DROP AND BLOCK WIRING
STRINGING SAGS FOR DROP WIRE

1. GENERAL

1.01 This section covers the normal and minimum sags for C and F drop wire.

1.02 This section is reissued to include reference to F drop wire which replaces C drop wire.

1.03 Table A gives normal stringing sags to which C or F drop wire should be strung. Workman on poles can obtain these sags with normal hand pulling. However, if normal stringing sags will not provide adequate ground clearances, use minimum stringing sags.

1.04 Table B indicates the minimum stringing sag to which C or F drop wire can be strung where ground clearances under the spans are controlling. These smaller sags result in higher stringing tensions in the wire and hence pulling tools are required to enable workmen to pull the wire up to tension.

1.05 Both Tables A and B indicate the approximate final unloaded sags which C or F drop wire will develop after being subjected to wind and ice storms. To avoid the necessity of resagging drop wire after storms to comply with ground clearance requirements, allowance shall be made in selecting heights of attachments on poles and houses to care for sag increases from stringing to final conditions. Such sag increases between stringing sags and final sags are shown in Tables A and B.

1.06 Sag increases shown in Tables A and B are the maximum amounts which develop at midspan only. These amounts decrease as you approach the supporting attachments of the drop wire span. Table C indicates the percentage of total sag at 5 percent intervals along the span.

1.07 In span-clamp-to-house spans, string drop wire with a tension which will not pull the aerial cable out of line. If this is not practical then distribute the drop from a pole.

TABLE A

NORMAL STRINGING SAGS FOR C OR F DROP WIRE IN POLE-TO-POLE AND POLE-TO-HOUSE SPANS

SPAN LENGTH	STRINGING			APPROX FINAL UNLOADED SAG FOLLOWING STORM LOADING		SAG INCREASE FROM STRINGING TO FINAL CONDITION	
	SAG		APPROX TENSION				
FT	FT	IN	LB	FT	IN	FT	IN
HEAVY LOADING AREA							
50 (or less)	0	6	30	0	6		
75	1	0		1	0		
100	1	9		2	0	0	3
125	2	10		3	4	0	6
150	4	0		4	10	0	10
175	5	6		6	7	1	1
200	7	0		8	6	1	6
225	9	0		10	10	1	10
250	11	2		13	4	2	2
MEDIUM AND LIGHT LOADING AREAS							
50 (or less)	0	6	30	Same as Stringing Sags		No In-creases	
75	1	0					
100	1	9					
125	2	10					
150	4	0					
175	5	6					
200	7	0					
225	9	0					
250	11	2					

Note: On spans over 250 feet — Use minimum stringing sags shown in Table B.

2. NORMAL STRINGING SAGS FOR C OR F DROP WIRE

2.01 String C or F drop wire to the sags indicated in Table A in all pole-to-pole and pole-to-house spans except in those cases where adequate ground clearances can only be provided with the use of the minimum stringing sags shown in Table B. Your supervisor will advise the storm loading to be assumed for the area concerned.

TABLE B

MINIMUM STRINGING SAGS FOR C OR F DROP WIRE IN POLE-TO-POLE AND POLE-TO-HOUSE SPANS

SPAN LENGTH	STRINGING			APPROX FINAL UNLOADED SAG FOLLOWING STORM LOADING		SAG INCREASE FROM STRINGING TO FINAL CONDITION	
	SAG		APPROX TENSION				
FT	FT	IN	LB	FT	IN	FT	IN
HEAVY LOADING AREA							
50 (or less)	0	3	50	0	5	0	2
75	0	7		0	10	0	3
100	1	0		1	5	0	5
125	1	7		2	3	0	8
150	2	3		3	7	1	4
175	3	0		5	0	2	0
200	4	0		7	0	3	0
Over 200 ft—Same as Table A							
MEDIUM LOADING AREA							
50 (or less)	0	3	50	0	3		
75	0	7		0	7		
100	1	0		1	0		
125	1	7		1	7		
150	2	3		2	4	0	1
175	3	0		3	2	0	2
200	4	0		4	4	0	4
225	5	0		5	5	0	5
250	6	0		6	5	0	5
275	7	6		8	0	0	6
300	9	0		9	6	0	6
LIGHT LOADING AREA							
50 (or less)	0	3	50	Same as String-ing Sags		No In-creases	
75	0	7					
100	1	0					
125	1	7					
150	2	3					
175	3	0					
200	4	0					
225	5	0					
250	6	0					
275	7	6					
300	9	0					

TABLE C

AMOUNT OF SAG AT 5 PERCENT INTERVALS ALONG SPAN

POINTS ALONG TOTAL LENGTH OF SPAN (%)	% OF MAX. SAG
5 — 95	19.5
10 — 90	36.5
15 — 85	51.0
20 — 80	64.0
25 — 75	75.0
30 — 70	84.4
35 — 65	91.3
40 — 60	96.0
45 — 55	98.9
50 — 50	100.0

2.02 Wire expands to become longer in hot weather. The effect becomes more noticeable as span lengths increase. In order to compensate for this effect, when drop wire spans exceed 100 feet and the temperature is below 32°F, reduce the sags shown in Table A by 4 inches.

3. SAGGING DROP WIRE TO NORMAL STRINGING SAGS

3.01 The sag of drop wire in pole-to-house or pole-to-pole span is indicated in Fig. 1 and 2.

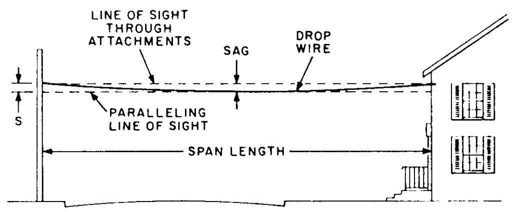

Fig. 1 - Drop Wire Attachments on Same Level

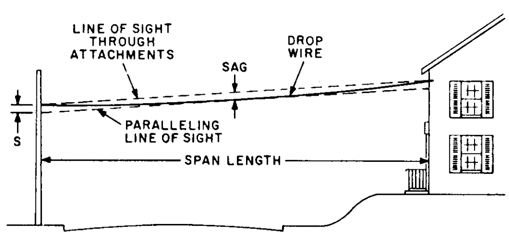

Fig. 2 - Drop Wire Attachments on Different Levels

3.02 Since the normal stringing sags given in Table A are used only in locations where ground clearance is readily obtained, it is satisfactory to estimate the amount of sag given to drop wire.

4. MINIMUM STRINGING SAGS FOR C OR F DROP WIRE

4.01 The minimum stringing sags to which C or F drop wire should be strung are indicated in Table B. These sags should be used where they provide the only means of obtaining required ground clearances under drop wire in spans.

4.02 In order to compensate for the effects of temperature (mentioned in 2.02), the sags shown in Table B shall be reduced by 5 inches when drop wire spans exceed 100 feet and the temperature is below 32°F.

4.03 The minimum sags shown in Table B require a stringing tension of 50 pounds which is more than workmen on poles can readily pull with the normal means of placing drop wire. Therefore, when minimum sags are used the wire is tensioned with the aid of a drop wire puller.

5. TENSIONING DROP WIRE TO MINIMUM STRINGING SAGS

5.01 Tensioning of drop wire by means of the drop wire puller is accomplished as follows:

(1) Suspend the drop wire puller on the drive hook by means of its hook. Pull up on the drop wire handtight and hold it over the drive hook with one hand. With the free hand reach out and place the wire grip on the drop wire at arm's length. This setup for tensioning drop wire is shown in Fig. 3.

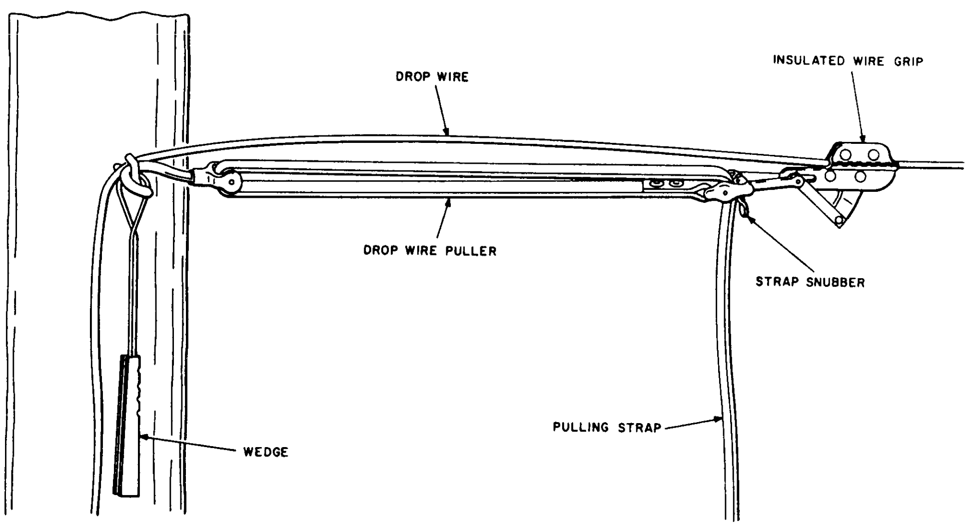

Fig. 3 - Tensioning Drop Wire

(2) Pull on the drop wire with the drop wire puller until the sag corresponds to the stringing sag shown in Table B [reduced by 5 inches where required (see 4.02)]. Snub the pulling strap with the strap snubber and note the ground clearance. For clearances, see Sections 462-070-015, 462-070-016, 462-070-017. If the desired clearance with minimum sag is not accomplished, make adjustments by raising attachments at either or both ends of the drop wire span.

(3) Place the drop wire clamp loosely on the slack drop wire section between the grip and the pole. Take up the slack in the wire and hold while tightening the drop wire clamp on the drop wire with the tail wire locating about 1/2 inch short of the drive hook.

(4) Pull on the drop wire and attach the drop wire clamp to the drive hook.

(5) Remove the wire puller by detaching the wire grip thereby transferring drop wire tension to the drop wire clamp. The drop wire puller may then be removed from the drive hook.