

ground handling

I N T E R N A T I O N A L

THE WAY WE WERE:

Handling in the mid-twentieth century

Simulating the real thing:

The rise and rise of the
airside training aid

Power on the ramp:

A round-up of GPUs,
ASUs and ACUs

World analysis:

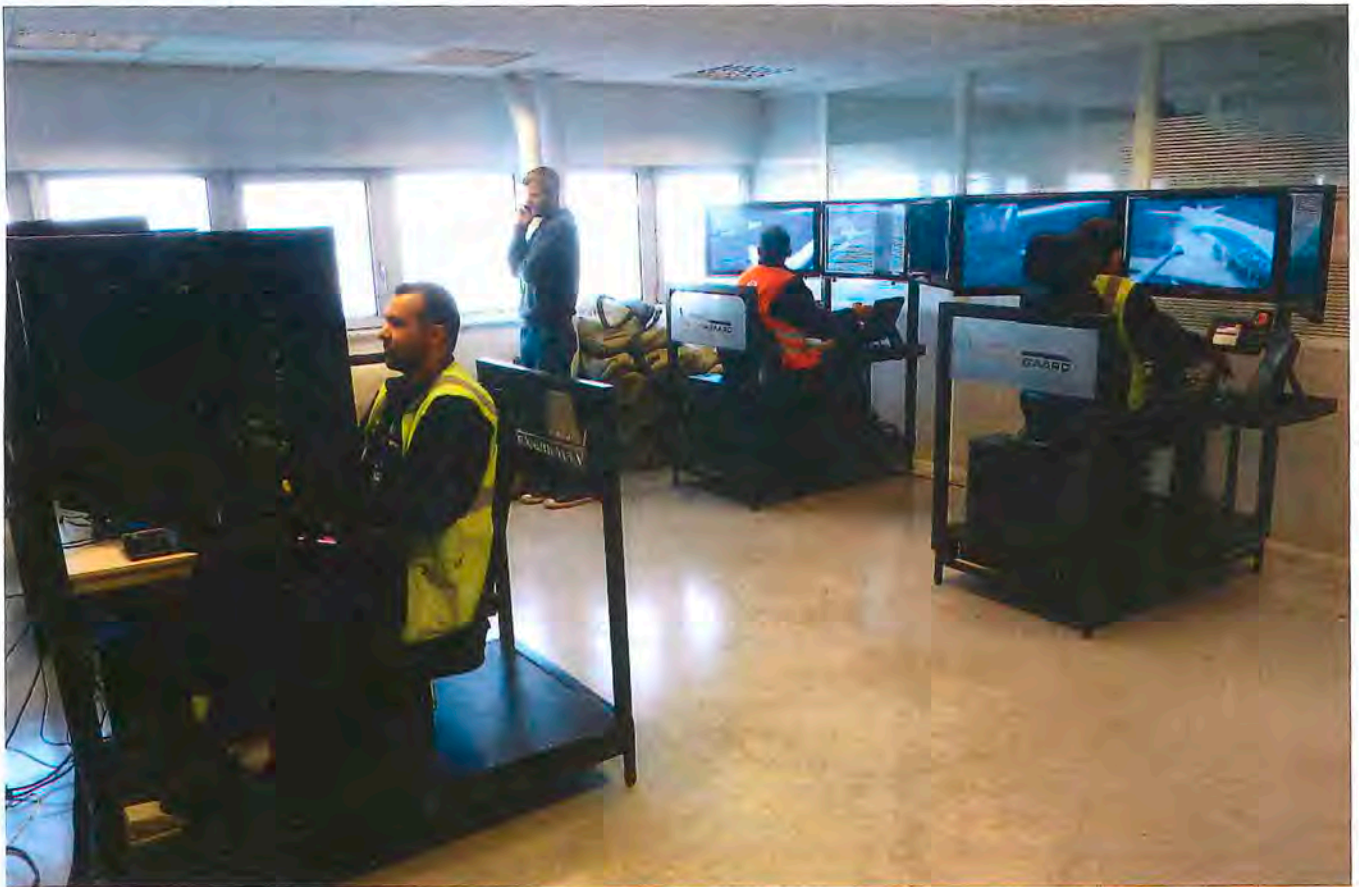
Handling in the US
and Canada

India:

An update from Delhi



**African GHI
Conference 2014**
Full details inside



Training days

■ If safety is on everyone's lips today, then perhaps the driving simulator should be at the top of every accountant's wish list, writes Alwyn Brice.

When it comes to researching, there is no shortage of proponents in the marketplace who are able to offer computer-based driving aids - and we're not talking here merely about the aviation sector. The maritime segment is equally well served - and there are any number of flying aids, as well as a host of applications for those whose chosen career involves piloting less glamorous equipment, such as a dumper truck or maybe a snowplough. Simulators, with the inexorable rise of technology, have really come into their own in recent years and today, it's a wise handler who, at the very least, has looked into the benefits of this particular safety aid.

Those benefits don't really require elaboration on my part. Driving on the ramp, in whatever vehicle, be it something as simple as a baggage tractor or as complex as a de-icer, requires training. Training is still rolled out on the ramp itself, of course, but with every passing year, there is more and more appearing in print about the benefits of learning the techniques in

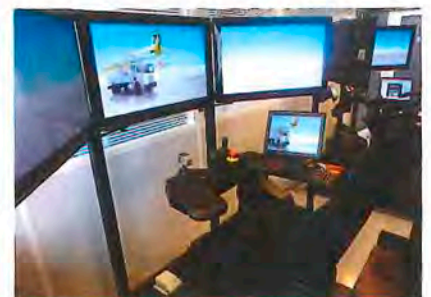
the classroom before getting into the cab for real.

Today's simulators are designed to give the learner as close an environment as possible to the realities of operating a vehicle in proximity to an aircraft. Everything is available, from vibration and sound through to a realistic portrayal of exterior conditions, which can encompass adverse weather and even different lighting conditions. As an introduction to a career on the apron, such technology has no peer - and the biggest advantage is that which sees the newcomer finding his (or her) feet in the safety of a controlled environment, without becoming exposed to the daily dangers of working on the ramp. Moreover, many more hours can be accrued in the learning process, hours that would be much more difficult to come by if the trainee had to rely on ramp schedules, with the peaks and troughs in turnarounds that are par for the course at most airports today.

The technology, then, has a lot to recommend it: so exactly what's available?

De-icing made simple(r)

Few reading this, I feel, would argue with the assertion that the most complex operation on the ramp today is that of manipulating a de-icing rig. The Argus of Greek mythology would have made light of it, perhaps, but since ramp employees tend to be endowed with just one pair of eyes, then vigilance and concentration on a colossal scale is the skill required here. Whilst new staff appearing at today's airports are likely to have the requisite hand-to-eye co-ordination skills, coupled with a degree of familiarity with a button-embossed joystick (gained through exposure to computer games), nonetheless a lot of training is required before they can be let loose with real aircraft. De-icing, by its very nature, poses more difficulties than any other task simply because it is (often) carried out at times of low visibility, either through inclement weather or because of the time of



Vestergaard application for trainee de-icers



Hands on for Global Ground Support: new aircraft types are in the pipeline

day. Gaining the confidence and the expertise is no overnight matter and because this service exposes an aircraft to the possibility of damage, it's thus essential that staff are highly competent. Beyond that is the economic aspect: spraying is one thing, but cost-effective spraying is quite another. At a time when the accountant is king and the green lobby is challenging the way things are done in society, it's vital that there's no unnecessary application of fluids and equally, it's in the handler's best interest to ensure that any spent fluid is recuperated as far as possible.

Global Ground Support's Jeff Walsh says that his company hasn't recently added a great deal to the simulator range that he has been offering now for some years. As a manufacturer of de-icing rigs, he sees a huge value in this ancillary technology but readily admits that it is not his bread and butter product. Unit sales of simulators per year tend to average out at around four or five but he notes with undisguised enthusiasm that the fiftieth sale is on the horizon, which will be something of a landmark in his operation. Most recently, a couple of simulators have been sold to Air Canada, whilst a third went to United. The latest additions to his range have included two new airframes to enhance the training possibilities even further: these are replicating the DC-10 and the Boeing 737.

Another big name in de-icing simulation is that of Danish company Vestergaard. As befits the manufacturer of the Elephant Beta, the company also produces the Elephant Beta Simulator, a state-of-the-art, PC-based training tool. It enables operators as well as trainees to simulate most aspects of aircraft de-

icing in a lifelike environment.

Vestergaard's recent deliveries include simulators to TNT for its hub in Belgium as well as to Scandinavia-based airline SAS, which brings the total number of

delivered units to 27: these have been sold to ground handlers, airlines and airports alike.

Past Vestergaard deliveries have included one particular application, which has four aircraft de-icer simulators, and which was delivered to GIMAS in Roissy airport, Paris. These Beta simulators are network-based and it is possible to carry out simulated de-icing with two simulators working on the same aircraft, with one de-icer on each side of the aircraft; alternatively, a quartet of de-icers working on one aircraft is achievable. This has relevance for large aircraft such as the A380. A network feature enables the practice of co-ordination between the operators and it is a valuable tool in training both new and inexperienced employees.

The system is able to provide a report of the de-icing training session and includes all information regarding the time spent on the operation and the quantity of fluid sprayed, as well as a replay function for after-action review.

The company adds that the latest models feature the new, ergonomically improved Beta Next Generation controls.

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Cost-effective solution

Having a hands-on learning device is clearly an advantage when it comes to airside operations. Micro Nav is one company that has an extensive background in this area and the company says that its applications provide a safe, versatile and dynamic learning environment for all aspects of airside driving. The ability to train in a variety of scenarios, including that of driving in low visibility whilst performing RT communications, has proved invaluable as a training aid. It's a fact that competency increases safety levels and dramatically reduces the expense of runway incursions.

Any inductee's training needs are covered in a safe, cost-effective, simulated environment. The Airside Driver Trainer provides a number of benefits, including runway incursion training and individual driver record keeping, along with airport familiarisation and emergency procedure training.

According to the company, the key attribute of the airside driving system is that it is able to offer a variety of scenarios, especially those that cannot be replicated when on-the-job training is the only option. In the recent past, additional 3D models have been added to enable more on-site situations to be incorporated; and in terms of customers, both ground handling organisations and airports have invested in this technology.

"Interest in the Micro Nav ADT has

steadily increased over the last 12 months," adds the spokesperson. "This is due to the increase in the number of airside incursion statistics. We are in discussions with a number of key customers at the moment, which may well lead to the inclusion of additional functionality."

Progress in the US

Another player in the simulation sector is that of Florida-based Adacel.

Adacel continues to supply a baseline platform for airside driver training called the Adacel Flightline Driving Simulator, or AFDS. The core platform is configurable to suit a variety of airside driving tasks, providing flexibility for the end-user. Basically speaking, there is an instructional component to teach core knowledge such as airport procedures layout, signs and markings. There is also a 3D environmental component to enable a trainee to practise driving through an airport layout as well as an intelligent tutoring component that provides continuous real-time assessment of a student's performance via automatic prompts, instructional pop-ups and variations of the unfolding scenario. This enables the system to be configured as a stand-alone; with individual student driver positions; or networked with other AFDS positions and an instructor station (or stations) for hands-on observation and coaching via the built-in radio communications simulator. A variety of pre-configured

modules are also available to tailor the application to a specific airport driving task and vehicle operating characteristics. The included scenario preparation tools allow the client to create new exercises or amend the exercises to match their own particular requirements.

The intent of the AFDS is to teach people, who already know how to drive, the skills and knowledge needed to operate safely in an airport environment. This includes generic type learning such as standard airfield lighting and signs and markings, as well as site-specific learning such as the airport layout and operating procedures in compliance with FAA Part 139 rules and regulations. Simulation enables training to take place in the safety of a classroom setting without disruption to actual airport operations. As a result, the most popular application is to train new and seasonal employees required to operate and escort vehicles on the airport and to provide recurrent training on a regular basis.

Over the past year Adacel reports that it has experienced more customer interest in the driving simulator. Whilst the primary application remains much the same, a broader range of enquiries for specific task groups such as firefighting, de-icing and ground handlers has been recorded.

The company says that Adacel's AFDS has matured into a very stable platform over time, with refinements to both content and the core simulation engine.

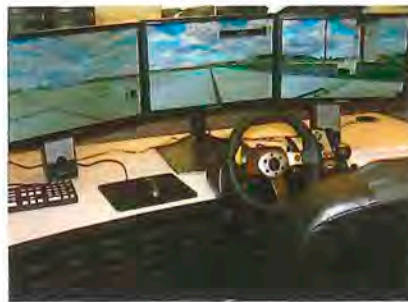


Schematic shows how a number of trainees can learn simultaneously, in this case courtesy of Adacel

Updates to the software occur regularly, to ensure that the product evolves to be both relevant and responsive to user requirements. In the last 12 months Adacel has focused a lot of attention on adding enhanced functionality to support specific task modules. Airport authorities remain the key clients when it comes to purchase.

It's worth noting (although it's perhaps not surprising) that the highest concentration of Adacel's customers lies in the US, primarily at larger airports. Simply put, the larger the facility, the greater the number of ground operators required to operate smoothly. The large, complex layouts and the numbers of people requiring training make simulation a very attractive option. Development of airport-specific databases remains a key cost in simulation and Adacel's library of over 200 airports has helped in keeping costs down, particularly in the US.

Whilst the level of interest in this product does fluctuate, the company has noted a spike over the past 18 months. This is in response to efforts to increase traffic flow efficiency along with regulatory pressures to improve



Face of the future?

airport safety. Operators are looking for more effective ways to accomplish training without disrupting operations. For many airport users, the primary motivator may not necessarily be cost, but rather time. Efficient, incident-free operations help ensure that flights proceed on schedule. As the old adage goes: time is money.

The sheer magnitude of the signs, markings and lighting requirements for realistic simulation of an airport ground environment actually obliged Adacel to develop a specific 3D Image Generator to accurately render the extensive ground scene in a high-fidelity, evolving scenario. Further, a key training requirement for its customers

has been that of exposing trainees to a variety of severe weather conditions with their associated deteriorating visibility, which can make airfield driving an extremely hazardous operation. This representational advance, by all accounts, adds a phenomenal degree of realism to accurately simulate any severe weather phenomenon.

Finally, a word from JBT AeroTech. According to Josh Parkin, the company's Manager, GSE Aftermarket Sales and Service, JBT is moving towards developing online training programmes in lieu of simulation modules.

"At this time, online training content is being developed with plans for a launch later this year. We want our customers to have access to product information and education around the clock with as little, or as much, JBT input as they desire. Our online platform allows for the most flexibility at the least expense for both the customer and JBT. Initially, the on-line training programme will be focused on product familiarisation and emergency procedures and will be expanded to trouble-shooting and advanced systems."



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