

## Index - Developing a Champion: The Electramotive Nissan GTP Story

### A

A1 Thread Rolling, 243  
AAR (All American Racers), 52–53, 56,  
149, 327, 406  
AAR Toyota, 417, 421, 424, 427, 430–31,  
433  
Activision, 49  
Adam, Bill, 370  
Adamowicz, Tony, 29, 36, 41, 48–49,  
125–27, 131, 133, 139–42, 145–47,  
282–83, 285  
Aerial Video Systems, 310  
Aero Alloys, 244, 255  
aerodynamics, 14, 29, 32–33, 52, 99, 112,  
130, 149, 154, 170, 172, 279, 307, 312,  
325, 342, 405  
Aerospace, Kent, 352  
AIAA, 165  
air flow, 34, 82, 149, 183, 189, 345,  
399–400  
choked, 345  
engine's exhaust, 159  
slow speed, 120  
straightener, 151  
tunnel's, 150  
air pump, 68, 192, 290  
air restrictor, 411  
Alcon brakes, 349  
Allegro, Kirk, 21  
Alpha United, 120  
American Auto Racing Writers &  
Broadcasters Association, 262, 397  
Anahory, Joe, 52  
Andretti, John, 415, 433  
Angelus Pattern Works, 243  
Antonio, San, 94, 330, 351, 388, 392, 396,  
429, 431–32  
Anvil design software, 353  
Apple Macintosh, 199  
AP Racing, 29, 349, 420  
calipers, 350–51  
clutch, 29  
rotors, 351  
ARP Racing, 243

Ashlock, Dennis, 6, 8, 12–13, 62, 80–81,  
100, 126, 128–29, 131, 139, 142,  
145–46, 164, 238, 283–84, 287,  
296–98, 301–2, 304, 316, 322–23, 328,  
332, 338, 342, 347, 356, 369–70, 376,  
379–80, 385–86, 388–89, 393, 398,  
405, 413, 415–18, 420, 426, 432,  
434–35, 440  
ASIC (Application-Specific Integrated  
Circuit), 99  
Astrodome, Houston, 258  
ATL Laboratories, 300  
AVS-Shadow Can-Am, 58

### B

Bains, Wally, 308  
Baird, Carson, 24  
Balch, Sherman, 257, 259, 267, 270  
Bansho, Kiyoshi, 56, 125, 137, 164, 276–77,  
280, 308, 324, 343, 406, 409  
Barnes, Bruce, 125  
Bayfront Park Miami Street Circuit, 49, 347  
Bayside Motorsports, 344, 391, 405  
BBS, 308, 371  
Beach, Mark, 181, 259  
Beeny, Mike, 20  
Bell, Derek, 330, 377, 381  
bellhousing, 106, 118, 133, 136–37, 178,  
195, 291, 319, 372, 374, 407  
belt guards, 207  
Benetton-Renault, 170  
Bernhardt, Paul, 23–24, 27  
beryllium copper, 186, 195  
BF Goodrich, 24, 340, 371, 440  
Bicentennial Park Street Circuit, 283–84,  
311, 347, 411  
Bishop, John, 24  
Blackburn, Logan, 35, 45  
Blackburn Racing, 45  
B&M torque converter, 262  
BMW, 203  
GTO, 143  
GTP, 301–2, 317  
Bob Sharp's dealership, 24

bodywork, 56, 108, 139, 157–58, 162–63,  
171, 282, 287–88, 295, 307, 354, 373,  
391, 399–400, 403, 421  
fiberglass, 58, 260  
molds, 115  
plug, 403–4  
Boeing Aircraft, 58, 150  
Bondurant School, 40  
boost, 41–42, 51, 63, 65–68, 71–72, 80–81,  
83, 85–86, 94, 164, 225, 254, 321, 355,  
382, 395  
boost control, 65–67, 80, 82–83, 199  
diagram, 74  
pressure, 42, 74, 82, 188, 201, 210, 224  
pressure target, 194  
Borgen, John, 279  
Borme, Andy, 406  
Bosch, 41, 94, 97, 379  
fuel injectors, 85  
Motronic, 65  
Boyd, Walt, 181, 190  
Brabham, Geoff, 7, 11, 95, 164, 285–86,  
295–96, 298–99, 302, 304, 311,  
313–14, 318, 321, 327–28, 330, 332,  
337, 339, 343, 347–48, 353–57, 359,  
366, 368–72, 377–84, 386–88, 390–97,  
407–8, 411–24, 426–37  
Brabham, Sir Jack, 356  
Brabham BMW, 65  
Brainerd International Raceway, 29, 42, 49  
brakes, 23, 127, 130, 253, 261, 308, 348–51,  
377, 379, 388, 393, 395, 408–9, 415,  
428, 433, 436  
carbon, 307, 386, 400, 420  
Hitco, 301  
ducts, 348–49, 351, 400  
pads, 350–51, 389  
pedal box, 349  
Bray, Laurie, 116  
BRE  
(Brock Racing Enterprises), 13, 20–22,  
27–28, 43, 52, 58  
Hino, 20  
Trans-Am, 27  
Brennan, Rick, 318  
Brickey, Alan, 11, 22–23, 43, 150

Bridgestone, 125–26, 133, 139, 282, 295,  
302, 316, 318, 320, 323, 333–34, 340  
Bright, John, 56, 116, 125–26  
Brill, Don, 89  
Broadley, Eric, 92, 104, 109–10, 112, 116,  
130  
Brock, Pete, 20–21, 43  
Brophy, John, 18  
Brown-Forman Inc, 126  
Brundle, Martin, 368–69, 372, 387–88, 392  
BSR (Bob Sharp Racing), 175, 180–81  
Budweiser, 397  
Bugeye Sprite, 15–16  
Buick, 203, 295  
Burness, Bruce, 58  
Burt Rutan's Pond Racer, 440  
Busby, Jim, 405, 439–40  
Butler, Ron, 23, 29–32, 36, 43–44, 55  
  
**C**  
Cabin Racing Team LeMans, 234  
CAD  
(Computer Aided Design), 353  
Anvil 1000MD, 353  
Caldwell, John, 21  
California Coffin, 146, 285  
California Cooler, 62, 85, 125–26, 282, 285  
California Highway Patrol, 33  
Cal State University, 9  
cam, 25, 74, 192  
drive system, 206  
flat tappet, 28  
grinds, 202  
hub, inner, 206  
camera  
in-car TV, 310  
lipstick-sized video, 99  
Campbell, Glenn, 116  
Can-Am, 7, 52, 57–58, 61, 145, 282, 285,  
311, 314, 344, 367, 372, 383, 396, 408  
Canas, Francisco, 70  
Cannaday, Les, 11  
Carney, Frank, 29–30, 35, 40  
Cartier, Bill, 56, 60  
CASOC, 15  
Cavaglieri, Joey, 11, 27

CCAs (Circuit Card Assemblies), 89, 97  
Chapman, Jim, 119, 325  
Charlotte Motor Speedway, 24, 133  
    crash, 135–39, 425  
Chen, Jess, 60, 125–26, 130, 150, 276, 308  
Chenoweth, Lynn, 261  
Chevrolet, 203, 259, 295, 328  
    6.0-liter V-8, 434  
Chevron, 306, 385  
Christie, John, 308–9, 338, 343, 406, 408,  
    412  
Christmas party, Electramotive Engineering,  
    336  
Ciba-Geigy, 326, 403  
Clarival, Alain, 142, 276, 308, 343  
Clayton Cunningham Racing, 238, 376  
clutch, Tilton 7.25-inch carbon-carbon, 307,  
    317  
Coan, Jim, 17  
Coast Fabrication, 336  
Cobb, Price, 381, 383, 390, 394, 414,  
    421–24, 427–28, 430–31, 433, 435  
Columbus Ford Dealers Camel Grand Prix,  
    331, 391  
composites, 56, 116, 151, 264, 307–8, 403  
connecting rods, 19, 24, 117, 181–82,  
    210–11  
    Carrillo, 211  
    Crower, 182, 211  
Conner, Jim, 257, 259  
Cooper Payen Ltd, 241  
Cooper Seals, 241  
Corvette GTP, 101–2, 108, 298–99, 304–5,  
    313–14, 392, 408  
Cosworth engines, 259  
Courage Competition, 234  
Couzens, George, 429  
crankshaft, 24–25, 29, 66, 85, 179–82, 190,  
    193, 202–3, 206, 210, 249–50, 252  
Cunningham, Clayton, 407  
cylinder head, 16, 28, 52, 178, 182, 184,  
    191, 195, 241, 243, 250

## D

Dailey, Bill, 11, 66, 68, 77, 84, 88, 97,  
    173–74, 179, 187–88, 202, 211, 225,  
    239, 355, 374, 406  
Daly, Derek, 391–95, 408  
datalogger, 69, 91, 93  
    Micro-logger, 93  
    Mobylogger, 93  
Datsun, 19–23, 29–31, 34–37, 40, 43, 45,  
    48, 50, 52, 162, 174, 258  
    B210, 23, 29, 282  
    Motorsports Department, 35, 38, 53  
Dave Kent Racing, 20, 54, 56, 162, 288  
Davenport, Dick, 35, 40  
Daytona International Speedway, 10, 24, 29,  
    33–35, 40–41, 43, 47–49, 81, 88, 94,  
    111, 281–82, 344, 407–8, 411, 440–42  
    24 Hours of Daytona, 29, 40, 81, 282,  
    344, 407–8, 440–42  
Denzin, Mike, 343, 398, 406, 408  
detonation, 24, 84, 210, 224–26, 240  
Devendorf, Alice, 16, 282  
Devendorf, Dave, 11, 18, 64, 74, 172, 353  
Devendorf, Don, 7, 9, 11, 13–14, 20, 46, 58,  
    63, 70, 75, 125–27, 131, 133, 139–42,  
    145, 147, 154, 175, 281, 283, 311, 372  
digital boards, 74–75, 85, 95  
digital signal processor (DSP), 97  
Disney, 78, 90  
distributors, 25, 41, 65–66  
dive planes, 158, 400, 405  
    dual, 342  
    lip, 279  
Dodge, 259  
Donohue, Mark, 314  
Don Preston Racing, 30  
Dowe, Tony, 372, 423  
Downs, Mike, 17  
drag, 99, 141, 154, 159, 165, 170, 274, 292,  
    295, 307, 312, 342  
Dredge, Bill, 60, 125–26, 142  
drive pegs, 379  
Duncan, Shaylor, 276, 288  
Dunlop, 340, 371, 387, 394, 426  
    super-soft, 395  
Durae, Harry, 15

Dussia, Brent, 11, 38, 52, 63, 69–71, 75,  
77–79, 89–90, 93, 188–89, 196, 202,  
275, 401  
dyno, 16–17, 68–69, 72, 80, 84–85, 94, 97,  
117, 199–200, 224–25, 261, 344–45

## **E**

Earl, Bob, 434–36  
Economaki, Chris, 435  
EECP (Electronic Engine Control Processor), 14, 41, 48–49, 63, 65–69, 71, 75, 80, 82–83, 89, 95–96, 99, 189, 193–94, 210, 344, 346  
analog, 65, 71–72, 75, 80, 99, 199  
controlled boost system, 194  
Test Unit, 89  
EECP2, 63, 69, 71–75, 78, 80, 84–90, 94, 97, 199, 246, 279  
designers, 71  
EECP3, 97  
EECP4, 97, 99  
Eickhoff, George, 19–20, 22  
Eldridge, Chad, 336  
Electramotive  
2.5-liter GTO engine, 216  
3.0-liter GTP engine, 211, 240  
advertisement, 35  
crew, 23, 27, 281, 315, 427, 436  
Datsun B210, 22–23, 27  
Datsun L28 Turbo GTO engine, 39  
electronics lab, 69–70, 87–88, 99, 152  
FJ-24 four-cylinder engine, 39, 261  
flat pad, 419  
GTO Championship, 47–48  
IMSA RS Datsun B210, 25–26  
manufactured wastegates, 81, 194  
March V-6, 221, 228  
modified cylinder head, 183  
Nissan 3.0L V-6 Turbo GTP engine, 197  
Nissan Hardbody truck, 263, 274  
Stadium Truck, 39, 91, 141, 171, 238, 257, 264, 273–74, 343  
twin-turbo GTP engine, 373  
twin-turbo V-6 GTO, 423

electronics, 9, 21, 32, 58, 64–65, 69, 71, 86, 88, 91, 94–95, 128, 150, 174, 234, 279, 340  
Elf fuel, 224  
Ellis, Mark, 27  
El Segundo Flood Control, 152  
Elvis, 336–37, 377, 396, 407–8  
Endean, Mike, 305  
EPROM (Erasable Programmable Read Only Memory), 84, 96, 199  
EPROM burner, 84  
Epstein Barr Syndrome, 281–83  
ERC, 201  
Ercek, Dennis, 171, 282  
Ermerins, Bill, 173–75, 182  
ESPN, 99, 288  
Essex Racing, 429  
Evans, Walker, 259, 274  
exhaust, 41, 94, 119, 186, 194–95  
exhaust headers, 122–23, 194–95

## **F**

Fail-Safe Technologies, 52, 70–72, 89–90  
Failure Analysis Test Track, 292, 340, 343  
Fangio II, Juan Manuel, 424, 433  
Fast and Boogie, 83  
Ferrari, 29  
Ferrari, Mike, 308, 336, 343, 368, 406  
FIA, 367, 396  
World Endurance Championship, 45, 217, 228  
Firebird International Raceway, 147, 217, 280–82  
FISCO fuel, 201, 224  
Fitzpatrick, John, 372  
Florida State Fairgrounds, 396, 433  
Flynn, Joe, 11, 70, 86, 341, 436  
Folkhardt Weidle, 60  
Follmer, George, 61  
Forbes-Robinson, Elliott (EFR), 11, 15–16, 282–83, 285–88, 292, 301–4, 306, 311, 313–23, 330–32, 344  
Ford, 43, 382, 406  
Ford GT, 43  
Ford Merkur, 56  
Ford Probe, 131, 287, 301, 304, 392

Ford Rangers, 259–60  
Galaxie, 43  
Formula 1, 48, 65, 149, 159, 328  
    3.5-liter engine, 382  
Formula 3, 369  
Formula 5000, 61  
Foundries, Gregg, 350  
Fox, Bob, 261  
Fox shocks, 261, 267, 371  
Foyt, A.J., 344  
Franciscus, Eugene, 69–71, 75, 88, 147,  
    280, 368  
Franklin rear end assembly, 42, 262  
Frissbee Can-Am, 58  
Frisselle, Brad, 27–29, 32, 36  
front spindles, 131, 379  
front suspension, 261, 264, 326, 339, 389,  
    397  
fuel cell, 192, 264  
    new lightweight, 300  
fuel injection, 63, 65, 67, 74  
fuel injection events, 41, 72, 75  
Fuji International Speedway, 45–46, 68, 72,  
    90, 218–22, 224, 227–28, 230–31,  
    233–35, 246, 252  
function generators, 67–68

**G**

Galles, Eagle, 54, 58  
Galles, GR3 Can-Am, 58–59  
Garrett AiResearch, 118–19, 194–95  
    T03 turbo, 195  
    T31 turbo, 194  
gearboxes, 21, 24–25, 42, 57, 123, 157, 169,  
    279, 288–90, 328, 374–75, 412, 423,  
    427  
Geatches, Curt, 11, 176, 196, 406  
Gibbs III, Thomas M., 126  
Gloy, Tom, 371–72, 386  
Goodyear, 16, 24, 133–34, 333–34, 340,  
    344, 353, 371, 382, 387, 429, 432  
    engineers, 410  
Goodyear Aerospace, 65  
Grand Prix of Miami, 311, 347, 376, 411  
Gregg, Peter, 372  
GTE World Challenge, 396

Guna, Ray, 164, 276, 295, 308, 343, 368,  
    381, 406  
Gurney, Dan, 56, 327  
Gurney, Eagle Indy, 52, 316, 327, 396  
Gurney, Indycar, 7, 295

**H**

Harris, Glen, 259  
Harris, Phil, 372  
Harris, Trevor, 7, 11, 14, 19, 43, 58–60, 125,  
    149–50, 154, 181, 262, 271, 285, 325,  
    329, 343, 368, 373, 386, 389, 399,  
    406–7  
Harris Dynamics, 58  
Harris Enterprises, 58  
Hartley, Steve, 57, 125–26, 276  
Hartman, Wayne, 162, 403–4  
Hartman Fiberglass, 162, 403  
Hasemi, Masahiro, 225  
Haywood, Hurley, 313, 320, 322  
Heartland Park Track, 429  
Heatherington, Gene, 406  
Heimrath Jr., Ludwig, 292  
Hendrick, Rick, 101  
Hermes, Randy, 310  
Hewland, 290–91, 302, 305–6, 374, 393  
Hewland, Mike, 305  
Higgins, Jon, 129  
Higham, Greg, 125  
Hobbs, David, 316–18  
Hoke, Tom, 275  
Holbert, Al, 299–300, 391, 395, 407  
Holbert Porsche, 131, 287–88, 299, 320,  
    344, 377, 407  
Holbert Racing Team, 355, 391  
Holbert Trophy, 395, 436  
Holman & Moody, 43  
Holman Automotive, 43  
Home Depot, 151  
Honsowetz, Frank, 11, 35, 175–76, 280–82  
Hoosierdome, Indiana, 258, 260  
horsepower, 17, 22, 27, 32, 42, 57, 144, 212,  
    291, 295, 305, 311, 328, 344, 382, 391,  
    396, 411, 413, 421  
Hoshino, Kazuyoshi, 220, 225

House, John, 53, 60, 152, 258, 260–62, 264, 268, 274  
Howland, John, 243  
Huber, Jeff, 259–60, 262, 274  
Huffaker, Joe, 395, 436  
Hughes, Dennis, 308  
Hughes Aircraft, 9, 13, 15, 53, 63, 65, 68, 70–71, 99, 281–82, 370  
engineers, 63  
philosophy, 9  
Huntington, David, 11

## I

ignition, 38, 65, 72, 74–75, 86, 94, 99  
capacitive-discharge, 32, 99  
crank-fired, 25, 27, 38, 40, 66  
timing, 41, 63, 65–67, 72, 75, 199  
trigger wheel, 193  
Imperial College Wind Tunnel, 112–13, 130, 149  
IMSA (International Motor Sports Association), 13, 24, 40, 42, 55, 212, 238, 304, 344–45, 354, 370, 372, 378, 381–84, 391–92, 396, 406, 421, 428–30, 433  
IMSA  
BF Goodrich Radial Challenge, 24  
BF Goodrich Radial Challenge Championship, 24  
Camel Lights, 131, 320, 390  
Camel Pyramid Award, 358, 378, 394  
Camel Smooth Move Award, 424  
GTO Championship, 45, 63  
GTP Championships, 58, 347  
GTU, 27, 31, 35  
GTU Championship, 48  
GTU Manufacturers Championship, 36  
Radial Sedan Series, 23  
rules, 83, 212, 408  
Inconel, 119, 186, 195  
Indy cars, 7, 24, 52–54, 57, 61, 116, 131, 145–46, 165, 260, 285, 304, 327, 343, 370, 397, 407, 437  
injectors, 41, 67, 85–87, 187–88, 192  
instrumentation, 33–34, 58, 252, 333, 351  
intake manifold, 66, 86, 188

truck V-6, 263  
Intel Corporation, 74, 97  
intercoolers, 51, 101, 105, 120, 123, 139, 195, 225, 399–400  
Interscope Indy car team, 54  
Iskenderian, Ron, 27–28  
Isky Cams, 202  
Italya Sport Team, 230–32

## J

Jack Murphy Stadium, San Diego, 258  
Jackson, John, 11, 52, 70–71, 74, 83, 85, 90, 95, 97–99, 152  
Jaguar, 141, 299, 301, 334, 343–44, 348, 355–56, 368–70, 378–79, 382, 384, 386–88, 392, 394–96, 412, 414, 417–18, 421, 423–24, 426–33, 436  
Silk Cut, 224, 231  
XJR-7, 320  
XJR-8, 344  
XJR-9, 344, 421, 426  
XJR-10, 406, 421, 423–24, 426, 431, 433  
Japanese Zero Tail, 150  
Japan Sports Prototype Championship, 175, 217–18, 223, 230–31, 233–35  
Jeep, 273–74  
Jenner, Steve, 276, 308, 343, 406  
Jerry Titus Memorial Award, 397  
Jet Propulsion Laboratory, 83  
Jewell, David, 97  
Jim Busby Racing, 276, 405, 440  
Jobe, Tom, 118–20, 137, 189  
Joest Racing Porsche, 414  
Johnson, Amos, 55, 382  
Johnson, Amos, Team Highball, 55, 95, 382–83  
Johnson, Jack, 59, 141, 174  
Johnstone, Parker, 440  
Jones, Tim, 15–16  
Jones, Davy, 356–57, 426, 429  
**K**  
Kastner, Kas, 7, 11, 17–18, 61, 273–74, 279–80, 317, 325, 382, 437  
Kastner Brophy Racing, 18–19, 333  
Katayama, Yoshimi, 36

Katayama, Yutaka, 52  
Kazmer, Peter, 308, 330, 406  
Kelley, Hal, 396  
Kelsey Hayes system, 23  
Kendrick, Richard, 43  
Kennedy, Chris, 48, 174  
Kennedy, Mark, 174, 176  
Kent, Bob, 125  
Kent, Dave, 56  
Kent Aerospace Castings, 352  
Kenwood, 95  
Kingdome, Seattle, 258, 274  
Kline, Jeff, 359, 365–66  
Knepp, John, 11, 13–14, 19–23, 25–47,  
50–52, 67–68, 72, 75, 77, 80, 82, 84,  
86–88, 96, 102–3, 105–10, 113,  
115–18, 121–22, 129, 134, 140, 147,  
155, 158, 173–79, 182–88, 190–94,  
196–236, 241, 243–44, 246–47, 255,  
267, 280–81, 286, 291, 299, 310–12,  
314–15, 317, 329, 344–45, 352, 358,  
376, 387, 440  
Knepp, Lori, 11  
Kodak Pit Stop competition, 384, 395  
Koni shocks, 371–72  
Kono, Kelly, 406, 412  
Kramberger, Karl, 443  
Kuida, Jeff, 11, 56, 60, 125, 276, 308, 343,  
406

**L**  
Laguna Seca Raceway, 23, 29, 42, 50, 146,  
287–88, 301, 306, 316–17  
Lammers, Jan, 282, 303, 356–57, 380–81,  
392, 395, 421, 426–27, 431, 433,  
435–36  
Lang, Mike, 327  
Larrauri, Oscar, 396  
LCD (liquid crystal display), 97, 99  
Lee, Tommy, 308  
Leitzinger Racing, 213, 238  
LeMans, 65, 232, 234  
Leven, Bruce, 322, 391  
Lift/Drag ratio, 154, 159, 165, 307, 312, 342  
lifters, 183, 185

Lime Rock Park, 23, 49, 317, 337, 342,  
359–70, 407  
Lola Cars, 101–12, 115–16, 126, 131, 136,  
149, 154, 158, 165, 178, 203, 218–20,  
222–24, 235, 325–26, 329, 339, 439  
F3000, 116  
Lola Composites, 115  
Lola R89C, 234–35  
Lola T600 Corvette GTP, 317  
Lola T710, 104  
Lola T810, 59, 101, 112–15, 153, 156,  
178, 217, 227–28, 337  
uprights, 352  
Long Beach State, 15, 174  
Lopez, Pete, 174, 176  
Los Angeles County Fairgrounds, 262  
Low, Spencer, 267, 270  
Lowell, Jeff, 164, 295, 308, 341, 343  
LSI Logic, 99  
Lucas fuel pump, 192  
Ludwig, Klaus, 287, 301, 304, 391, 393, 395  
Luyendyk, Arie, 234, 405, 408, 413–14,  
416, 429

**M**  
Macintosh Pro, 93  
Macintosh SE/30, 353  
magnehelic gages, 34  
magnesium, 120, 189, 207, 307, 352  
AZ91C-T6, 372  
bellhousing casting, 136  
belt guards, 207  
QH21A, 352  
ram tubes, 187  
RZ5, 352  
main caps, 239, 243, 246–48, 250, 252–53  
Mallory, Hersey, 57, 308–9, 338, 343, 381,  
406  
Mallory distributor, 32  
March Cars, 203, 209, 219  
85G, 227  
88S, 231  
chassis, 101, 189, 217, 219  
March-Buick, 286  
R86V, 209, 223, 225, 230–31  
R87E, 230–31

R88C, 231, 234  
Marple, Fred, 90  
Martin, Barbara, 71, 75  
Martin, Dave, 11, 70–72, 75–76, 93, 199,  
202  
Mass, Jochen, 301, 431  
Matsumoto, Keiji, 225  
Matsuo, Yoshihiko, 52  
Mazda, 36, 40  
    four-rotor, 382  
    Mazda B2000s, 259  
    Mazda rally, 90  
    Mazda RX-7, 56  
    truck, 274  
McCulloch Helicopter, 56  
McCullough engine, 15  
McFadden, Dan, 60  
McIlree, Bob, 70–71, 95, 341  
McKnight, Larry, 276  
McKnight Laboratories, 181, 276  
McLaren, 316  
    Can-Am, 316  
    F1, 106  
    TAG-Porsche, 65  
McQueen, Mike, 56  
Mears, Roger, 53, 141, 257, 259, 262,  
270–71, 273–74  
Mears Racing, 213  
Mechanization Systems Company, 181, 190  
Mexico City, 328  
Mickey Thompson, 257–58, 268  
    Grand National Sport Trucks  
    Championship, 53, 262  
    Off-Road Championship Gran Prix, 257  
    SCORE Off-Road Championships, 257  
microcontrollers, 74–75, 86, 97, 99  
microprocessors, 85, 87, 97  
Microsoft Excel, 353  
Mid-Ohio Sports Car Course, 24, 27, 42,  
48–49, 290, 292, 317–18, 371, 422–23  
Mignanelli, Tom, 397  
Mikuni carburetors, 261  
Milkie, Jerry, 176  
Millen, Rod, 259  
Millen, Steve, 259, 262, 267, 376, 407  
Milligan, Steve, 99

MIRA wind tunnel, 149–50  
Morton, John, 11, 21, 29, 43, 280, 309,  
322–23, 330, 336, 344, 347, 354,  
356–57, 359, 368, 376–77, 380, 382,  
386, 390–91, 396–97, 407, 421, 440  
Mosport Park, 49  
Moss, Wes, 11, 14, 43, 46, 60, 68, 133, 143,  
154, 289, 343, 375, 406, 409  
Motorola, 95  
MSD Ignition, 25–27  
Mueller, Lee, 18

**N**  
Namba, Yasuharu, 51, 175  
NASCAR, 43  
    banking, 133  
National Championships, 16–17, 19, 23, 59,  
61, 262  
    Runoffs, 17–18, 35  
Nesbitt, Bruce, 22  
Newman-Sharp Racing, 213, 238  
Nichols, Terry, 56, 86, 125, 164, 258–59,  
276, 280, 290, 295, 308, 321, 337–38,  
343, 406, 408  
Nielsen, John, 355, 369, 377, 380, 388, 414,  
421, 423–24, 426, 430  
Nismo, 69, 71–72, 85, 90, 175, 178, 201,  
203–4, 217–19, 223, 225, 229–31,  
234–35, 238, 244, 246, 403  
    building, 175  
    Lola T810, 219–20  
    March, 206, 220  
    Nissan R85V, 223, 225–26  
    Nissan R86V, 224–25, 227  
    Nissan R88V 3.0-liter V-6, 234  
    Nissan V-8, 233, 235  
    Nissan VEJ30 V-8, 229  
    Nissan VRH35Z V-8, 235

Nissan  
    first FIA Group C win, 220  
    King Cab, 263  
    Lola T810, 111, 153, 155–56  
    L-series engine, 28, 32  
    V-6



- aluminum block, 52, 203, 212–13, 231, 237–40, 242–46, 248, 252–54, 263, 307, 314, 321, 323, 340, 407
    - engine, 254, 307, 323
    - first, 210, 314
    - strain-gauged, 250
    - strain gauge test, 249
    - test, 254
  - iron block, 52, 181–82, 203, 239–41, 243, 254, 263, 323
- Nissan Motor Corporation, 52, 397, 437
- Nissan Motorsports, 43, 46, 53, 224, 234, 259, 325, 357, 437
- Norelco Drivers Cup, 395
- North Carolina State University, 11, 43
- NPT-90, 399, 438–39, 443
- NPTI (Nissan Performance Technology, Inc.), 9, 11, 61, 97, 99, 171–72, 258, 437–38, 440, 443
- NPTI, electronics lab, 437
  
- O**
- Oblinger, Kurt, 36, 40, 49, 285–86, 314
- Olson, Drake, 417, 424
- O’Neal, Craig, 60
- O’Neill, Mike, 305
- Ontario Motor Speedway, 23, 33
- On Track magazine, 35
- Orange County Raceway, 19
  
- P**
- Packard connector, 128
- Page, Ashley, 6, 10–11, 52, 54, 56–57, 60, 68, 70, 91, 116, 125–26, 130, 137, 143, 147, 164, 171–72, 195, 276–77, 280, 288, 291, 293–95, 297–98, 300, 303, 308, 311, 318, 323, 325–26, 330, 334, 336–37, 343, 346, 348–49, 368, 377–78, 381, 383, 385, 389, 395, 402–3, 406–8, 412, 423
- Parrish, Bruce, 10–11, 14, 55–56, 60, 63, 104–5, 118–25, 127–28, 132, 135–38, 148, 154, 162, 171, 189, 192, 197, 245, 258, 260, 263–67, 279, 288, 295, 309, 319–21, 324, 326, 329, 336, 339–41, 350, 385, 394, 400–402, 408–9, 425, 438, 443
- Passos, Nelson, 60, 276, 295
- Paul Jr., John, 440
- Pep Boys, 192, 290
- Performance Friction, 350–51
- Pershing, Bernie, 150, 165, 171, 312
- Person’s Racing Team, 231, 233
- pistons, 84–85, 117, 179, 181–82, 211, 250, 254, 340
- Pit Stop Foreign Auto, 20
- Pleasant, Damon, 22
- plenum, 82, 86, 120, 187–89, 195, 204, 400
- Pocono International Raceway, 24
- Pomona Fairgrounds, 258
- Pontiac Silverdome, Michigan, 260
- Porsche, 51, 61, 65, 111, 153, 217, 220, 222, 280, 301, 314, 317–18, 320, 322–23, 340, 343–45, 351, 378–79, 381, 384, 390–91, 393–97, 405–7, 411, 428, 431
  - 935 GTX, 41
  - Rothmans, 65, 220, 224
- Porteous, Roger, 57, 341
- Portland International Raceway, 36–37, 42, 164, 333
- Posey, Sam, 35
- PROM (Programmable Read Only Memory), 84
- Pro-System, 351
- Pruett, Scott, 304, 397
- pulleys, 17, 193, 206–7
- Pumpelly, Tom, 392
  
- R**
- radioactivity, 352
- Raffauf, Mark, 55, 370, 382, 406
- Rahal, Bobby, 332, 392
- Raybestos, 351
- rear suspension, 17, 29, 43, 58, 104, 261, 264, 267, 271, 325, 373, 396, 425
- rear wing, 99, 159, 168, 391, 400
  - dual-element, 307, 312, 400
  - new Pershing, 169–70
- Redman, Brian, 141
- Reno Air Races, 440
- resistors, 68–69, 87

restrictors, 212, 344–45, 382, 396, 406, 417, 423  
rev limit, 26, 66, 199, 203–4, 225  
rev limiter, 25, 32, 40  
Reynolds, Don, 11, 147, 176, 196, 280, 309  
Rezmer, Harold, 255  
RFI (Radio Frequency Interference), 86  
RFI test rig, 86–87  
Ribbs, Willy T., 427  
Rickey, Devin, 11, 21, 70, 149, 174, 180–81, 274  
Rickman, Mike, 35  
ride height, 30, 159, 274, 342, 372  
  sensitivity, 292  
  sweeps, 154  
Riverside International Raceway, 17, 217, 257, 304, 310  
  6 Hours of Riverside, 36  
  test, 91–92, 310  
Road America, 40, 42, 49, 55, 141, 212, 254, 282, 305, 323, 346, 350, 380–81, 390, 425–26  
Road Atlanta, 24, 30, 36, 42–43, 49, 285, 312–13, 331, 337, 353–54, 358, 417–18  
Roberts, Dick, 19–20, 23, 26, 40, 46, 53, 175, 257–58, 279  
Robinson, Chip, 96, 234, 337, 377, 398, 401, 407–8, 411, 413, 417, 420–22, 424, 426–27, 429–31, 433–35  
Rodeck, John, 241, 244  
Rodeck 350 Sprint Car engine, 239  
Roe, Michael, 408  
Rolling Stones, 385  
Rosintoski, Gene, 359  
Rosintoski Motorsports Photography, 292, 303, 313, 331, 359–66, 385, 405, 414–15, 441–42  
Ross Racing Pistons, 202  
Roy Woods Racing, 61, 316  
Ruegsegger, Al and Neil, 306

## S

Samulewitz, Rolf, 11, 259, 271, 273  
San Antonio Track, 330, 390, 430  
Sanchez, Ralph, 411–12

San Roman, Eddie, 56, 119, 125, 137, 259, 276, 308, 336  
Santa Barbara Airport, 61  
Saunders-Hyde, John, 325  
Scat Enterprises, 180  
SCCA (Sports Car Club of America), 16–20, 23–24, 31, 35, 282  
Schatt, Kevin, 259, 271, 343, 368, 381, 406, 408  
Schuppan, Vern, 397  
Sears Point Raceway, 13, 42, 49–51, 140, 300–302, 306, 318, 322, 350, 386–89, 432  
Sebring International Raceway, 35, 281, 285, 312, 344, 346, 353, 405, 413–16, 442  
  12 Hours of Sebring, 285, 312, 353, 405, 414, 416, 442  
Seignoret, Yves, 276, 308  
sensors, 25, 66, 68, 76, 83, 193  
separator, fuel-air, 67, 192  
Shadow Formula 1, 149  
Shaffer, Bob, 353, 383  
Sharon Hospital, 359  
Shelby, Carroll, 43  
shocks, 21, 261, 271, 326, 371  
Silverstone Circuit, 209  
Simpson, Bart, 385  
Simpson, Homer, 385  
Slagle, John, 308  
Sneva, Tom, 260  
software, 67, 70, 76, 91, 93–94, 97, 199  
solenoids, 80, 82  
South Florida Fairgrounds, 356, 420  
SPARC workstation, 99  
Spice Engineering, 276, 406  
  Firebird GTP, 434  
  Spice-Pontiac, 359, 365  
spindles, 43, 379  
Springer, Alwin, 370  
Spruce Goose Pavilion, 397  
Stafford, Craig, 11, 308, 343, 384, 406  
Starita, Dick, 26  
Stevens, Rob, 372  
Stewart, Ivan, 259, 262  
Stiff, Fred, 35

St. Luc Engineering School, 142  
strain gauges, 248, 251–52  
strain gauge test, 253  
Sturridge, Bill, 164, 276, 295  
suspension, 17, 29, 55, 126, 133, 146, 302,  
326, 339, 351, 372, 389, 399  
Suzuka, Yoshi, 11, 52, 60, 91–92, 99, 101,  
111–14, 125, 144, 149–54, 156–61,  
164–70, 172, 276, 292, 295, 308,  
342–43, 367–68, 403–4, 406  
Suzuka Circuit, 219, 223, 227, 230–31, 233,  
235  
Suzuki, Aguri, 225  
Swift, John, 259

## T

tachometer, 67, 85–86  
Tadokoro, Ken, 99  
Taube, John, 371  
Taylor, Wayne, 433–35  
Templeton, Irene, 90  
Texas Instruments, 97  
Texas Stadium, 258  
Tharp, David, 20  
Thompson, Danny, 259  
Thompson, Mickey, 55, 257–58, 268  
Tilton, Mac, 21, 43  
Tilton Engineering, 317, 349  
Timeout Bar, 22, 28, 30  
timing, 24–26, 67, 84, 95–96, 184  
Tobin, Joe, 57, 164, 276, 279–80, 289, 291,  
295, 307–9, 343, 368, 381, 393, 406,  
408, 412  
Tokyo City University, 52  
torque, 24, 42, 57, 80, 180, 212, 291, 320,  
344, 350–51, 421  
Toyota, 217, 230–31, 235, 259–60, 262,  
267, 273, 317, 406, 417, 420, 422, 424,  
427, 429–30, 435  
4Runners, 259  
Celica, 56  
traction control, 80, 94  
Trans-Am, 61, 283, 318, 371  
trigger wheel, 66–67, 193  
Triumph, 18–19, 61, 279, 281, 333  
Competition Department, 17, 61

GT6, 18  
Spitfire, 16, 54  
TR3A, 61

Truesports, 372  
Indycar race team, 397  
TRW Mechanic of the Year, 395  
tub, 7, 70, 137, 314, 325–26, 329, 334–35,  
339, 397, 399, 439  
turbo engines, 51–52, 86, 119, 179, 186–87,  
212, 344, 406  
turbo lag, 41, 386–87  
turbo restrictors, 333, 391, 406  
Turner, Alan, 276, 308, 317  
TWR (Tom Walkinshaw Racing), 344,  
387–88, 406, 414

## U

UCLA, 64  
Uniroyal belt, 193, 206  
upright, 128, 348, 351–52

## V

valves, 26, 85, 185–86, 205, 225, 307  
exhaust, 184, 186, 409  
intake, 184, 204  
van der Merwe, Sarel, 298, 314, 408  
Varnals, Russell, 276, 308–9, 343, 385, 406,  
409, 412  
VDS, 7, 58  
Veterans Memorial Main Auditorium, 391

## W

Wada, Takao, 225  
Walkinshaw, Tom, 344, 357, 428  
Ward, John, 327  
wastegates, 66, 80–82, 194, 225  
water pump, 182, 193, 206  
Waters, John, 75  
Watkins Glen International, 55, 99, 145,  
303, 319–20, 378–79, 394, 424  
Watson, John, 302  
Weaver, James, 224–25, 390, 413  
Web Graphics, 241, 243–44  
WEC (World Endurance Championship),  
217, 223, 231, 235  
weight savings, 203–7, 372

Weismann, 106, 289–91, 302, 327–28  
gearbox, 42, 139, 141, 290, 327  
transaxle, 106, 146, 279, 289, 291, 302,  
425  
Weismann, Pete, 328  
Welltite stellite, 186  
Western Gear, 42  
West Palm Beach, 319, 337, 356–58, 392,  
420  
wheel drive pegs, 379  
White, LeRoy, 57  
Whittle jet engine, 119  
Wiggins Alloys, 119  
Wildhirt, Dan, 50, 337  
Wilkinson, Sylvia, 11, 54–55, 309, 382, 406  
Williams, Mark, 109, 112  
Willow Springs Raceway, 41, 50, 85, 376  
Wilson, Kurt, 406, 409  
Windecker, Mark, 27, 30, 48, 141, 354–55,  
371, 392, 422  
wind tunnel, 32, 53, 111, 148–50, 152–54,  
158, 165, 172, 279, 292, 312, 367, 384,  
399, 437  
Eiffel-type, 152, 172  
Electramotive, 101, 130, 153–54, 170,  
292, 367, 373, 379  
moving ground plane, 14, 52, 149–50  
non-moving ground plane, 149–50, 170  
Winters center section, 374  
Wise, Tim, 174–75  
Wollek, Bob, 140, 304, 383, 411, 422–23  
Woodford, Tony, 443  
Woodling, Odell, 174  
Wootten, Brit, 41  
World Sportscar Championship, 344

## **X**

Xtrac, 305

## **Y**

Yagami, Dick, 373, 403–4, 406  
Yokohama, 371

## **Z**

Zakspeed, 90, 301