partners supporting this event. Together with the German manufacturer, we promoted the latest solutions for bus air conditioning.

At his stand, our partner presented air conditioning units from Ultra Light series intended for buses and trolleybuses. Konvekta also presented its CO<sub>2</sub> heat pump for electric buses.

These high-efficiency and ecological pumps provide year-round heating and cooling of electric buses. The goal of the heat pump is to obtain from a fraction of supplied energy its multiple, to provide high thermal comfort. Due to application of the pump, the bus range increases up to 40%. Visitors to the stand could also learn about the benefits of eco-friendly CO<sub>2</sub> refrigerant (R744).

Konvekta is a pioneer in this field – for a few years, the company has paved the way in the field of development and research of environmentally friendly refrigerants.

Carbon dioxide is non-flammable and non-toxic, it is harmless to the ozone layer and when used in a controlled way it is also environment-friendly.

CO<sub>2</sub> air-conditioning systems consume up to 25% of fuel and produce up to 1000 times less greenhouse gases which makes them the right choice in terms of saving money and caring for the environment. CO<sub>2</sub> is a natural component of air and its global warming potential (GWP) is only 1. Thus, there are no legal restrictions on the use of CO<sub>2</sub>.

R744 is a great alternative to the current R134a refrigerant.

## Focus on municipal vehicles

At the invitation of the Management Board of the National Forum of Directors of the Urban Sanitation Departments, we once again took part in the 55<sup>th</sup> convention gathering the entire industry that deals with urban cleaning and waste management. Our participation was related to the presentation and promotion of solutions influencing comfort and safety in municipal vehicles.





# 55th National Forum of the Urban Sanitation Departments in Arłamów

18-20 September

At our stand, we presented - ContiPressureCheck (CPC - tire pressure and temperature monitoring system), MIX Fleet Manager (by MiX Telematics), Konvekta air conditioning systems and ALCOLOCK V3 ignition interlock. Conference participants visiting our stand were particularly interested in CPC system that protects tires, contributes to reduction of fuel consumption and extends tire life.

ContiPressureCheck not only gives the accurate pressure and temperature values but for the other fleet operators it is also a valuable indicator of the efficiency in terms of fuel and tire management in the fleet. In addition, CPC cooperates with the vehicle fleet management system, that was also presented at our stand. Thanks to this, the fleet manager or a dispatcher has access to full information on vehicles condition, and in the event of a tire failure she/he can immediately take the appropriate steps to remove defects or send another vehicle to work.

For a few years now, CPC system has been successfully used in a hook-lift truck of the Miejskie Przedsiębiorstwo Oczyszczania w m. st. Warszawie (waste management company for the Capital City of Warsaw). The vehicle is also equipped with the fuel consumption measurement system - EDMeco.

At our stand, we presented the demo version of the ContiPressureCheck system and other solutions to the congress participants, including representatives of Przedsiębiorstwo Gospodarki Komunalnej from Nysa (Nysa municipal company), Przedsiębiorstwo Usługowo-Handlowe TECOM from Gdańsk, Miejska Gospodarki Komunalnej from Oleśnica (Oleśnica municipal company), and FB Serwis from Kryniczna near Środa Śląska.



# KONVEKTA offer for rail vehicles



This year, as many as 700 exhibitors from 30 countries around the world came to Gdańsk for one of the most important meetings of the European rail transport industry. Among them there was also our partner – Konvekta company.

We provided the German manufacturer with support in regard to contacts with Polish customers. At its stand Konvekta presented the HVAC 6708 air conditioning unit with a CO<sub>2</sub> heat pump for natural CO<sub>2</sub> (natural refrigerant R744). This device, with solid and durable aluminum construction, has been designed for passenger compartments in trams and electric trains.

Konvekta offer in the field of heating – ventilation - air conditioning systems for rail vehicles is much larger, and consists of air conditioning for passenger space as well as for the motorman's workplace, door and under-seat heating, Frontbox and convector.

Konvekta solutions could also be seen in the rail vehicles of our Clients, exhibiting at Trako. Newag company from Nowy Sącz presented two locomotives - Newag Dragon 2 E6ACTa and Newag Griffin E4DCU. Both of them have been equipped with Konvekta HVAC 3405 air conditioning system and HZ422 heating for the motorman's cab.

Konvekta systems, such as HVAC 3405 air conditioning for the motorman space and HVAC 6405 air conditioning for passenger compartments have been also installed in Moderus Gamma tram manufactured by Modertrans in Poznań.

This year's entire rolling stock exposition at AMBEREXPO was really impressive and met with great interest of trade fair visitors.

## Konvekta systems in trade fair rail vehicles:



Moderus Gamma Modertrans



Newag Dragon 2 E6ACTa



Newag Griffin E4DCU



Konvekta and Drabpol teams have jointly promoted solutions in the field of air conditioning units for rail vehicles, including the HVAC 6708 air conditioner with a CO<sub>2</sub> heat pump.

## Assembly of Konvekta refrigeration units in two models of FORD make

# THE NEW FORD CARS ARE ALREADY COOLING



 **Frank-Cars**

This year, together with our partner - Konvekta company, we made a demo assembly of two refrigeration units in Ford vehicles.

This installation comes from the cooperation with „Frank-Cars” – an authorized, dynamically developing Ford dealer from Częstochowa. It should be mentioned that Frank-Cars has been operating on the Częstochowa market since 1999. The company offers not only sale, rental, commission and service for passenger cars and vans, but also carries out vehicle specialized bodywork.

One of such vehicle bodyworks included installation of refrigeration units, in which Frank - Cars service was actively involved alongside with employees of Drabpol and Konvekta company.

Both Ford models have been equipped with under-floor integrated refrigeration units that are invisible from outside. The first installation took place in the Ford Custom vehicle with a 2.0 Ecoblue engine, while the second one — in the Ford Transit with the same engine. Both refrigeration units have been installed with an under-floor condenser, that allows for keeping the factory dimensions of the vehicle.



*Integrated, invisible from the outside, Konvekta FK 2010 underfloor refrigeration units have been installed in Ford Custom and Ford Transit vehicles.*

This is particularly important for customers using underground parking lots or low passageways. In addition, Ford Transit has been equipped with engine-off power supply ( 230V).

The assembly of refrigeration units was combined with the training of Frank-Cars staff and lasted for three days.

Another (the third one) specialized vehicle bodywork of the Konvekta refrigeration unit in Ford Connect car is planned in Autumn.



## 2nd Commercial and Special Vehicles Trade Fair in Częstochowa

21 September

# JOINT PROMOTION

 **Frank-Cars**

In the wake of our cooperation with Frank-Cars company, an authorized Ford dealer, regarding bodywork of refrigeration units in Ford vehicles, as an exhibitor we took part in the Commercial and Special Car Trade Fair that was organized for the second time by this Częstochowa representative of Ford company.

During the event the company presented, among others, vehicles that were bodyworked by Centrum Zabudów Ford Frank - Cars (Frank-Cars vehicle bodywork center).

These included light vehicles for the fire department, uniformed services, workshop bodyworks, dump trucks, campers, as well as refrigerated trucks for food transport. Among the last ones Ford Custom with the Konvekta FK 2010 refrigeration unit, on which we worked together with Frank - Cars service this summer. Because of this refrigeration unit, this car has been promoted at our stand. Our offer in the field of underfloor and roof - mounted refrigeration units is definitely larger. Customers who visited our stand could get acquainted with the whole family of refrigeration units for transporting fresh and frozen products. An important aspect for all users was the fact that Konvekta refrigeration units do not limit the height of the vehicle.

Częstochowa trade fair was combined with the 20th anniversary of Frank-Cars company, hence the event was full of



*At the Częstochowa trade fair, we promoted solutions in the field of Konvekta underfloor and roof refrigeration units - one of them (FK2010) could be seen at Ford Custom at our stand.*

attractions. Congratulations to our Customer for the round jubilee and strong market position that has been developed over the years. At the same time, we wish Frank-Cars every successes in the future and further round anniversaries.

## Reactivation of vehicles of the legendary NYSA brand!

# NYSA-DRABPOL - joint project



This summer, we started cooperation with NYSA Zakład Pojazdów S.A. Its goal is the implementation of the project in the field of supply of components and technologies for emerging NYSA prototypes.

Nysa proceeded to start the production of modern, fully electric vans in N1 class, up to 3.5 tonnes DMC, equipped with many innovative technical solutions. Our partner in the implementation of this project is the Rational Motion GMBH company from Germany.

The Nysa brand itself has already existed for several dozen years. Many of our Readers associate it with light vans, which for decades (until 2003), have been produced in the city of the same name. Nysa vehicles could be found practically on the streets of every Polish town.

The current Nysa Zakład Pojazdów S.A company has been founded in 2014 on the basis of Wrocław company Smirnow Truck providing maintenance services for vehicles up to 12 t. The company's headquarters is in Wrocław.

Although the place of production has changed, the Nysa brand has been preserved. The new vehicles were entirely designed from scratch and their production has already started.

The entire process is carried out using NCBiR resources (Narodowe Centrum Badań i Rozwoju - The National Centre for Research and development).

We would like to thank Nysa for the opportunity to participate in this unusual project. Our Readers will be regularly kept informed about its realization in the next issues of our newsletter.



Soon, the legendary Nysa vehicles will appear in a completely new version - modern, fully electric vans in N1 class up to 3.5 tonnes DMC, and with many innovative technical solutions.

## Perfect connectivity with Poynting LTE antennas and Cradlepoint routers

# WiFi on the sea



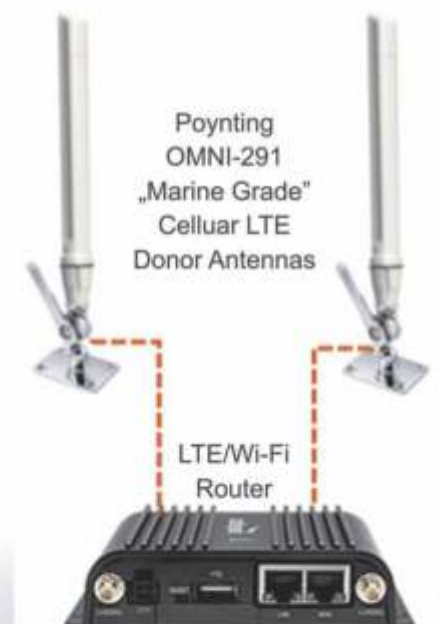
Means of transport require increasingly better connectivity. GPS has been a standard for a long time, and the access to WiFi in public transport vehicles is becoming a standard right now. These changes also affect water transport – both private tourist yachts as well as boats for commercial or patrol applications. In response to these needs, there was created a solution created based on Poynting's LTE antennas and routers of the American manufacturer – Cradlepoint.

So far our company has offered this solution to the Automotive market. Cradlepoint mobile routers in combination with Poynting's antennas have been successfully used in road vehicles - buses and trucks. We also offer LTE antennas for radios with DAB, DAB +, DAB ++, radiotelephones, etc. Now both solutions have found application in water transport.

The combination of Cradlepoint routers and Poynting antennas – two high-quality products, provides stable access to the Wifi network on board of the ship, at a distance providing access to the LTE network, i.e. about 10-30 km from the shore.

The system offers great possibilities but its construction is relatively simple. Poynting prepared two models of omnidirectional antennas dedicated to the marine market. These are OMNI-291 and OMNI-402 solutions. The forementioned devices have an increased angle of catching the signal (vertically), thanks to which they do not „lose” contact with the BTS mast when the ship sways in the waves. The antennas have been designed and manufactured in accordance with the IP68 protection standard, which offers waterproofness and dustresistance sufficient enough for use on boats. In the last issue of DN we presented Cradlepoint IBR900 that serves here as the router. The device is very durable, easy to install on flat surfaces and equipped with passive cooling. It combines the functionality of an LTE router and a WiFi access point.

Certainly, the marine market will not remain indifferent to this solution. It not only increases the comfort of spending time on tourist yachts, but also expands communication possibilities on boats, used for commercial applications as well as by public services.



**CURTISS -  
WRIGHT**

# Our new offer due to cooperation with Curtiss-Wright

In the last issue we wrote about establishing cooperation with the American concern – CURTISS-WRIGHT, and more specifically with the department called "Industrial Division" dealing with manufacturing of advanced industrial electronics.

As a result, our company's offer has expanded to include electronics systems (for all types of industrial vehicles), such as: electronic suspended and floor-mounted pedals, thumb-throttle units, electronic throttle control systems, electronic transmission shifters, converters, motor controllers, traction inverters, joystick controls, HMI consoles, hydraulic levers, sensors and shifters.

## The history of Curtiss-Wright

Curtiss-Wright company not only offers a wide range of products with an established reputation on the global market, but also a rich history that one cannot simply pass by indifferently. We would like to present our Readers with the most spectacular events from the rich history of this American concern.

The Beginnings of Curtiss-Wright are beginnings of the development of global aviation. The name itself consists of the



*The beginnings of Curtiss-Wright are closely related to the beginnings of the development of global aviation, whose pioneers were the Wright brothers. On December 17, 1903, they made in turns the first flight in the world on the „Flyer” aircraft they constructed.*

names of American aviation pioneers - Glenn Curtiss and brothers Wilbur and Orville Wright.

Everything started on 17 December 1903, when Wilbur and Orville Wright achieved one of civilized man's fondest dreams - flight. Then, the "Flyer", a plane that they designed and build, raised into the air and within 12 seconds covered a distance of 36.6 m. This initiated the era of sky conquest and the development of aviation.

A few years later, the Wright brothers' plane could sustain flights of 24 miles, and the Wright Company (founded in 1909) became the owner of Wright brother's patents.

It might seem that aviation world belonged to them. Out of the sudden, in their path they met an aviator and designer – Glenn Curtiss, a men who, among others, took them away a victory at the world's first international air race in France. This spectacular success has brought incredible development of the Curtiss Airplane and Motor Company,



Twórcy Curtiss – Wright – od lewej: bracia Orville i Wilbur Wright oraz Glenn Curtiss.

with Glenn Curtiss as president. During the First World War the concern became one of the biggest plane manufacturers in the world, listing the company on the stock exchange in 1916.

On July 5, 1929, the companies founded by these three great aviation pioneers – Curtiss Airplane and Motor Company and Wright Aeronautical Corporation merged to become the largest aviation company at that time – the Curtiss-Wright Corporation. On August 22nd of the same year, Curtiss-Wright Corporation was listed on the New York Stock Exchange (NYSE) where it still trades today.

In the 1970s, the company moved dramatically forward implementing numerous new and innovative technologies. The Company became the owner of the rights to the Wankel rotary engine. Curtis-Wright engineers and scientists made new strides towards clean and economical combustion of coal and coal waste products for the generation of electricity and process steam.

Another important step was the 1998 acquisition of Curtiss-Wright Drive Technology. Drive Technology Department, with its headquarter in Switzerland, designs and manufactures drives and suspension systems for armoured military vehicles and tilting systems for high-speed railway car applications. CW-Drive Technology not only introduced the company into these new markets, but also provided it with hydraulic and electronic capabilities that are applied to the Company's aerospace product lines.

In the first decade of the 21st century, Curtiss-Wright transformed to a global technology player with sales exceeding \$2 billion a year. This was achieved, among others, through a solid growth and the strategic acquisition of nearly 60 companies.

The transformation of Curtiss-Wright continued, as the company acquired 7 companies between the third quarter of 2012 and first quarter of 2013. The Company continued to employ its diversification and acquisition strategies that further strengthened its commercial end market offering, particularly in the general industrial market.

In 2014, the company transitioned to a new segment structure under the „One Curtiss-Wright” vision, becoming an integrated, global and diversified industrial company with worldwide coverage.



Early years of Curtiss-Wright Corporation.

## Curtiss-Wright today

Today Curtiss-Wright has balanced and diversified its portfolio of products and services. The company employs 8 600 people all over the world and successfully operates on four markets, such as defense, aviation, power engineering and industry.

Cooperation established between Drabpol and Curtiss-Wright company pertains to the Industrial Division, so to the industrial sector.

The choice of our company for a partner of the American concern was related with our several decades of experience on transport, aviation and industrial markets. It was also connected with the implementation of many innovative solutions, both dedicated to producers and end-users, and with our extensive technical, constructional and stock background.

The Curtiss-Wright Industrial division, which we represent, is comprised of the following three groups of product lines.





## 1. EST GROUP

EST Group specializes in the development, manufacturing and marketing of highly-engineered products and repair services for shell and tube heat exchangers, condensers, coolers and chillers. The best known product, the Pop-A-Plug®, is the industry's leading technology for sealing leaking heat exchanger tubes.

## 2. INDUSTRIAL GROUP

The Industrial Group is a recognized leader in providing components and systems for a wide range of vehicles, such as: medium and heavy-duty trucks, buses and motor coaches, municipal vehicles, construction, agricultural, forestry, privileged and mining vehicles, forklifts, telescope leaders, cranes, lifters, industrial machines and other specialty vehicles, such as wheelchairs and scooters for medical mobility.

## 3. VALVE GROUP

The Valve Group deals with comprehensive design, actuation and manufacturing of safety-critical valves for the naval, commercial nuclear and conventional power, hydrocarbon processing, refinery, petrochemical, chemical, natural gas production and transmission, pharmaceutical and other general processing industries worldwide.

## INDUSTRIAL GROUP – components and sub-systems for commercial vehicles

Due to our activity, we will focus on the products of the Curtiss-Wright Industrial Group. The department represents product brands such as Arens Controls, Penny & Giles, PG Drives Technology and Williams Controls.

Industrial Group family of products involves:

- ▶ Joystick controls
- ▶ Electronic throttle controls
- ▶ Shifters-levers
- ▶ Position sensors
- ▶ Pressure sensors
- ▶ Actuators and solenoid valves
- ▶ Power management products

## Electronic Throttle Controls

In this issue we want to familiarize our Readers with solutions from the group of electronic throttle controls, including electronic pedals (both suspended and floor-mounted).

For over 45 years Curtiss-Wright has been proud of its innovative solutions in the field of electronic throttle controls. One of the first solutions in this area has been developed for extremely demanding forestry and automotive market in 1937.

The above innovation is reflected in a wide range of electronic throttle controls. The offer of the company encounters three types of Electronic Throttle Controls (ETCs), such as:

- Suspended electronic pedals
- Floor-mounted electronic pedals
- Hand throttle controls

These products incorporate the latest non-contact Hall-effect technology to provide a durable, rugged and reliable drive-by-wire signal for the electronic management system of the vehicle's fuel system the motor controller for battery-powered vehicles. The sensors are compatible with all the major engine manufacturers and provide a combination of APS and IVS signals which can be factory configured to suit individual applications.

### Advantages of ETCs:

- ▶ Robust and compact design
- ▶ Electronics IP67 Sealed (FMVSS-124 and 302)
- ▶ Compatible with a wide range of Curtiss-Wright sensors
- ▶ Kickdown and non-kickdown versions
- ▶ Multiple angle options
- ▶ Customizable foot casing
- ▶ High strength materials
- ▶ Hall-effect technology
- ▶ CAN technology

### Suspended pedals

Electronic suspended pedals are well suited for applications where clean floor access is required. Pedal options include both low-cost and heavy-duty designs, as well as custom designs to meet any application requirement.

### Floor-mounted pedals

Floor-mounted pedals Electronic floor-mounted foot pedals are used for applications where the operator is seated or standing and it is recommended that the pivot point for electronic accelerator control is located under the operator's heel. This offer includes both low-cost and robust constructions, as well as non-standard, individual designs

### Hand throttle controls

Electronic hand throttle controls, such as the thumb and twist grip throttles have been designed specifically for applications where a montage on the steering shaft is preferred. Such controls are ergonomically designed and ideal for use in All-Terrain Vehicles (ATVs), Personal Recreational Vehicles (PRVs), motorbikes and ebikes. The offer of hand throttle controls is fully customizable thanks to options including shaft orientation, sensors position, and knob color.



The above systems and components are practically intended for all land vehicles. These solutions are ideal for all kinds of working machines – agricultural, construction, mining or specialized heavy equipment.

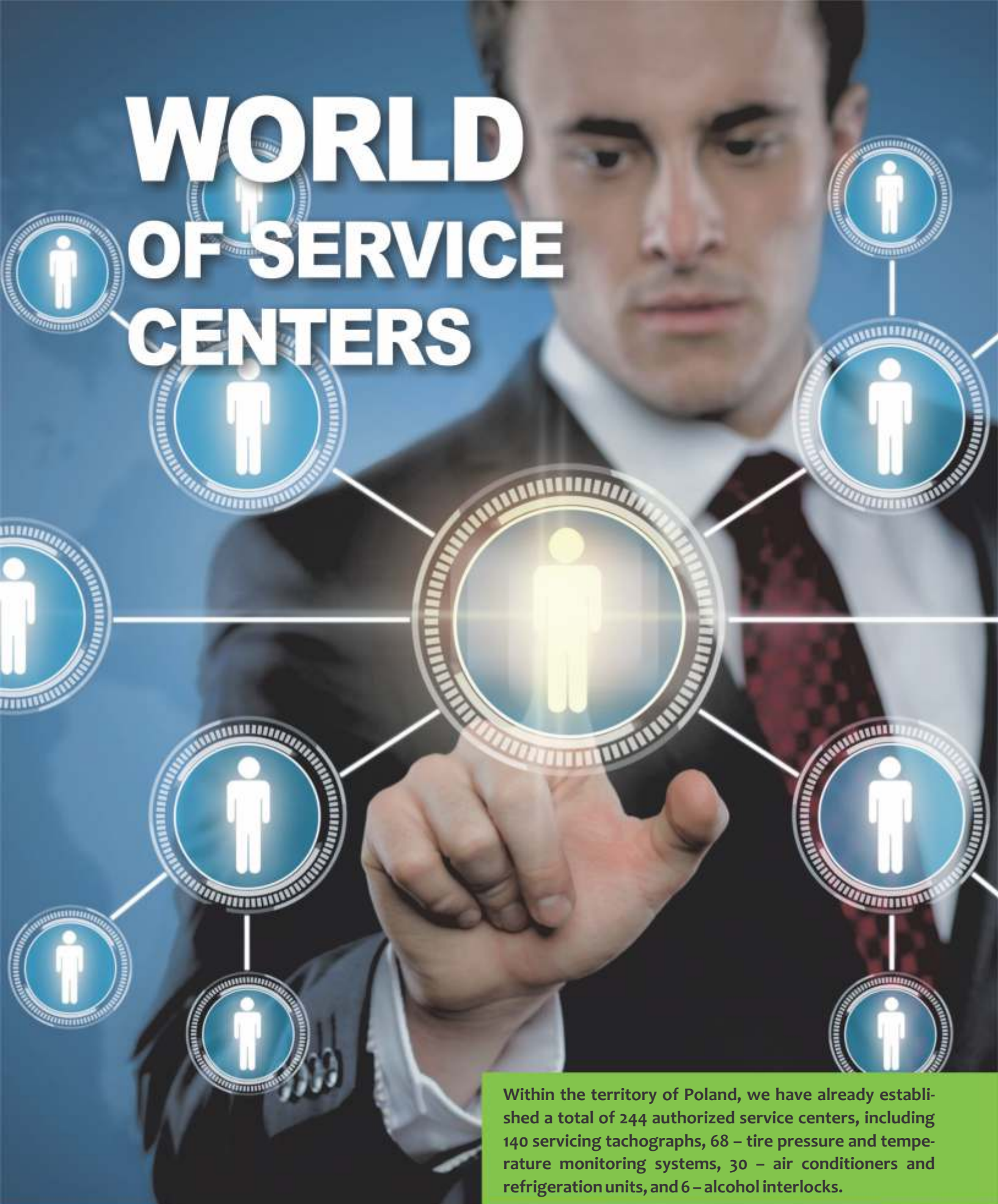
We encourage everyone who is interested in the new products in our offer to contact with our Sales Department.

## Target markets

- |                                  |                                |
|----------------------------------|--------------------------------|
| ▶ Medium – and heavy-duty trucks | ▶ Container handling machines  |
| ▶ Buses and motor coaches        | ▶ All-Terrain Vehicles         |
| ▶ Agricultural vehicles          | ▶ Military vehicles            |
| ▶ Construction vehicles          | ▶ Personal Recreation Vehicles |
| ▶ Maining machines               | ▶ Specialty vehicles           |



# WORLD OF SERVICE CENTERS



Within the territory of Poland, we have already established a total of 244 authorized service centers, including 140 servicing tachographs, 68 – tire pressure and temperature monitoring systems, 30 – air conditioners and refrigeration units, and 6 – alcohol interlocks.



You are welcome to visit DTCO 4.0 service centers

# DTCO 4.0 calibration set off at full steam



Several months have passed since introduction of regulations saying that newly registered vehicles over 3.5 tonnes must be obligatory equipped with the new DTCO 4.0 tachograph. This year's summer was therefore very busy for service centers supporting new tachographs.

It is worth reminding that all service centers that were authorised to support this device, apart from extensive knowledge in this field, have to be equipped with the necessary devices for handling with new tachographs. Our authorised service centers, that have been trained in the field of DTCO 4.0 since March, are equipped with Workshop Tab 4.0 - a device ready to work with Continental, Stoneridge and Efas smart tachographs. Our service centers in Mykanów, Warsaw and Lublin have been prepared for supporting customers since this Spring. During the holidays they could not complain about the lack of work. During this hot period, our service technicians performed several dozen calibrations of new tachographs for both individual customers and vehicle dealers. In our headquarters in Mykanów, we regularly calibrate DTCO 4.0 tachographs in SCANIA vehicles (for the Częstochowa branch of Scania Polska) as well in vehicles of MAN make. Lately, our service center calibrated a tachograph in Mercedes Sprinter vehicle for Ośrodek Szkolenia Służb Więziennych (training center for prison service) in Kule.



Our customers can use calibration services all around the country since not only our company but also our authorised service centers, that support smart tachographs, heartily invite customers to their facilities. List of all DTCO 4.0 service centers is available on page 21 or on [www.drabpol.pl](http://www.drabpol.pl).



*At our headquarters in Mykanów we regularly calibrate DTCO 4.0 tachographs in SCANIA vehicles.*

**CONTINENTAL VDO – DRABPOL recommended service centers, supporting DTCO 4.0 smart tachographs**

No.	City	Service Center name	Zip code	Street address
1	BIĄŁYSTOK	Mechanika Precyzyjna Czeszel	15-620	Elewatorska 29
2	GRÓJEC	Mateo Agnieszka Rejman	05-600	Janówek 27A
3	JELCZ LASKOWICE	Tach-Pol & Inter-Car Janusz Lachowski	55-221	Techników 33
4	KALISZ	AGRO-STAR Tadeusz Nogaj Sp. z o.o. Sp.K	62-800	Owsiana 7
5	KIELCE	PPUH TSL Jacek Wojciechowski	25-801	Krakowska 291
6	KRAKÓW	Tacho-Tax s.c. K. Litewka, W.Litewka	30-720	Saska 4
7	KÓRNIK	Elektromechanika Pojazdowa Stachowiak Jan	62-035	Żerniki, ul. JanaGuttenberga 2
8	LEGNICA	Okręgowa Stacja Kontroli Pojazdów	59-220	Złotoryjska 178
9	LISI OGON	Zakład Usług Wielobranżowych Bogamet Mieczkowska Bogumiła	86-065	Szczecińska 15-19
10	LUBICZ	Kujawski Truck Centre Sp. z o.o.	87-162	Rogówko 114B
11	LUBICZ GÓRNY	Joltex Mariola Lipińska	87-162	Warszawska 44
12	LUBLIN	Drabpol Sp.j. P.Drabczyński i Wspólnik	20-209	Konstruktorów 21
13	MIKOŁÓW	SERWIS 2B Krzysztof Jakubiec	43-190	Jasna 1-5
14	MYKANÓW	Drabpol Sp.j. P.Drabczyński i Wspólnik	42-233	Akacyjowa 24/26
15	MYŚLENICE	Tacho-Tax s.c. K. Litewka, W.Litewka	32-400	Przemysłowa 4
16	MODRZYCA K. NOWEJ SOLI	PP.H.U. Tachotronic Paweł Lubieniec	67-106	Nowosolska 24
17	NOWY TARG	Tacho-Tax s.c. K. Litewka, W.Litewka	34-400	Ludźmierska 29
18	OLKUSZ	Tacho-Tax s.c. K. Litewka, W.Litewka	32-300	1000-lecia 1
19	OŚWIĘCIM	Tacho-Tax s.c. K. Litewka, W.Litewka	32-600	Fabryczna 1D
20	OZORKÓW	Tacho-Serwis Krzysztof Zaleski	95-035	Sierpów 33
21	PILZNO	Omega Truck Center	39-220	Kraszewskiego 44
22	ROPCZYCE	Tacho-Tax s.c. K. Litewka, W.Litewka	39-100	Zielona 6
23	RUMIA	Melzer Z.W. Elektromechanika pojazdowa	84-230	Parkowa 4
24	RZESZÓW	STC Paweł Kula	35-301	Al. Żołnierzy I Armii Wojska Polskiego 18
25	SŁUBICE	FROST TRUCK SERWIS Okręgowa Stacja Kontroli Pojazdów	69-100	Transportowa 8B
26	SULECHÓW	PP.H.U. Tachotronic Paweł Lubieniec	66-100	Północna 5
27	SZCZECIN	TACHO-SERVIS	71-001	Południowa 15
28	SZCZECIN	Taks Moto	71-656	Druckiego - Lubeckiego 1A
29	TARNÓW	Stacja Diagnostyczna SAM s.c. Stanisław, Artur, Piotr Maciołek	33-101	Zbylitowska 76
30	WARSZAWA	Drabpol Sp.j. P.Drabczyński i Wspólnik	02-495	Al. Jerozolimskie 250
31	WOLICA	Mateo Agnieszka Rejman	05-830	Al. Katowicka 10
32	WOŁOMIN	Mateo Agnieszka Rejman	05-200	Majdan, ul. Watykańska 1
33	ZIELONA GÓRA	PP.H.U. Tachotronic Paweł Lubieniec	65-705	Naftowa 1
34	ZIELONA GÓRA	PP.H.U. Tachotronic Paweł Lubieniec	65-127	Kostrzyńska 1

## Latest news – 3rd Quarter 2019

- ▶ Six Solaris buses with twenty-four USB chargers went to Miejskie Zakłady Komunikacji Bełchatowie (Bełchatów transit company).
- ▶ Six USB chargers have been installed in three Solaris buses for Miejskie Zakłady Komunikacyjne w Kędzierzynie Koźlu (Kędzierzyn Koźle transit company).
- ▶ Four Solaris buses for MPK Radomsko (Radomsko transit company) have been equipped with twenty USB chargers.
- ▶ Przedsiębiorstwo Komunikacji Miejskiej w Katowicach (Katowice transit company) has supported its fleet with twenty-five Solaris buses, in which there were installed one hundred and twenty five USB chargers (5 items per vehicle).
- ▶ Solaris buses bought for Zakład Komunikacji Miejskiej w Zawierciu (Zawiercie transit company) have been equipped with 15 USB chargers.
- ▶ One Solaris bus with six USB ports has supported the fleet of TPBUS w Tarnowie Podgórnym (Tarnowo Podgórne transit company).

▶ Fifteen AUTOSAN buses with FAP driver's workplaces and ContiPressureCheck systems went to Związek Gmin Podkarpackiej Komunikacji Samochodowej w Rzeszowie (Podkarpackie transit company in Rzeszów).

▶ Miejska Komunikacja Samochodowa w Dębicy has bought two AUTOSAN buses – both equipped with FAP driver's workplaces, CPC systems, twelve USB chargers and mobile Cradlepoint router.

▶ Twenty USB chargers and five CPC systems have been installed in VOLVO buses that supported the fleet of Miejskie Zakłady Komunikacyjny w Koszalinie (Koszalin transit company).

## Review of trainings

### 2nd July

Technical training on DTCO 4.0 digital tachograph for representatives of PHU TACHSPID Piotr Korycki and ZHU TAKS-MOTO Ryszard Wochowski. The training was carried out in our headquarters in Warsaw.

### 9-10th July

A tour headquarters in Mykanów, two trainings in the field of automatic speed limiters (AGB) were held for Mercedes-Benz Trucks Polska Sp. z o.o. (divided into two groups). This is another training on AGB for the employees of Mercedes-Benz Trucks Polska Sp. z o.o.

### 11th July

Training on ContiPressureCheck system for OTRACOM company, carried out at customer's headquarters in Tarnowskie Góry.

### 2nd August

Technical training on DTCO 4.0 digital tachograph for representatives TACHO SERWIS Robert Góra, TACHO A4 Sp. z o.o. and FROST THERMO KING Sp. z o.o, carried out in our Warsaw office.

### 25th-27th September

In our Warsaw office, we also conducted a three-day basic training for workshop technicians in the field of digital tachographs. The aim of the training was to prepare candidates for workshop technicians for the exam, conducted by the Central Office of Measures.



### They wrote about us

1. [www.truckfocus.pl](http://www.truckfocus.pl), „Drabpol and Banke developed an electric garbage truck”, 2019-09-16 .
2. [forumtransportu.pl](http://forumtransportu.pl), „Drabpol integrates KIBES system in the first BANKE electric garbage truck” , 2019-09-13.
3. [www.samoloty.pl](http://www.samoloty.pl), „Cooperation between Drabpol and Gogo BA”, 2019-10-02.
4. [www.truckfocus.pl](http://www.truckfocus.pl), „Cooperation between DRABPOL and CURTISS-WRIGHT ”, 2019-09-23.
5. [www.forumtransportu.pl](http://www.forumtransportu.pl), "Cooperation between DRABPOL and CURTISS-WRIGHT", 2019-09-24.
6. [www.infobus.pl](http://www.infobus.pl) , „Drabpol started cooperation with Curtiss-Wright”, 2019-09-24.
7. [www.trans.info.pl](http://www.trans.info.pl) , „Transport and logistics of dangerous materials”, 2019-07-10.