Service-Information

Group 00 Equipment Advice	February 1983	Bulletin No: 00 028 83 (2069)

- For U.S.A. and Canada Only -

RE: NEW BMW MOTORCYCLE MODELS FROM MODEL YEAR 1983 ON

Dear Dealer:

Starting from the plant vacation shutdown in 1982, the BMW range of motorcycles has been enlarged to include the

R80ST and R80RT.

Please refer to the accompanying descriptions to obtain the principal

-technical data
-maintenance instructions
-details of special accessories

which you and your service team will need.

On all models, the frame number is no longer stamped into the steering head. It is now stamped into the right lower frame loop above the center stand mount. This change has taken place during the autumn of 1982.

Yours truly,

BMW OF NORTH AMERICA, INC.

Herb Neas
National Service Manager

Enclosure: Descriptions

lease route and initial before filing

Bright chromium plate on exhaust system, cylinder guard hoop, left side

Saddlebag holder and luggage grid

Kick starter as special equipment only; electric starter standard equipment

Distinctive color scheme for this model, (choice of two colors):

- -spheric silver with red stripe
- -red metallic with silver stripe

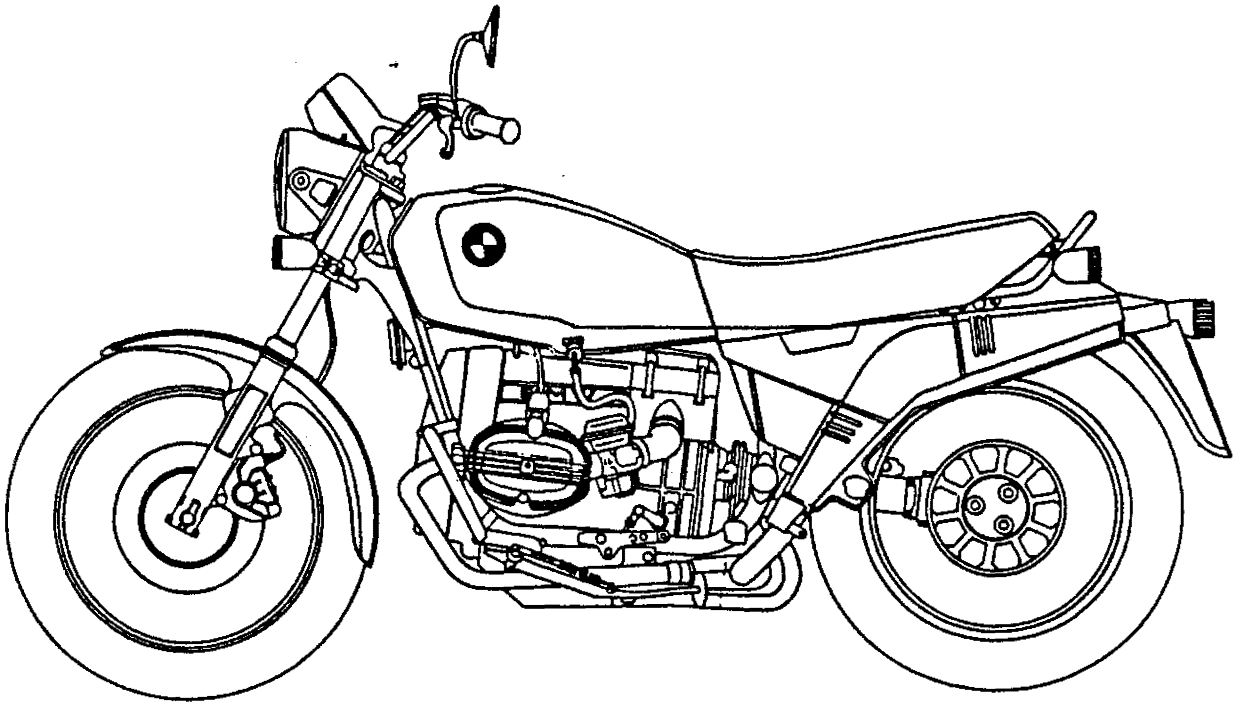
Saddlebag case at left (new version only, with modified base; previous left cases will not fit)

Special accessories - as for R80G/S

(Exceptions: Saddlebag case holders and "Touring" cases now as a pair. Special equipment option of revolution counter and cylinder guard hoops now inappropriate. Special equipment option of kick starter is added.)

Engine:	Aircooled two-cylinder four-stroke horizontally opposed unit with overhead valves in inverted V layout; light alloy construction, with "Galnikal" coated aluminum cylinder barrels. Single-piece forged crankshaft with plain bearings.
Number of Cylinders:	Two
Displacement, effective:	797.5 cm^3
Torque: - at engine speed:	56.7 Nm (41.8 lb.ft.) 5000/min
Bore x stroke:	84.8 x 70.6 mm
Compression ratio:	8.2 : 1
Mixture preparation and control:	Two constant-depression carburetors, barrel diameter 32mm, with cold-starting device
	Left carburetor type: V 64/32/305 Right carburetor type: V 64/32/306 Barrel diameter: 32mm

BMW R80ST



The following specification details on the R80ST differ from the G/S model:

New design of front fork

19-inch front wheel

Different front mudguard

Headlight diameter 160mm (6.3 in)

Twin instrument cluster with crash pad

Touring handlebars

Fuel tank with recessed, lockable cap

Aluminum footrests with rubber covering

Redesigned exhaust-pipe cover panel

Monoshock spring-damper strut for rear wheel with 153mm (6.02 in) travel

Seat height 845mm (33.3 in)

Deep oil sump and lower oil pump suction head

Low-profile tires (100/90 H 19 and 120/90 H 18)

Cylinder guard hoop with prop stand as standard equipment

Ignition System:	Breakerless transistorized coil ignition (TSZ h) with centrifugal timing control (adjustable). Protected location in separate ignition box. Maintenance-free. Adjustment data as for R80G/S.
Coil:	12 V, twin-spark
Spark plugs:	14 mm dia., long thread Bosch W 7 D Beru 14-7 D Champion N 10 Y
Spark plug electrode gap:	0.6 + 0.1 mm (0.024 + 0.004 in)
Alternator:	280 W
Starter motor:	Sliding-engagement type, 0.7 kW
Fuel tank:	19 l (4.18 U.S. gal) capacity, sheet steel, with internal corrosion protection
Fuel tap:	With reserve position; quantity of fuel in reserve app. 2 l (3.5 U.S. pint)
Exhaust system:	2 in 1, with primary expansion chamber and high-mounted main silencer at left; polished chromium-plated finish
Exhaust pipe diameter:	35 mm (1.38 in)
Clutch:	Single dry plate with increased-leverage diaphragm spring
Clutch plate diameter:	165 mm (6.5 in)
Effort required at clutch lever:	50 ... 70 N (110 ... 154 lbf)
Gearbox:	5-speed, flanged to engine block, with claw-pattern shift and integral shock damper
Oil content:	0.8 l (1.4 U.S. pint) brand-name hypoid gear oil, API Class GL 5 -above 5°C (41°F): SAE 90 -below 5°C (41°F): SAE 80

	Main jet: 148 Needle jet: 2.64 Jet needle No. 46-241 Needle position: 4 Idle jet: 45 Idle air jet: 1 mm (0.04 in) diam.
Fuel requirement:	Leaded or unleaded
Octane number:	RON = 91 R & M = 87
Valve gear:	Camshaft driven by chain and sprockets; valves operated by light alloy pushrods and rockers
Valve timing:	Inlet opens: 16° before TDC Inlet closes: 44° after BDC Exhaust opens: 56° before BDC Exhaust closes: 4° after TDC [at valve clearances of 2 mm (0.079 in)]
Valve diameters: -inlet: -exhaust:	 42 mm (1.654 in) 38 mm (1.496 in)
Valve clearances: -up to 1000 km (app. 630 miles) -inlet: -exhaust: -after 1000 km (app. 630 miles) -inlet: -exhaust:	 0.15 mm (0.006 in) 0.20 mm (0.008 in) 0.10 mm (0.004 in) 0.15 mm (0.006 in)
Engine oil content: - if oil filter is renewed:	2.25 l (3.96 U.S. pint) 2.5 l (4.4 U.S. pint)
Engine oil viscosities:	Please refer to the motorcycle's rider's handbook - illustration of viscosity thermometer.
Oil pump:	Trochoid pattern (Eaton system)
Theoretical flow rate at Nmax:	1400 l (308 U.S. gal)/h at 6000/min and 4.5 bar pressure
Oil filter:	"Micronic" filter element
Air cleaner:	"Micronic" pancake-type element

Gearbox ratios:	1st, 4.4; 2nd, 2.86; 3rd, 2.07; 4th, 1.67; 5th, 1.50 to 1
Final drive ratio: - number of teeth:	3.36 : 1 37/11
Overall ratios:	1st, 14.78; 2nd, 9.6; 3rd, 6.95; 4th, 5.61; 5th, 5.04 to 1
Propeller shaft:	With universal joint and integral torsional vibration damper
Front forks:	Telescopic, with double-acting hydraulic dampers and progressive spring rates; fixed tube diameter 36 mm (1.42 in)
Oil content per fork tube:	0.19 + 0.01 l (0.44 + 0.018 U.S. pint). Refer to Rider's Handbook for approved oil grades
Total front suspension travel:	175 mm (6.89 in)
Steering lock angle:	2 x 47°
Handlebar:	Touring pattern, adjustable
Steering lock:	on left side of steering head
Lock system:	Identical-key locks for ignition, dualseat, fuel tank filler cap and steering lock
Mirrors:	Two, rigidly mounted on handlebar, mirror diameter 100 mm (3.94 in)
Switches and functions:	Central ignition/light switch in instrument cluster Left: lever for cold-starting device (cho horn push, low beam (dip) switch wi headlight flasher, turn indicator control Right: ignition cutout ("kill") switch, starter pushbutton
Rear wheel drive:	Light alloy propeller shaft housing, crown wheel and pinion with antifriction bearings and Palloid tooth contact pattern. Rear wheel attached to crown wheel flange

Oil content:	0.35 l (0.62 U.S. pint) brand-name hypoid gear oil, API Class GL 5 - above 5°C (41°F): SAE 90 - below 5°C (41°F): SAE 80
Rear swinging arm and suspension:	Torsionally rigid BMW "monolever" with adjustable taper roller bearings and long-travel suspension
Oil content for propeller shaft lubrication:	0.15l (0.18 U.S. pint) brand-name hypoid gear oil, API Class GL 5 - above 5°C (41°F): SAE 90 - below 5°C (41°F): SAE 80
Swinging arm length:	413 mm (16.3 in)
Suspension travel (at wheel):	153 mm (6.02 in)
Springing element:	Monoshock with gas-filled damper, progressive spring rate and provision for spring-rate adjustment
Spring rate adjustment:	3-position
Front brake:	Single fixed-caliper disc brake with perforated stainless steel disc and semi-metallic pads to resist wet-weather fade. No provision for conversion to twin disc brake
Brake disc diameter:	260 mm (10.23 in)
Brake piston diameter:	38 mm (1.5 in)
Brake operation:	hydraulic
Master cylinder diameter:	12 mm (0.47 in)
Total brake pad area:	37 cm^2
Rear brake:	Drum, integral with rear wheel drive
Drum diameter	200 mm (7.87 in)
Brake operation:	Mechanical, by rod linkage
Total brake lining area:	89 cm^2
Front wheel	Spoked, with hardened light alloy rim
Front rim size:	1.85 B 19
Rear Wheel:	Spoked, with hardened light alloy rim

Rear rim size:	2.50 B 18
Front tire:	100/90 H 19 (3.25 H 19)
Rear tire:	120/90 H 18 (4.00 H 18)
Frame:	Tubular, double loop with bolted-on rear subframe
Fairing:	Miniature cockpit fairing can be installed subsequently as special equipment
Footrests:	Light alloy with rubber facing, spring-loaded, folding
Pillion footrests:	Folding, rubber-faced
Dualseat:	Detachable, with lock
Dualseat length:	600 mm (23.6 in)
Storage space:	Tool tray under dualseat
Storage space volume:	2.1 l (0.074 ft^3)
Toolkit:	21 items, plus tire inflating pump and puncture repair kit
Standard Accessories:	Cylinder guard hoop with prop stand
Motorcycle electrical equipment:	Central wiring harness of modern design, with multiple protection. All electrical control elements are centrally located and protected under the right half of the tank. Two fuse circuits.
Electrical system voltage:	12 V
Battery capacity:	16 Ah
Signalling equipment:	Vibrator-pattern horn
Instruments/functions:	Two separate dials integrated into common crash pad: speedometer with trip distance recorder. Telltale and warning lights: left/right turn indicator repeater (green), battery charge (red), engine oil pressure (red), neutral selected (green), high headlight beam (blue)
Additional Instruments:	Clock and voltmeter as special equipment option

Headlight bulb:	H 4, 55/60 W
Headlight diameter:	160 mm (6.3 in)
Rear light:	Single-chamber

Dimensions:

Overall length (at unladen weight:	2180 mm (85.8 in)
Max. width (engine):	790 mm (31.1 in)
Max. height (without mirrors):	1150 mm (45.3 in)
Handlebar width (without mirrors):	715 mm (28.1 in)
Handlebar width with mirrors:	850 mm (33.5 in)
Width over footrests:	590 mm (23.2 in)
Wheelbase in normal-load position:	1442 mm (56.8 in)
Caster in normal-load position:	129 mm (5.08 in)
Seat height at unladen weight:	845 mm (33.3 in)
Ground clearance:	170 mm (6.69 in)
- in normal-load position	130 mm (5.12 in)
Heel-over angle r/l in normal-load position:	45° / 46°

Weights:

Dry weight acc. to ISO 6726:	183 kg (403.4 lb)
Unladen weight:	198 kg (436.5 lb)
Gross weight limit:	398 kg (877.4 lb)

Braking performance with all brakes in use:

To a standstill from	(Rider only)	(At gross weigh limit)
50 km/h (31 mile/h):	11.6 m (38.1 ft)	12.3 m (40.4 ft
80 km/h (50 mile/h):	30.5 m (100.1 ft)	28.9 m (94.8 ft
100 km/h (62 mile/h):	44.1 m (144.7 ft)	47.3 m (155.2 f
130 km/h (81 mile/h):	76.1 m (249.7 ft)	79.5 m (260.8 f
150 km/h (93 mile/h):	95.8 m (314.3 ft)	108.9 m (357.3

Acceleration:

	(Rider only)
0 - 100 km/h (62 mile/h):	5.6 s
0 - 140 km/h (87 mile/h):	10.3 s
0 - 400 m (1312 ft):	13.5 s
0 - 1000 m (3281 ft):	26.0 s

BMW R80RT

The R80RT is derived from the R100RT model.

The engine is the well-proven 800 cm^3 unit as used in the R80G/S, running on regular or unleaded grade fuel.

The principal differences are to be found in the altered equipment specification.

Engine:	800 cm^3, 37 kW
Standard specification does not include:	Clock and voltmeter Steel-cable padlock Nivomat self-levelling suspension Power socket Rear disc brake* Holder for "Touring" pannier cases

With the exception of the item marked *, the above equipment can be obtained as special equipment options, as well as the remaining items on the options list.

This model has its own color schemes, with lining out:

-Pacific blue metallic with silver lining out
-Red metallic with gold lining out

Engine:	Aircooled two-cylinder four-stroke horizontally opposed unit with overhead valves in inverted V pattern; light alloy construction, with "Galnikal" coated aluminum cylinder barrels. Single-piece forged crankshaft with plain bearings.
Number of Cylinders:	Two
Displacement, effective:	797.5 cm^3
Torque: - at engine speed	59 Nm (43.5 lb. ft) 3500/min
Bore x stroke:	84.8 x 70.6 mm
Compression ratio:	8.2 : 1
Mixture preparation and control:	Two constant-depression carburetors with cold starting device Left carburetor type: V 64/32/305 Right carburetor type: V 64/32/306 Barrel diameter 32 mm Main jet: 145 Needle jet: 2.64 Jet needle No. 46 - 241 Needle position: 4 Idle jet: 45 Idle air jet: 1 mm (0.04 in)

Fuel requirement:	Leaded or unleaded
Octane number:	RON = 91 R & M = 87
Valve gear:	Camshaft driven by chain and sprockets; valves operated by light alloy pushrods and rockers
Valve timing:	Inlet opens: 16° before TDC Inlet closes: 44° after BDC Exhaust opens: 56° before BDC Exhaust closes: 4° after TDC (at 2 mm (0.079 in) valve clearances)
Valve diameters:	
-inlet:	42 mm (1.654 in)
-exhaust:	38 mm (1.496 in)
Valve clearances:	
-up to 1000 km (app. 630 miles)	
-inlet:	0.15 mm (0.006 in)
-exhaust:	0.20 mm (0.008 in)
-after 1000 km (app. 630 miles)	
-inlet:	0.10 mm (0.004 in)
-exhaust:	0.15 mm (0.006 in)
Engine oil content:	2.25 l (3.96 U.S. pint)
-if oil filter is renewed:	2.5 l (4.4 U.S. pint)
Engine oil viscosities:	Please refer to the motorcycle's rider's handbook - see illustration of "viscosity thermometer"
Oil pump:	Trochoid pattern (Eaton system)
Theoretical flow rate at Nmax:	1400 l (308 U.S. gal)/h at 6000/min and 4.5 bar pressure
Oil filter:	"Micronic" filter element
Air cleaner:	"Micronic" pancake-type element
Ignition system:	Breakerless transistorized coil ignition (TSZ h) with centrifugal timing control (adjustable). Protected location in separate ignition box. Adjustment data as for R80G/S.
Coil:	2 x 12 V
Spark plugs:	14 mm dia., long thread
	Bosch W 7 D Beru 14-7 D Champion N 10 Y

Electrode gap:	0.6 + 0.1 mm (0.024 + 0.004 in)
Alternator:	280 W
Starter motor:	Sliding-engagement type, 0.7 kW
Fuel tank:	24 l (5.28 U.S. gal) capacity, sheet steel, with internal corrosion protection
Fuel tap:	With reserve position; quantity in reserve 3 l (5.3 U.S. pint)
Exhaust System:	Two polished chromium-plated silencers; exhaust pipes linked by two interference pipes
Exhaust pipe diameter:	38 mm (1.5 in)
Clutch:	Single dry plate with increased-leverage diaphragm spring
Clutch plate diameter:	165 mm (6.5 in)
Lever effort required:	50 ... 70 N (110 ... 154 lbf)
Gearbox:	Five-speed, flanged to engine block, with claw-pattern shift and integral shock dampler
Oil content:	0.8 l (1.4 Imp. pint) brand-name hypoid gear oil, API Class GL 5 -above 5°C (41°F): SAE 90 -below 5°C (41°F): SAE 80
Gearbox ratios:	1st, 4.4; 2nd, 2.86; 3rd, 2.0; 4th, 1.67; 5th, 1.50 to 1
Final drive ratio: - number of teeth:	3.36 to 1 37/11
Overall ratios:	1st, 14.78; 2nd, 9.6; 34d, 6.95; 4th, 5.6 5th, 5.04 to 1
Propeller shaft:	With univeral joint and integral torsional vibration damper
Front forks:	Long-travel telescopic forks with double-acting hydraulic dampers and progressive-rate springs. Fixed tube diameter 36 mm (1.42 in)
Oil content per fork tube:	0.22 + 0.01 l (0.46 + 0.018 U.S. pint). Refer to rider's handbook for approved grades.

Total front suspension travel:	200 mm (7.87 in)
Steering lock angle:	2 x 35°
Handlebar:	"Touring" pattern, adjustable
Steering lock:	on left side of steering head
Lock system:	Identical-key locks for ignition, dualseat, fuel tank filler cap, steering lock and storage compartment (2x)
Mirrors:	2, integrated into fairing
Switches and functions:	Central ignition switch on instrument panel Left: lever for cold-starting device (choke) horn push, main light switch, low beam (dip) switch with headlight flasher, turn indicator switch Right: emergency ignition cutout ("kill") switch, starter pushbutton
Rear wheel drive:	Light alloy propeller shaft housing with antifriction bearings for crown wheel and pinion; Palloid tooth contact pattern
Oil content:	0.35 l (0.62 U.S. pint) brand-name hypoid gear oil, API Class GL 5 -above 5°C (41°F) SAE 90 -below 5°C (41°F) SAE 80
Rear wheel swinging fork and suspension:	Torsionally rigid fork with adjustable taper roller bearings
Oil content for propeller shaft lubrication:	0.15 l (0.18 U.S. pint) brand-name hypoid gear oil, API Class GL 5 -above 5°C (41°F): SAE 90 -below 5°C (41°F): SAE 80
Length of swinging fork:	413 mm (16.3 in)
Suspension travel (at wheel):	125 mm (4.92 in)
Springing element:	2 spring struts with integral hydraulic dampers; progressive spring rate and provision for spring rate adjustment
Spring rate adjustment:	3-position
Alternative rear suspension:	HD spring-damper struts or nivomat self-levelling units

Front brake:	Twin disc with fixed calipers, perforated stainless steel discs and semi-metallic pads for resistance to wet-weather fade
Disc diameter:	260 mm (10.23 in)
Brake piston diameter:	38 mm (1.5 in)
Brake operation:	hydraulic
Master cylinder diameter:	15 mm (0.59 in)
Total brake pad area:	74 cm^2
Rear brake:	Drum, integral with rear wheel drive
Brake operation:	Mechanical, by linkage
Total brake lining area:	89 cm^2
Front wheel:	Cast light alloy with safety rim profile
Front rim size:	2.15 B - 19
Rear wheel:	Cast light alloy with safety rim profile
Rear rim size:	2.50 B - 18
Front tire:	3.25 S 19
Rear tire:	4.00 S 18
Frame:	Tubular, double loop with bolted-on rear subframe
Fairing:	Rigidly attached to frame, with interchangeable sections. Full protection against weather effects. Adjustable windscreen and integral, lockable storage compartments
Footrests:	Adjustable, rubber-faced
Pillion rests:	Folding, rubber-faced
Dualseat:	Hinge-up dualseat, lockable
Dualseat length:	650 mm (25.6 in)
Storage space:	Tool tray, rear compartment, compartments in fairing
Storage space volume:	3.0 l / 2.8 l / 2 x 4.5 l (0.11 / 0.10 / 2 x 0.16 ft^3)

Toolkit:	19 items, plus pump and puncture repair kit
Standard accessories:	Hydraulic steering damper, adjustable First Aid kit
Electrical system:	Central wiring harness of modern design, with multiple protection. All electrical control elements located in protected positions under tank and in headlight housing. Two fused circuits.
Voltage:	12 V
Battery capacity:	28 Ah
Audible warning:	two horns
Instruments/functions:	Separate dials in common housing: speedometer with trip distance recorder; revolution counter; telltale and warning lamps for turn indicators (green), engine oil pressure (red), battery charge (red), neutral selected (green) and high headlight beam (blue)
Additional instruments:	Clock and voltmeter as special equipment option
Headlight bulb:	H 4, 55/60 W
Headlight diameter:	180 mm (6.35 in)
Rear light:	Multiple-chamber pattern

Dimensions:

Overall length (at unladen weight:	2210 mm (78.0 in)
Max. width (faring):	930 mm (32.8 in)
Max. height (without mirrors:	1465 mm (51.7 in)
Handlebar width (without mirrors:	720 mm (25.4 in)
Width over footrests:	550 mm (19.4 in)
Wheelbase in normal-load position:	1465 mm (51.7 in)
Caster in normal-load position:	95 mm (3.35 in)

Seat height at unladen weight:	820 mm (28.9 in)
Ground clearance:	160 mm (5.65 in)
- in normal-load position:	130 mm (5.12 in)
Heel-over angle, right/left, in normal-load position:	45° / 48°

Weights:

Dry weight acc. to ISO 6726:	214 kg (471.8 lb)
Unladen weight:	235 kg (518.1 lb)
Gross weight limit:	440 kg (970.0 lb)

Performance:

Top speed, rider seated:	161 km/h (100 mile/h)

Braking performance with all brakes in use:	Rider only	At gross weight limit
To a standstill from:		
50 km/h (31 mile/h):	11.6 m (38.1 ft)	13.0 m (42.7 ft
80 km/h (50 mile/h):	30.3 m (99.4 ft)	29.3 m (96.1 f
100 km/h (62 mile/h):	44.1 m (144.7 ft)	43.5 m (142.7 f
130 km/h (81 mile/h):	81.0 m (265.7 ft)	79.8 m (261.8 f
150 km/h (93 mile/h):	103.7 m (340.2 ft)	108.0 m (354.3

Acceleration:

0 - 50 km/h (31 mile/h):	2.2 s
0 - 100 km/h (62 mile/h):	7.1 s
0 - 130 km/h (81 mile/h):	12.8 s
0 - 160 km/h (99 mile/h)	33.0 s
0 - 400 m (1312 ft):	15.3 s
0 - 1000 m (3280 ft):	29.7 s