

TYPES OF LICENSING SYSTEMS

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The paper by A. James McKnight describes the functions that the various elements of graduated licensing are expected to serve. These include reducing the novices exposure to the risk of collision, improving the proficiency or skill of novices so they can better contend with the risks to which they are exposed, and enhancing the motivation of novices to avoid circumstances giving rise to driving risks. While these three functions are characteristic of graduated licensing, they are not found to the same extent in more traditional licensing systems. This paper describes several of these licensing systems and considers how graduated licensing differs from them. These systems include conventional, probational and provisional licensing. The review of various licensing systems also provides the basis to examine the rationale for graduated licensing, to describe how a graduated licensing system might be structured, and to illustrate how graduated licensing actually works in practice.

Conventional Licensing

Licensing systems were originally introduced as a form of driver control serving three functions: revenue generation; driver identification; and selection and education (Mayhew and Simpson 1990). The collection of revenue has come to be a less important function with conventional driver's licenses being used more as a means to ensure that novices meet certain minimal requirements deemed necessary to operate a motor vehicle safely in traffic. In this context, the issuance of a driver's license serves an identification role, specifically the identification of those persons who have reached some standard of proficiency.

In most conventional licensing systems all new drivers are treated the same as other drivers. Once the novice passes the vision, knowledge and on-road test, he or she has unrestricted driving privileges. The governments response to "driver failures" (that is, violations and accidents) is typically warnings, meetings, and, ultimately, as a last resort, prohibiting driving and taking the license away. These same treatments are applied to novice drivers with only a few weeks driving experience and to drivers who have had many years of driving experience.

Probationary Licensing

Recognition that new drivers have high rates of collisions and offenses has resulted in several jurisdictions introducing probationary licenses. As the name implies drivers with a probationary license are subject to a trial period, during which their license can be suspended or other actions taken for less cause than normally applies to regularly licensed drivers. In this way, probationary schemes use the threat of punishment to encourage new drivers to drive safely and punishment itself for those who do not.

Thus, the only distinction made between a new driver, with a probationary license, and another driver is that it takes fewer demerit points to result in license suspension during the probationary period.

The probationary scheme is based on the belief that the threat of punishment in the form of losing your license will encourage safe driving habits in the initial years of experience and this will carry over to later years. As such, the approach is oriented towards the identification and punishment of the "errant" or "problem" driver, rather than all new drivers, since no restrictions are imposed if a violation- and accident- free record are maintained. It is this feature of the system that often makes it attractive, because it is perceived as "fair" — it does not punish or restrict all new operators, only those who fail to comply with traffic laws.

Such systems have potential for influencing how beginners choose to drive (e.g., they can discourage risk-taking) but not how these novices are capable of driving — nothing about the system is designed to improve skills or experience.

If new drivers do encounter problems during their first few years of driving, they can quite easily be placed on probation or be prohibited from driving. This can, in fact, be counterproductive in some cases. Given that driving experience plays a role in reducing the risk of collision among newly-licensed drivers, prohibiting driving effectively eliminates the opportunity to obtain critical on road experience.

It is also important to recognize that while many jurisdictions have probationary licensing systems — e.g., several provinces in Canada (e.g., British Columbia); several states in the U.S. (e.g., Michigan); several

countries in Europe (e.g., Germany) — the few evaluations that have been conducted of these systems have found no or minimal impact (Gorys et al., 1983; Rosenbaum et al., 1985; Eavy et al. 1986; Lynam and Twisk, 1995). This was certainly the case with the probationary licensing systems in New Zealand as well as in Ontario. As a consequence, New Zealand introduced a graduated licensing system in 1987 and Ontario did so in 1994.

Provisional Licenses

Several jurisdictions have adopted special features for young drivers that have come to be known as provisional licensing. This type of licensing, in practice, is primarily a form of probationary licensing, typically applied to young newly licensed drivers not older ones. Its principal intent is to encourage young drivers to operate their vehicles within the law by subjecting them to tighter license suspension rules than older new drivers and more experienced drivers. Thus, like probationary systems, provisional ones, in practice, rely heavily on threat of punishment. Unfortunately, there is no evidence that threats and punishment overcome inexperience. Certainly, a license suspension means that the novice cannot practice to gain much needed experience.

In some jurisdictions, provisional systems for young drivers include certain restrictions, for example, a night curfew. Importantly, some of these restrictions in provisional licensing systems have proven effective. A night curfew is a good example of a safety measure that has proven effective (Preusser et al., 1984; Preusser et al., 1990; McKnight et al., 1983; McKnight et al., 1990; McKnight 1986; Williams et al., 1985).

The major drawback of provisional licensing schemes is that they only address the problems facing young, newly-licensed drivers and make no provisions for older, newly-licensed drivers. Moreover, the provisional system tends to be "one-shot". It imposes a set of restrictions for a fixed period of time, or until the novice turns 18 years of age, at which point the restrictions are all removed and full driving privileges are granted. A progressive entry into unrestricted driving, which is logically a more promising approach given the difficult learning curve facing novices, is not achieved.

Provisional license schemes have been introduced in several U.S. states — i.e., Maryland, California, Oregon — and in a few European countries — e.g., France. In the French *apprentissage* system, the minimum age for a full license is 18, however, 16 and 17 year olds can drive earlier through a combination of both private and formal instruction in driving.

Does a provisional licensing system produce safety benefits? The provisional license schemes in the United States have been showed to be associated with some safety gains (McKnight et al., 1983; McKnight et al., 1990; Hagge and Marsh 1986; Hagge and Marsh 1988; Jones 1994). These reductions, however, have not been great and not consistently found across all measures examined. The evaluations of the *apprentissage* system of early accompanied driving in France are so far inconclusive (Lynam and Twisk 1995).

Graduated Licensing

Graduated licensing systems are distinguished from probationary and provisional systems by their systematic, step-wise approach to full licensing status. Limitations are initially placed on the new driver in terms of such things as when they can drive, where they can drive, with whom, and how. These limitations could include, for example, restrictions from operating on certain high speed highways, being accompanied by a licensed adult at all times, driving during daylight hours only, and prohibiting drinking any alcohol and driving. As new drivers pass predetermined milestones — such as post-licensing tests, years of experience, and clean driving records — the restrictions placed on their driving privileges are gradually removed and they earn the privilege of full unrestricted driving. In this manner, graduated licensing provides a protective way for new drivers to gain experience.

Thus, graduated licensing systems are intended to provide new drivers with the opportunity to gain **driving experience** under conditions that minimize the exposure to risk. As such, it is the most promising of systems because it recognizes that increases in experience result in decreases in the risk of collision (Mayhew and Simpson 1990; Mayhew and Simpson 1995). Somewhat like an apprenticeship program, it is intended to ease the novice into the full range of traffic conditions.

Such a system recognizes that beginning drivers will make more errors in the early stages when learning a new skill, particularly a complex, dynamic psychomotor skill like driving. Fewer critical mistakes occur as proficiency or mastery in the skill is gained; but proficiency requires extended practice over a considerable length of time. Unfortunately, novice drivers are usually launched into difficult driving conditions without this proficiency, so the results are inevitable and predictable.

What is needed is a method by which the novice can gain experience and proficiency but under less demanding (risky) conditions, so that errors and their

	<i>Stage 1</i>	<i>Stage 2</i>	<i>Stage 3</i>	F U L L L I C E N C E
ZERO BAC	Restriction in effect	Restriction in effect	Restriction in effect	
SUPERVISION	At all times	Only at night	No restriction	
CURFEW	From 1/2 hour after sunset to 1/2 hour before sunrise	None if accompanied by lic. adult	No restriction	
PASSENGERS	No restriction	No pass. unless with lic. adult	No restriction	
ROAD LIMITS	80 km/h limits or less	No restriction	No restriction	
	6 months	6 months	12 months	

FIGURE 1 Graduated licensing system.

consequences are reduced. This is the purpose of graduated licensing. The principal objective is to provide opportunities to gain experience under conditions of minimal risk. As experience and competence are gained, exposure to more demanding driving conditions is gradually phased-in.

Figure 1 illustrates how a graduated system might be structured (Simpson and Mayhew 1992). As can be seen, this system would involve three stages before graduation to a full license with unrestricted driving privileges. Each of these stages are described briefly below.

- *Stage One* (six-month duration). The entry requirement would be passing the current knowledge test and meeting the medical and vision standards. If these conditions were met, the beginner would be issued a "GL" driver permit as well as removable "GL" plate or sticker for the vehicle(s) they operate. During the learner stage, their driving would be subject to the following restrictions:

- A zero BAC;
- Accompanied, at all times, by a fully licensed adult (aged 19 or over), who occupies the front-seat, passenger position;
- No driving at night from one-half hour after sunset to one-half hour before sunrise;
- No driving on roads with a posted maximum speed of over 80 km/h.

These restrictions would be in place for a period of six months. If the driver remains violation and accident-free, he or she can graduate to the second stage of the system upon meeting certain other conditions described below.

- *Stage Two* (six months). After the first six-month stage has been completed, the driver can advance to Stage Two if they pass a road test. If successful, they are issued a graduated driver's license. In this stage, the driving privileges are more extensive, since some of the restrictions have been removed. If nighttime driving

occurs, or if passengers are being transported, supervision is still required, however the novice driver can now drive but only during daylight hours. Also, the novice can now drive on roads with a posted maximum speed of over 80 km/h. Thus, the novice would be subject to the following restrictions:

- Zero BAC;
- Must be accompanied by a licensed adult when driving at night; and
- Can drive solo during daylight hours but cannot carry passengers (unless of course, such passengers are licensed adults aged 19 or over).

This set of restrictions would be in place for six months. Given an accident and violation-free record, the novice could progress to the next and final stage.

● *Stage Three* (12 months). Following the second six-month stage, the beginning driver would progress to a 12-month Stage Three. In this stage, all the restrictions are removed with the exception of the zero BAC provision. Although the novice is granted virtually unrestricted driving privileges during this phase, violations or accidents can result in a return to the beginning of the system. There is a strong incentive to drive safely.

Following this stage the novice qualifies for graduation to a license with full driving privileges. To do so, he or she may be required to pass a hazard perception test and/or an advanced on-road test.

The rather complex graduated licensing scheme shown in Figure 1 does not exist in any jurisdiction. A more simplified version of this system, however, had been proposed in the United States by the National Highway Traffic Safety Administration (NHTSA) as early as the late 1970s. At that time, NHTSA developed a model for provisional (graduated) licensing of young novice drivers that was incorporated into a work statement for a demonstration project (Croke and Wilson 1977) awarded to the State of Maryland in 1977. Maryland's State Motor Vehicle Administration implemented the program (which is more provisional than graduated in nature) in 1979 and amended it in 1985 after evaluation. The Maryland system contains elements of graduated licensing — e.g., night curfew — but falls short of being a full blown graduated licensing system.

Simplified versions of graduated licensing have been implemented in a few jurisdictions outside the United States, including New Zealand, several Australian States — e.g., Victoria — and two Canadian provinces — Ontario and Nova Scotia. The graduated licensing

schemes in Australia have recently been reviewed in a study by the Accident Research Centre at Monash University and found not to conform to the concept of graduated licensing (Haworth 1994). At best, the current system in Victoria can be described as a very weak version of graduated licensing. Much stronger schemes are in place in Ontario and Nova Scotia and these are described in companion papers. The New Zealand graduated licensing system is described briefly below.

The graduated licensing system in New Zealand was introduced in August 1987 and it applies only to drivers age 15 through 25 with the exception of motorcyclists. All motorcycle riders, no matter what age must pass through the graduated license system.

The New Zealand scheme has three Phases.

- Phase I is a Learner's period.
 - This Learner's license must be held for a minimum of six months.
 - The six month requirement can be reduced to three months if the learner completes an accredited driver training course.
 - During this initial phase the learner must drive under adult supervision at all times.
- Phase II is a Restricted period.
 - It is 18 months in duration but can be reduced to nine months if an Advanced Driving Course is completed.
 - No passengers are allowed unless the front seat occupant is over 20 and has had an unrestricted license for over 2 years.
 - There is a low BAC limit of 30 mg%.
 - There is also a night curfew from 10 p.m. to 5 a.m.

The third phase of the system is graduating to full driving privileges.

The graduated licensing scheme in New Zealand differs considerably from systems adopted elsewhere — e.g., Victoria, Australia; Ontario and Nova Scotia. In Ontario and Nova Scotia, for example, graduated licensing applies to all new drivers not just to those age 15 through 25 as is the case in New Zealand. Moreover, the Ontario and Nova Scotia graduated licensing schemes also differ from one another in important ways and these differences will become apparent in reading the relevant papers in this Circular. The point is that graduated licensing has proven to be flexible and adaptable to social, economic, geographic and political conditions within a jurisdiction.

Does a graduated licensing system produce safety benefits? The only evidence so far on the effects of graduated licensing on traffic accidents comes from New

Zealand. A report released by the Ministry of Transport in that country found initially a substantial drop in casualties — i.e., about 25% — coincidental with the introduction of graduated licensing that lasted for two years before partially dissipating. The study found that there is still an 8% reduction in the proportion of crash-involved drivers who are 15-19 years old (Frith and Perkins 1992).

Summary

Graduated licensing is potentially more constructive than probationary and provisional approaches because it provides direct remedial action for the problems encountered by new drivers, especially young ones. Such a system provides the opportunity for beginning drivers to gain experience and proficiency under less hazardous conditions than does probationary and provisional license systems. The graduated licensing approach does not seek to limit the quantity (number and distance of trips) of a new driver's experience, rather it seeks to influence the quality (conditions and circumstances) under which that experience is gained.

Graduated licensing also minimizes the opportunities for young beginners to engage in risky behaviors or encounter risky situations — it often carries restrictions that are directed more at age-related factors (e.g., zero BAC; number or age of passengers). For example, it should potentially reduce the incidence of drinking and driving at night when many of the social functions and youth-oriented drinking occasions take place. Such elements may be vital for young newly licensed drivers. Graduated licensing also covers several years allowing the developmental process to unfold before granting full driving privileges.

Graduated licensing systems can also vary substantially in their operational features. Jurisdictions considering introducing a graduated licensing system, for example, need to consider several key design, operational and other features including:

- Who is covered by the system (e.g., should it apply to new drivers of all ages or only those who are young?)
- Restrictions (e.g., should it include night curfews, passengers restrictions, speed and/or highway restrictions);
- Exemptions (e.g., who should be exempted from which restrictions?);
- Enforcement (e.g., how can compliance with the restrictions be regulated and ensured?);

- Sanctions (e.g., what sanctions should be applied for violations?);
- Rewards and incentives (e.g., should incentives be introduced to foster compliance?);
- Education and training (e.g., how do training and education interface with the system?);
- Testing (e.g., should new licensing tests be introduced?); and
- Duration (e.g., how long do the various phases last?).

Thus, a graduated licensing system can take many forms depending on the restrictions selected, how they are applied and to whom, over what period of time, what sanctions are applied to violators, and so on. In designing a graduated licensing system, however, it is critical to ensure that its features are true to the basic prevention principle of providing opportunities to obtain driving experience under conditions that minimize exposure to risk. In addition, the elements of the system should be based, to the extent possible, on scientific evidence and proven effectiveness.

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