

United States Department of the Interior  
National Park Service

For NPS use only

National Register of Historic Places  
Inventory—Nomination Form

received JUL 13 1983

date entered AUG 27 1983

See instructions in *How to Complete National Register Forms*  
Type all entries—complete applicable sections

1. Name

historic KSAC Radio Towers

and/or common N/A

2. Location

street & number Kansas State University campus N/A not for publication

city, town Manhattan N/A vicinity of

state Kansas code 20 county Riley code 161

3. Classification

Category	Ownership	Status	Present Use
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input type="checkbox"/> building(s)	<input type="checkbox"/> private	<input checked="" type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input checked="" type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input type="checkbox"/> site	<b>Public Acquisition</b>	<b>Accessible</b>	<input type="checkbox"/> entertainment
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input type="checkbox"/> yes: restricted	<input type="checkbox"/> government
	<input type="checkbox"/> being considered	<input checked="" type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial
	N/A	<input type="checkbox"/> no	<input type="checkbox"/> military
			<input type="checkbox"/> museum
			<input type="checkbox"/> park
			<input type="checkbox"/> private residence
			<input type="checkbox"/> religious
			<input type="checkbox"/> scientific
			<input type="checkbox"/> transportation
			<input checked="" type="checkbox"/> other: transmitter

4. Owner of Property

name State of Kansas Board of Regents

street & number

city, town Topeka N/A vicinity of state Kansas

5. Location of Legal Description

courthouse, registry of deeds, etc. Register of Deeds

street & number Riley County Courthouse

city, town Manhattan state Kansas

6. Representation in Existing Surveys

title None has this property been determined eligible?  yes  no

date  federal  state  county  local

depository for survey records

city, town state

# 7. Description

**Condition**

excellent

good

fair

deteriorated

ruins

unexposed

**Check one**

unaltered

altered

**Check one**

original site

moved

date \_\_\_\_\_

**Describe the present and original (if known) physical appearance**

The two KSAC radio towers are located to the west of Nichols Gymnasium on the Kansas State University campus. They are about 140 feet high and stand about 300 feet apart. The towers themselves have not been visibly altered since their construction in 1924. There is no longer any antenna hung between the two towers.

The KSAC radio towers were constructed in 1924 by the U.S. Wind Engine and Pump Company of Batavia, Illinois, a company that made and sold wind mill towers. The towers supported a flat top antenna, a design copied from a ship radio. It consisted of a number of parallel wires stretched horizontally between the towers with the transmitter line from the studio fanning out to join these wires midway between the towers. The towers themselves were 4-sided open-frame metal structures.

The appearance of the towers was changed slightly toward the end of 1929 when a new antenna was installed. The flat top antenna was replaced by a more advanced T-cage antenna. The T-cage consisted of a number of parallel copper wires stretched between metal rings, one mounted on each of the two KSAC towers. This gave the appearance of a "cage" or tube of wires stretched between the two KSAC towers with the studio link adjoining the "cage" at the midpoint between the towers.

Currently there is no antenna connecting the towers. The north tower is being used to microwave the KSAC studio signal from the campus to the KSAC transmitter on Denison Avenue. At the base of this tower is a memorial to Grover C. Cobb, a pioneer Kansas broadcaster.

# 8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1900-	<input checked="" type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input type="checkbox"/> other (specify)

**Specific dates** 1924 **Builder/Architect** U.S. Wind Engine & Pump Co.

### Statement of Significance (in one paragraph)

The KSAC radio towers on the Kansas State University campus are an excellent example of early radio towers built in the United States. At the time of their construction in 1924 they represented the finest available radio technology. The original towers remain intact, virtually as they were when constructed. They are now the only remaining towers of their type in Kansas, and are among a very few left in the United States. They are appropriate symbols of broadcasting history and of KSAC's place in that history.

The history of broadcasting at Kansas State Agricultural College (as it was known until 1959) began 12 years before the KSAC radio station was constructed. In 1912 the physics department of Kansas State licensed a one kilowatt transmitter and began daily weather broadcasts in morse code. Radio technology was not advanced to the point that voice transmissions were possible. Many farmers and farm boys had crystal detectors and learned code well enough to receive these weather reports. These broadcasts were reported to have been received more than 150 miles away in Winfield. They are now believed to be the first fixed radio broadcasts of weather reports in the United States. Professor Hamilton of Kansas State brought these broadcasts to the attention of the U.S. Secretary of Agriculture and a similar service was soon inaugurated by the Army and Navy.

In 1922 Professor Eric Lyon established a new 100 watt radio telephone station (WTG) capable of broadcasting the human voice and music. The occasional broadcasts from WTG were heard by Kansas listeners with crystal receiving sets within a radius of 150 miles.

Ten years after the first morse code transmissions the first commercial broadcasting stations began operations, notably the Kansas City Star station WDAF in Kansas City, Missouri and KFKB, owned and operated by Doctor John R. Brinkley at Milford, Kansas.

Remote broadcasts from Kansas State Agricultural College began on February 11, 1924 on Dr. Brinkley's KFKB station. Three far sighted K-State faculty each contributed \$50 of their own money to lease telephone wires to link the university's remote studio with that of KFKB. Programming for so much radio time had become by this time a severe burden to the physics department so it was decided that the extension division would assume control of programming duties.

Construction of a new 500 watt radio station with call letters KSAC began on August 20, 1924. The towers that were put up then are those that stand today. By special permission of the Acting Secretary of Commerce, station KSAC began broadcasting with a five hour nationwide "Aggie" program. The operation of this station has been continuously the responsibility of the extension division.

In 1926 KSAC made radio connection with commercial radio station KFAB, then in Lincoln, Nebraska, when full time broadcasting of quality programming became too great a burden on KSAC staff. It was felt that each station could share the same frequency, each broadcasting at separate fixed times in the day. Considerable difficulty in time sharing resulted from this union. Trouble originated over KFAB's refusal to allow KSAC to broadcast the Kansas State basketball games in their entirety. In addition, KSAC officials received numerous com-

# 9. Major Bibliographical References

SEE CONTINUATION SHEET

# 10. Geographical Data

Acreeage of nominated property Less than one acre

Quadrangle name Manhattan

Quadrangle scale 1:24,000

UTM References

A 

1	4	7	0	8	9	2	0	4	3	3	8	1	0	0
Zone		Easting				Northing								

B 

1	4	7	0	8	9	3	0	4	3	3	8	0	2	0
Zone		Easting				Northing								

C 

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D 

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E 

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F 

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G 

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H 

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Verbal boundary description and justification The property nominated here consists only of the towers and the ground that they occupy in S18, R8E, T10S.

List all states and counties for properties overlapping state or county boundaries

state N/A code county code

state code county code

# 11. Form Prepared By

name/title Nora Pat Small, Architectural Historian

organization Kansas State Historical Society

date June 30, 1983

street & number 120 West Tenth

telephone (913) 296-5294

city or town Topeka

state Kansas

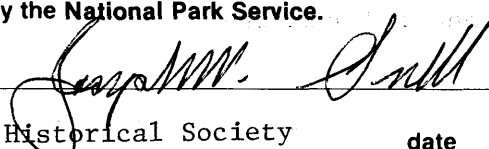
# 12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national  state  local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature



title Executive Director, Kansas State Historical Society

date June 30, 1983

For NPS use only

I hereby certify that this property is included in the National Register

Entered in the National Register

date 8/27/83

Keeper of the National Register

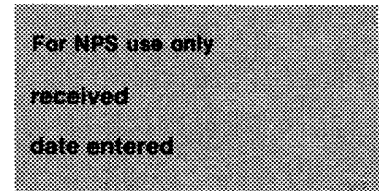
Attest:

date

Chief of Registration

**United States Department of the Interior  
National Park Service**

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Continuation sheet

Item number 8

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plaints from their listeners concerning the weakness of the station's signal. KSAC engineers also wished to change to a lower frequency to provide a better signal. For these reasons KSAC ended its affiliation with KFAB on Oct. 30, 1928.

After the break from KFAB, KSAC changed its frequency to 580 and began a time sharing with WSUI, a sister educational station at the University of Iowa at Iowa City, Iowa. KSAC was licensed to operate at 100 watts daytime and 500 watts at night. The time sharing with WSUI was quite satisfactory. However, the Federal Radio Commission preferred time sharing stations to be located close to one another. As a result of the F.R.C. policies KSAC switched from time sharing with WSUI to time sharing with WIBW, a commercial station located in Topeka, Kansas on November 30, 1929.

The radio signal generated by KSAC was modernized in 1947 when the station built a new 424 foot  $\frac{1}{4}$  wave vertical antenna on Denison Avenue just north of the main campus. The connection between the campus studios and the transmitter was by phone lines.

From 1947 both towers were non-functioning. In August, 1974 the north tower of the two original KSAC Radio towers was pressed into service once again. Since that time it has been used as a tower to microwave the studio signal on campus to the transmitter on Denison Avenue.

THIS STATEMENT REFLECTS CURRENT KNOWLEDGE AND IS SUBJECT TO CHANGE.

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Continuation sheet

Item number 9

Page 1

Jack Burke, General Manager, KSAC, 1958–Present

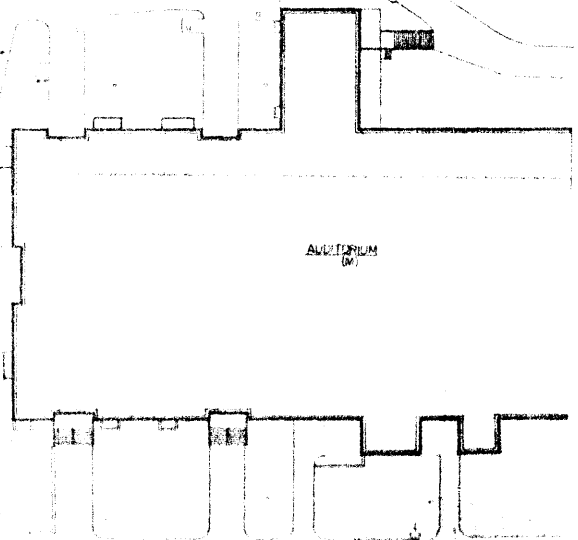
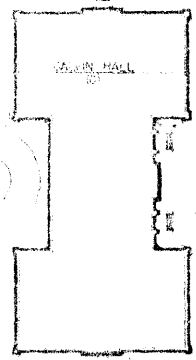
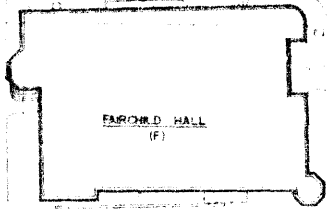
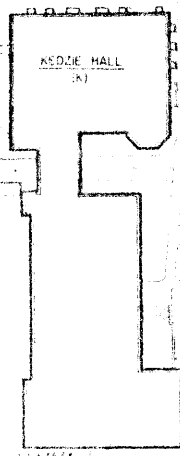
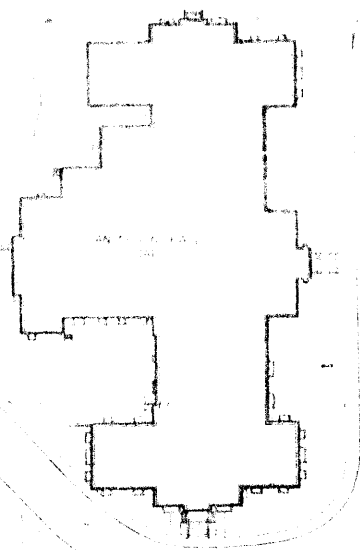
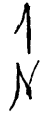
Ralph Titus, Assistant Manager, KSAC, 1960–Present

Richard B. Ridgeway, 1968 Graduate Thesis: A Historical Study of KSAC  
Radio, Kansas First Educational Radio Station

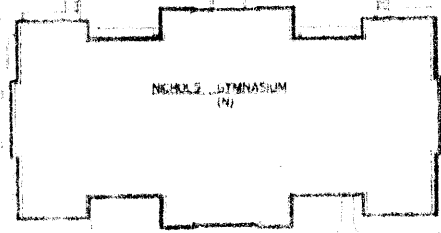
Bernard Holbert, KSAC, Chief Engineer, 1943–1971 (retired)

Delbert Staab, KSAC, Assistant Engineer 1969–1971  
Chief Engineer 1971–Present

This nomination was prepared from materials submitted by Harriet Lange, Kansas Association of Broadcasters.



**K.S.A.C  
RADIO TOWER**



**K.S.A.C  
RADIO TOWER**

