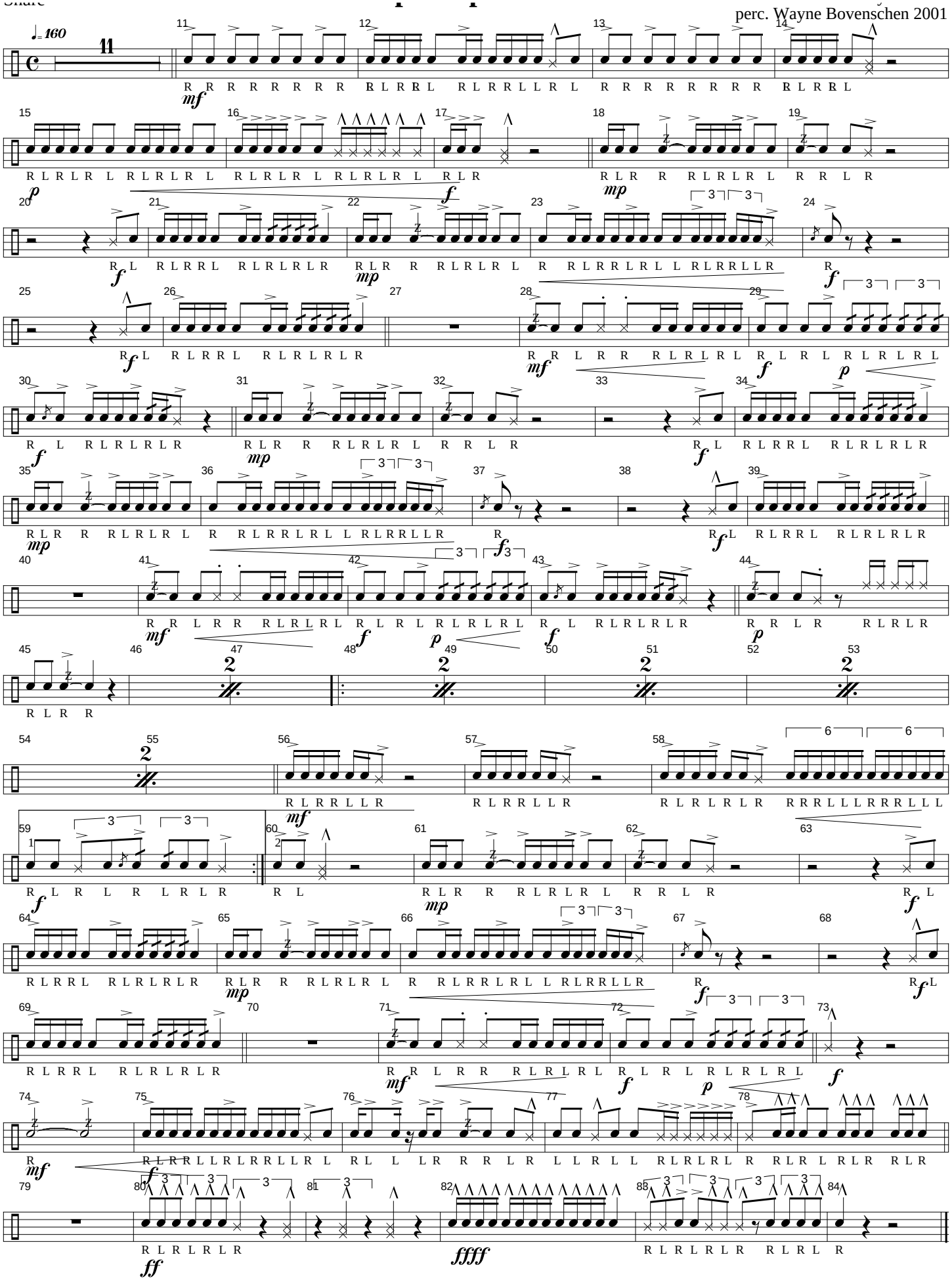perc. Wayne Bovenschen 2001