FOR MULTIPLE TRANSMISSION SYSTEMS (CONT.):

Combine these equations to find:

$$R_4 = \frac{R_1 \times (T_1 \times T_3 \times T_5)}{(T_2 \times T_4 \times T_6)}$$

DESIGN HORSEPOWER:

To find DESIGN HORSEPOWER, multiply the MOTOR HORSEPOWER by the appropriate SERVICE FACTOR.

Design hp = Motor hp X Service Factor

HORSEPOWER:

To find HORSEPOWER, multiply EFFECTIVE TENSION, *Te* (inch pound-force) by BELT SPEED (feet per minute) and divide by 33,000.

$$HORSEPOWER = \frac{Te \times BELTSPEED}{33{,}000}$$

To find HORSEPOWER, multiply TORQUE (inch pound-force) by REVOLUTIONS PER MINUTE, *R*, and divide by 63,000.

$$HORSEPOWER = \frac{TORQUE \times R}{63{,}000}$$

SPEED RATIO:

To find the SPEED RATIO, divide the REVOLUTIONS PER MINUTE, *Rf*, of the faster machine by the REVOLUTIONS PER MINUTE, *Rs*, of the slower machine.

$$Speed\ Ratio = \frac{Rf}{Rs}$$

BELT SPEEDS FOR SHEAVES & PULLEYS

Pitch Diam. of Pulley	Values in Table are Belt Speed in Feet per Minute (fpm)						
	Revolutions per Minute (rpm) of Pulley						
(inch)	850	1,050	1,075	1,140	1,550	1,725	3,450
1.0	223	275	281	298	406	452	903
1.2	267	330	338	358	487	542	1,084
1.4	312	385	394	418	568	632	1,264
1.6	356	440	450	478	649	723	1,445
1.8	401	495	507	537	730	813	1,626
2.0	445	550	563	597	812	903	1,806
2.2	490	605	619	657	893	994	1,987
2.4	534	660	675	716	974	1,084	2,168
2.6	579	715	732	776	1,055	1,174	2,348
2.8	623	770	788	836	1,136	1,264	2,529
3.0	668	825	844	895	1,217	1,355	2,710
3.2	712	880	901	955	1,299	1,445	2,890
3.4	757	935	957	1,015	1,380	1,535	3,071