

ANNEX 7a Issue 2

F3 Aerobatics Volume – F3A Manoeuvres Description & Diagrams

(Minutes Item 11.6 i)

5.1.13 Schedule of Manoeuvres

For (2011)-2012 Schedule A-12 is recommended to be flown in local competitions as to offer advanced pilots a suitable measure to achieve skills to step-up to P-13 Schedules.

For 2013-2014 Schedule A-14 is recommended to be flown in local competitions as to offer advanced pilots a suitable measure to achieve skills to step-up to P-15 Schedules.

For 2012-2013 Schedule P-13 will be flown in the preliminaries. Schedule F-13 will be flown in the semi-finals, as well as in the finals, alternating with unknown schedules.

For 2014-2015 Schedule P-15 will be flown in the preliminaries. Schedule F-15 will be flown in the semi-finals, as well as in the finals, alternating with unknown schedules.

Advanced Schedule A-12 (2011/2012)

A-12.01 Half Clover Leaf	K 3
A-12.02 Stall Turn	K 3
A-12.03 Roll Combination with consecutive two ¼ rolls, two ¼ rolls in opposite direction	K 4
A-12.04 Half Square Loop with ½ roll	K 3
A-12.05 Triangle with roll	K 4
A-12.06 Split S with ½ roll	K 2
A-12.07 45° Upline with 1 snap roll	K 5
A-12.08 Reverse Top Hat with ¼ roll down, ¼ roll up	K 4
A-12.09 Spin with 3 turns	K 4
A-12.10 Pull-Push-Pull Humpty-Bump with ¼ roll up, ¼ roll down (Option: Two ¼ rolls up)	K 3
A-12.11 Cuban 8 with roll.	K 5
A-12.12 ½ Loop	K 1
A-12.13 Square Loop	K 5
A-12.14 Figure 9	K 3
A-12.15 Roll Combination with consecutive two rolls in opposite directions	K 4
A-12.16 ½ Square Loop on Corner	K 3
A-12.17 Figure Z with ½ roll	K 4

Total K 60

Advanced Schedule A-14 (2013-2014)

A-14.01 Golf Ball	K 3
A-14.02 ½ Square Loop on Corner	K 3
A-14.03 Double Immelman with ½ roll, roll	K 5
A-14.04 ½ Square Loop with ½ roll	K 2
A-14.05 Stall Turn with ¼ roll up, ¼ roll down	K 5
A-14.06 Reverse Cuban 8 with ½ roll	K 2
A-14.07 Roll Combination with consecutive three ¼ rolls, three ¼ rolls in opposite direction	K 5
A-14.08 Pull-Push-Pull Humpty-Bump with ¼ roll up, ¼ roll down (Option: ½ roll up)	K 4
A-14.09 Top Hat Spin with 3 turns	K 4
A-14.10 Pull-Pull-Push Humpty-Bump with ½ roll down	K 4
A-14.11 Reverse Cuban 8 with roll, ½ roll	K 4
A-14.12 Figure 9 with roll up	K 3
A-14.13 Hour-Glass	K 4
A-14.14 Stall Turn with ½ roll down	K 3
A-14.15 45° Upline with slow roll	K 4
A-14.16 Split S with ½ roll	K 1
A-14.17 Avalanche with snap roll on top	K 4

Total K 60

Preliminary Schedule P-13 (2012-2013)

P-13.01 Half Clover Leaf with horizontal roll	K 3
P-13.02 Stall Turn with $\frac{1}{4}$ roll up, $\frac{1}{4}$ roll down	K 3
P-13.03 Roll Combination with consecutive three $\frac{1}{4}$ rolls, three $\frac{1}{4}$ rolls in opposite direction	K 4
P-13.04 Half Square Loop with consecutive two $\frac{1}{2}$ rolls in opposite directions	K 3
P-13.05 Triangle with roll in each line	K 4
P-13.06 Split S with roll	K 2
P-13.07 45° Upline with 1 $\frac{1}{2}$ snap roll	K 5
P-13.08 Reverse Top Hat with $\frac{1}{4}$ roll down, $\frac{3}{4}$ roll up	K 4
P-13.09 Spin with 2 $\frac{1}{2}$ turns, 2 $\frac{1}{2}$ turns in opposite direction	K 4
P-13.10 Pull-Push-Pull Humpty-Bump with $\frac{1}{4}$ roll up, $\frac{1}{4}$ roll down (Option: Consecutive two $\frac{1}{4}$ rolls up)	K 3
P-13.11 Cuban 8 with integrated rolls on top 90° of both part loops.	K 5
P-13.12 $\frac{1}{2}$ Loop	K 1
P-13.13 Square Loop with $\frac{1}{2}$ roll in each line	K 5
P-13.14 Figure 9 with consecutive two $\frac{1}{2}$ rolls	K 3
P-13.15 Roll Combination with consecutive $\frac{1}{2}$ roll, roll, $\frac{1}{2}$ rolls in opposite directions	K 4
P-13.16 $\frac{1}{2}$ Loop on Corner with $\frac{1}{4}$ roll, $\frac{1}{4}$ knife-edge loop, $\frac{1}{4}$ roll	K 3
P-13.17 Figure Z with consecutive four $\frac{1}{8}$ rolls	K 4

Total K 60

Preliminary Schedule P-15 (2014-2015)

P-15.01 Golf Ball with two $\frac{1}{2}$ rolls	K 3
P-15.02 $\frac{1}{2}$ Square Loop on Corner with $\frac{1}{2}$ roll	K 3
P-15.03 Double Immelman with two knife-edge flights	K 5
P-15.04 Half Square Loop with $\frac{1}{2}$ roll	K 2
P-15.05 Stall Turn with 1 $\frac{1}{4}$ roll up, $\frac{3}{4}$ roll down	K 5
P-15.06 Reverse Cuban 8 with $\frac{1}{2}$ roll	K 2
P-15.07 Roll Combination with consecutive three $\frac{1}{6}$ rolls, three $\frac{1}{6}$ rolls in opposite direction	K 5
P-15.08 Pull-Push-Push Humpty-Bump with $\frac{3}{4}$ roll up, $\frac{3}{4}$ roll down (Option: $\frac{1}{2}$ roll up, $\frac{1}{2}$ roll down)	K 4
P-15.09 Top Hat Inverted Spin with 2 $\frac{1}{2}$ turns	K 4
P-15.10 Pull-Knife-Edge-Push Humpty-Bump with $\frac{1}{2}$ roll down	K 4
P-15.11 Reverse Cuban 8 with consecutive two $\frac{1}{4}$ rolls, consecutive two $\frac{1}{2}$ rolls in opposite directions	K 4
P-15.12 Figure 9 with consecutive four $\frac{1}{4}$ rolls up	K 3
P-15.13 Hour-Glass with $\frac{1}{2}$ roll, roll, $\frac{1}{2}$ roll	K 4
P-15.14 Stall Turn with consecutive two $\frac{1}{4}$ rolls down	K 3
P-15.15 45° Upline with consecutive two rolls in opposite directions	K 4
P-15.16 Split S with $\frac{1}{2}$ roll	K 1
P-15.17 Avalanche with snap roll on top	K 4

Total K 60

Semi-Final and Final Schedule F-13 (2012-2013)

F-13.01 Humpty-Bump with $\frac{3}{4}$ roll up, $\frac{1}{2}$ knife-edge loop, $\frac{3}{4}$ roll down	K 4
F-13.02 Half Square Loop with consecutive $\frac{1}{2}$ roll, roll in opposite direction	K 3
F-13.03 Loop with consecutive four $\frac{1}{2}$ rolls in opposite directions integrated	K 6
F-13.04 Figure 6 with stall turn, consecutive two $\frac{1}{4}$ rolls down	K 4
F-13.05 Roll Combination with consecutive $\frac{1}{4}$ roll, two snap rolls in opposite directions, $\frac{1}{4}$ roll	K 6
F-13.06 Shark Fin with roll up, consecutive two $\frac{1}{4}$ rolls down	K 3
F-13.07 Horizontal Circle 8 with consecutive two rolls	K 5
F-13.08 Pull-Push-Pull Humpty-Bump with consecutive four $\frac{1}{4}$ rolls up, <u>1 $\frac{1}{2}$</u> roll down	K 3
F-13.09 45° Upline with consecutive four $\frac{1}{8}$ rolls, 1 $\frac{1}{2}$ snap roll in opposite direction	K 5
F-13.10 Reverse Top Hat with $\frac{3}{4}$ roll down, $\frac{1}{4}$ rolls up (Option: roll down, consecutive two $\frac{1}{4}$ rolls up)	K 3
F-13.11 Clown Dance with $\frac{1}{2}$ loop, inverted spin, 2 $\frac{1}{2}$ turns, consecutive two $\frac{1}{4}$ rolls down	K 5
F-13.12 Fighter Turn with two $\frac{1}{4}$ rolls	K 4
F-13.13 Knife-Edge Loop with integrated roll on top 90°	K 4
F-13.14 Reverse Cuban 8 with snap roll up	K 4
F-13.15 Triangle with consecutive two $\frac{1}{4}$ rolls in each line	K 4

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F-13.16 ½ Loop with roll integrated	K 3
F-13.17 45° Downline with consecutive two 1/8 roll , roll, two 1/8 roll in opposite directions	K 4

Total K	70

Semi-Final and Final Schedule F-15 (2014-2015)

F-15.01 Double Immelman with ½ rolls in both ½ loops integrated, two consecutive two ¼ rolls in opposite direction to integrated rolls.	K 4
F-15.02 Stall Turn with consecutive three ¼ rolls up, 1 ¼ snap rolls down	K 3
F-15.03 Golf Ball with two ¾ roll up, knife-edge loop with snap roll, ¾ roll down	K 5
F-15.04 ½ Square Loop with consecutive two snap rolls in opposite directions	K 4
F-15.05 Loop with consecutive two ½ rolls in opposite directions integrated	K 4
F-15.06 Inverted Spin with 2 ½ turns, ½ roll down	K 3
F-15.07 Horizontal Triangular Circle with ¼ roll, ½ outside rolls in each corner integrated	K 6
F-15.08 Top Hat with consecutive two ¼ rolls up, snap roll down (Option: Consecutive three ¼ roll up, 1¼ snap roll down)	K 4
F-15.09 Vertical Cuban 8 with consecutive four 1/8 rolls up, consecutive two ½ rolls down	K 4
F-15.10 ½ Square Loop on Corner with ½ roll integrated in ¼ loop	K 4
F-15.11 Horizontal Hour-Glass with consecutive two ¼ rolls, two ¼ rolls in opposite direction, consecutive two ¾ rolls in opposite directions	K 4
F-15.12 Half Square Loop with consecutive two ½ rolls	K 3
F-15.13 Figure 9 with consecutive four ¼ rolls up, ¾ loop with roll integrated in top 180°	K 6
F-15.14 Split S with 1 ½ snap roll	K 3
F-15.15 Roll Combination with consecutive four rolls in opposite directions	K 5
F-15.16 Pull-Pull-Push Humpty-Bump with two ½ roll in opposite direction up, roll down	K 3
F-15.17 Stall Turn with consecutive six 1/8 rolls up, 1 ¾ snap roll down	K 5

Total K	70

Manoeuvre Descriptions for Schedules A-12 and A-14

Advanced Schedule A-12 (2011/2012)

A-12.01 Half Clover Leaf

From upright, pull through a ¼ loop into a vertical upline, push through a ¾ loop into a horizontal line, push through a ¾ loop into a vertical downline, pull through a ¼ loop, exit upright.

A-12.02 Stall Turn

From upright, pull through a ¼ loop into a vertical upline, perform a stall turn into a vertical downline, pull through a 1/4 loop, exit upright.

A-12.03 Roll Combination with consecutive two ¼ rolls, two ¼ rolls in opposite direction

From upright, perform consecutively two ¼ rolls, ¼ rolls in opposite direction, exit upright.

A-12.04 Half Square Loop with ½ roll

From upright, pull through a ¼ loop into a vertical upline, perform a ½ roll, push through a ¼ loop, exit upright.

A-12.05 Triangle with roll

From upright, push through a 1/8 loop into a 45° do wline, push through a 3/8 loop into a horizontal line, perform a roll, push through a 3/8 loop into a 45° upline, push through a 1/8 loop, exit upright.

A-12.06 Split S with ½ roll

From upright, perform a ½ roll and immediately pull through a ½ loop, exit upright.

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A-12.07 45° Upline with 1 snap roll

From upright, pull through a 1/8 loop into a 45° up line, perform a snap roll, push through a 1/8 loop, exit upright.

A-12.08 Reverse Top Hat with 1/4 roll down, 1/4 roll up

From upright, push through a 1/4 loop into a vertical downline, perform a 1/4 roll, push through a 1/4 loop into a horizontal line, push through a 1/4 loop into a vertical upline, perform a 1/4 roll, push through a 1/4 loop, exit upright.

A-12.09 Spin with 3 turns

From upright, perform a upright spin with 3 turns, perform a vertical downline, pull through a 1/4 loop, exit upright.

A-12.10 Pull-Push-Pull Humpty-Bump with 1/4 roll up, 1/4 roll down (Option: Two 1/4 rolls up)

From upright, pull through a 1/4 loop into a vertical upline, perform a 1/4 roll, push through a 1/2 loop into a vertical downline, perform a 1/4 roll, pull through a 1/4 loop, exit upright.

Option: From upright, pull through a 1/4 loop into a vertical upline, perform two consecutive 1/4 rolls, push through a 1/2 loop into a vertical downline, pull through a 1/4 loop, exit upright.

A-12.11 Cuban 8 with roll.

From upright, pull through a 5/8 loop into a 45° downline, push through a 3/4 loop into another 45° down line, perform a roll, pull through a 1/8 loop, exit upright.

A-12.12 1/2 Loop

From upright, pull through a 1/2 loop, exit inverted.

A-12.13 Square Loop

From inverted, pull through a 1/4 loop into a vertical downline, pull through a 1/4 loop into a horizontal line, pull through a 1/4 loop into a vertical upline, pull through a 1/4 loop into a horizontal line, exit inverted.

A-12.14 Figure 9

From inverted, push through a 3/4 loop into a vertical downline, pull through a 1/4 loop, exit upright.

A-12.15 Roll Combination with consecutive two rolls in opposite directions

From upright, perform consecutively a two rolls in opposite directions, exit upright.

A-12.16 1/2 Square Loop on Corner

From upright pull through a 1/8 loop into a 45° up line, pull through a 1/4 loop into a 45° upline, pull through a 1/8 loop, exit inverted.

A-12.17 Figure Z with 1/2 roll

From inverted, pull through a 3/8 loop into a 45° downline, perform a 1/2 roll, pull through a 3/8 loop, exit upright.

Advanced Schedule A-14 (2013-2014)

A-14.01 Golf Ball

From upright, pull through a 1/8 loop into a 45° up line, pull through a 3/4 loop into a 45° downline, pull through a 1/8 loop, exit upright.

A-14.02 1/2 Square Loop on Corner

From upright, pull through a 1/8 loop into a 45° up line, pull through a 1/4 loop into a 45° upline, pull through a 1/8 loop, exit inverted.

A-14.03 Double Immelman with ½ roll, roll

From inverted pull through a ½ loop immediately followed by a ½ roll, perform a horizontal line, push through a ½ loop immediately followed by a roll, perform a horizontal line, exit upright.

A-14.04 Half Square Loop with ½ roll

From upright push through a ¼ loop into a vertical downline, perform a ½ roll, pull through a ¼ loop, exit upright.

A-14.05 Stall Turn with ¼ roll up, ¼ roll down

From upright, pull through a ¼ loop into a vertical upline, perform a ¼ roll, perform a stall turn into a vertical downline, perform a ¼ roll down, pull through a ¼ loop, exit upright.

A-14.06 Reverse Cuban 8 with ½ roll

From upright pull through a 1/8 loop into a 45° upline, perform a ½ roll, pull through a 5/8 loop, exit upright.

A-14.07 Roll Combination with consecutive three ¼ rolls, three ¼ rolls in opposite direction

From upright, perform consecutively three ¼ rolls, three ¼ rolls in opposite direction, exit upright.

A-14.08 Pull-Push-Pull Humpty-Bump with ¼ roll up, ¼ roll down (Option: ½ roll up)

From upright, pull through a ¼ loop into a vertical upline, perform a ¼ roll, push through a ½ loop into a vertical downline, perform a ¼ roll, pull through a 1/4 loop, exit upright.

Option: From upright, pull through a ¼ loop into a vertical upline, perform a ½ roll, push through a ½ loop into a vertical downline, pull through a 1/4 loop, exit upright.

A-14.09 Top Hat Spin with 3 turns

From upright pull through a ¼ loop into a vertical upline, push through a ¼ loop into a horizontal line, perform an upright spin with 3 turns, perform a vertical downline, pull through a ¼ loop, exit upright.

A-14.10 Pull-Pull-Push Humpty-Bump with ½ roll down

From upright, pull through a ¼ loop into a vertical upline, perform a ¼ roll, pull through a ½ loop into a vertical downline, perform a ¼ roll, push through a ¼ loop, exit inverted.

A-14.11 Reverse Cuban 8 with roll, ½ roll

From inverted, push through a 1/8 loop into a 45° upline, perform a roll, pull through a ¾ loop into another 45° upline, perform a ½ roll, pull through a 5/8 loop, exit upright.

A-14.12 Figure 9 with roll up

From upright, pull through a ¼ loop into a vertical upline, perform a roll, push through a ¾ loop, exit inverted.

A-14.13 Hour-Glass

From inverted, push through a 1/8 loop into a 45° upline, push through a 3/8 loop into a horizontal line, push through a 3/8 loop into a 45° downline, pull through a 3/8 loop into a horizontal line, pull through a 3/8 loop into a 45° upline, pull through a 1/8 loop, exit inverted.

A-14.14 Stall Turn with ½ roll down

From inverted, push through a 1/4 loop into a vertical upline, perform a stall turn into a vertical downline, perform a ½ roll, pull through a ¼ loop, exit upright.

A-14.15 45° Upline with slow roll

From upright, pull through a 1/8 loop into a 45° upline, perform a slow roll, push through a 1/8 loop, exit upright.

A-14.16 Split S with ½ roll

From upright, perform a ½ roll and immediately pull through a ½ loop, exit upright.

A-14.17 Avalanche with snap roll on top

From upright, pull through a loop while performing a snap roll on the top of the loop, exit upright.

Manoeuvre Descriptions for Schedules P-13 and P-15

Preliminary Schedule P-13 (2012-2013)

P-13.01 Half Clover Leaf with horizontal roll

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, push through a $\frac{3}{4}$ loop into a horizontal line, perform a roll, push through a $\frac{3}{4}$ loop into a vertical downline, pull through a $\frac{1}{4}$ loop, exit upright.

P-13.02 Stall Turn with $\frac{1}{4}$ roll up, $\frac{1}{4}$ roll down

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{4}$ roll, perform a stall turn into a vertical downline, perform a $\frac{1}{4}$ roll, push through a $\frac{1}{4}$ loop, exit inverted.

P-13.03 Roll Combination with consecutive three $\frac{1}{4}$ rolls, three $\frac{1}{4}$ rolls in opposite direction

From inverted, perform consecutively three $\frac{1}{4}$ rolls, three $\frac{1}{4}$ rolls in opposite direction, exit inverted.

P-13.04 Half Square Loop with consecutive two $\frac{1}{2}$ rolls in opposite directions

From inverted, push through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively two $\frac{1}{2}$ rolls in opposite directions, push through a $\frac{1}{4}$ loop, exit upright.

P-13.05 Triangle with roll in each line

From upright, push through a $\frac{1}{8}$ loop into a 45° downline, perform a roll, push through a $\frac{3}{8}$ loop into a horizontal line, perform a roll, push through a $\frac{3}{8}$ loop into a 45° upline, perform a roll, push through a $\frac{1}{8}$ loop, exit upright.

P-13.06 Split S with roll

From upright, perform a roll and immediately push through a $\frac{1}{2}$ loop, exit inverted.

P-13.07 45° Upline with 1 $\frac{1}{2}$ snap roll

From inverted, push through a $\frac{1}{8}$ loop into a 45° upline, perform 1 $\frac{1}{2}$ snap roll, push through a $\frac{1}{8}$ loop, exit upright.

P-13.08 Reverse Top Hat with $\frac{1}{4}$ roll down, $\frac{3}{4}$ roll up

From upright, push through a $\frac{1}{4}$ loop into a vertical downline, perform a $\frac{1}{4}$ roll, push through a $\frac{1}{4}$ loop into a horizontal line, push through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{3}{4}$ roll, push through a $\frac{1}{4}$ loop, exit upright.

P-13.09 Spin with 2 $\frac{1}{2}$ turns, 2 $\frac{1}{2}$ turns in opposite direction

From upright, perform a upright spin with 2 $\frac{1}{2}$ turns immediately followed by another 2 $\frac{1}{2}$ turns in the opposite direction, perform a vertical downline, pull through a $\frac{1}{4}$ loop, exit upright.

P-13.10 Pull-Push-Pull Humpty-Bump with $\frac{1}{4}$ roll up, $\frac{1}{4}$ roll down (Option: Consecutive two $\frac{1}{4}$ rolls up)

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{4}$ roll, push through a $\frac{1}{2}$ loop into a vertical downline, perform a $\frac{1}{4}$ roll, pull through a $\frac{1}{4}$ loop, exit upright.

Option: From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively two $\frac{1}{4}$ rolls, push through a $\frac{1}{2}$ loop into a vertical downline, pull through a $\frac{1}{4}$ loop, exit upright.

P-13.11 Cuban 8 with integrated rolls on top 90° of both part loops.

From upright, pull through a $\frac{5}{8}$ loop into a 45° downline while performing an integrated roll in the top 90° of the loop, push through a $\frac{3}{4}$ loop into another 45° downline while performing an integrated roll in the top 90° of the loop, pull through a $\frac{1}{8}$ loop, exit upright.

P-13.12 $\frac{1}{2}$ Loop

From upright, pull through a $\frac{1}{2}$ loop, exit inverted.

P-13.13 Square Loop with $\frac{1}{2}$ roll in each line

From inverted, pull through a $\frac{1}{4}$ loop into a vertical downline, perform a $\frac{1}{2}$ roll, push through a $\frac{1}{4}$ loop into a horizontal line, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{2}$ roll, push through a $\frac{1}{4}$ loop into a horizontal line, perform a $\frac{1}{2}$ roll, exit inverted.

P-13.14 Figure 9 with consecutive two $\frac{1}{2}$ rolls

From inverted, push through a $\frac{3}{4}$ loop into a vertical downline, perform consecutively two $\frac{1}{2}$ rolls, pull through a $\frac{1}{4}$ loop, exit upright.

P-13.15 Roll Combination with consecutive $\frac{1}{2}$ roll, roll, $\frac{1}{2}$ rolls in opposite directions

From upright, perform consecutively a $\frac{1}{2}$ roll, a roll in opposite direction, a $\frac{1}{2}$ roll in opposite direction, exit upright.

P-13.16 $\frac{1}{2}$ Loop on Corner with $\frac{1}{4}$ roll, $\frac{1}{4}$ knife-edge loop, $\frac{1}{4}$ roll

From upright pull through a $\frac{1}{8}$ loop into a 45° upline, perform $\frac{1}{4}$ roll, perform $\frac{1}{4}$ knife-edge loop into a 45° upline, perform $\frac{1}{4}$ roll, pull through a $\frac{1}{8}$ loop, exit inverted.

P-13.17 Figure Z with consecutive four $\frac{1}{8}$ rolls

From inverted, pull through a $\frac{3}{8}$ loop into a 45° downline, perform consecutively four $\frac{1}{8}$ rolls, pull through a $\frac{3}{8}$ loop, exit upright.

Preliminary Schedule P-15 (2014-2015)

P-15.01 Golf Ball with two $\frac{1}{2}$ rolls

From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, push through a $\frac{3}{4}$ loop into a 45° downline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{8}$ loop, exit upright.

P-15.02 $\frac{1}{2}$ Square Loop on Corner with $\frac{1}{2}$ roll

From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, pull through a $\frac{1}{4}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, push through a $\frac{1}{8}$ loop, exit upright.

P-15.03 Double Immelman with two knife-edge flights

From upright push through a $\frac{1}{2}$ loop immediately followed by a $\frac{1}{4}$ roll, perform a horizontal knife-edge flight, perform a $\frac{1}{4}$ roll and immediately pull through a $\frac{1}{2}$ loop immediately followed by a $\frac{1}{4}$ roll, perform a horizontal knife-edge flight, perform a $\frac{1}{4}$ roll, exit upright.

P-15.04 Half Square Loop with $\frac{1}{2}$ roll

From upright push through a $\frac{1}{4}$ loop into a vertical downline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop, exit upright.

P-15.05 Stall Turn with 1 $\frac{1}{4}$ roll up, $\frac{3}{4}$ roll down

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $1\frac{1}{4}$ roll, perform a stall turn into a vertical downline, perform a $\frac{3}{4}$ roll down, pull through a $\frac{1}{4}$ loop, exit upright.

P-15.06 Reverse Cuban 8 with $\frac{1}{2}$ roll

From upright pull through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, pull through a $\frac{5}{8}$ loop, exit upright.

P-15.07 Roll Combination with consecutive three $\frac{1}{6}$ rolls, three $\frac{1}{6}$ rolls in opposite direction

From upright, perform consecutively three $\frac{1}{6}$ rolls, three $\frac{1}{6}$ rolls in opposite direction, exit upright.

P-15.08 Pull-Push-Push Humpty-Bump with $\frac{3}{4}$ roll up, $\frac{3}{4}$ roll down (Option: $\frac{1}{2}$ roll up, $\frac{1}{2}$ roll down)

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{3}{4}$ roll, push through a $\frac{1}{2}$ loop into a vertical downline, perform a $\frac{3}{4}$ roll, push through a $\frac{1}{4}$ loop, exit inverted.

Option: From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{2}$ roll, push through a $\frac{1}{2}$ loop into a vertical downline, perform a $\frac{1}{2}$ roll, push through a $\frac{1}{4}$ loop, exit inverted.

P-15.09 Top Hat Inverted Spin with 2 $\frac{1}{2}$ turns

From inverted push through a $\frac{1}{4}$ loop into a vertical upline, pull through a $\frac{1}{4}$ loop into a horizontal line, perform an inverted spin with $2\frac{1}{2}$ turns, perform a vertical downline, pull through a $\frac{1}{4}$ loop, exit upright.

P-15.10 Pull-Knife-Edge-Push Humpty-Bump with ½ roll down

From upright, pull through a ¼ loop into a vertical upline, perform a 1/2 loop in knife-edge flight into a vertical downline, perform a ½ roll, push through a ¼ loop, exit inverted.

P-15.11 Reverse Cuban 8 with consecutive two ¼ rolls, consecutive two ½ rolls in opposite directions

From inverted, push through a 1/8 loop into a 45° upline, perform consecutively two ¼ rolls, push through a ¾ loop into another 45° upline, perform consecutively two ½ rolls in opposite directions, pull through a 5/8 loop, exit upright.

P-15.12 Figure 9 with consecutive four ¼ rolls up

From upright, pull through a ¼ loop into a vertical upline, perform consecutively four ¼ rolls, push through a ¾ loop, exit inverted.

P-15.13 Hour-Glass with ½ roll, roll, ½ roll

From inverted, push through a 1/8 loop into a 45° upline, push through a 3/8 loop into a horizontal line, perform a ½ roll, pull through a 3/8 loop into a 45° downline, perform a roll, push through a 3/8 loop into a horizontal line, perform a ½ roll, pull through a 3/8 loop into a 45° upline, pull through a 1/8 loop, exit inverted.

P-15.14 Stall Turn with consecutive two ¼ rolls down

From inverted, push through a 1/4 loop into a vertical upline, perform a stall turn into a vertical downline, perform consecutively two ¼ rolls, pull through a ¼ loop, exit upright.

P-15.15 45° Upline with consecutive two rolls in opposite directions

From upright, pull through a 1/8 loop into a 45° upline, perform consecutively two rolls in opposite directions, push through a 1/8 loop, exit upright.

P-15.16 Split S with ½ roll

From upright, perform a ½ roll and immediately pull through a ½ loop, exit upright.

P-15.17 Avalanche with snap roll on top

From upright, pull through a loop while performing a snap roll on the top of the loop, exit upright.

Manoeuvre Descriptions for Schedules F-13 and F-15**Semi-Final and Final Schedule F-13 (2012-2013)****F-13.01 Humpty-Bump with ¾ roll up, ½ knife-edge loop, ¾ roll down**

From upright, pull through a ¼ loop into a vertical upline, perform a ¾ roll, perform a ½ loop in knife-edge flight into a vertical downline, perform a ¾ roll, push through a ¼ loop, exit inverted.

F-13.02 Half Square Loop with consecutive ½ roll, roll in opposite direction

From inverted, push through a ¼ loop into a vertical upline, perform consecutively a ½ roll, a roll in opposite direction, pull through a ¼ loop, exit inverted.

F-13.03 Loop with consecutive four ½ rolls in opposite directions integrated

From inverted, pull through a loop while performing consecutively four ½ rolls in opposite directions, integrated in each 90° of the loop, exit inverted.

F-13.04 Figure 6 with stall turn, consecutive two ¼ rolls down

From inverted, pull through a ¾ loop into a vertical upline, perform a stall turn into a vertical downline, perform consecutively two ¼ rolls, pull through a ¼ loop, exit upright.

F-13.05 Roll Combination with consecutive ¼ roll, two snap rolls in opposite directions, ¼ roll

From upright, perform consecutively a ¼ roll, a snap roll, another snap roll in opposite direction, and a ¼ roll, exit upright.

F-13.06 Shark Fin with roll up, consecutive two $\frac{1}{4}$ rolls down

From upright, pull through a $\frac{1}{8}$ loop into a 45° up line, perform a roll, push through a $\frac{3}{8}$ loop into a vertical downline, perform consecutively two $\frac{1}{4}$ rolls, pull through a $\frac{1}{4}$ loop, exit upright

F-13.07 Horizontal Circle 8 with consecutive two rolls

From upright, perform a $\frac{1}{4}$ horizontal circle while performing the first $\frac{1}{4}$ of consecutive two rolls to the outside, then while continuing the rolling ($\frac{1}{4}$ of the rolls per $\frac{1}{4}$ of the circles), perform immediately another (full) circle in the opposite direction, then, while continuing the rolling accordingly finish the remaining $\frac{3}{4}$ of the first circle, exit upright.

F-13.08 Pull-Push-Pull Humpty-Bump with consecutive four $\frac{1}{4}$ rolls up, roll down

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively four $\frac{1}{4}$ rolls, push through a $\frac{1}{2}$ loop into a vertical downline, perform a $1\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop, exit upright.

F-13.09 45° Upline with consecutive four $\frac{1}{8}$ rolls, $1\frac{1}{2}$ snap roll in opposite direction

From upright, pull through a $\frac{1}{8}$ loop into a 45° up line, perform consecutively four $\frac{1}{8}$ rolls, and $1\frac{1}{2}$ snap roll in opposite direction, push through a $\frac{1}{8}$ loop, exit upright.

F-13.10 Reverse Top Hat with $\frac{3}{4}$ roll down, $\frac{1}{4}$ rolls up (Option: roll down, consecutive two $\frac{1}{4}$ rolls up)

From upright, push through a $\frac{1}{4}$ loop into a vertical downline, perform a $\frac{3}{4}$ roll, push through a $\frac{1}{4}$ loop into a horizontal line, push through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{4}$ roll, push through a $\frac{1}{4}$ loop, exit upright.

Option: From upright, push through a $\frac{1}{4}$ loop into a vertical downline, perform a roll, push through a $\frac{1}{4}$ loop into a horizontal line, push through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively two $\frac{1}{4}$ rolls, push through a $\frac{1}{4}$ loop, exit upright.

F-13.11 Clown Dance with $\frac{1}{2}$ loop, inverted spin, $2\frac{1}{2}$ turns, consecutive two $\frac{1}{4}$ rolls down

From upright, pull through a $\frac{1}{2}$ loop into a horizontal line, perform an inverted spin with $2\frac{1}{2}$ turns, perform a vertical downline, perform consecutively two $\frac{1}{4}$ rolls, pull through a $\frac{1}{4}$ loop, exit upright.

F-13.12 Fighter Turn with two $\frac{1}{4}$ rolls

From upright, pull through a $\frac{1}{8}$ loop into a 45° up line, perform a $\frac{1}{4}$ roll, push through $\frac{1}{2}$ circle, to a 45° downline, perform a $\frac{1}{4}$ roll, pull through a $\frac{1}{8}$ loop, exit upright.

F-13.13 Knife-Edge Loop with integrated roll on top 90°

From upright, perform a $\frac{1}{4}$ roll, perform a loop in knife-edge flight while performing a roll integrated in the top 90° of the loop, perform a $\frac{1}{4}$ roll, exit upright.

F-13.14 Reverse Cuban 8 with snap roll up

From upright, pull through a $\frac{1}{8}$ loop into a 45° up line, perform a snap roll, push through a $\frac{5}{8}$ loop, exit inverted.

F-13.15 Triangle with consecutive two $\frac{1}{4}$ rolls in each line

From inverted, push through a $\frac{3}{8}$ loop into a 45° upline, perform consecutively two $\frac{1}{4}$ rolls, pull through a $\frac{1}{4}$ loop into a 45° downline, perform consecutively two $\frac{1}{4}$ rolls, push through a $\frac{3}{8}$ loop into a horizontal line, perform consecutively two $\frac{1}{4}$ rolls, exit upright.

F-13.16 $\frac{1}{2}$ Loop with roll integrated

From upright, pull through a $\frac{1}{2}$ loop, while performing a roll integrated, exit inverted.

F-13.17 45° Downline with consecutive two $\frac{1}{8}$ roll, roll, two $\frac{1}{8}$ roll in opposite directions

From inverted, pull through a $\frac{1}{8}$ loop into a 45° downline, perform consecutively two $\frac{1}{8}$ rolls, a roll in opposite direction, and another consecutive two $\frac{1}{8}$ rolls in opposite direction, pull through a $\frac{1}{8}$ loop, exit upright.

Semi-Final and Final Schedule F-15 (2014-2015)

F-15.01 Double Immelman with $\frac{1}{2}$ rolls in both $\frac{1}{2}$ loops integrated, two consecutive two $\frac{1}{4}$ rolls in opposite direction to integrated rolls.

From upright, pull through a $\frac{1}{2}$ loop while performing a $\frac{1}{2}$ roll integrated, immediately followed by consecutive two $\frac{1}{4}$ rolls in opposite direction to the integrated roll, perform a horizontal line, pull through a $\frac{1}{2}$ loop while performing a $\frac{1}{2}$ roll integrated, immediately followed by consecutive two $\frac{1}{4}$ rolls in opposite direction to the integrated roll, exit upright.

F-15.02 Stall Turn with consecutive three $\frac{1}{4}$ rolls up, 1 $\frac{1}{4}$ snap rolls down

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively three $\frac{1}{4}$ rolls, perform a stall turn into a vertical downline, perform 1 $\frac{1}{4}$ snap roll, push through a $\frac{1}{4}$ loop, exit inverted.

F-15.03 Golf Ball with two $\frac{3}{4}$ roll up, knife-edge loop with snap roll, $\frac{3}{4}$ roll down

From inverted, push through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{3}{4}$ roll, perform a $\frac{3}{4}$ loop in knife-edge flight with a snap roll on top into a 45° downline, perform a $\frac{3}{4}$ roll, pull through a $\frac{1}{8}$ loop, exit upright.

F-15.04 $\frac{1}{2}$ Square Loop with consecutive two snap rolls in opposite directions

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively two snap rolls and in opposite directions, pull through a $\frac{1}{4}$ loop, exit inverted.

F-15.05 Loop with consecutive two $\frac{1}{2}$ rolls in opposite directions integrated

From inverted, pull through a loop while performing a $\frac{1}{2}$ roll integrated in the first 180° of the loop and another $\frac{1}{2}$ roll in opposite direction integrated in the second 180° of the loop, exit inverted.

F-15.06 Inverted Spin with 2 $\frac{1}{2}$ turns, $\frac{1}{2}$ roll down

From inverted, perform an inverted spin with 2 $\frac{1}{2}$ turns, perform a vertical downline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop, exit upright.

F-15.07 Horizontal Triangular Circle with $\frac{1}{4}$ roll, $\frac{1}{2}$ outside rolls in each corner integrated

From upright, perform a $\frac{1}{4}$ roll in the center, perform a horizontal triangular circle of equal side lengths while performing a $\frac{1}{2}$ roll to the outside in each corner integrated, perform a $\frac{1}{4}$ roll in the center, exit upright.

F-15.08 Top Hat with consecutive two $\frac{1}{4}$ rolls up, snap roll down (Option: Consecutive three $\frac{1}{4}$ rolls up, 1 $\frac{1}{4}$ snap roll down)

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively two $\frac{1}{4}$ rolls, pull through a $\frac{1}{4}$ loop into a horizontal line, pull through a $\frac{1}{4}$ loop into a vertical down line, perform a snap roll, pull through a $\frac{1}{4}$ loop, exit upright.

Option: From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively three $\frac{1}{4}$ rolls, pull through a $\frac{1}{4}$ loop into a horizontal line, pull through a $\frac{1}{4}$ loop into a vertical down line, perform a 1 $\frac{1}{4}$ snap roll, pull through a $\frac{1}{4}$ loop, exit upright

F-15.09 Vertical Cuban 8 with consecutive four $\frac{1}{8}$ rolls up, consecutive two $\frac{1}{2}$ rolls down

From upright, pull through a $\frac{3}{8}$ loop into a 45° up line, perform consecutively four $\frac{1}{8}$ rolls, pull through a $\frac{3}{4}$ loop into a 45° downline, perform consecutively two $\frac{1}{2}$ rolls, push through a $\frac{3}{8}$ loop, exit inverted.

F-15.10 $\frac{1}{2}$ Square Loop on Corner with $\frac{1}{2}$ roll integrated in $\frac{1}{4}$ loop

From inverted, push through a $\frac{1}{8}$ loop into a 45° upline, push through a $\frac{1}{4}$ loop into a 45° upline, while performing a $\frac{1}{2}$ roll integrated in the $\frac{1}{4}$ loop, pull through a $\frac{1}{8}$ loop, exit inverted.

F-15.11 Horizontal Hour-Glass with consecutive two $\frac{1}{4}$ rolls, two $\frac{1}{4}$ rolls in opposite direction, consecutive two $\frac{3}{4}$ rolls in opposite directions

From inverted, pull through a $\frac{1}{4}$ loop into a vertical downline, pull through a $\frac{3}{8}$ loop into a 45° upline, perform consecutively two $\frac{1}{4}$ rolls, two $\frac{1}{4}$ rolls in opposite direction, push through a $\frac{3}{8}$ loop into a vertical downline, push through a $\frac{3}{8}$ loop into a 45° upline, perform consecutively two $\frac{3}{4}$ rolls in opposite directions, pull through a $\frac{1}{8}$ loop, exit inverted.

F-15.12 Half Square Loop with consecutive two $\frac{1}{2}$ rolls

From inverted, pull through a $\frac{1}{4}$ loop into a vertical downline, perform consecutively two $\frac{1}{2}$ rolls, pull through a $\frac{1}{4}$ loop, exit upright.

F-15.13 Figure 9 with consecutive four $\frac{1}{4}$ rolls up, $\frac{3}{4}$ loop with roll integrated in top 180°

From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively four $\frac{1}{4}$ rolls, pull through a $\frac{3}{4}$ loop while performing a roll integrated in the top 180° of the $\frac{3}{4}$ loop, exit upright.

F-15.14 Split S with 1 $\frac{1}{2}$ snap roll

From upright, perform 1 $\frac{1}{2}$ snap roll and immediately pull through a $\frac{1}{2}$ loop, exit upright

F-15.15 Roll Combination with consecutive four rolls in opposite directions

From upright, perform consecutively four rolls in opposite directions, exit upright.

F-15.16 Pull-Pull-Push Humpty-Bump with two $\frac{1}{2}$ roll in opposite direction up, roll down

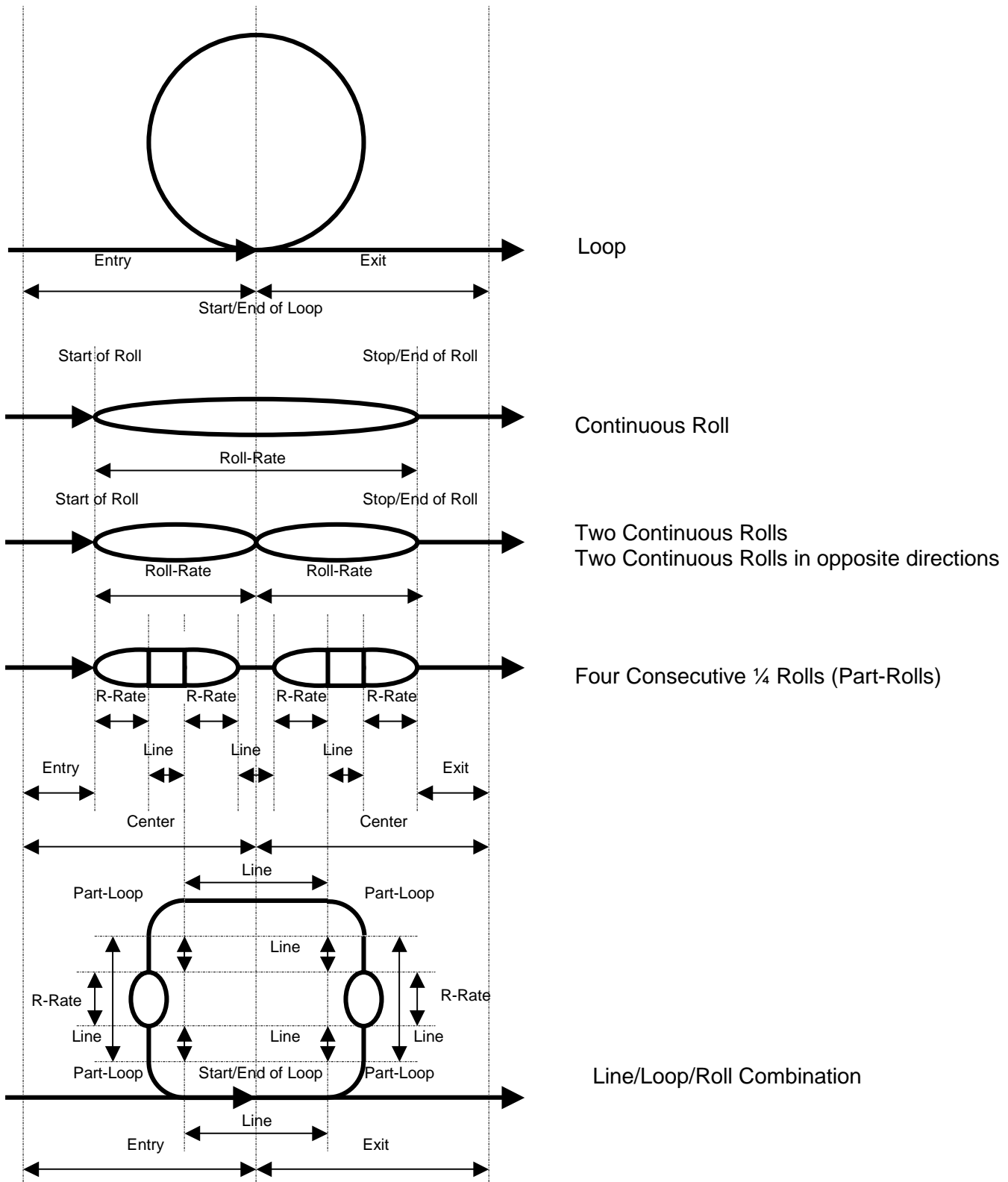
From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively two $\frac{1}{2}$ rolls in opposite directions, pull through a $\frac{1}{2}$ loop into a vertical downline, perform a roll, push through a $\frac{1}{4}$ loop, exit inverted.

F-15.17 Stall Turn with consecutive six $\frac{1}{8}$ rolls up, 1 $\frac{3}{4}$ snap roll down

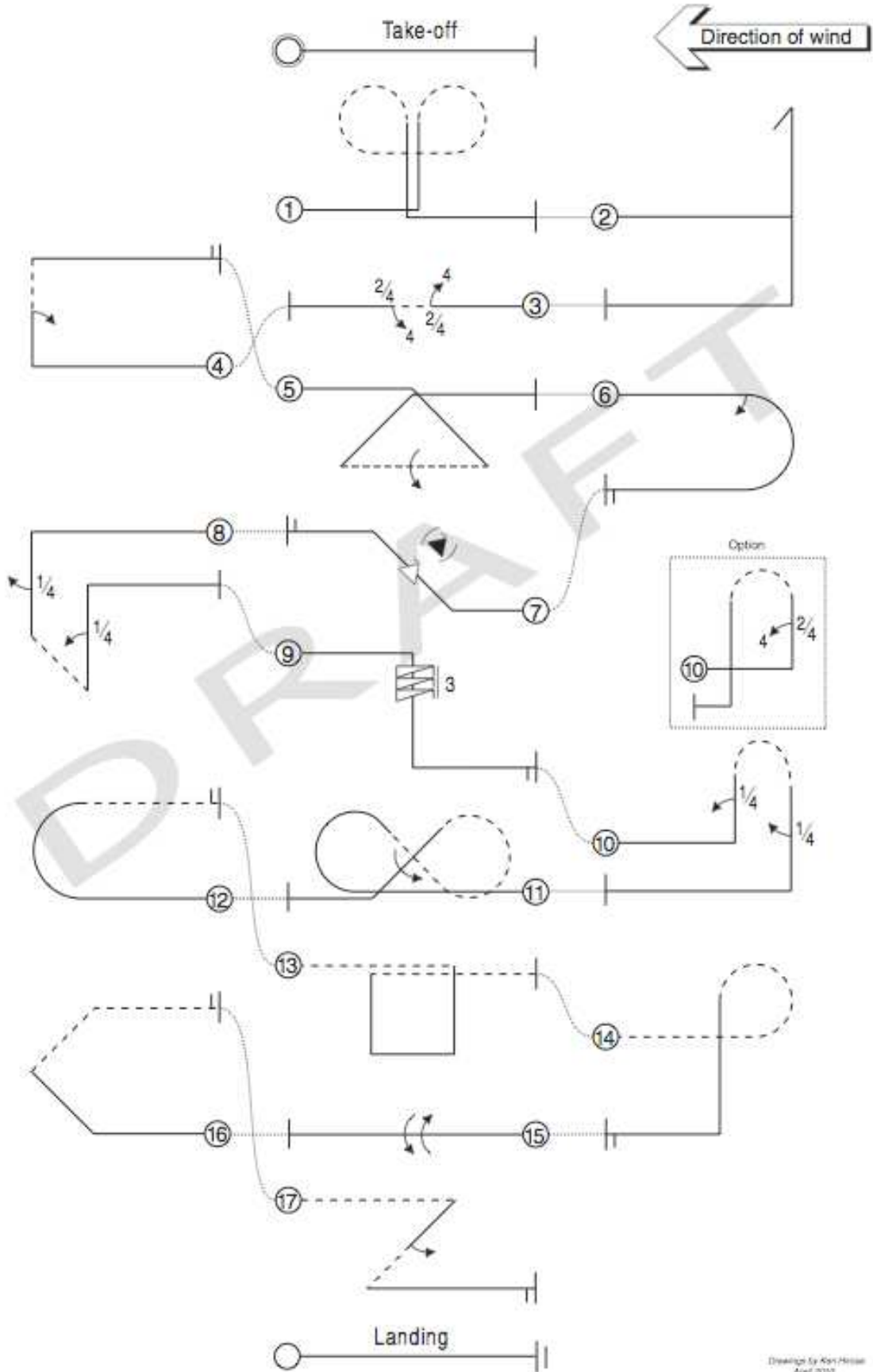
From inverted, push through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively six $\frac{1}{8}$ rolls, perform a stall turn into a vertical downline, perform 1 $\frac{3}{4}$ snap roll, pull through a $\frac{1}{4}$ loop, exit upright.

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Examples of Terminology

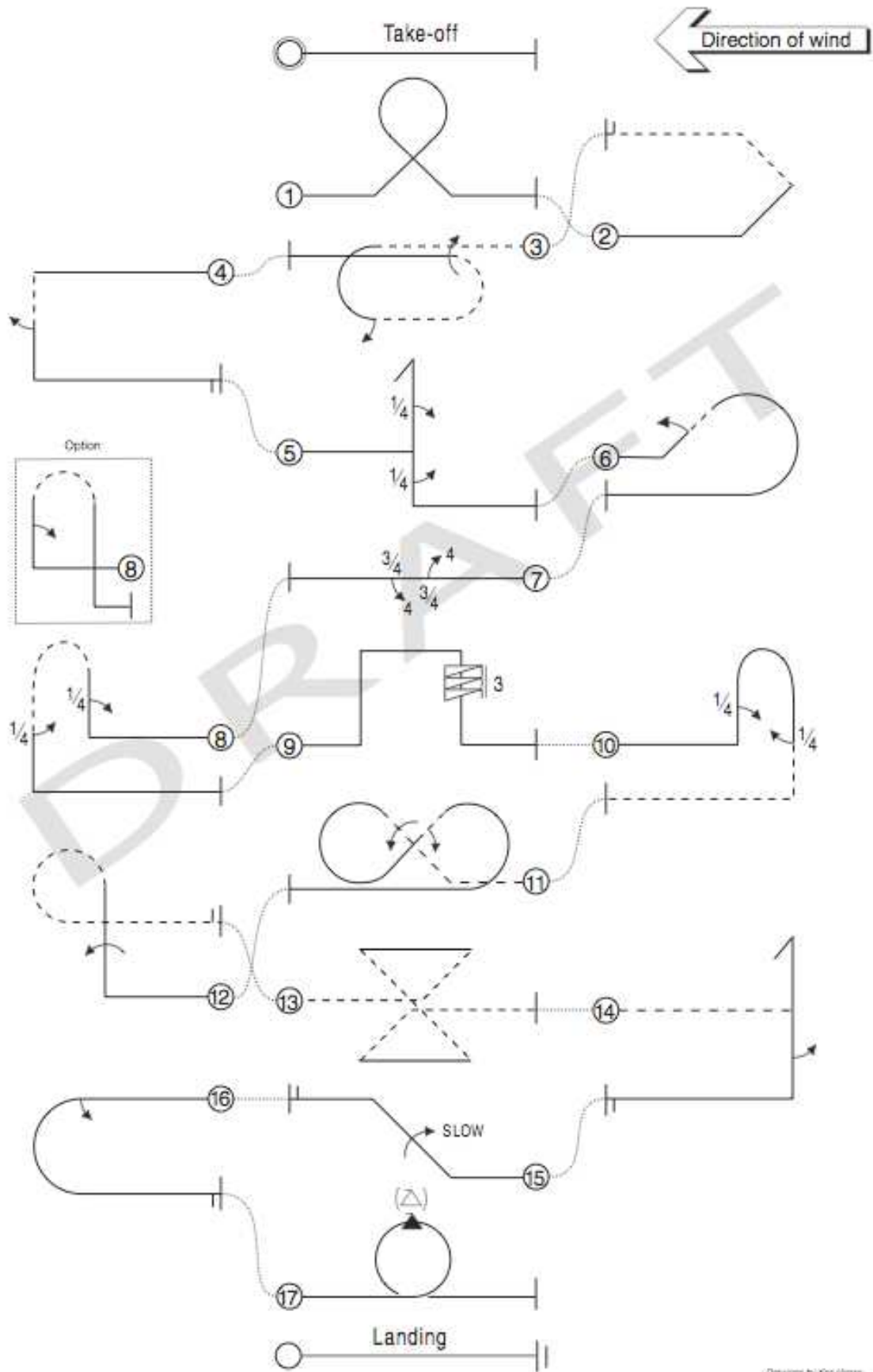


ADVANCED SCHEDULE A-12 (2011/2012)

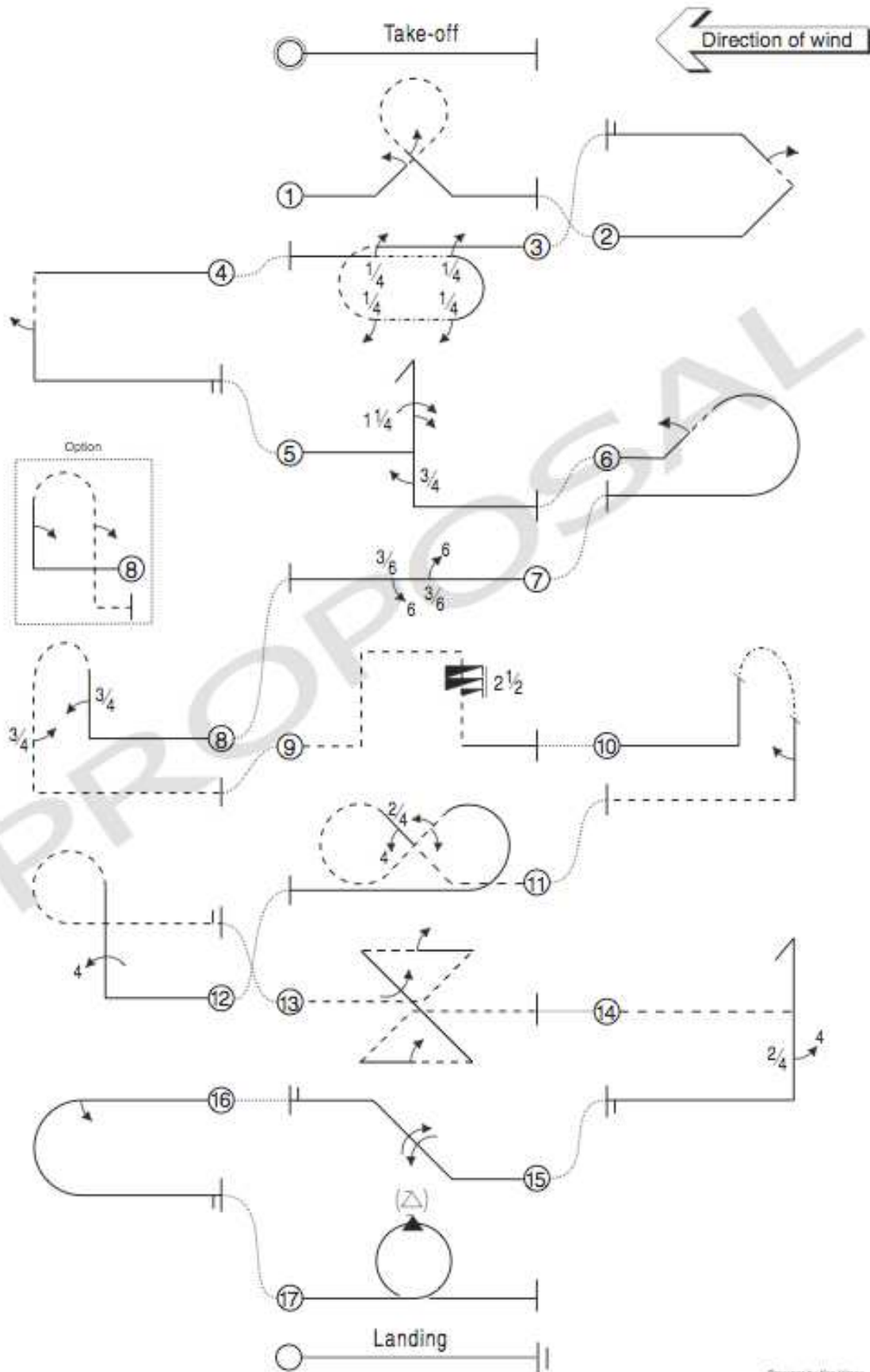


Drawings by Ken Hinson
April 2012

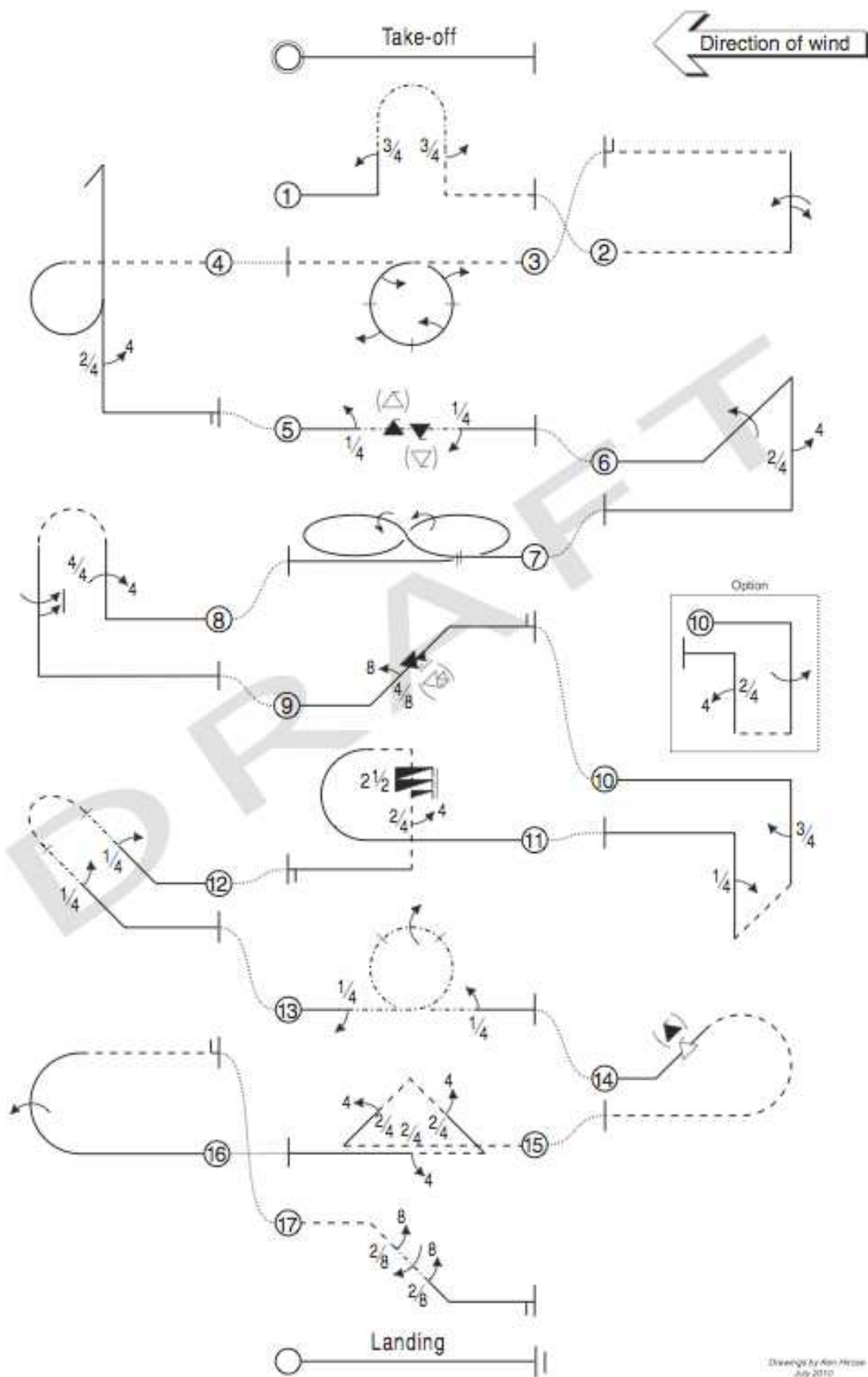
ADVANCED SCHEDULE A-14 (2013/2014)



PRELIMINARY SCHEDULE P-15 (2014-2015)

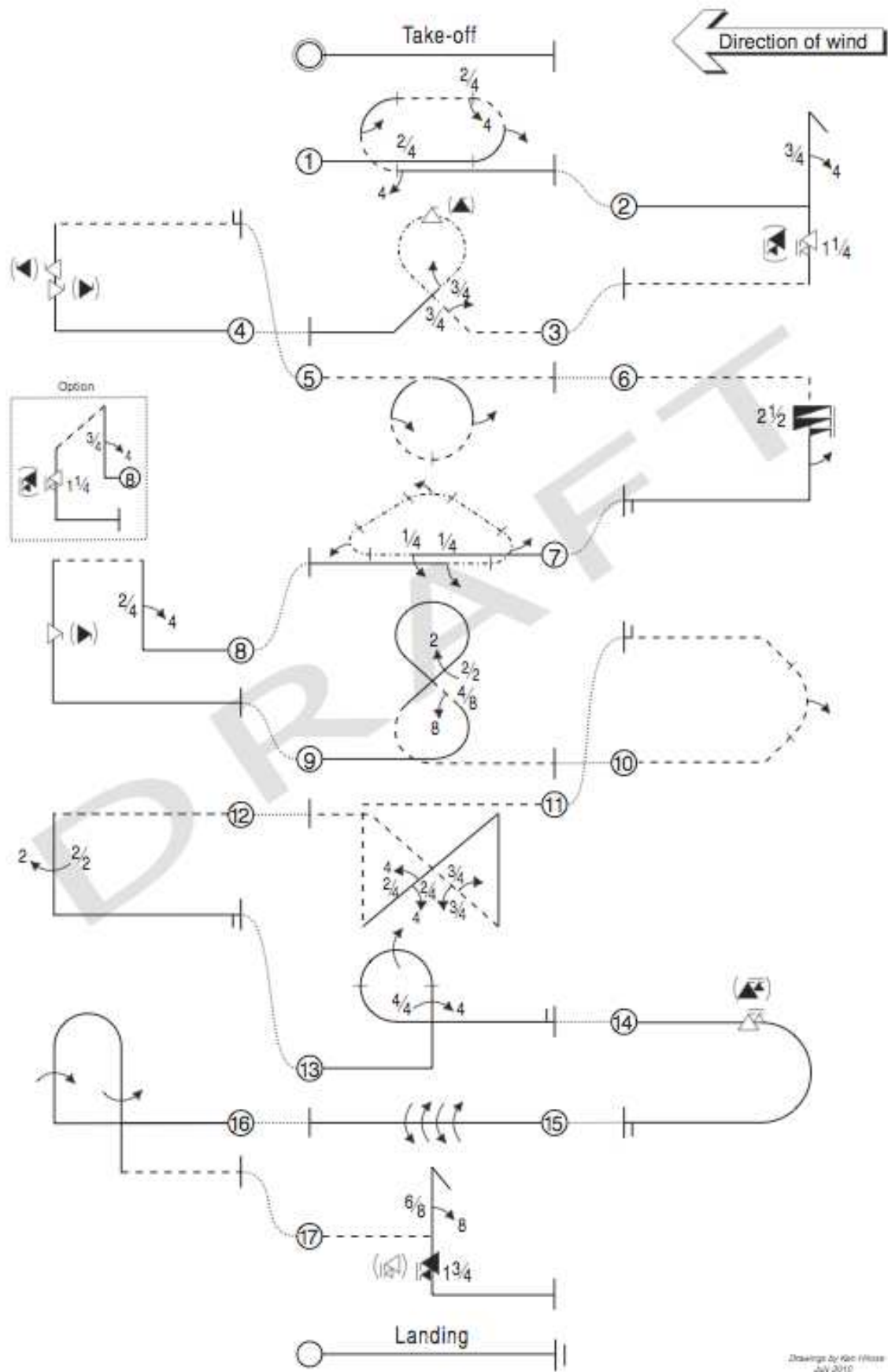


SEMI-FINAL AND FINAL SCHEDULE F-13 (2012-2013)



Drawings by Ken Hesse
July 2010

SEMI-FINAL AND FINAL SCHEDULE F-15 (2014-2015)



Drawings by Ken Hesse
July 2010