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***Second-Tier Motorcycle Skills Testing:  
The Ontario Experience***

**“The Human Element”**

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## *Second-Tier Motorcycle Skills Testing: The Ontario Experience*

### **Abstract:**

Ontario pioneered a comprehensive graduated licensing system in 1994, providing today a unique body of experience in motorcycle rider training pursuant to such legislation. It was the earliest North American jurisdiction to introduce tiered skills testing and licensing. It remains alone in requiring an advanced skills test of probationary motorcyclists in order to earn unrestricted operator status.

The Rider Training Institute, a national non-profit organization, has been active in legislative consultation, skills-test design, curriculum design for phased on-road public training, market development for advanced licensing training, and examiner training in concert with the province's transportation ministry.

Ontario experiences a high degree of public support for graduated licensing. Rider training opportunities have expanded dramatically as a result of the tertiary, in-traffic test, funded entirely by student fees for non-mandatory training. A significant component of this highly successful program is an unusual degree of delegation to the private sector of rider skills training, license evaluation, and insurance-based market incentives. The results have been high rates of motorcyclist participation, and greater local availability of training - without the compulsory and state-funded aspects of some jurisdictions' training. Graduated licensing in Ontario has established a market for advanced rider training as a countermeasure for the risks associated with entry-level (irrespective of age) motorcyclists' learning curves.

The available research fortifies the position that a form of graduated licensing, with extended probationary periods, and successively more demanding skills testing in order to progress to the next tier of licensing, increases safety.

Ontario's experience is a unique resource. A purpose of this presentation is to provide a model for jurisdictions contemplating a more comprehensive system of rider training and licensing.

## *Second-Tier Motorcycle Skills Testing: The Ontario Experience*

### **The Legislative Environment**

Ontario pioneered a comprehensive graduated licensing system in 1994, providing today a unique body of experience in motorcycle rider training pursuant to such legislation. It was the earliest North American jurisdiction to introduce tiered skills testing and licensing. It remains alone in requiring an advanced skills test of probationary motorcyclists (with up to 5 years' experience) in order to earn unrestricted operator licensing status.

It should be noted that graduated licensing does not necessarily correspond to multi-tier skills testing in order to move through sequential levels of licensing. The more typical graduated licensing system contemplates only that certain privileges will be delayed through one or more periods of probationary licence classes, with or without progressive testing requirements.

There is a wide range of these privileges, aimed most pointedly at the young and inexperienced automobile driver. Those same privileges may not readily transfer into the motorcycle context. For instance, restrictions requiring experienced adult accompaniment might be antagonistic to the motorcyclist's safety, not to mention a passenger's. It follows that probationary periods are typically shorter (as in Ontario) for novice motorcyclists than for novice drivers since the quality of solo riding practice is theoretically not as high as for in-car supervised driving.

Some non-North American jurisdictions have a system that discriminates among motorcycles of varying displacements, on the premise that inexperienced riders are more prone to mishap with higher-powered machinery. It may well be the case that any significant benefit from this restriction has more to do with the posted speed and traffic density of the roadway on which novice motorcyclists are eligible to travel, than on available horsepower.

Although graduated licensing is logically independent of skills testing, a multi-level testing regime was, fortunately, grafted onto Ontario's legislation. That jurisdiction remains essentially alone in North America in requiring, beyond a preliminary knowledge test, a two-tier evaluation of on-motorcycle skills.

The licensing regime prior to mid-1994 required a knowledge test only of learner's permit candidates. A further test within two months requiring basic motorcycle handling skills and an observed traffic maneuver qualified the rider for the unrestricted M licence. After that date, probationary periods and licence classes M1 and M2 became necessary precursors to the unrestricted M licence – a process that could be navigated in a period from 20 months (over two summer seasons of riding) to 5+ years. This system operated

in parallel to the automotive driver's licensing regime, also introduced in 1994, of G1, G2, and G.

Conditions, or privileges restricted in each class, with minimum periods in each class, are as follows:

M1: Allows the rider no passengers, no riding in darkness, no travel on highways with posted speeds in excess of 80 km/h (50 mph), and no blood alcohol

The M1 is valid for a minimum of 60 days, after which the rider may apply for the M2, on the strength of successful completion of training at an approved private-sector institution, or successful testing for basic handling skills at the province's Ministry of Transportation driver examination offices. Timing is important, in that testing must occur within the 90 - day expiry limit of the M1.

M2: Allows the rider no blood alcohol

The M2 is valid for a minimum of 1.5 years to a maximum of 5 years. A further and much more comprehensive traffic-management skills test now qualifies the candidate to proceed to the M licence.

M: Unrestricted, and permanent (barring legal penalties)

It can be seen that there are some unnecessarily quirky aspects to the present system. It is a matter of some debate that the most visible, and questionable, benefit of the M licence is that riders are now free to consume alcohol, restricted only as to statute allowing the operator up to .08% blood alcohol

In the absence of other restrictions (such as ones limiting engine displacement, for instance) it is still the case that a complete novice is not barred from riding any machine, based on the minimal knowledge of motorcycles and traffic required of the rider to obtain an M1 (a written test).

There exist also slightly different time frames for candidates proceeding through the approved-training stream, rather than the governmental driver examination centers, that were originally thought to provide an incentive for riders to take safety training by encouraging accelerated passage through the licence classes. The effect is at best insignificant and clumsy, and at worst counter-productive, as has been suggested by a study looking at comparable effects in the automobile (G) licence classes.

The existence of a limited number of private-sector, not-for-profit institutions (such as the Rider Training Institute) authorized to conduct training and licence testing has introduced an element to motorcycle licensing that is absent from automobile licensing in Ontario. That element is a clear incentive to take operator safety training, in the form of an included test recognized by authorities for licensing purposes. It is also a means of avoiding queuing inherent in the public licensing domain, as training institutions are better able to clear the market with private-sector pricing.

Throughout the process of development of graduated licensing by the provincial government, motorcyclists - among them principals of the Rider Training Institute - were active in the design of the uniform test, student curriculum, and an instructor-training curriculum. Most particularly, riders collaborated in the province's Ministry of Transportation program to train examiners province-wide, both for the government's licence examiners and for private sector training bodies.

## **The Market Environment**

Training is not mandatory in Ontario. Public acceptance of training availability is nonetheless widespread. The proportion of new riders taking training in order to pass from M1 to M2 is high – estimated to be 75%. Safety does, indeed, sell.

The ratio of motorcyclists who do proceed from M2 to M through training, is also high - on the order of 50%. It is remarkable that experienced motorcyclists, gaining very little more than the continuation and upgrading of their motorcycle driver's licence class, should choose to enroll in such numbers with a considerably more expensive private-sector licensing facility. Again, safety would appear to be selling.

It should be noted too that the existence of this private-sector training has encouraged a vibrant market for insurance rate reductions for having obtained one's license through training, rather than solely through testing. This incentive has been effective to encourage students to reduce insurance premiums by enrolling for training, to encourage improvements in training as institutions seek, on behalf of their students, the endorsement of insurers, and to encourage identification of real risk factors for motorcyclists. To date, this insurance effect has been largely confined to the move from M1 to M2

If the provision of insurance discounting to trained riders is reflective of earned safety (reduced risk in the eyes of insurers), then the same phenomena should hold true for riders trained at a second tier with more demanding skill sets. We expect that rates of rider participation in training, to pass from M2 to M, will rise further, as underwriters compete to take advantage of greater reductions of risk on the part of riders, by offering further incentives to be trained.

A significant feature of this largely privatized licensing system has been the absence of public funding for training institutions. There is no dedicated public fund, no dedicated driver's licensing or plating fee, no dedicated tax or expenditure to support training efforts. Training is largely funded by full-cost pricing of tuition to students, with some support from dealers, manufacturers, and associations such as the national Motorcycle & Moped Industry Council.

The number of new licensing entrants in motorcycling has been climbing steadily in Ontario for the past two decades, out of proportion to such other indicators as the licensed population, vehicle population, and even new motorcycle sales.

**Selected Motorcycle Licence Classes in Ontario 1993-2003**

Year	**M1 (selected) (000)	**M2 (selected) (000)	**M (selected) (000)
1993	n.a.	n.a.	473.1
1994	5.5	5.4	472.0
1995	12.9	14.7	466.7
1996	11.9	19.1	467.4
1997	16.3	26.4	470.0
1998	20.3	33.9	470.9
1999	25.1	37.7	471.9
2000	29.6	41.6	474.4
2001	33.6	48.0	474.1
2002	44.4	51.2	473.5
2003	40.9	59.3	475.0

Ontario's total motorcyclist population has been static throughout the period, as indicated by operators whose licence designations include the full M. [For consistency, only the most numerically significant licence groupings have been selected, comprising approximately 95% of all M licence-holders.] This is surprising given the number of new M licensees produced each year. It may be indicative of an aging population of motorcyclists whose numbers are dwindling as new entrants appear.

The number of 90-day M1 learner's permits issued rose steadily since 1994 when graduated licensing was enacted, as did the number of M2 probationary permits. Because of the 5-year window for advancing to M, the backlog of M2-licensed individuals continues to grow, and shows no sign of finding a plateau.

It is apparent that a significant number of M1 licensees fail to progress through the system. It may well be the case that more than 50% of the 40,000 (2003) failed to register for training or testing toward the M2 licence. Because of the short-term of the M1, it can unfortunately suffice as an occasional operator's permit, with little incentive provided to move on to M2.

A parallel situation applies to M2. Licence-holders may allow the licence to lapse after five years, notwithstanding the strong likelihood that they received training. Perhaps this is for the best in terms of motorcycle safety. Licensees without street-legal motorcycles (of which there is a very high number) are unlikely to be gaining useful experience during the life of their licence, and, in fact, may have atrophying skills that are best not enshrined with a permanent licence. One of the principal benefits of tiered skills testing may then be that it requires unmotivated riders to return to the beginning of the licensing stream, and to refresh their skills.

It is also apparent from the table below that the young and the inexperienced, (as for automobile drivers in G1 and G2 licence classes) are far from primary sources for M1 and M2 licence applicants. Overwhelmingly, the M1 and M2 licensees appear with a

mature driving record. This corresponds with the demographics that we see in training registrations, with a mean age in excess of 30 years.

**Probationary Car / Motorcycle Driver Licence Classes in Ontario 1993-2003**

Year	G1M1	G2M1	GM1 (000)	G2M2	GM2 (000)	GM (000)
1993	n.a.	n.a.	n.a.	n.a.	n.a.	396
1994	216	118	4.8	176	4.8	393
1995	458	911	10.6	1107	12.40	386
1996	556	1057	9.5	1700	15.9	387
1997	684	2044	12.4	2968	21.2	387
1998	971	2871	15.0	4002	26.8	387
1999	1192	3510	18.5	4273	29.9	387
2000	1268	3480	22.4	3865	33.6	388
2001	1343	3499	25.9	3827	39.3	387
2002	1664	4107	34.9	3430	42.4	386
2003	1388	3527	32.3	3703	49.5	386

**The Training Environment**

Training institutions have flourished under the challenge of providing two levels of training.

The basic skills necessary for the passage from M1 to M2 are significant, and the test (based on a variant of the Motorcycle Safety Foundation’s MOST II) is more discriminating of that skill, than the comparable test used at the public licensing facility. The test is, however, only indicative of a limited repertoire of basic handling skills in the absence of traffic, and any other conditions approximating real-life’s distractions. Also, the test rewards predominantly hand-eye dexterity, and to some degree penalizes the degree of psychological caution that is arguably not suitable to all possible traffic conditions.

Still, the 14+ hours of on-motorcycle, on-range training leading up to the test, teaches to a standard well in excess of that required in satisfaction of the test. This is the first tier of motorcycle skills training, and it has performed well enough for its clients in distinguishing those physically proficient, at least for the purposes of the skills test toward the M2 (probationary) operator’s licence.

The secondary level of skills training, the passage from M2 to M, contemplates the more comprehensive and realistic skills required for confidence and safety in traffic. I say “realistic” because the test requires an hour of closely - observed rider behaviour in free traffic in a variety of environments. The training, typically over 10 hours, therefore requires a great deal of on-road (6+ hours) interaction between riders in the context of unrehearsed traffic conditions.

It is in this environment that training bodies have risen to the considerable challenge of designing and providing new motorcyclist training products. Among the features of current M licence training and testing as approved by the Ministry of Transportation that have been found to be effective are:

- observable/ quantifiable indicators of situational awareness and space management
- coach/instructor rides motorcycle in training group with candidate(s)
- undivided attention of coach/examiner (during test) by being seated in the passenger seat of a following car driven within observation range, but not otherwise interacting with the candidate's motorcycle
- radio contact for directions, and real-time coaching
- training and prescribed testing routes typically 20 km (12 miles) in length, incorporating roadways such as in reduced-speed residential areas, higher-speed multi-lane commercial areas, and multi-lane freeways
- testable maneuvers include multiple turns, stops, lane changes, freeway entries and exits, as well as longer periods of non-narrated interaction with the ambient environment
- an intensive examiner training regime, with inter-examiner correlation (over multiple runs, and different riders) of the observed errors in order to promote systemic reliability
- validity of the observed errors was established in exhaustive pre-launch testing by consultants to isolate riding behaviors that most clearly delineated observed differences between experienced and novice riders

It is noteworthy that the presumption during test design was that the test was to be sufficiently protracted to reduce the possibility that candidates could sustain uncharacteristically test-friendly behavior for the necessary length of time (up to one hour). Redundancy of test maneuvers is intentional.

### **The Safety Environment for Motorcyclists**

Ten years' experience in Ontario hints at some of the impact of this early and comprehensive system on motorcyclists' safety. Delayed privileges and multiple exposure to training and testing environments has accompanied a pronounced longer-term trend toward reduced injuries and fatalities among motorcyclists.



**Motorcyclist fatalities and injuries in Ontario with selected populations 1991-2003**

Year	Fatalities (incl.pass.)	Injuries (incl.pass.)	Dr.Licences (000,000)	MC as % of Vehicles	MC Pop. (000)
1991	64	2670	6.57	n.a.	n.a.
1992	61	2218	6.69	n.a.	n.a.
1993	59	2102	6.82	1.7	112
1994	54	1850	6.96	1.6	106
1995	41	1598	7.09	1.5	100
1996	29	1250	7.26	1.4	94
1997	38	1249	7.54	1.4	95
1998	35	1331	7.73	1.4	96
1999	41	1338	7.92	1.4	103
2000	38	1418	8.12	1.4	102
2001	52	1484	8.27	1.4	113
2002	38	1472	8.41	1.5	119
2003	52	1355	8.54	2.0	128

In a decade of a steadily growing population of licensed drivers and a stable ratio of motorcycles to other vehicles on the road, the number of motorcycles grew significantly. Graduated licensing was introduced early in the riding season of 1994 (shaded). Fatalities and injuries declined immediately, and more rapidly, than can be attributed to the temporary drop in registered motorcycles (1994 to 1998).

Despite the overall decline, it is interesting to note that in each of only three years (1999, 2001, 2003) that motorcycle registrations grew by approximately 10%, fatalities (but not injuries) bumped upward by 17%, 37%, and 37% respectively. It is tempting to surmise that a sudden increase in the number of active motorcyclists is disproportionately comprised of high-risk novice and returning motorcyclists. Within a year, the fatalities reverted sharply to the gradually descending mean, which had been only temporarily swamped by the influx of high-risk riders. Comparably, when the motorcycle population moved downward by 15% (from 1993 to 1996), fatalities plummeted by 50% and injuries by 40% over the same period.

Some broadly identifiable risk factors have seen reductions over the period as well, among them the rider aged under 25, the unlicensed rider, and the non-helmeted rider. The drop in the incidence of alcohol involvement is particularly heartening, given that alcohol was at one time the most significant (at 80%) identifiable risk factor for motorcyclists. The motorcycle culture has undergone a lively change in the past 20 years.

On the other hand, the prevalence of single vehicle incidents and observed rider error are indicative of the persistence of certain human factors in motorcycle fatalities, despite otherwise highly successful legislative, educational, and policing efforts.

**Selected factors relevant to motorcycle fatalities in Ontario 1993-2003**

Year	Under 25 %	Alcohol Used %	No helmet %	Rider error %	Single Vehicle %	Unlicensed Rider %
1993	44	41	21	73	45	16
1994	30	48	18	69	41	7
1995	45	26	19	77	35	14
1996	32	33	18	70	48	9
1997	33	21	8	56	31	8
1998	19	25	14	78	46	5
1999	36	23	4	65	48	4
2000	41	27	17	71	38	-
2001	19	29	10	71	50	7
2002	12	26	5	57	45	3
2003	18	16	6	70	48	4

**Summary**

The record in Ontario for motorcycle safety is comparatively good, and steadily improving. We cannot, of course, conclude that graduated licensing has been driving these improvements. More particularly, we cannot conclude that voluntary second-tier, advanced skills training has necessarily accelerated the decline in motorcyclist injuries and fatalities.

The motorcycling public's subscription to second-tier training is nonetheless a compelling argument for its effectiveness. Its educational impact is significant. The acceptance of this form of training in Ontario is not premised on mandatory training or licensing requirements. The market for advanced training has not been driven by insurance incentives.

The available research fortifies the position that a form of graduated licensing, with extended probationary periods, and successively more demanding skills testing in order to progress to the next tier of licensing, increases safety. Graduated licensing in Ontario has established a market, and a culture, for advanced rider training as a countermeasure for the risks associated with entry-level motorcyclists' learning curves.

The Rider Training Institute strongly endorses a program of graduated licensing for motorcyclists that incorporates multi-tier skills testing, with voluntary training capability. Ontario's experience is a ready resource for jurisdictions contemplating a more comprehensive system of rider and driver education. We wish to assist in such efforts.