

# Improving Helicopter Pilot Training with On-Board GPS

**Andy Horcher<sup>1</sup> and Rien Visser<sup>2</sup>**

<sup>1</sup>Researcher, Forest Service Technology and Development Center, San Dimas USA

<sup>2</sup>Associate Professor, Virginia Tech, Blacksburg USA

(& Director of Forest Engineering, Canterbury University, New Zealand)

## **Abstract**

Helicopter yarding is incredibly versatile due to its ability to avoid many of the obstacles that encumber ground based and skyline systems. Helicopter yarding is employed for a variety of reasons including site sensitivity, urgency to remove or deliver the product, lack of access, and slope of the terrain. Because of the high cost of helicopter yarding, maximizing productivity is critical. There are many site and stand factors that affect productivity. Pilot experience is also known to be an important productivity factor. On-the-job training of new pilots can be very expensive through loss of productivity (opportunity cost). Basic time and motion studies can show differences in productivity. Using an on-board GPS system to capture elemental time study data that is geo-referenced makes it possible to isolate, in detail, during what phase of the turn cycle a trainee is not efficient. Using data collected at two different sites to compare experienced with trainee pilots, basic productivity curves were developed for each element of the yarding cycle. For these case studies, the trainee pilot was losing most of his time position the helicopter for hooking the trees, although reduced acceleration and maximum top velocity was also noted. With detailed feedback from an onboard GPS system, the trainee pilot and or trainer can focus the improvement efforts reducing overall costs.