EASY INSTRUCTIONS FOR OPERATING THE COMPTOMETER

ADDS
MULTIPLIES

Comptometer

DIVIDES
SUBTRACTS

POSITION OF HANDS FOR ADDITION

Always begin at the top of the column and add downward, keeping the index finger of the left hand where it points to the next item to be added

Clear the Comptometer by moving the lever on the right side of the machine as far back as it will go and pulling it forward. This brings all register wheels to cipher, ready for a new problem.

ADDITION

Addition on the Comptometer is the simplest and easiest of all operations. Beginning on the right, the two white columns (the keys 1 to 9 constitute a column) represent the units and tens of cents; the successive rows are the units, tens, hundreds of dollars, etc.

Rule—

Strike the first item to be added according to the large figures on the keys, striking each figure of the item in its proper column. Strike in the same manner the remaining amounts to be added and the total will appear on the register. In amounts containing ciphers strike the figures only. For $5.00 strike the 5-key in the units of dollars column.

In adding, locate the key desired, place the finger on it, and simply push it down till you feel it strike bottom. This push-stroke requires practice, for it differs distinctly from the sharp, staccato blow of a typewriter. It is the easiest known stroke on the finger, for the blow of hitting the key is done away with. This method of operating will insure absolute accuracy and fair speed in the beginning and ultimately becomes very rapid.

For the first few days go very slowly, memorizing the keyboard and acquiring the stroke. Speed will come later.

Add the following columns, using the first and second fingers of the right hand. Remember to place the finger on the key desired, and push it down until you feel it strike bottom.

1.45	1.35	13.45	87.00
.67	.47	35.00	45.50
2.30	5.60	23.57	235.00
4.46	2.35	86.40	57.68
5.00	8.00	240.00	68.77
2.25	3.50	33.46	433.24
5.70	2.34	5.67	700.00
1.25	5.70	53.30	55.25
6.90	6.05	400.00	24.50
29.98	35.36	890.85	1706.92

Add each column, write down the total obtained. Then prove it at once by re-adding the column. Nothing will convince you so thoroughly of the perfect accuracy of the machine as the fact that you can without previous practice get the correct total time after time without error. If an error is made it will be the direct result of trying to go too fast.

ADDITION

Touch Method

This method is advised for the operator who will use his Comptometer for an hour a day or more and wishes to become a highly efficient operator. It is just as simple as the first rule, but admits of almost unlimited speed. A large part of the time spent in operating an ordinary adding machine is lost in looking from the work to the keyboard. The easiest method to operate the Comptometer entirely by touch is to use only the lower half of the keyboard. Thus, every key to be operated is within easy reach of the fingers, practically without any movement of the hand.

Rule:

In beginning, place a blotter between the rows of **5** and **6 keys.**

To add 9 strike 4 and 5	To add 7 strike 3 and 4
To add 8 strike 4 twice	To add 6 strike 3 twice

To make touch operating very simple, we make the odd keys, **1, 3, 5,** etc., with cup-shaped tops, and the even keys, **2, 4,** etc., with flat tops. With this in mind, add the following columns, beginning at the top of each column and adding down. Use the first finger for adding in the tens column only and the second finger for adding in the units column only. Keep each finger on its own column. Find the keys by feeling as much as possible. Go slowly and carefully; speed will come later.

Remember to put the finger on the key desired, and push it down until you feel it strike bottom.

Examples:

No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7
22	33	43	23	67	84	25
23	34	33	36	43	47	92
33	43	12	43	77	63	14
34	32	44	48	65	84	52
44	31	23	35	95	93	71
45	35	32	49	48	32	42
55	53	24	43	64	26	35
54	24	21	36	23	82	92
43	22	35	42	72	48	25
31	35	45	36	83	99	18
___	___	___	___	___	___	___

Add each column at least four times, in order to firmly fix in your mind the combinations used.

ADDITION RULE

Use only the first and second fingers to add the following four-figure items.

First, add the cents only, adding the tens with the first finger, and the units with the second finger.

Leave the total of the cents in the answer register, and—

Then, add the dollars, adding the tens with the first finger, and the units with the second finger.

Remember to place the finger on the key desired, and push it down until you feel it strike bottom.

Examples:

No. 8	No. 9	No. 10	No. 11	No. 12	No. 13
24.64	66.43	62.43	62.43	54.56	33.45
55.33	50.34	17.56	17.56	43.21	65.34
44.24	83.75	23.67	42.67	32.61	77.21
26.78	74.96	11.24	43.24	11.33	43.12
83.33	34.22	12.36	24.36	32.24	63.33
45.21	94.34	13.36	24.36	82.27	63.44
46.35	85.09	38.11	21.11	72.27	14.55
76.67	58.87	47.24	32.35	72.56	54.33
44.32	75.43	40.54	46.54	23.24	25.98
58.23	66.21	80.66	22.66	44.45	65.67
87.68	16.11	90.24	35.24	62.75	53.22
95.55	44.33	55.89	44.24	43.31	54.43

ADDITION RULE

Use only the first and second fingers to add the following four and five figure items.

First, add the cents only, adding the tens with the first finger and the units with the second finger.

Leave the total of the cents in the answer register, and—

Then, add the dollars, **adding both hundreds and tens with the first finger** and the units with the second finger.

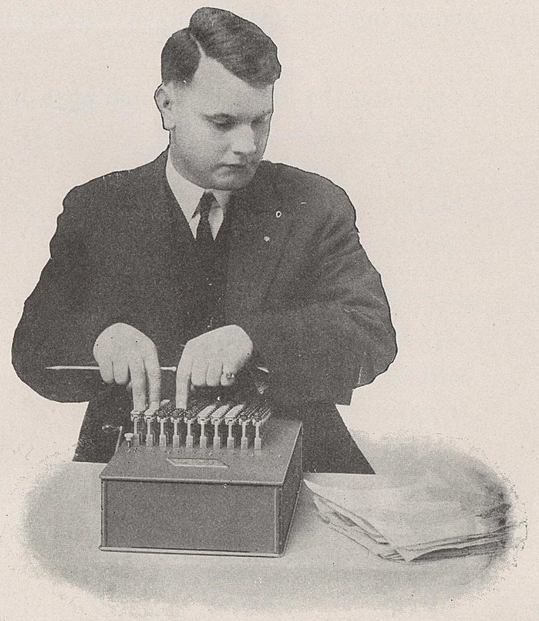
Remember to place the finger on the key desired and push it down until you feel it strike bottom.

Examples:

No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20
54.00	22.00	333.64	789.45	73.23	75.45	70.00
73.68	65.98	43.45	555.64	633.75	98.67	543.21
20.00	37.43	400.67	54.67	22.98	45.21	29.00
100.87	60.45	45.00	45.76	32.75	80.00	98.23
32.40	20.65	45.78	40.00	78.21	945.24	378.80
67.68	200.00	78.64	434.54	67.35	31.23	345.45
36.35	23.67	20.00	56.20	87.67	111.34	896.87
33.00	24.24	88.78	64.02	12.50	70.00	454.22
45.65	800.00	98.00	90.87	226.78	76.41	30.00
.45	44.58	63.55	500.00	36.88	13.12	236.79
34.48	366.57	13.75	42.45	78.87	22.11	400.00
50.00	10.00	13.00	75.32	33.34	67.78	323.00
38.44	32.22	67.00	53.40	35.75	400.90	2.30
42.65	45.00	47.33	78.89	443.00	34.42	20.16
66.00	78.23	333.45	334.32	66.43	67.89	678.93

TOTALS

NOTE: After sufficient practice, operators are able to add columns like the above without adding the dollars and cents separately, but the above method should be used for at least two weeks.



POSITION OF HANDS FOR
MULTIPLICATION

MULTIPLICATION

Primary Rule

Example: 1364x57.

Place the 1st finger of the right hand on the **7**-key and the 1st finger of the left hand on the **50**-key. Strike the **57** in this position as many times as the right hand figure (**4**) of the multiplicand indicates. Move both fingers one column to the left and strike as many times as indicated by the second figure (**6**) of the multiplicand. Continue to move to the left, striking in each column the multiplier as many times as indicated by the successive figures (**3, 1**) of the multiplicand.

In beginning multiplication every operator should confine himself to the use of the first finger of the right hand and the first finger of the left hand.

After the fingers have been positioned on the keys representing the multiplier, strike slowly, giving each key a full push-stroke, until you feel it strike bottom. Raise the fingers slightly above the keys after each stroke.

In each of the following examples use the first finger of the left hand for the tens figure of the multiplier and the first finger of the right hand for the unit figure:

24,531 35	12,456 68	5,315 64	23,456 75	84,143 79
35,642 45	15,341 88	45,673 28	36,341 23	14,683 47
89,986 37	15,366 15	65,418 31	94,345 63	14,312 86
26,433 19	46,541 91	63,222 83	46,812 61	46,533 11

MULTIPLICATION RULE

Example: 314x45.

Place the first and second fingers of the right hand on the keys in the right-hand columns representing the multiplier **(45)**, and strike as many times as indicated by the right-hand figure **(4)** of the multiplicand; move the fingers one column to the left and strike as many times as the 2nd figure **(1)** of the multiplicand indicates. Continue to move to the left, striking as many times as the succeeding figure **(3)** of the multiplicand indicates.

Never multiply with more than two fingers of each hand. Give each key a full stroke.

Multiply each of the following problems, using the fingers as shown by the abbreviations in front of, and following the multiplier. 1 L and 2 L indicate 1st and 2nd fingers of the left hand. 1 R and 2 R indicate 1st and 2nd fingers of the right hand.

Raise the fingers slightly above the keys after each stroke. Never use the thumb.

Examples:

No. 21	No. 22	No. 23	No 24	No 25
43	**13**	**47**	**83**	**276**
1R **34** 2R	2R **42** 1R	1L **62** 1R	1L **37** 1R	1L **345** 1 & 2R
No. 26	No. 27	No. 28	No. 29	No. 30
19	**342**	**43**	**43**	**56**
2R **54** 1R	1L **153** 2 & 1R	1L **39** 1R	1R **13** 2R	**89** 1 & 2R
No. 31	No. 32	No. 33	No. 34	No. 35
75	**83**	**28**	**284**	**104**
1R **46** 2R	1L **87** 1R	1L **19** 1R	1L **324** 1 & 2R	1L **678** 1 & 2R

Where the multiplier has four figures, split the multiplier. Example Multiply **12,365x8,379.** First Multiply **12,365** by **79,** leaving the result on the register. Then multiply **12,365** by **83,** starting the **83** in the fourth and third columns.

NOTE A hyphen indicates where the multiplier should be split

In all ordinary cases where you are multiplying through with two figures, use both hands—the first finger of each

No. 36	No. 37	No 38	No. 39
6744	**2456**	**5613**	**58426**
735	**65-35**	**27-18**	**53-78**
No. 40	No 41	No. 42	No. 43
5362	**17465**	**15082**	**13461**
523	**43-45**	**3104**	**19-19**
No. 44	No. 45	No. 46	No. 47
13723	**19147**	**4817**	**5447**
73-65	**92-23**	**37-29**	**6-25**
No 48	No 49	No 50	No. 51
6714	**3672**	**5754**	**85976**
73-68	**94-45**	**16-17**	**82-72**

SPECIAL MULTIPLICATION RULE No. 1

Decimal Multiplication.

In multiplying large numbers containing decimals, it is advisable to strike from the left toward the right. Hold the multiplier with its left-hand figure on the left-hand column of the machine. Strike here as many times as is shown by the left-hand figure of your multiplicand, and then move one column to the right, etc. Point off as many register holes from the left as there are whole places in the multiplicand and multiplier together

Example: 12.345x4.356.

Hold **4356** with the **4** on the left-hand column of the machine and in this position strike once—move each finger one column to the right and strike two times, one more column to the right and strike three times—then four times, then five times. The result as it stands on the register is **053774820.** There are two whole places in **12.345** and one in **4.356,** making together three register holes to point off from the left of the machine, and your answer is **53.77482.**

NOTE Hyphen in multiplier indicates that it should be split.

Examples

No. 52	No. 53	No. 54	No. 55
346.21	**14.374**	**2.2635**	**.35624**
4.67	**32.78**	**9.4-56**	**91.-47**
No. 56	No. 57	No. 58	No. 59
11.463	**4627.1**	**26.516**	**314.62**
37.8	**.846**	**21.68**	**7.3-49**

SPECIAL MULTIPLICATION RULE No. 2

Where you have three numbers to be multiplied together, like **465x138x325,** you should multiply **465x138** on the right of the machine, leaving your result **64170** on the register As **64170** is in the register once, you want it only **324** more times, so you hold **324** with the **4** over the left-hand figure of the **64170.** Strike here the number of times indicated, six—move to the right one column and strike the number of times indicated, four—one more column to the right and strike once—move one more column to the right and strike seven times, and your answer is **20,855,250.** As you move from left to right, the figure in the answer register under the **4** on which your finger is, shows the number of times the **324** should be struck.

Example: 45x267x457.

45x267=12015 (Let this result stand on the register)
457 minus one, equals **456.**

Holding **456** with the right-hand figure (**6**) over the left-hand figure (**1**) of **12015,** strike successively toward the right **1, 2, 0, 1** and **5** times.

Answer, **5,490,855.**

Examples:-

No. 60	No. 62	No. 64	No. 66
345x289x56	**6452x344x66**	**645x4456x28**	**75x6489x567**
No. 61	No. 63	No. 65	No. 67
789x88x546	**33x875x458**	**389x673x438**	**372x44x8879**

SPECIAL MULTIPLICATION RULE No. 3

Accumulative Multiplication:

Where we wish to total the products of several multiplications, multiply from the right to the left in the ordinary manner, without canceling between each operation.

Example: 346x 79
1824x368
216x425

Total 790,366

Multiply each of the above without canceling and the accumulated product **790,366** will appear in the register.

SPECIAL MULTIPLICATION RULE No. 4

Accumulated multiplication is used in hundreds of commercial houses for the checking of both incoming and outgoing bills. In bill work we are likely to find decimals in both quantity and price, and to be able to accumulate these decimal multiplications, we use the following rule

In most cases we hold the price, and it is easy to remember that in the first position the sixth white column is units of dollars and the fifth and fourth black columns are cents.

Example:-

4 3/4 (4.75) yards at $1.25
16 1/2 (16.5) yards at .34 1/2c
148 1/4 (148.25) yards at .06 1 4c

Total product $20.895

Hold the price **$1.25** with the **1** in the sixth (white) column, and the **2** in the fifth (black) and the **5** in the fourth (black), multiplying toward the right, strike four times, seven times and five times, and the answer shows **$5.9375.** Leave this on the register

Then hold **34 1/2c** with the **3** in the fifth, **4** in the fourth, and **5** in the third. As the yardage commences not in the units but in the tens column, move one column to the left before commencing the multiplication, then strike from left toward the right, one time, six times and five times, and the accumulation is **$11.63.** Leave this on the register

Then hold **6 1/4c** or **625** with the **6** in the fourth (a black) column. As the quantity **148 1/4** begins not in its units but its hundreds, you should move two columns to the left before commencing to multiply Starting here, strike successively one time, four times, eight times, two times and five times. If at any time part of your fingers run off the keyboard on the right, strike with the fingers which still remain on the keyboard. Your accumulated answer appears **$20.895.**

Your decimal point in this method always remains in the same position, that is, invariably between the fifth (black) column and the sixth (a white) column. If you keep in mind the fact that we merely use the fourth and fifth (both black) columns as cents, this method is very simple. Always take the position of your price as above indicated, and should your quantity have more than one whole place, move your position, before multiplying, one column to the left for each additional place. For instance, move one column to the left for **48 3/4,** two columns for **236 3/4,** etc.

Example No. 68:-

1 1/8 yards at .45c
12 1/4 yards at .67 2/3c
67 yards at .50c
6 3/8 yards at $1.25

Example No. 69:-

16 2/3 yards at .34 1/2c
172 yards at .06 1/2c
25 1/4 yards at $1.89
256 yards at .19c

Bookkeeping and Cashier's Department

Adding Cash Book
Adding Sales
Adding Remittances
Adding Deposit Slips
Adding Charge Sheets
Checking Daily Postings with Comptometer Posting Slips
Adding Reports, Collectors' Slips
Adding Monthly Statements
Balancing Individual Ledger Accounts
Adding Check Stubs
Adding Sales Distribution Sheets
Adding Trial Balance with Comptometer Sub total Cards
Checking Extensions on Bills Received
Checking Freight Bills
Figuring Percentages
Extending and Checking Inventory

Billing Department

Adding Quantities
Original Extension on Invoices
Adding Invoices
Checking Invoices by Individual Extensions or by Accumulation
Figuring Discounts
Figuring Freight Charges and Deductions
Adding Charge Sheets
Figuring Profit and Loss

Pay-Roll and Cost Departments

Adding and Extending Time Tickets
Adding Pay-roll
Extending Material Tickets
Totaling Job Costs
Statistical Costs
Denominating the Pay-roll with Comptometer Pay-roll Shield

Only common uses listed. Auditing, Engineering, Advertising, Estimating, Purchasing and Statistical Departments each have their work for a Comptometer

Special Comptometer uses found in almost every line of business.

When a Comptometer locks in adding, go back and strike again the last key operated.

1. If this key works, touch the release button and continue the addition.

2. But if the last key operated is found locked, touch the release button and add in the key used before the last.

Example of Rule 1.

Intentionally press the 40-key part way down. The 5-key is then locked. Go back and strike again the 40-key, touch the release button and your correction is made. Complete the first item by striking the 5, and continue the addition.	.45 1.25 .67 .45

Example of Rule 2.

In adding 75 by the combination method,— intentionally press the 30-key part way down. Then give the 40-key a regular stroke. On attempting to strike the 5-key you find it locked.	{ 30 40 5 } —.75 .56 2.80 .47 3.20

To correct, go back to the last key operated (40) and you will find it locked.

Following the rule, touch the release button and add in the key before the last (30).

This completes the correction, and after adding in the 5, continue with the other items of the column.

NOTE: If the "key before the last" is in the same column and is larger than the "last key operated," cancel and re-add the column.

Form No. 96. (OVER)

IN MULTIPLICATION AND DIVISION.

When any key locks under the finger it is a positive danger signal of misoperation Owing to the speed of the Comptometer it is simpler and faster to cancel the machine and go over the problem than to stop and make the correction. The positive danger-signal prevents an error slipping into the answer without the knowledge of the operator.

(OVER)