

ROCKY MOUNTAIN VINTAGE RACING, LTD.



INSTRUCTOR MANUAL

Revised: Spring 2010

Listening and following up with questions is the best form of instruction. Questions help the student begin a process of self-discovery by analyzing his or her own driving errors.

To promote consistency between classroom sessions, the contents of the Drivers' School Manual (reproduced herein), and the student's Provisional License, please become familiar with the driving school concepts/terms and school overview.

Thanks for helping instruct and mentor new drivers for our club.

The following two pages of this document are aids to help you in the instructional process. After those pages, the entire *Drivers' School Manual*, supplied to each student, is reproduced. Please be sure you are familiar with the material in their manual.

Effective Instructional Strategies

Instruction is the process of helping others to develop attitudes, skills and knowledge. Establish a relationship and discover what your student hopes to achieve while in drivers' school.

- Recognize and provide for unique learning styles and differences. Some people need to act immediately on what they've learned while others are more comfortable watching for a while.
- Provide specific positive comments to reinforce good driving habits. This promotes a more conscious continuation of application.
- Frequently use teaching strategies that minimize the amount of time students spend listening. Use the discussion guides and allow students to articulate and make meaning based on their own learning/experience.
- Help your student identify his or her own comfort zone. Begin there.
- Provide and/or help you student identify one or two goals for each driving session. Do not overwhelm by providing too much to work on at once.
- Tie and relate concepts being discussed or taught to the student's actual experience. Better yet, have them make the connection.
- When asking questions, pause for at least ten seconds before speaking again to allow the student(s) time for thinking and responding.
- If in a group and one student has answered, ask the other students if they agree or if they have anything to add before jumping into the discussion. Another strategy is to ask, "What do you think?"
- When discussing concepts identified in the Provisional License book, ask your student, "What do you already know, what do you want to know?"
- Have students teach one another or restate things in their own words based on their experiences and understanding.
- Have students analyze their own errors or the conditions that caused a "less than perfect" experience. "Do you know why that happened?"
- When your student is a passenger, either in your car or his/hers, monitor your speed and take care to be sensitive to his or her comfort level.
- Be decisive and clear when explaining your expectations.
- When asking questions, limit the number of "closed questions," (those with a limited number of answers) or "yes-no" questions.
- When sitting and watching a session, consider asking the following:
 - Which car do you think takes this corner better and why?
 - Can you point out those cars that are coasting before they reach the braking zone?
 - Why do you think that just happened?
 - Can you tell me how being "smooth" enhances car control?
Which of those cars seems to be smooth?

Provisional License Book Check List

Copied from the Provisional License book, on the left are the questions which the student may well be asking you about. On the right is a check list for you. While working with the student, use the list in the student's Provisional License book to check off topics as they are covered. All topics should be covered BEFORE the student is "OK To License."

ITEMS TO DISCUSS WITH YOUR INSTRUCTOR

Car/Driver Fit:

- Seating position, steering wheel reach and general fit
- Seat belts
- Mirror adjustment
- Control position

Safety:

- Vehicle preparation
- Remaining in control
- On-track courtesy

Awareness:

- 'Visual Sequence'
- Traffic
- Track position
- Flag stations
- Vehicle feedback – what is car doing and why?

The Line:

- Learn and visualize the track
- Turn-in, apex, track-out
- Early apex vs. late apex
- Consistency

Smoothness:

- Hand position on controls
- Use of foot controls
- Matching engine/transmissions speeds during shifts

Tire noise –feedback to smoothness

Instructors: Please discuss and check off each of these items BEFORE “OK to license” is recommended.

<u>Date</u>	<u>Subject</u>	<u>Date</u>	<u>Subject</u>
___	Braking Points	___	Center of Gravity
___	Contact Patch	___	Threshold Braking
___	Early Apex	___	Trajectory
___	Late Apex	___	Weight Transfer
___	Heel/Toe	___	Track Out Point
___	Low/High Eyes	___	Track Camber
___	Over-steer	___	Turn-in Point
___	Reference Points	___	Trail Braking
___	Car Rotation	___	7/10 ^{ths} vs 10/10 ^{ths}
___	Hand Position on Wheel	___	Trailing Throttle Over-steer

[The following pages are the entire *Drivers' School Manual* which is provided to all students. Please be sure you are familiar with the material in their manual.]

ROCKY MOUNTAIN VINTAGE RACING, LTD.



DRIERS' SCHOOL MANUAL

Revised: Spring 2010

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Introduction

The goal of the RMVR Drivers' School is to offer instruction that will result in the development of fundamental driving skills along with the proper attitude to ensure safe participation and enjoyment of the sport of vintage racing.

School participants will:

- Understand RMVR procedures
- Develop car control, judgment and reasonable level of driving skills
- Demonstrate awareness and courtesy on the track
- Understand the philosophy of vintage racing

RMVR Procedures

Information about RMVR process and procedures will be shared during the school and are described in this manual. The school is designed such that the majority of the training you receive will come from the driving instructors chosen to work with you. It is the beginning of a process that will continue throughout your "racing career." Our intention is for you to learn about RMVR and enter the sport safely and with the proper attitude. Your personal development as a driver will depend on your own expectations and motivation.

Car Control, Judgment and Reasonable Driving Skill

Wheel to wheel racing, at any level, is complex and requires you to make instant decisions while exercising car control. During this school you are expected to drive safely and demonstrate that you are control at all times. It is strongly suggested that you spend at least one day in your car at the track prior to the school to become comfortable in your car and be able to benefit from instruction. Having your instructor accompany you in a passenger seat is the best way to improve your skills. Consider bringing a street car if your race car will not accommodate a passenger.

We will encourage you to demonstrate a reasonable level of driving skill in competition. When errors occur you must learn from them. After completing this school, you will be observed for at least two complete race events before you will be considered eligible for a full competition license.

Awareness and Courtesy

You are expected to consistently demonstrate awareness of other cars, corner station locations, flags, and course conditions. Acknowledge flags and be aware of faster cars attempting to overtake you. As vintage racing is a cooperative sport, your lap times, driving skills, enjoyment and friendships will all grow if you wave by a faster car and follow his or her line, noting braking and turn-in points.

Philosophy of Vintage Racing

Vintage racing is about the cars, fun and friendship. You are about to develop many good friends and create wonderful memories, from racing wheel-to-wheel to sharing parts and stories. No one will remember who won the race, but everyone will remember who ruined their car or who through carelessness, damaged a competitor's. It must be stressed that your racing license may be sanctioned, withheld, or revoked if you make contact with other cars, act in a reckless or disrespectful manner, place others in danger on the track or in the paddock or damage your own car. Remember that one careless moment, when emotions run unchecked, may result in ruined friendships and harm to yourself or others.

Car and Equipment Preparation

We run cars upwards of thirty years old and without proper preventative maintenance you may experience mechanical and electrical problems that can end your weekend prematurely. Race car preparation includes frequent inspection (wheels, bearings, brakes, frames, throttle cables, crack testing etc.) This is an important part of racing SAFELY.

Have Fun!

We hope you have a great weekend and welcome you to vintage racing!

Overview Of Drivers' School

Flags (see attached)

Friday Early Morning

Refreshments (coffee & donuts) and Provisional License will be available

“Classroom” Topics – RMVR Goals, Procedures and Processes

- The Vintage Spirit
- Car preparation and eligibility
- Registration and tech
- Timing and scoring
- FLAGS (Be familiar with their meaning prior to the school)
- Entering and exiting paddock procedures
- Licensing process
- Who's who in RMVR
- Assignment of Instructors

Friday Morning and Afternoon

Van rides will begin early in the day and be offered during the day. There will be another classroom sessions during the day. With your instructor, walk the track again during the lunch break to get a better feel for visual landmarks, braking points, corner entry, apex, and exit points. Observe tire marks and discuss braking zones for passing other cars. .

The following is a brief list of the concepts and exercises you will be working on during your first on-track day. Your instructor will provide many details, answer questions and provide further clarification of concepts at various times during the day spend as much time as you can with your instructor, observing other sessions and walk to specific corners that you may find challenging.

Session I: *Follow the Leader — Learn “The Racing Line”*

You will learn the course layout and the racing line by following your instructor at a slow pace.

- No passing, single file, low speed
- Concentrate on position, comfort with controls and relaxing
- Note location of corner stations
- **Place your car on the “racing line” and use all of the track – use the cones placed on corner entry, apex, and exit points as guides**
- Practice visual sequence (look for flags, check you mirrors, look for the apex,) before each turn-in
- Visually rehearse the sequence of the track while waiting for your next session.

Session II: *Higher Speeds and Learn “The Visual Sequence”*

You will increase the speed to a more brisk pace and practice the **visual sequence** when approaching a corner, (**look for flags, check you mirrors, look for the apex.**)

- No passing, single file but with increased speed
- Increase familiarity with the track and **work on developing a rhythm to your driving**
- **Scan for flags and check mirrors**
- Practice “high eyes” after locating apex
- Wave at corner workers after the checkered flag, during the cool down lap

Session III: *Passing and Being Passed — Awareness is key!*

You will learn how to pass, how to be passed, and how the line changes when passing occurs.

LIMITED passing in ONE areas with point-by will be described in the classroom session.

- Pass and be passed – Front Straight ONLY
- Use acknowledgment signals
- **Watch your mirrors and practice the visual sequence**
- **Cooperate with the passing car**
- Adjust your line and corner entry speed when passing

*****NOTE:** Students in street cars will be limited to specific passing zones with point-by and acknowledgment for the entire weekend.

Session IV: *More Passing and More Practice — More Passing zones.*

The **passing zones will be expanded to Front & Back Straights** as described during the classroom session. You will **continue to develop comfort with passing and being passed** with point-by and acknowledgement.

- Complete several passing maneuvers in a variety of turns
- Develop comfort with how braking and corner entry points change when passing
- Practice the visual sequence when entering corners
- Practice smoothness, develop a rhythm, hit turn-in, apex, and exit points.
- **Identify goals you wish to address tomorrow.**

Discuss with your instructor specific areas in need of improvement. Watch other sessions and discuss troublesome corners with your instructor.

Saturday

Session V: *Picking Up Where We Left Off*

Just like the tires and the track surface, the driver is a little cold so take some time to warm up. This will be the last restricted passing session with point-by.

- Pass and be passed – **Anywhere on the track WITH a point-by.**
- Point-by and acknowledge
- Practice the visual sequence when approaching corners
- Use your mirrors
- Concentrate on smoothness, hitting the turn-in, apex, and using the entire track
- Be predictable and remain on-line when faster cars approach
- Relax and have fun

Session VI: *Typical Practice Session — How to best use “practice”*

This will be the first unrestricted practice session. Continue to work on the areas you’ve identified for improvement.

- Continue to always “point by” when being challenged.
- Practice the basics and continue to improve driving skills
- Be relaxed and aware
- Practice visual sequence
- **Pick something specific to “practice” and really focus on that one thing.**

Sunday

Session VII: *Side-By-Side Practice Starts*

This session will require students to grid according to their assigned position, form up side-by-side, and practice flying starts. The session will include three green flag starts that will quickly end using the yellow flag at the corner stations. Cars will be expected to slow and “re-form side-by-side” according to their current position once the yellow flag is out in preparation for the next start. After the third “start” you will practice your skills until the end of the session.

- **This is not a race**
- The pole position car sets the pace for the warm-up lap.
- Passing is unrestricted (under green ONLY)
- Acknowledge flags
- Continue working on your skill goals

Session VIII Practice Race –Students only, but a full race.

This is when you put it all together. You will grid according to lap time, line up side-by-side and wait for the green flag. The session ends when the checkered flag is thrown.

- **Maybe team up with someone to practice passing each other often.**
- Practice all you’ve learned.
- The pole position car will set the pace for the warm-up lap.
- Acknowledge flags
- Use the visual sequence

Session IX The Real Thing — Run in your regular run group.

- Relax and have fun
- Be sure to **retrieve your Provisional License book from your instructor** to take to your next event. Keeping track of your log book is YOUR responsibility, not the instructor’s.

Driving School Concepts

Be sure to review the following terms and topics with your instructor during the weekend. *They need to be discussed, practiced and observed, then noted in the Provisional License book.*

Line

Track layout
 “Racing” line and “ideal” line
 Use of entire track (turn-in, apex, track-out)
 Locating flag stations/Black flag station
Hand position on wheel
 Consistency
 Predictability

Cornering

Visual sequence
Low/High Eyes
 Exit speed
Turn in point/Track out point
 Constant, decreasing, increasing radius of corner
Under-steer and over-steer
Late apex
Early apex
Car rotation
 Conditions that affect apex
Track camber, elevation, pavement changes, traffic, grip
 Smoothness (**heel/toe**)
Trailing Throttle Over-steer

Braking

Conditions that affect braking
Temperatures, track camber and surface, **contact patch**
Coasting
Reference points/Braking points
Center of gravity
Threshold braking/Trail braking
Trajectory
Weight transfer - smoothness

Awareness, Safety, Judgment and Courtesy

Visual Sequence
Corner Station Location/Flags
Hand signals (grid, on-track, off-track, acknowledgement of flags)
Passing (point-by and acknowledgement waves)
Starts

Passing

Visual sequence
“Who owns the corner?”

Philosophy of Vintage Racing

Attitude
10/10ths vs. 7/10ths
Car control
Friendship and fun

What Is Vintage Racing?

Vintage racing is about something other than winning. Although the competitive spirit is there and we would all like to improve our times and maybe even win, there is much more to consider. Our cars are too valuable to get into the “pushing and bumping” game, parts are hard to find, and our drivers tend to have considerable differences in their skill and experience. Cars with a wide range of horsepower and handling capabilities are on the track at the same time. We’re not doing this to get sponsorship, awards and fame. Dicing with those in front of us and behind us, setting a personal best and simply finishing are worthy goals. Competing in an event is a joy unto itself.

We develop many good friends in vintage racing and together, create wonderful memories. Welcome and enjoy!

What Is Over-Aggressive Driving?

The following is a definition of over-aggressive driving from the Vintage Motorsport Council:

- Failing to slow down when passing a waiving yellow.
- Weaving at the end of the straight, even once, to block a faster car
- Driving 10/10ths all the time.
- Continually putting wheels off the pavement.
- Sliding into another car due to driving beyond you or your car’s capabilities.
- Ignoring the black flag.

- Diving deep into the inside of a corner not being able to get a nose in front thus forcing a competitor wide to avoid you.

Over-aggressive driving is **NOT**:

- Ignoring the passing flag – it is for information only
- Executing a racing pass to the inside of a corner by **CLEARLY** out-braking another car and having a **SUBSTANTIAL** part of your car ahead at turn-in

What Can I Expect For My First Event?

1. At registration you must present your RMVR Competition License or Provisional License. You must sign the release forms as failure to do so places the club in great jeopardy. Sign yourself in, and enter any crew member or visitor expected. You will receive an event schedule, a wrist band, a run group list and a run group sticker. Place the sticker in a prominent (visible) location on your race car and put the wrist band on your left wrist. You must not enter the track without your wrist band and doing so is a serious infraction.
2. Find a pit space in the paddock area. This is actually much more fun on Thursday than on Friday morning, but in either case be aware that pit space is at a premium. Generally, you can count on a 34' x 11' space. Be sure to have practiced backing up your trailer prior to Friday morning.
 - Use only the space you need
 - Be a good neighbor to adjoining spaces
 - You are responsible for your kids, pets and visitors
 - Adult friends and pit crew must abide by our rules
 - NO alcohol, etc.
3. Unload the race car and drivers' gear (helmet, suite, etc.) and determine where Tech Inspection is being held. Tech inspectors can be identified by the "TECH" hats. If it's Friday afternoon, you can often get a Tech person to your pit, otherwise it is usually performed at a location designated by a long line of race cars. Have your car's log book, your Provisional License book, safety gear and completed Tech Inspection Form with you. Formula cars need to have the front body and engine cover removed. "Debates" with the Tech inspector are not recommended.
4. Find your instructor. Pit nearby if possible. Arrange a general plan of where to meet before and after each session and discuss the instructor's agenda for the weekend. Walk the track if possible, but be certain to take a van ride, offered to those new to the track, prior to the drivers' meeting.
5. Attendance at the Drivers' Meeting Saturday and Sunday morning is mandatory. The agenda for the day will be discussed, possible changes announced and other pertinent information such as track conditions will be made available. If you are scheduled to run

in Group 1, you should be wearing your driving gear and your car should be driven to the grid prior to the meeting.

6. Be aware of which group is currently on the track so that you can budget your time accordingly. Each session is generally 15-20 minutes in duration. Shortly after the run group prior to your group leaves the grid, bring your car to the grid along with your driving gear. It is better to be too early than too late. Drink lots of water.
7. Pit and grid workers will blow a whistle and hold up five fingers to begin the grid count while the prior group is still on the track. There is roughly five minutes before your group will leave the grid, so get in your car, get the belts on, arm restraints, etc. Most drivers get the belts and straps in place and tight before putting on the helmet and then gloves. As the countdown proceeds, pit and grid workers will blow the whistle and hold up four, then three, etc. fingers. Start your engine at about two minutes, giving it time to warm up, but not overheat. When it is time to roll out, pit and grid workers will blow the whistle and show a raised fist. If you are lining up for a start, the pit and grid workers will direct you as to which side of the track you are to line-up on. Acknowledge by gesturing which side, it will help you remember.
 - Mentally prepare for the session, focus on what you want to accomplish.
 - Occupy the grid position you are assigned.
 - Observe the pit and grid workers and follow their instruction.
 - Acknowledge the five minute countdown with hand signals
 - Your crew must be alert to other cars, and vacate the grid at the one minute count.
 - If you have a problem and cannot leave the grid with your group, raise your hand as soon as possible to signal both the driver behind you and to get the attention of the workers.
8. When lining up for a race, as you get approximately half-way through the warm-up lap, the corner workers will slow the lead cars to assemble the group into the “start” configuration. At this point, weaving and hard braking tactics need to be curtailed. When the green flag falls, the session has begun.
9. During the start, hold your line, be predictable, and use your mirrors. No race is won or lost in the first turn. If another car spins or slows unexpectedly in front of you, do not lock-up your brakes as you then lose all steering and stopping power. Try to signal the cars behind you by raising an arm into the air. If it is your car that slows, stay on line and raise your hand in the air to be seen.
 - Check corner stations for flags, every station, every lap.
 - If yellow flags are shown, no passing!
 - Check condition of the track, debris, potholes, oil, etc. during your warm-up lap.
 - When you pass the start/finish check for a green flag to begin your session. Some practice sessions are under the green flag from the moment you first enter the track.
 - If you have a car problem, raise your hand, make sure you are clear of traffic, reduce speed and gradually (as in predictable to other traffic,) get off the racing line.
 - You must not stop on the racing surface, if at all possible. Get off the track safely and close to a corner station. Wait for their direction.

- In the event you leave the racing surface, re-entry will only occur under direction of the corner worker or grid worker.
10. At the end of all sessions, practice or race, you will see the checkered flag. Do not slow suddenly. Take your cool-down lap and wave at the workers, (at Tech and the spectators,) enter the pits and be very careful of pedestrians in the pit area. Try not to stop in the middle of the access lane in the paddock as this may cause a traffic jam. After you've had some water, go find your instructor.
- Watch your speed in the hot pits and in the paddock!
 - As soon as possible, check over your car for leaks, tire wear and anything that may need to be checked before your next session.
 - Consider inviting spectators to sit in your car, but be careful as they may not choose to get out!
11. During lunch and at all social times scheduled for the end of the day, be sure that corner workers are served first. Without them, we wouldn't be here.

Random Advice

The driver is always the best place to begin to improve lap times. There is no substitute for seat time. Don't try to go fast before working on smoothness, line and consistency. Get all the experience you can.

Make the car reliable and consistent first, improve your driving, and then think about improving the car.

Don't expect too much, too fast. Try to work corners at least once, especially if you find a specific corner to be challenging.

Check over your car after each session. Look for oil, water and fuel leaks. Check for tire wear and wheel torque.

Pick a few things to work on at every race, create a list at the beginning of the season. Use a notebook. Organize it in specific areas and add information at every opportunity.

Find mentors. A mentor should have experience in your racing class. Ask questions and get feed back. Make friends and help to create a friendly atmosphere. If someone else struggling, lend a hand.

Prepare the car before the event, not at the track.

Take care of yourself. Be rested, exercise, use sunscreen, drink lots of water, and eat healthy foods. **And remember — it's about the cars, camaraderie and fun!**

Recommended Reading

The Ace Factor – A Guide to what you need to know about Vintage Racing

Compiled by E. Paul Dickenson – Published by VMC

The booklet, published by the VMC (Vintage Motorsports Council), is **provided to you as an integral part of your RMVR curriculum. Ideally you should review the contents of this book BEFORE the Drivers School weekend** in order to be familiar with its content. This will better equip you to quickly use it as a resource DURING and AFTER the School weekend. While mostly devoted to the beginning race car driver, it is an excellent resource to re-visit as you continue to develop your racing skills.

Going Faster! Mastering the Art of Race Driving

Carl Lopez

Bentley

ISBN 0-8376-0227-0

This is an exceptional book, even for beginning drivers. It is well illustrated with examples and clear explanations. Carl is a career instructor for the *Skip Barber Racing School*. This book is the most clearly written and well thought-out in presentation. Carl and the *Skip Barber Racing School* (800-221-1131) have been teaching race car driving at a high level for many years and they have distilled their collective experience into this book.

Bob Bondurant on High Performance Driving

Bob Bondurant and John Blakemore

OSPREY

ISBN 0-87938-158-2

Jackie Stewart's Principals of Performance Driving

Edited by Alan Henry

OSPREY

ISBN 0-905138-34-0

This is about driving, mostly by describing Jackie Stewart's approach.

Think to Win, the New Approach to Fast Driving

Don Alexander

Robert Bentley

ISBN 0-8376-0070-7

Any of **Carroll Smith** books support race car fabrication and preparation.