

We are **UMBRA GROUP**

The voice of the CEO

Twenty-Twenty

The point of the President

**COVID-19:
the greatest crisis**

**Value of the Industrial
area and reaction to
COVID-19**

**Challenges and
conquests of the early
months of 2020**

**Quarantine:
Italian pride in the face
of an emergency**



Behind every problem
is an opportunity.

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Twenty-*Twenty*



Dott. ANTONIO BALDACCINI
CEO & President UMBRAGROUP

Referring to the year that had just begun, all of us said the words “twenty-twenty” at least once, with hopes for the future and looking forward to experiencing the positive novelties in store. But instead, at the end of February it became clear that the date’s final zero represented, for all of us, a new phase in our way of living and doing business. Our mobility became zero. Countries and businesses started from zero to set new rules and redesign spaces to defend from an enemy that no observer had been able to perceive before: a pandemic virus.

The advent of COVID-19 not only attacked people’s health and healthcare systems, but it’s having a huge impact on the global economy. Our Group hasn’t been left unscathed. Without delay, we immediately issued specifically targeted rules and enacted measures aiming to limit the risk of contagion, in compliance with the most stringent worker protection regulations. Making a virtue out of necessity, we seized the opportunity to adopt innovative processes, implementing remote working and e-learning formulas, and thus becoming one of the most forward-thinking businesses. Just as immediate was our reinterpretation of the market, focusing heavily on our customers, who had never seemed so valuable and, at the same time, threatening. Their actions led to a significant contraction in demand or made us deal with a dramatic change in delivery schedules based on a calendar that was so variable it was almost chaotic. No company plan can hold up if it is left at the mercy of uncontrollable outside events.

Thus, with the prompt contribution of all, key points were determined for negotiations to be immediately initiated with our suppliers and customers, all with a view to protecting UMBRAGROUP’s soundness while striving to respect the positions of others.



During the pandemic, which we have come to know in spite of ourselves, we became the promoters of a change that focused on honing our dialogue with our stakeholders, starting with the internal ones. Internationally, the Group now has Carlo Mears whose role has been consolidated and assigned more responsibility. He has great experience in the aeronautical field. He'll know how to lead Umbra Cuscinetti Inc. along the path of expansion. Nello Salemme's expertise will enhance the German subsidiaries. A decisive role will be played by the Group's UmbraGroup Production System [UPS], led by Roberto Giuliotti and coordinated by Giuseppe Pompei. The Team is already at work, and the completion of the process is planned for September. In the meantime, there is a major internal reorganization underway, which will give

COOs more leeway for managing demand. The rules of the market have changed, and the formulas used for the calculation of volumes produce numbers that signal uncertainty. The changes are unprecedented. Nevertheless, I am happy to announce the positive aspects of these difficult six months.

Under the careful, professional guidance of Matteo Notarangelo, the Aerospace line achieved three important targets, successfully completing the qualification activities for the Airbus H160, Collins Ejection Seat, and Boeing 777X OCSO actuators. The first shipset of the latter will be produced in September and will guarantee good volumes thanks to the transfer, by the end of June, of the contract from Everett to Foligno, while the initial assembly of the H160 is planned for the end of the year.

These are all important goals that signal a prestigious future for the aerospace line, which also becomes stronger with the recent renewal of the KLM contract and the signing of the contract with Dassault Future Falcon Flap and HSTA for the MRO and OEM aeronautical business, respectively. In the Industrial area, worthy of note is the structure's new internal organization in collaboration with Team Operations. We can also include the renewals of the agreement with Trumpf for the supply of electromechanical actuators and that with Holzher for an order of electrospindles for the two-year period 2020-2021. In addition, the F1 2020 championship will feature our components sold to the prestigious Ferrari GES.

The SERMS industrial plan includes the recent purchase of the Discovery DM1000 C 15 ESS Speedy environmental chamber, a high-performance piece of equipment that will enhance the range of testing services we will be able to provide from Terni. The same province is where the "Additive Manufacturing in Aerospace Applications" workshop was held by engineer Alvino, the SERMS Technical Manager, to promote dissemination of the knowledge of high-potential technologies in companies. Participation was a success. At Praezisionskugeln Eltmann in northern Europe, the Group's activity includes, both the development of the new Wind Energy Program, together with a strategic industrial partner, and that of new suppliers/subcontractors with a view to reducing costs.



The implementation of the UPS is another step worthy of mention. On the other hand, Kuhn is continuing the modernization of its premises, with makeover work on the offices and production area which will render the production environment more attractive for customers and employees alike.

Over in America where, two years after we acquired Linear Motion, we are proud to have contributed to business growth in Michigan:

UMBRAGROUP received the Economic Excellence Award for having contributed to the economic growth of Saginaw in 2019.

At Linear Motion, we completed the creation of the new assembly and testing area for Raytheon actuators, and received major accolades for merit. Northrop Grumman recognized us for our support in the development of their new programs. At Umbra Cuscinetti Inc. we celebrated the start-up of the first implementation phase of the Umbra Production System, satisfied 99.65% of hard-to-please Boeing's green policy, and met 97% of customers' Quality demand.

These facts all contribute to a feeling of balanced confidence. UMBRAGROUP continues, in any case, to focus on its ambitious long-term goals and strategies. The temporary layoff fund will continue to be a supporting remedy, but we will concentrate on Group coordination to streamline the management processes and centralize them as much as possible. The vision of growth will still be based on acquisitions. I am confident that this dark period will give us new energy to pass the test with incredible strength and resistance. It is an invitation to believe that we will find ourselves once again on an ascending path. I will continue to be moved by the awareness of your collaborative and professional support.



There are still dark days ahead, but I hope they can be transformed into positive certainties.

It will not be a simple journey, but I assure you that we will continue to do what we have done up to now, in so many years of challenges and successes. We will be able to bear witness to how stubbornness, willpower, and dedication can guarantee clarity of thought in situations that are often contradictory.

We will show that the best hopes sprout from the worst wounds.

Amidst the numerous uncertain economic situations, we will be the model of a strong Group endowed with the elasticity necessary to tackle the present with courage, always ready to write the great history of tomorrow.

"In three words I can sum up everything I've learned about life: it goes on." Thus wrote the American poet Robert Frost; and likewise I say it's the only possible attitude for all of us: we'll go on. The future is intriguing.

Have a good summer!



COVID—19: the greatest crisis



ANTONELLO MARCUCCI

President of the Board of Directors UMBRAGROUP

In February 2020, the outbreak of a new virus, “COVID-19”, was confirmed in Italy and Europe after first appearing in China in January. The epidemic rapidly spread to many of the world’s countries, leading to its designation as a

8 “pandemic” by the World Health Organization.



This all subjected our country's healthcare system to great pressure, leading our government to enact restrictive measures connected to citizens' freedom of movement and the closing of certain economic activities.

During the first phase we saw sudden major damage inflicted on the economy:

- » a reduction in the workforce due to a high number of employees sickened by the virus, or dying, or being forced to care of sick family members, all resulting in a decrease in productivity;
- » the temporary shutdown of companies, stores, schools, and public services to limit contagion in the areas affected;
- » a drastic decrease in consumer demand, especially in the sectors considered most "risky" (tourism, food-and-drink establishments, cinemas and theatres, sports events, retail sale of non-essential goods, transportation);
- » a collapse of international trade and investments.

UMBRAGROUP promptly stepped up to deal with the Coronavirus emergency, forming a committee to implement the actions necessary to protect workers' health and safety. Also, where possible, it set up remote working [WFH] arrangements.

At the same time, in compliance with the restrictive measures imposed by government authorities, we sought to ensure the normal continuation of the company's business, including:

- » honoring the delivery schedules;
- » relations with the entire supply chain;
- » regular payments by customers;
- » maintaining production efficiency.

The aeronautical industry is currently dealing with a "perfect storm," created by the combined impact of the 737 Max grounding and the consequences stemming from the COVID-19 emergency. For this reason, it has become necessary for airlines to cancel flights or reduce them to a minimum for an indefinite period. This will all have an impact on the aircraft forecasts envisaged for the next decade. Today, more than ever, the Government must enact measures supporting innovation which will integrate with the course undertaken by companies in this direction. It is hoped that they may become structural and long-term as envisaged by the Budget bill, provided there is the necessary financial coverage, especially considering the particularity of the period our country finds itself in with the COVID-19 pandemic.

The process of modernizing the Italian manufacturing industry and implementing the digital transformation of production plants must not stop.

Even before the COVID-19 impact, the Group's 2020 Budget reflected a slight drop in volumes for 2020, as had already been envisaged in the 2019-2022 business plan.

Today a precise quantification of the impact on our income statement and financial resources is a complicated task. Even if the events connected with COVID-19 have an inevitable impact on revenues and operating income, we believe this will not change the Group's growth prospects in the medium or short term, nor will they affect its stability. We must fully grasp the significance of the international economic situation we are experiencing and enact all the measures necessary to lessen its impact and be able to maintain profitability and adequate generation of cash, while continuing an investment level that guarantees the medium- and long-term sustainability of the business.

The COVID-19 pandemic has led to an economic crisis worse than that of 2009.



In April, the International Monetary Fund (IMF) hypothesized a worldwide economic recession with a contraction of 3% in 2020, while in 2021 there will be a growth of 5.8%.

Now the estimates are much broader.

The economic crash is having an impact on all the world's countries, regardless of the extent of their quarantine and lockdown measures.

For this reason, it is necessary to analyze a global economic scenario in which:

- » no countries or companies are operating in a business-as-usual situation;
- » business as usual will not resume automatically with the discovery of a vaccine and loosening of the social distancing restrictions;
- » many companies will not survive the various government-imposed shutdowns, creating gaps in the global supply chain;
- » many sectors, with a final impact also on UMBRAGROUP, will have a hard time starting up again (tourism, consumer spending, international traveling, etc.);
- » government and central bank welfare measures can support the economic output only to a limited extent;



- » business as usual might change permanently in certain aspects (business processes, demand patterns, professional interactions);
- » currently, no country or economic indicator or company research can make a credible forecast regarding supply and demand in the coming months.
- » Making predictions is difficult and we cannot reasonably state that the current crisis will end in the short term. We cannot ignore the inevitable long-term repercussions.

How can we organize ourselves during the crisis to limit the damages and come out of it stronger?
Never lose touch with reality: look it in the face and react the right way.

Never confuse confidence with discipline in tackling difficult moments.

Thanks to the effort of all our employees and associates, we have guaranteed the continuity of our activities even during this emergency period, while concentrating first on safeguarding the health and safety of our workers. We have complied with all the recommendations provided by the health authorities and the restrictions imposed by the governments of the various countries in which the Group operates.

The post-coronavirus future will be full of challenges and new opportunities for growth: for example, the digital transformation and the evolution in the way we work. UMBRAGROUP will once again be capable of innovating itself and being a leader despite the uncertainties the future may have in store. Lastly, I'd like to thank all the stakeholders for their continuing support, starting with our shareholders, who have always been close to us even in unusual periods like the present; they have continued to support us and advise us, and we hope they will continue to do so, so we can achieve even more outstanding results.

Thanks also to the Board of Directors, a body of fundamental importance for their support in every strategic decision.

Also deserving of praise are all the associates who, every day and at every level, prove their loyalty and spirit of self-sacrifice toward UMBRAGROUP.



One team, more news!

Sara Bordoni

Marketing & Communication Coordinator UMBRAGROUP



It's been a long time since the first issue of "Noi Umbra"!

The magazine was founded in 1996, as can be seen from our archives, to tell about life at the former Umbra Cuscinetti S.p.A.: the latest novelties, the most important events, the activities. It was an in-house information tool for all our associates.

The company has grown and its organization has evolved, and Noi Umbra, too, has been expanded and enriched with new contents: quality, safety, and interesting facts and tidbits.

When Umbra Cuscinetti became a Group, Noi Umbra started including content from the other branches, arriving in America and Germany with English and German editions: "Noi UMBRAGroup". Then came the digital version and availability to the public, telling the world about our spirit of commerce and sense of humanity.

Today UMBRAGROUP is a brand comprising 7 companies of different cultures, with organizations and markets that are physically distant from each other, but joined together by the same line. It is a

line that unites: on a plane or train, in the thousand movements our products offer our businesses of reference. It's a line that brings all employees together under the same vision and same values: FIRST!

This restyling of "Noi Umbra" is meant to give our magazine a more modern style, and facilitate its enjoyment by an extensive reading audience without borders. The images, with their graphic impact and emotional punch, acquire greater breadth, and the new, more international title expresses both the continuity with its roots and origins and, at the same time, the capacity to renew itself, to always be topical, and to reflect the multicultural nature of our team.

"We are UMBRAGROUP": We all share the same brand, we are united by the same goals, we are the many facets of a single great organization, and we're a single team, capable of always creating greater value for our stakeholders.

Value of the Industrial area and reaction to *COVID-19*

Roberto Giuliotti

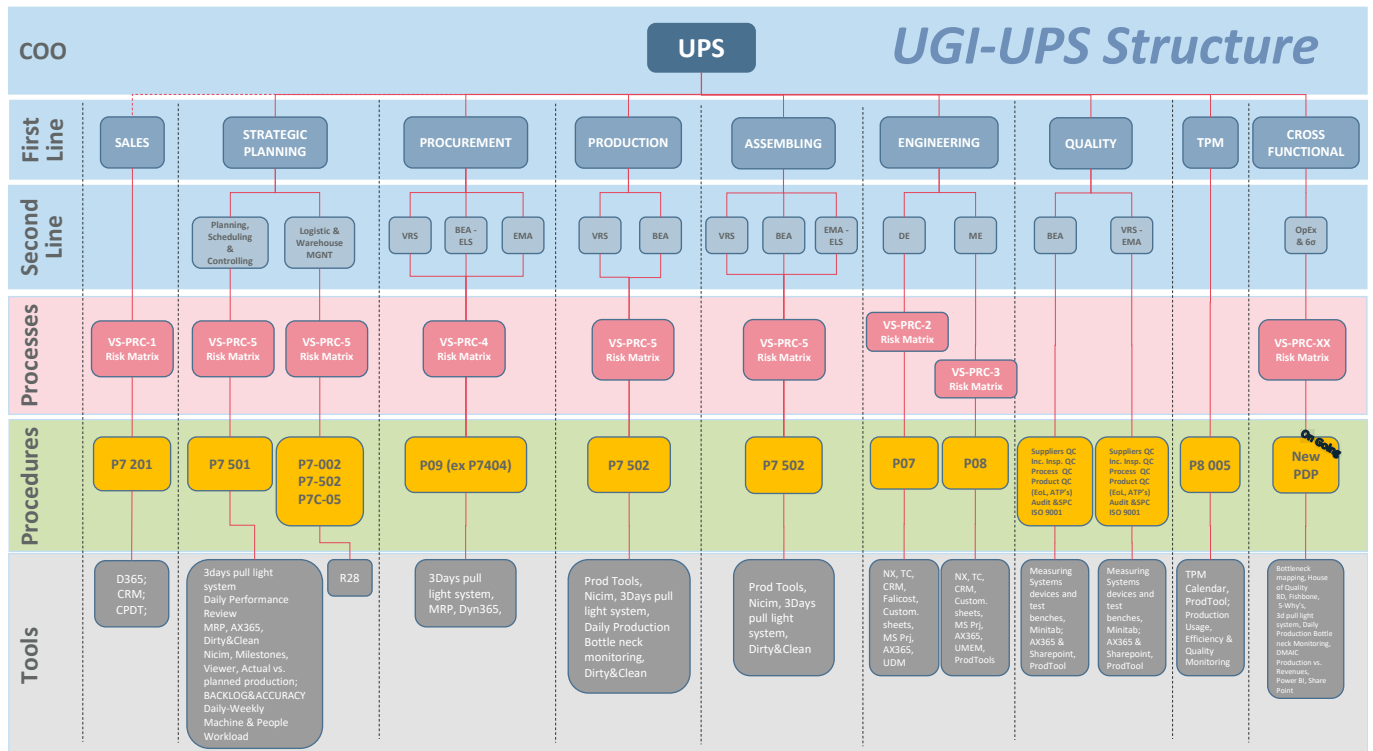
COO Industrial UMBRAGROUP

The “Umbra Production System” has proven its effectiveness in terms of the results obtained in turnover, OTD, back-log and warehouses over the last five months. With a data flow processing system, all processes are synchronized, generating harmonized information and communication flows that guarantee constancy and target maintenance with daily monitoring. This was demonstrated by the extremely high capacity for adaptation to the contraction in demand caused by the COVID-19 emergency. All the processes were reset to a slower production pace, without causing uncontrolled warehouse increases or losses of efficiency. This was a true sign of the maturity of the system and professionalism of all the people involved.

In addition to exporting the Umbra Production System [UPS] to all our subsidiaries, the “Power BI” business intelligence tools are being computerized. This will permit all users to access the KPI visuals at any time and, with drill down, even their details,

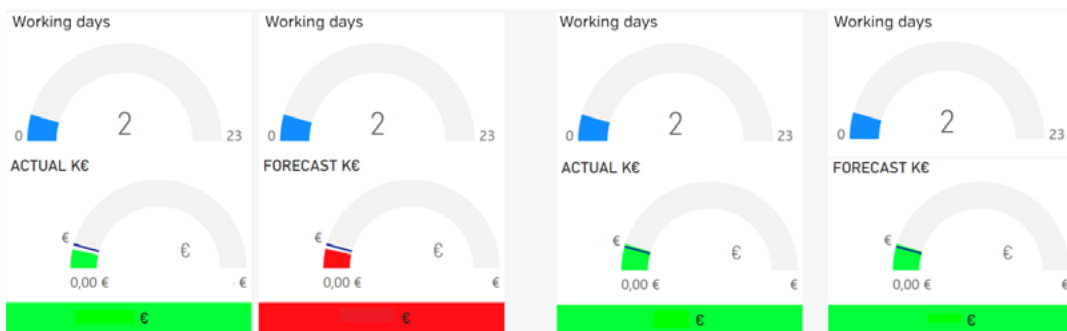
guaranteeing strong, reliable data. In this case also, as with the conception and implementation of the UPS, a team was created which is working on the mapping and creation of the technical specifications of all the masks for each KPI.

To be able to intervene in the Procurement policies and limit inefficiency, a project was launched involving the IT, Operations, and COGI departments. The aim is to freeze the industrial standard BOM on the system and therefore to measure, over time, the gaps with respect to the actual BOM. Another significant aspect is the creation, within the BOM, of batches with at least six quantity intervals. These will make it possible to recover efficiencies thanks to the lower set-up and start-up costs generated by small lots at the start of production. Everything will be supported by a proper revised commercial policy, with a definition of the minimum quantities for each article and customer.



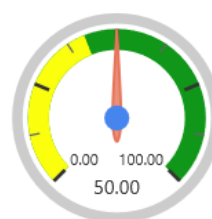
UPS strategy, related processes, procedures and tools.

Industrial turnover at 7/31

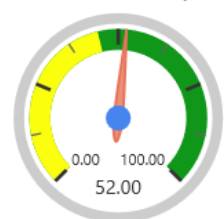


Trumpf's signing of the new actuator contract is a huge achievement and a noteworthy success. We turned a negative margin into a positive one, generating the right economies of scale and the expected results. We also did an excellent job reducing the component costs.

Projected Total and Actual Total



Total projected equivalent and total actual equivalent



Legend
Yellow = Projected
Green = Actual

Quality in *“remote mode”*

Valeria Palmini

Quality Engineer UMBRAGROUP

The COVID-19 emergency has brought significant changes to the way our company operates. One day we were in the office and the next day we were sent home to work.

The Quality department, by its very nature, collaborates cross-functionally with numerous company bodies, and so it needs to communicate daily with many people. At first, in this new “remote working” context, it seemed impossible that we would be able to guarantee the service at the same level, but fortunately it was exactly the opposite. In fact, thanks to the information tools with which we were equipped, the situation turned out to be a real opportunity for improvement and growth.



Somewhat like explorers, we plunged into this new reality and, despite a few initial difficulties, we managed to keep to the original plans, carrying out:

- » the mapping of the company processes;
- » internal auditing activities in compliance with all the certification schemes [ISO9001, EN9100, NADCAP, Part 21G and Part 145];
- » remote training activities.

We also guaranteed support to all Customer Quality activities.

We must, however, acknowledge that even though technology contributed a great deal in allowing us to follow the original plans, the key strength was, and continues to be, the strong bond of cooperation and trust that we have developed over time both in and out of our office.

The next steps we will be undertaking in “remote mode” are more demanding than those already accomplished. Suffice it to say that the ISO9001/EN9100 certification audit is scheduled for July, and that it will very probably be conducted remotely by the certification body TUV. The fact that we are already familiar with the information tools necessary for remote working will undoubtedly be an advantage for managing the activity effectively.

To conclude, thanks to the digitization path on which UMBRAGROUP is focusing and to the positive “remote mode” experience, the Quality Management department will be able to guarantee continuing coverage of the processes. And who knows? Maybe in the future this system may become permanent.



Gender quotas take off

Enrico Lazzerini
Production Manager AMCo

In partnership with
Morgana Morici
Administrative Employee AMCo

The presence of female workers in AMCo is becoming increasingly significant. So I've decided to ask one young employee, Martina Bartoli, to tell us about her experience with our company.

[The interview took place before the COVID-19 emergency decree took effect]

As we sit down, Martina seems a bit nervous, but she smiles brightly.

What kind of schooling did you have?

I received a diploma as a surveyor, and then I took a course for CNC operators.

What is your position with our company?

I work with sliding head lathes as a CNC operator.

What was it that made you think, "This is the job for me?"

Skepticism! Some of my friends and relatives told me not to take the training course because, "No one will hire you anyway; you're a woman!" This made me even more determined, and so I realized it was the job for me. I wanted to prove to others, but above all to myself, that being a woman cannot, and must not, be an obstacle for a professional career.

What's it like to work in a predominantly male sector?

In the beginning I was afraid I'd be put down by my co-workers, considered to be a "distraction", like other employers had already hypothesized during



my job interviews. Instead the opposite happened, and I immediately felt accepted and one of the team.

What is the added value a woman can bring to the machining field?

Definitely our attention to detail and our precision.

Are you happy with your job?

Martina smiles, perhaps finding the question a little funny, but she answers with decisiveness. Yes, very much!

This meeting made me realize that the stereotypes connected with metalworking and mechanical engineering are finally falling away, and Martina is an example of how the Group is giving the women “in blue overalls” the trust they deserve.

Paraphrasing the slogan of an iconic feminist poster, “Women, you can do it!”





A new look for Kuhn

Paul Schröder
Plant Manager Kuhn GmbH

Kuhn has always shown itself to be a sound, efficient company with good profit margins.



Its innovative soul, however, was trapped inside a building that had become dated and out of step with the other companies of the Group. For this reason, in recent years we have also worked on the look of our headquarters, seeking to create a structure appropriate and suitable for conveying our image to the community.

After renovation of the production area and the façade, last year we also embarked on the makeover of the first offices and the entrance area. The aim was to create a simple, modern look, with spaces that would be as practical as possible and also meet today's ergonomics and worker health requirements.

For example, the new offices have no light switches. Presence detectors automatically turn on energy-saving LED bulbs only when the office is occupied.

If sufficient light is provided by the windows, the system automatically dims the lights accordingly. Tables are height-adjustable, making it possible to work or hold small meetings either seated or standing up.

The offices are equipped, of course, with Wi-Fi and gigabit network cabling, offering connection capabilities for all current and future devices. If an employee works using a laptop, they are provided with a USB-C docking station. This drastically reduces the presence of external wires and facilitates flexible working in the office or from home.

Because of the current economic situation caused by COVID-19, the rest of the work planned for the other offices has been momentarily put on hold. We're looking forward to when we'll be able to unify the look of the whole company, matching that of the offices already completed.

This should further improve our efficiency and make the company even more attractive for customers and employees alike.

Quality has gained new *spaces*

Sigfried König

Quality Control Manager Präzisionskugeln Eltmann

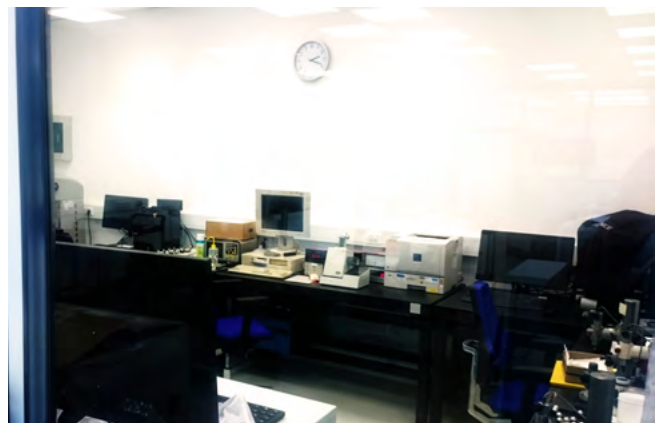
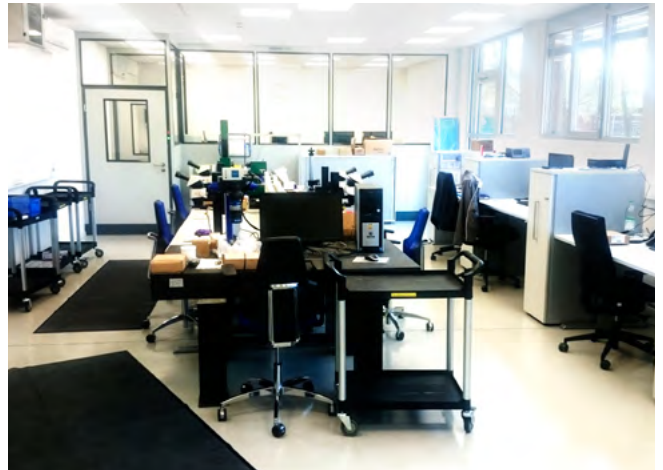
After the beautiful restyling of the open space offices here at Eltmann in 2018, it was decided that the Quality Assurance Department, too, needed more modern spaces.

And so it was that the rooms, with their poor lighting and air conditioning, underwent a total functional restyling to create a safer and more comfortable workplace.

It was a considerable undertaking, one that entailed, among other things, structural work on the ceiling, the replacement of flooring, new and more ecological heating and electric systems, the opening of new internal and external doors, and new spatial subdivisions for a streamlining of the processes. Lastly, everything was repainted to make it all conform to the company image.

Today the department is divided into 3 areas: an office area, a testing and general control area, and a climatized measurement and calibration area, which can be accessed only through an air chamber.

We have already moved into the new premises, which are now much brighter and more pleasant.

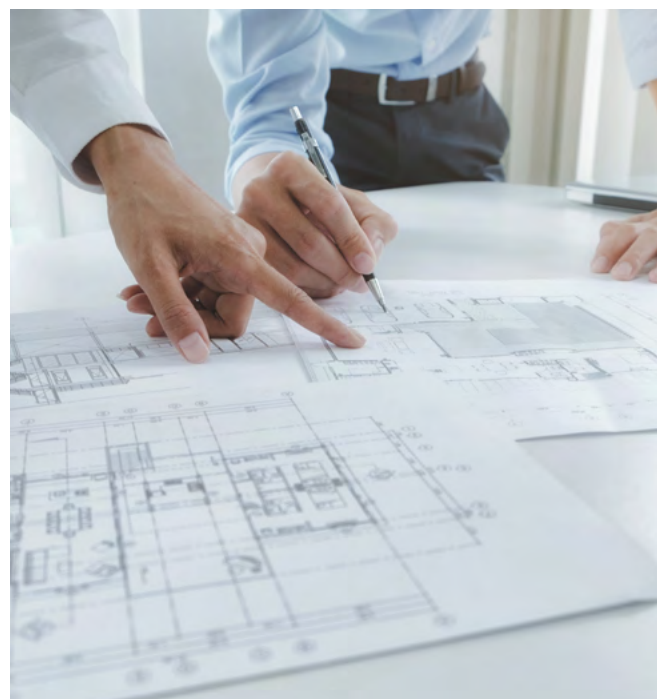




I have witnessed a progressive, continuous improvement of our company, and it has been a pleasure for me to contribute to its success.

Now, after more than 40 years spent in various ball production plants in Germany, including 15 as the Quality Assurance Manager here at Präzisionskugeln Eltmann GmbH, my working years are coming to an end. And with this article I would like to take the opportunity to salute all of you, and in particular my associates, on the occasion of my retirement.

Thank you so much.



The Post COVID Period: *working from home* and *space economy*

Lucia Di Masso
CEO Serms srl

The global pandemic has forced us to work remotely, exploiting all available technologies in order to continue to support the collaborative arrangements existing with our customers since before the health emergency.

Working from home, a.k.a. remote working, has led us to discover that it's necessary to work by objectives and not by hours; all this requires training and a new business aptitude, where the "merchandise" sold consists of expertise, professionalism, and new ideas.

During this period of suspended time, even if COVID-19 has brought great economic insecurity, we are evaluating new market opportunities in which industry and research can become even

more synergetic, in an even more strategic space sector, to effectively meet the needs the pandemic has accelerated. I'm thinking of the need to transmit data more and more rapidly and efficiently, because we have realized how useful the exchange of information has been in tracking the epidemic during the lockdown; also, perhaps out of professional habit, I'm thinking of the testing of materials that may become useful in producing more effective, and perhaps "greener", personal protection equipment. Once the storm has passed, once we are settled into our new normality, the objectives we will be able to plan will perhaps also depend on the opportunities we were able to grasp during this challenging time.

Implementation of Umbra Production System *in Everett*

Patrick Turner

Supply Chain Manager Umbra Cuscinetti Inc.

Having a standardized production system that allows you to monitor the health of an organization was a desire that Antonio expressed to us during one of his visits. This desire led to the primary 2020 goal of implementing the UMBRA PRODUCTION SYSTEM (UPS) in Umbra Cuscinetti inc.

In February the project was launched, and a dedicated implementation team was formed. The team was led by Giuseppe Pompei, who headed the production system. Giuseppe modified his schedule to support our implementation, which meant that on certain days he was wearing his beloved Levi's jeans for 18 hours a day, working both on his industrial responsibilities and on our UPS implementation.

Daily UPS meetings with Giuseppe took up all the working hours of the implementation group. We spent every day creating tools and working on the devices powering the tools. We knew we wanted to be the best example of North American UPS and with that in mind, the team powered through

difficulties, frustrations, and challenges.

After creating and validating the tools, we immediately began to have a better understanding of the issues that plagued us in 2019 and to identify the actions we needed to take to improve. Using the bottleneck viewer and production viewers, we closely monitored our adherence to the set production targets, ultimately improving our production performance and achieving our May production target.

The warehouse dashboard highlighted our inventory levels and areas where mitigating actions were needed, utilizing the "3-day pull system" or "traffic light" tool. Using the logic we learned from the UPS in combination with these tools has helped us substantially reduce our inventory in the short amount of time we have been using the UPS.

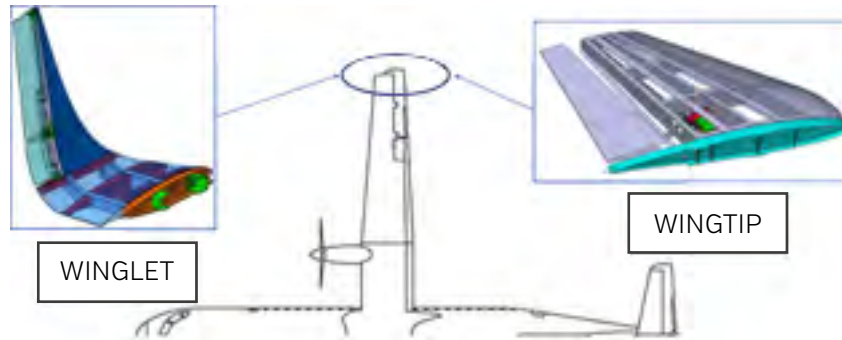
We went from having a rough idea of what we would have produced monthly to knowing exactly what we would produce every day, evolving from



chasing demand to production level loading, from guessing at our inventory levels to understanding the inventory we actually have.

Our success is due to a closely-knit team that can monitor its processes and prevent variations by dealing with any problems ahead of time. It has been an honor and a privilege to work with Giuseppe (Program Manager), Roberto (Industrial COO), and the Italian UMBRAGROUP team.





Variable-geometry Wingtip and Winglet, the *wing morphing* of the future

Moreno D'Andrea

Research Center Manager UMBRAGROUP

The research center is expected to achieve major milestones in 2020. After spending an intense 2019 on design, the time has come for the production phase of the R&D products, when the recent study documents and 3D Model images will become reality.

The first components to be produced are for the ASTIB Winglet and ASTIB Wingtip projects. Some demanding and fascinating challenges are awaiting UMBRAGROUP.

As a matter of fact, once their assembly is completed, the actuators and control units will undergo an initial phase of integration and functional tests. These will be followed by all the qualification tests necessary to bring the system up to technological readiness level TRL6: a technology capable of operating in an industrially significant environment, which in aeronautics means having to conduct in-flight tests.

Several different phases will be necessary to reach

this readiness level.

The first, which will take place soon, comprises the qualification tests for the actuator, control unit, and relevant software, which will have to be DAL-B certified. After this initial phase, a system called “Ironbird”, consisting of the actuator and its control unit installed in the wing structure, will be assembled. Tests conducted on the ground will serve to verify the proper functioning of the entire chain of control, necessary to proceed with the subsequent in-flight tests.

The technology being studied would lead to a real revolution in the sector.

The purpose of the application is to create active Wingtip and Winglet surfaces. This would make it possible to alleviate the structural loads transmitted to the wings during maneuvering and in-flight turbulence phases. The alleviation generated would reduce the quantity of material needed to build the wings, resulting in benefits such as a reduction of the weight, fuel consumption, and CO₂ emissions, and an economic savings for the airlines.

The project, financed by Clean Sky 2 [CS2], a successful public-private partnership between the European Union and the European aeronautics industry, is well on the way to achieving its environmental performance goals, as it continues to incorporate the leading technologies of the aeronautics sector and proposes innovative configurations in airplanes. The Clean Sky 2 technologies will enable the planes of the future to reduce their fuel consumption and CO₂ emissions by 20-30% and reduce the noise levels by a similar amount, thus significantly improving the competitiveness and mobility in Europe.

Thanks to this and the ongoing R&D opportunities, UMBRA GROUP is involved in collaboration with the



major market players. This scenario will make it possible to create and write the immediate future of civil aviation with the advantage of being able to develop a product that is technologically ready for mass production, of having gained a considerable temporal advantage over competitors, and of having created a product that is totally integrated into the aircraft and practically impossible to replace.

We are well over halfway through the project, but we can state that the adventure has just begun: we are laying good foundations for the near future of aeronautics.

Challenges and conquests of the early months of 2020

Angelo Radicioni

Director of Manufacturing Engineering UMBRAGROUP

In this first part of the year with the pandemic and the consequences we are all experiencing, UMBRAGROUP has never stopped working. Indeed, it has continued, with an eye on the future, to work on projects and technologies that will enable us to be more efficient and competitive in the years to come. The development of new products, digitization, and development of advanced production technologies are among the main paths we're following. This month we want to talk about several successes connected with these themes.

Approval of the “Final” H160 DDP (Declaration of Design and Performance).

Main and nose landing gear of the H160. With the last signature, we in fact took on the weighty responsibility of making our product fly. The declaration is now classified “FINAL”, which means that our customer, Airbus Helicopter, can complete its certification. The introduction of the product on the market is now definitively launched.

This is an important milestone in our growth as a company, one that sets us apart and takes us one step higher in the ranking of an “intelligent supplier”.

A big “thank you” goes to the whole team that worked together during these months to build a piece of our company's history.

Matteo Adolfo Notarangelo

COO Aerospace UMBRAGROUP

Digitization of the Production Orders (POs) and shop documents.

Today POs are printed on paper; together with all the accompanying documents, they form packets composed of dozens of pages. According to the rules, for all aeronautical products and certain industrial ones, these documents must be kept for at least 25 years, thus taking up space, with the associated resulting expense, which can be significant.

POs also must guarantee a complete traceability of the workpieces, from the transformation of the raw material up to the finished component, managing their advancement in the process by means of a dedicated software program.

Hence the necessity to come up with a proprietary software program [currently not available on the market], which would help us “strengthen” our process by helping operators to avoid errors, integrating the information of the various software programs used, and making it possible to archive the information for the required number of years without taking up physical space. In addition, the system must be a reliable resource during the audit phase to permit inspection of the documents rapidly and reliably, and lastly to be able to conduct effective data analyses according to Advanced Analytics principles applied to Business Intelligence.



Team: Angelo Radicioni, Denis Curri, Giuliano Paoletti, Marco Morosi.

DS grinding wheel and its diamond tool, produced with the aid of the software

For the development of this project, a multidisciplinary team was formed, with Angelo Radicioni as the Project Leader, and Marco Ceccarelli, Enrico Castiglionesi, Sandro Bibi, Giorgio Bizzarri, Valeria Palmini, and Jessica Codignoni. In addition to our in-house experts, we also sought the help of Leonardo's technical consultants regarding the aerospace process, who aided us in the design phase and project development. Our thanks go to the entire team, including the Industrial Team [Balls Line] for the project's pilot phase.

Software for the creation of the compensated profiles in screw thread grinding.

UMBRAGROUP has always taken great care in developing its know-how for the technology considered the "core" of its product, defining a strategy for retrofitting thread grinding machines, having certain components built per its specifications, and standardizing the components on all the machines.

With the development of an innovative tool [DS Grinding Wheel] patented by UMBRA, we have been able to reduce grinding times considerably, giving our production a competitive advantage.

However, this important innovation was missing something: the development of an algorithm for the creation of profiles and solutions that would make it possible to produce diamond tools for "profiling" the grinding wheel. The purpose was to further reduce the grinding times, without jeopardizing the quality of the machined piece in any way.

The algorithm was implemented in the software



running the grinding machines and produced the information necessary for our supplier. It was then possible to finally create the diamond tool per our specifications. At the end of March, we conducted tests on the screw shafts, obtaining results that were very interesting in terms of production quality and important in terms of further time reduction on both aeronautical and industrial screws.

Of course, the work of a close-knit team produced an important result that will give UMBRAGROUP a technological advantage over its competitors. Members of the team included Angelo Radicioni [Manufacturing Engineering Manager] – Project Leader, Engineer Luciano Pizzoni [Technical Manager], Engineer Stefano Toro, and Denis Curri, with the contribution of the field experience of Giuliano Paoletti and Marco Morosi.



We'll be there

Nicola Bacelli

Group VP Sales UMBRAGROUP

In this issue, I decided to share the thoughts and predictions of AEROSPACE sector experts regarding COVID-19 and the likely scenarios. Here are the answers to the most frequently asked questions.

Why is this crisis different from all the others before?

The supply chain was already weak when COVID-19 arrived:

- » from 2009 through 2019, “squeezing” of the supply chain with various price reduction campaigns focusing on growing volumes;
- » investments and hiring of personnel to deal with the increase in volumes;
- » grounding and shutdown of the B737MAX line;
- » COVID-19.

What impact has COVID-19 had on flights business?

Compared to the same period in 2019, commercial flights have collapsed -110% Europe, in particular, has been severely impacted by practically eliminating plane traffic.



What impact has there been on orders and deliveries of planes?

The pandemic's impact on orders has been catastrophic, with a reduction of over 3,000 units compared to the previous year. The impact on deliveries has been better contained.

How many planes are parked on the ground and how many are in service?

There are over 14,000 stationary aircraft, compared to a little more than 10,000 in service. A relationship that describes well the general state of civil aviation during this pandemic.

Of course, borders will reopen and the whole world will start moving and traveling again. No one can say with certainty how passenger behavior will change, or predict how soon vaccines, treatments, and cures for COVID-19 will become available.

The aspect on which everyone agrees is that no one expects a solution to come soon.

The most critical phase is the one we are going through right now. The years 2020 and 2021 will determine who will be a part of the new future.

Not all Aerospace companies will manage to survive. Thanks to its broad customer and planning base and a diversified MRO portfolio, UMBRAGROUP has all the characteristics necessary to be successful, tightening its belt as needed and being aware of the challenge we are facing.

Phase 2

Daniele Frillici

Sales Manager Industrial UMBRAGROUP





Customized design for an integrated solution

In a national and international context that was already experiencing a strong contraction, the unexpected advent of COVID-19 further worsened a situation whose effects are being felt in the Industrial sector. These effects will become even more pronounced in the coming months.

The lockdown imposed by the various governments for public safety reasons has forced numerous firms to close or, in the best of cases, to operate in conditions of reduced capacity and only for certain specific contracts. UMBRAGROUP's production line was strongly impacted on both the customer and the supplier side, creating a much steeper slope to climb.

In this situation, we closed ranks, and chose to counteract the disruption outside the company by focusing totally on the Team. Analyzing the data and sharing the objectives we are perusing in the Industrial arena underlies this philosophy.

Obviously, Sales is one of its main actors, starting with Customer Service, which is handled today by Operations and Sales together. And then there's the creation of the Cost & Price Determination Team, which is comprised of a group of representatives from various organizations. They meet every day to monitor the costs and prices of every product line and to evaluate new opportunities.

Today, more than ever, it is necessary to be able to count on the cooperation of all the Team members, and not even two months of remote working has managed to break them up. We have recently entered Phase 2, and only in a few weeks' time we will know if we can finally breathe a sigh of relief.

In the meantime, Industrial Sales, too, is entering a new phase, aiming to consolidate partnerships that have been set up over the years, with clear conditions and a strong focus on all the elements making up the value chain.



Together we make *Saginaw* strong

Marylynn McPhail
Executive Assistant Linear Motion LLC.

These past few months have been very difficult and challenging due to all the consequences that the world is facing caused by COVID-19.



However, Linear Motion reacted very promptly, and at this point all our employees are safe, we have no cases in the company, and we haven't missed a single working day. We are very proud of this excellent result.

Along the way, we were involved in some interesting events that we would like to share with the UMBRA GROUP Community.

In February, UMBRA GROUP/Linear Motion was awarded the Economic Excellence Award from Saginaw Future. The event was hosted at Saginaw Valley State University. In attendance were multiple local and state representatives, along with many community leaders. This is the second year that UMBRA GROUP has received the Award. We are very excited to be recognized as a center of excellence. In addition, our CEO, Walter Baker, was invited to join the Saginaw Future Inc. Board of Directors. We would like to congratulate him for this new role!

On March 6, 2020, Linear Motion hosted students from the Engineering class at the Saginaw Career

Complex. The students attend both local high schools and career-oriented classes at the Career Complex. The students were very involved, as our employees proudly shared some industry experiences and answered questions on how our processes work. The purpose of this type of initiative is to attract more and more talents toward the manufacturing industry and contribute to building the next generation of workers at our company.

During this trying time for our community, Linear Motion has continued to be active, making every effort to help our frontline workers. We have given donations to our first responders along with other donations to local food pantries to help feed the hungry.

Together we are Saginaw strong.



Quarantine: Italian pride in the face of an emergency

Michele Maccheroni
HSE Manager UMBRAGROUP

Did you really think I would talk about something other than the COVID-19 experience? Obviously not. For UMBRAGROUP it officially all started on March 2, 2020. I'd prepared the vacation plans to be shared with my colleagues, when I received a phone call from Mr. Ortolani: "Michele, come into Marcucci's office, as soon as you can." I hung up, picked up my laptop, the cordless phone, and my cell phone, and didn't even have the time to check the "Club Prevenzione Grandi Organizzazioni" [Large Organizations Prevention Club] chat thread for the latest Coronavirus news from the northern regions, when the phone rang again... It was Ortolani again: "Michele, come up, hurry!". The COVID-19 Committee which we had set up well ahead of that time was waiting for me. It would become mandatory in all production facilities with the publication of the Shared Protocol of March 14, 2020. At that point I started to harass you with COVID communications, which were exceeded in number and wordiness only by the documents issued by our "friend" Prime Minister Conte. Thanks to him we discovered there's a town named "Vo" and we finally understood that "D.P.C.M." means "Decreto della Presidenza del Consiglio dei Ministri": Prime Minister's Decree.

2020 had definitely started out in a peculiar way; some have even mentioned the plagues of Egypt to sum up these first months: in January the wildfires in the Amazon, in February the news of record temperatures of over 20°C registered in Antarctica; locusts in the Middle East [which later arrived in Italy, too]; plastic always lining the waterways, cluttering up the seas and ending up in fish stomachs. This is the same plastic we thought we could eliminate from our lives by buying cool reusable water bottles online, and which one day would have found its way back into our hearts, as well as onto our faces, together with other certainties like alcohol to disinfect everything and yeast to make homemade pizza.

I realized it both at work and from the news media. Everyone did their part, without complaining, without getting angry: the Human Resources and Information Systems organized remote working plans for around 180 persons in 4 days; at the company entrance, with the aid of the emergency staff, they started taking everyone's temperature as they entered the premises. And then there were the RSU, RLS, Management, and ASPP, who had to give up various Saturdays and Sundays. After all, between one Netflix series and another, we also had to study the latest protocols!

Along with the confirmations came surprises, as well. For me, the most sensational and macroscopic was our ability to change our behaviors suddenly, from one day to the next. Of course, it's true that there were sporadic cases of people falling out of line, but from what I was able to observe in Foligno as I went to work during the quarantine, people generally followed Conte's instructions. This is the strength of Homo Sapiens: knowing how to adapt to change, even if it requires innumerable sacrifices. This convinces me that we will can change our behavior and unite, even for problems we perceive as distant [Who is Greta?], but are all connected with our future existence on this tiny blue speck in the midst of the universe: our planet Earth.





Congratulations

New hires

UMBRAGROUP S.p.A.

Bernardini Samuel
Bottausci Samuele
Casadei Federico
Chicchini Pierluigi
De Simone Umberto
Felicioni Filippo
Gammaidoni Roberto
Mancuso Walter
Petrini Michele
Pica Marco
Polticchia Alan
Scarponi Andrea
Spaccini Simone
Tassi Domenico
Utrio Lanfalonì Luca
Forni Monica Maria Piera

LINEAR MOTION

Berzley Alex
King Robert
Kunath Dennis
Mahoney John
Ruyts Shane

UMBRA CUSCINETTI Inc.

Perkins Linda
Schmidt Nick

Just Married

UMBRAGROUP S.p.A.

Curri Denis e Vergjeni Kallfani

Births

UMBRAGROUP S.p.A.

Benedetti Giulia
Bernardini Cloe
Bosi Edoardo
Corvara Lorenzo
Fiorani Gabriel Thomas
Fuso Valentino
Guidi Giulio
Lami Vittoria
Lini Lorenzo
Mattei Arianna
Pizzi Alessandro
Tordoni Azzurra



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